How do people value food?

Systematic, heuristic and normative approaches to narratives of transition in food systems

Jose Luis Vivero Pol

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Université catholique de Louvain

Université Catholique de Louvain
Earth and Life Institute - Faculty of Biological, Agricultural and Environmental Engineering



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President:	Claude Bragard (UCL)
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	Olivier de Schutter (UCL)
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	Tessa Avermaete (KUL)
	Marnik Vanclooster (UCL)

Louvain-la-Neuve, August 2017

"The difficulty lies not so much in developing new ideas as in escaping from old ones."
John Maynard Keynes (1883-1946), British economist

"The real voyage of discovery consists not in seeking new lands, but in seeing with new eyes"
Marcel Proust (1871-1922), French writer

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SUMMARY

Food, a life enabler and a cultural cornerstone, is a natural product with multiple meanings and different valuations for societies and individuals. Throughout history and geographies, food has shaped morals and norms, triggered enjoyment and social life, substantiated art and culture, justify commons-based systems and affected traditions and identity. More importantly, food has been closely related to power and the interaction between society and nature.

From the industrial revolution to present days, food has been increasingly valued for its commodity dimension: food as a mono-dimensional commodity produced and distributed in a global market of mass consumption. In this research, the progressive commodification of food as a vital resource is presented as a social construction, informed by an academic theoretical background, which shapes specific food policy options and blocks or discard other policies grounded in different valuations of food. As such, the value of food cannot be fully expressed by application of a value-in-exchange approach, since this value derives less from the market price than from its multiple dimensions relevant to humans and therefore cannot be either quantified (E.g. essentialness for human survival) or sold (E.g. food as a right). In opposition to the dominant paradigm, an alternative valuation of "food as a commons" is discussed, which has been barely explored in academic and political circles. This is based on the innovative idea of the six dimensions of food that is introduced in the present work: food as an essential life enabler, a natural resource, a human right, a cultural determinant, a tradeable good and a public good, cannot be reduced to the mono-dimensional valuation of food as a commodity. Those dimensions seem to align better with the multiple values-in-use food enjoys across the world.

In light of this, the objective of this thesis is to trace the genealogy of the meaning making and policy implications of the two conflicting narratives of "food as a commodity" and "food as a commons". In order to achieve this result, it focuses on the "Food Narratives of Agents in Transition" using two theoretical frames (Discourse Analysis and Transition Theory) and adopting three methodological approaches, including the combination of quantitative and qualitative tools. The work is divided into three sections, that correspond to the three approaches undertaken (systematic, heuristic and governance), and eight chapters (two per section plus the introduction and the conclusions).

In the first part, the work presents a genealogy of meanings of commons and food by using a systematic approach to schools of thought plus a research on academic literature where food is discussed either as a commons or as commodity. Notwithstanding the different interpretations, the economists' framing as private good and commodity prevailed. This framing was rather ontological ("food is a commodity") thus preventing other phenomenological meanings ("food as…") to unfold and become politically relevant.

The second part adopts a heuristic approach and contains two case studies that investigate the relevance that the two narratives had in influencing individual and relational agency in food systems in transition. That includes a case study with food-related professionals working in the food system at different levels and another one with members of the food buying groups in Belgium as innovative niches of transition that nurture shared transformational narratives through conviviality, networking and social learning.

Part three introduces the central issue of governance and navigates the policy arena with the use of a case study on how the absolute dominance of the tradeable dimension of food in the political stance of some important players (the US and EU) obscures other non-economic dimensions such as the

consideration of food as a human need or human right. In response to the monolithic approach of governments, this part also contains a prospective chapter where different governing arrangements based on the narrative of food as a commons are proposed, with specific policy measures suggested.

Finally, the conclusion chapter is structured as a synthesis of those approaches, and formulates a normative theory of food as a commons, with particular attention to different policy and legal options that should inform and justify institutional arrangements radically different from the business-as-usual proposals to reform the industrial food system. As discussed through the thesis, the consideration of food as a commons rests upon its essentialness as human life enabler, the multiple-dimensions of food that are relevant to individuals and societies, and the multiplicity of governing arrangements that have been set up across the world, now and before, to produce and consume food outside market mechanisms.

As a social construct based on the "instituting power of commoning", food can be valued and governed as a commons. Once the narrative is shifted, the governing mechanisms and legal frameworks will gradually be molded to implement that vision. A regime based on food as a commons would construct an essentially democratic food system (food democracy) based on the proper valuation of the multiple dimensions of food, sustainable agricultural practices (agro-ecology) and emancipatory politics (food sovereignty). That regime would also support the consideration of open-source knowledge (E.g. cuisine recipes, traditional agricultural knowledge or public research), food-producing resources (E.g. seeds, fish stocks, land, forests or water) and services (E.g. transboundary food safety regulations, public nutrition) as commons.

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- Quinze mesures pour soutenir l'alimentation en tant que bien commun en Europe http://www.iteco.be/antipodes/les-biens-communs/article/quinze-mesures-pour-soutenir-l-alimentation-en-tant-que-bien-commun-en-europe

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ACRONYMES

AFN:	Alternative Food Network
CAP:	Common Agricultural Policy (European Union)
CBPP:	Commons-based Peer Production
CSA:	Community-Supported Agriculture
EC:	European Commission
EU:	European Union
FAO:	Food and Agriculture Organisation of United Nations
FNS:	Food and Nutrition Security
GHG:	Green House Gases
GMO:	Genetically Modified Organisms
GPG:	Global Public Good
IAASTD:	International Assessment of Agricultural Knowledge, Science and Technology for Development
ICESCR:	International Covenant on Economic, Social and Cultural Rights
IMF:	International Monetary Fund
MMD:	Mildly Mono-dimensional
MTD:	Multi-dimensional
MLP:	Multi-Level Perspective on Sustainable Transitions Theory
NGO:	Non-governmental Organisation
OECD:	Organisation of Economic Cooperation and Development
SDGs:	Sustainable Development Goals
SDR:	Socially desirable responses
SMD:	Strongly Mono-dimensional
UN:	United Nations
UK:	United Kingdom
UN:	United Nations
US:	United States of America
WB:	World Bank
WEF:	World Economic Forum
WTO:	World Trade Organisation

CHAPTER 1:

INTRODUCING FOOD NARRATIVES OF AGENTS IN TRANSITION

CHAPTER 1: INTRODUCTION

"Tell me what you eat and I will tell you what you are"
Jean Anthelme Brillat-Savarin, French politician and gastronome

1.1.- SETTING THE STAGE WITH A COMPLEX QUESTION: WHAT IS FOOD?

What is food? Food has been defined as a commodity (Bush 2010; Bahel et al. 2013; Siegel et al. 2016), a commons (Dalla Costa 2007; Rundgren 2016; Karyotis and Alijani 2016), a public good (Akram-Lodhi 2013; Agyeman and McEntee 2014; McClintock 2014); a private good (Samuelson 1954; Musgrave and Musgrave 1973) and a human right (UN 1999; Ziegler 2001; De Schutter 2014a). Moreover, food is also an important cultural element (Counihan and Van Esterik 2013) and a power device (Frye and Bruner 2012). As prominent food scholars have shown, food (an essential resource for human bodies) is endowed with multiple meanings and different valuations by societies and individuals (McMichael 2000; Szymanski 2014). Moreover, specific food stuff enjoys a particular reputation that comprises intrinsic features, place relations and the physical effects in the eater (Bonaiuto et al. 2017). Therefore, the multiple meanings and the food reputation are phenomenological features that render every food item a sort of social agent, and not just a mere commodity.

However, these multiple meanings are nothing but social constructs, situated in time and space and can be constructed, reconstructed and shaped by influential agents such as the ruling elites, academic thinkers and political, religious and spiritual leaders. Actually, food can be understood as a relational concept or a network of meanings (Szymanski 2014), some of which may even be contradictory (E.g. how can food be a right and a commodity at the same time if rights are not tradeable? And, how can food be a basic need and a cultural determinant if human needs are basically equal and universal?).

Although food is so vital to our daily life, its critical interrogation is a field of study that demands greater exploration with an inter-disciplinary approach, combining academic science with citizen involvement (Dedeurwaerdere 2014). That is particularly true given the current situation where global public opinion is beginning to recognize that ignoring our relationship to food has significant and deleterious effects on our personal health, our national economies and the Earth's environment. Even though there is some acknowledgment of the power of food to send messages, it is the narrative qualities that, captured in discourses and behaviors, contribute to its meaning and thus to its political leverage as an agent of change. The stories we associate with food become food narratives.

The moral valuation of food and its multiple dimensions, relevant to humans, is therefore a social construct that depends on how various groups in society influence the policy arena, the social imagination and specific socio-technical practices. The different food narratives inform that valuation and the dominant narrative that sustains the global food system is grounded in the valuation of food as a commodity. In this text, I will follow Arjun Appadurai (1986) when he defined "commodities" as anything intended for exchange and the "commodification" of a good as a situation in which its exchangeability for some other thing is its socially relevant dimension. Typically, a commodity is a special kind of manufactured good or service associated with capitalist modes of production and

embedded in the market society (Radin 1996). Commodification has also been described as the symbolic, discoursive and institutional changes through which a good or service that was not previously intended for sale enters the sphere of money and market exchange (Gómez-Baggethun 2015). . The commodification of any good or services does not only put a price to it, but it also erodes its original values for society (Sandel 2013), ultimately making them disappear. As money-mediated commodity exchanges unfold, the symbolic ties and reciprocity logic that traditionally accompanied pre-capitalist transactions fade away (Mauss 1970). Likewise, the absolute commodification of food, heralded by the industrialization and neo-liberalization of the food system, has brought the absolute dominance of the economic dimension of food and the undervaluation of those dimensions that cannot be valued in monetary terms, such as food as a human right, an essential resource for our survival or a cultural determinant. The commodity dimension is expressed in market transactions and food prices governed by supply and demand rules. In this research, one of the multiple dimensions food is endowed with by humans is the commodity dimension (being a tradeable good), but it is not the only one. Thus, I will seek to understand how this dimension interacts with, and very often obscures, other non-tradeable dimensions of food.

The other concept that will appear extensively in this thesis, being the foundational pillar of the contrasting narrative of food is "commons", often being written in plural. Commons are material and non-material goods which are jointly developed and maintained by a community and shared according to community-defined rules (Kostakis and Bauwens 2014). They are goods that benefit all people in society and are fundamental to society's wellbeing and people's everyday lives, irrespective of their mode of governance (Bloemen and Hammerstein 2015). The practice of "commoning", having instituting power (Dardot and Laval 2014), creates the commons. Whether material or non-material, natural or man-made, commons are compounded of four elements: (a) natural or cultural resources, (b) the communities who share the resources, (c) the commoning practices they use to share equitably, and d) the purpose and moral narrative that motivates and sustain the commoning practices by the community.

The structure of this introductory chapter is as follows: Firstly, a section where different narratives of food are presented, putting an emphasis on explaining how the narratives are constructed by science and policy (a subject that will be analyzed in detail in chapters 2 and 3), the implications of the two typologies to be studied (food as a commodity and food as a commons) and their bonds with other narratives found in the global food system, such as food security, food sovereignty, productivism and agroecology. The political power of each narrative (being dominant in the regime or non-dominant) will also be analyzed in this section as it has important implications for the subsequent case studies. Secondly, a theoretical section will detail the theory of the discoursive analysis, the multi-level perspective of transition theory and the frameworks used to analyze the main research topic, namely "the food narratives of agents in transition". This section will also explain the importance of value-based narratives to guide individual actions in transition pathways and how those valuations of food (nothing but social constructs) are related to specific policy options. Two further sections will present the driving research questions (general and specific ones), the working hypothesis that will be tested in each chapter and the methodologies to be used. The chapter will end with the limitations of this research.

1.2.- DOMINANT AND NON-DOMINANT NARRATIVES OF FOOD

The prevalent narrative in the second half of the 20th century, mostly due to the developments that unfolded after the second World War (WWII), is that food is a commodity (or a private good using the economic terminology that is explained in detail in chapter 2). The market, a human construct to distribute scarce resources, is the most appropriate mechanism to govern the production, transformation, distribution and consumption of such a vital resource. However, there are different types of market arrangements so, to be more specific, the type of market that gained supremacy in the last quarter of the 20th century was the neoliberal version, where state interventions were reduced to the minimum and people's control could only be exercised via purchasing power and consumer choices (Harvey 2005; Robison 2006). This market model brought privatisation with regimes of absolute property as the driving force to transform former common resources either owned or governed collectively into private commodities. Profit maximization, individual competition and endless growth on a planet with finite resources are three major features of this neoliberal market model. Since food is framed as a commodity with a market price, only a person's purchasing power can facilitate access to food or food producing resources, most of them already being commodities (E.g. land, labour, knowledge) or in the process of being transformed into commodities (E.g. water, air, seeds). For those who cannot afford to get access to enough food, some states provide public funds and specific institutions that, through humanitarian assistance or targeted safety nets, can provide food (E.g. food banks or food-for-work schemes). However, these programmes are usually time-restricted, non-universal and not rights-based.

By considering food mostly as a commodity, the current global food system assigns the money-mediated market mechanism as the best system to allocate food resources. This valuation of food conditions the set of policies, economic mechanisms and legal frameworks that are put in place, privileging those that are aligned with the commoditized valuation and discarding or downsizing those that support other narratives of food. Actually, some authors already consider the neoliberal worldview as a lock-in mechanism that prevents a transition towards more sustainable food systems (Mardsen 2014; IPES-Food 2016).

Examples of dominant narratives aligned with the "food as a commodity" valuation can be seen when the agri-food corporations frame seeds, agro-chemicals and land as commodities alleging that "we need to feed the world", therefore justifying the development of controversial issues such as GMOs, land grabbing schemes, glyphosate authorization and intellectual property (IP) rights for seeds and the final food output (E.g. Syngenta Kumato or Heineken barley). Actually, in a world that already produces food in excess to feed everybody adequately, and that wastes one third of the total food produced, the policy mantra that "we need to double food production between now and 2050 to feed the growing population and its rising meat preferences" has already become a powerful narrative, despite its multiple flaws (Tomlinson 2011; Hunter et al. 2017).

Notwithstanding this dominant valuation, mostly hegemonic in the industrial food system, alternative narratives that reject the consideration and management of food as a pure commodity are also regularly found in global leaders' discourses (E.g. Pope Francisco, US President Bill Clinton), indigenous and civil society groups (E.g. La Via Campesina), as well as in a growing number of countries that accept that food is a special good that requires specific public policies and civic accountability (E.g. Brazil,

Ecuador, Kenya, Nepal, India). Hence, a different narrative of food is evolving and it may be grasped in different customary and contemporary food initiatives that are either resisting the absolute commodification of food or that are inventing (or revamping) new forms of food sharing, cooking, eating, exchanging, recycling or selling. This narrative that values other non-economic dimensions of food is partially enrooted in customary rural indigenous and peasant food systems that resist the enclosure of commons resources (land, water, seeds, forests and rivers) and are often touted as backward, non-efficient or less productive by the dominant mainstream (Stanhill 1990; Manjengwa et al. 2014; Harrison and Mdee 2017). And yet, the non-dominant narrative is also embedded in many contemporary food innovations that are mushrooming in urban areas all over the world, designed by young eaters and consumers[1] and urban producers and facilitated by new technologies.

In this research I tentatively call this non-dominant narrative "the food commons", and I will explore its theoretical premises, supportive agents, transformational power and political implications. To start with, the theoretical framework to propose the consideration of food as a commons was non existant and the scholarly cases where food was framed as a commons or public good were scanty. After a cursory search, a small group of scholars proposed the consideration of food as a commons or a public good during the 20th century (Pretty 2002; Dalla Costa 2007; Johnston 2008; Sumner 2011; Azetsop and Joy 2013; Akram-Lodhi 2013; Tornaghi 2014; Rundgren 2016). Moreover, as odd as it may sound, the most relevant critics of the capitalist/neoliberal system (E.g. Karl Marx, Karl Polanyi, Arjun Appadurai, Margaret Radin or David Harvey) did not analyze in detail the commodification of food. So, theorizing a narrative of food that values dimensions other than its tradability in the market will be a final output of this research.

Since the current food system is facing multiple crises of different nature, such as the mounting obesity, unabated undernourishment, reduced availability of arable land, erosion of the crop genetic pool, contribution to climate change, biodiversity destruction and the corporate concentration, the need for change in the "paradigms and values" that sustain the industrial food system was stressed by the multi-year, multi-researcher 2008 Internal Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD 2009), the most comprehensive and far-reaching assessment of the global agricultural system to date. This need for a paradigm shift was further confirmed by other ambitious global assessments (Paillard et al. 2011; UK Government 2011; TEEB 2015; IPES-Food 2016). The industrial food system works with oil-based machinery, large-scale landholdings with mono-cropping, mechanized feeding lots for livestock, and ultra-processed food made up of multiple ingredients supplied by cash crops such as corn, palm oil, soybean and sugar. This system has profit maximization in long food chains as its driving ethos and the valuation of food as a commodity as the value-based narrative that justifies the entire legal, political and financial set up. Arguably, alternative valuations of food are important within a large segment of food eaters, food-related workers and small-scale family farms. This research aims to shed light on the ethical foundations, historical developments and policy implications of this alternative narrative that values and governs food not as a pure commodity but as a commons or public good.

[1] Throughout this thesis, I will make a distinction between food eaters (all humans that eat food) and food consumers (those eaters that purchase the food they eat in the market).

1.2.1- Clash of narratives to steer food transitions

During the finalization of this thesis, I read a statement by Dr Graziano da Silva, FAO Director General, where he stressed the absolute need to change the productivist paradigm that drives the unsustainable food system that prevails in the world. Quoting him:

"Business as usual is no longer an option…High-input and resource-intensive farming systems have substantially increased food production at a high cost to the environment….Massive agriculture intensification is contributing to increased deforestation, water scarcity, soil depletion, and the level of greenhouse gas emissions…To achieve sustainable development, we need to transform current agriculture and food systems. The future of agriculture is not input-intensive, but knowledge-intensive. This is a new paradigm" (Graziano da Silva 2017).

And yet, although not phrased in those terms, the FAO Director General was referring to the industrial food system that is an important contributor to resource depletion, climate change, water acidification and biodiversity collapse at global scale. As the unsustainability and unfairness of the industrial food system are rather evident to many stakeholders, there is a broad consensus on the need for a significant change (World Bank 2008; IAASTD 2009; Paillard et al. 2011; UK Government 2011; FAO 2012; UN 2012a; WEF 2013). However, such consensus does not extend to the final goal (the narrative: Where do we want to go?) or the transition path (the process: How are we going to get there?). Even more, none of the global analyses ever questioned the nature of food as a commodity and, despite previous efforts by the UN system (Kaul et al. 2003), neither food and nutrition security is considered a global public good nor food a commons. Perhaps the global food system in its complexity requires several non-dominant narratives of transition (Tansey 2013).

The following paragraphs will present the main features of the dominant and non-dominant narratives of food but firstly, a few words on the importance of narratives to steer transitions and justify changes in societies.

1.2.1.a.- Narratives are molded by science and policy

There are several types of transition pathways to tackle food system challenges and the directions those pathways point to depend on the paradigms applied, the framing of problem/solutions, shared values and the valuations of material and non-material considerations. Thomas Kuhn defined scientific paradigms as universally recognized achievements that, for a certain period of time, provide models to problems and solutions to a scientific community (Kuhn 1962). Scientific paradigms remain relevant, dominant and constraining as long as the relevant scientific community accepts, without question, the particular problem-solutions already achieved. For the case presented in this research, the consideration of capitalist markets as the most appropriate allocation mechanisms for scarce resources and the faith in the self-regulatory "invisible hand" of supply and demand to distribute priced commodities are included in the dominant scientific and lay paradigm. Furthermore, this paradigm includes the narrative[2] that justify the need to commodify any valuable good to be subject of market

[2] As explained in detail below, paradigms can also be called meta-narratives, and they incorporate narratives and frames.

transactions, and that has happened to food and many food-related behaviours and dimensions. This dominant capitalist paradigm has also pervaded food and its multiple economic and non-economic dimensions, framing and governing it as a commodity. As stated by Foucault (1980), language, knowledge formation and worldviews are strongly related to the dominant power of any given period, as the dominant discourses, backed by the elites, construct different realities and maintain them through the operation of power. This process achieves a bottom up consensus that understands "as normal" the manufactured narrative of the elites. The economists have defined food as a private good that is better traded as a commodity, and the elites have privileged that idea because it is beneficial to their interests, thus seeking a normalization of that narrative throughout the public.

In general terms, a narrative is a discourse that is based on a coherent set of assumptions and principles underpinning and communicating a certain worldview (Freibauer et al. 2011). Assumptions and principles relate to claims about what, in the view of a particular narrative, are the problems, the underlying causes and the solutions that should be adopted. The value-based consideration of food is therefore regarded as a key element in understanding the narratives that sustain the different transition pathways in the global food system. For the case presented in this thesis, the consideration of food as a commodity is the dominant scientific and political narrative. As dominant narratives tend to close down alternative choices affecting the directions of change within a system (Leach et al. 2010a), instead of exploring several options to change the industrial food system, we are constrained by 'mono-cultures of the mind', as perfectly described by Vandana Shiva (1993). Markedly alternative or radical views will be easily discarded by the dominant mainstream, by being labelled utopian, naïve or, even worse in our times, communist. However, different paradigms are necessary to inspire and accompany socio-technical transitions towards a better food system (Göpel 2016). As recently stated by the report of the International Panel of Experts on Sustainable Food Systems, real competition in food systems is between different agricultural models, not different countries (IPES-Food 2016).

In this research, I align with the scholars that posit the existence of a clash of narratives of transition in the global, national and local food systems, with two major contenders presenting radically different world views and competing narratives of how we shall move to a different and better food system, namely the Food Security and the Food Sovereignty constituencies (Freibauer et al. 2011; Garnett 2013a; Jarosz 2014), with other minor narratives being found (and not always aligned) in both fields, such as de-growth, commons, transition towns or food justice in the Food Sovereignty side; and productivism, green growth, climate-smart agriculture and sustainable intensification in the Food Security side. The Food Security narrative incorporates perfectly the consideration of food as a commodity, subject to market rules and, to a lesser extent, state policies. On the other side, the Food Sovereignty narrative posits that "food is not a commodity" although it refrains from defining food as a "public good" such as health or education or a "commons" as La Via Campesina actually does with water, land and seeds. The dominant and non-dominant narratives of transition that can currently be found in the political debates on global and national food systems are presented as follows. Firstly, the productivist narrative because it has so far gained hegemony.

1.2.1.b.- The dominant narrative: world's food security needs to produce more

Increasing food supplies through technology-driven means still dominates the international discourse, being the hegemonic strategy to tackle food security in the future with top-down policies, promoted

as blueprints and universal panaceas. This rise in food production would be facilitated by restricted technologies and patented knowledge, based on multinational agribusiness, large monoculture landholdings owned by budget-rich-but-land-poor countries in budget-poor-but-land-rich countries, and having endless growth and market-driven competence as underlying rationales. This narrative is known as “technological productivism”. Although with different nuances, this paradigm has been rightly described by many researchers (Van der Ploeg 2010; Freibauer et al. 2011; Tomlinson 2013; De Schutter 2014b). This narrative is hegemonic within governments, spurred by international financing institutions and private philanthropic foundations, and reinforced by devolution of normative control from national governments to private corporations (Clapp and Fuchs 2009). Although productivism has recently been criticized by the ”sustainable intensification” proposal (Garnett et al. 2013; Godfray and Garnett 2014; Rockstrom et al. 2016), this criticism supplies merely a lip service that mostly addresses the technological challenges and obscures the social and power imbalances.

The productivist paradigm is compounded of a diverse mix of scientific knowledge (i.e. rational choice, bounded reality), ideological positions (E.g. Private enterprises are more efficient than the public sector), dominant values (E.g. Consumer’s absolute sovereignty, survival of the fittest), popular stories (E.g. Individualist self-made man) and conflictual statements (E.g. GMOs will improve production and combat hunger). Actually, the widespread political goal of “the need to double food production by 2050” that was supported by FAO and other reputed scholars (Tilman et al. 2011; Alexandratos Bruinsma 2012) has been recently criticized by having data inconsistencies, avoiding issues of decision making power and sustainability, and treating consumption patterns as unmovable (Tomlinson 2011; Hunter et al. 2017). And yet, this narrative is currently hegemonic. Even though its promoters and interested stakeholders feed no more than 40% of total population, this is currently the "mainstream approach".

The commodified productivist narrative is firmly embedded in the food security discourse that has been adopted by elites, governments and corporations during the second half of the 20th century. Due to the devastating consequences of both world wars in food systems at national and global levels, the concept of food security was born in parallel with the creation of the UN (E.g. FAO and WHO) and the Bretton Woods institutions (IMF and World Bank). Preventing hunger by increasing the food production of every nation was initially the main driver (Shaw 2007), although the concept continued to evolve to eventually incorporate access, food safety and nutrition issues (Schiff and Levkoe 2014). Finally, after the 2008 global food crisis (or better said the peak of food prices), food security gained a prominent space in global and national policy agendas, with the need to produce more to feed the growing population as the underlying paradigm. Currently, food security is embedded in dominant technocratic, neoliberal development discourses emphasizing technologically-driven productivism through increasingly open and global market mechanisms, where food is valued as a commodity. This narrative is well aligned with transnational agribusiness, national governments and institutions of governance at international scales (Jarosz 2014; Schiff and Levkoe 2014). However, food security frames have been critiqued for (a) legitimizing the priorities of the corporate food regime (Koc 2011); (b) framing the problem of the global food system as the need to produce more, because food is scarce, and proposing corporate-driven technical solutions to feed increasing populations (Allen 1999; Tomlinson 2013); and (c) prioritizing the needs of consumers (Patel 2009), thus downsizing concerns of non-industrial food producers, mostly small-scale peasant farmers, pastoralists and indigenous groups (Desmarais 2007). In general, the food security discourse is considered as an uncritical approach

that does not tackle the power imbalances and the root causes of an unsustainable and unfair food system.

A good example of this uncritical narrative can be provided by the US industrial food system. Recent data show how this country is mainly providing processed food, biofuels and animal feed to the wealthiest nations, not to the hungry ones (Weir-Schechinger and Cox 2016), thus debunking the claim that America's farmers will have to double their production of grain and meat to "feed the world"[3]. They are not feeding the world, just producing commodities to maximise profit for shareholders of the agri-food corporations.

1.2.1.c.- The alternative non-dominant narratives: Food sovereignty and its companions

The food security narrative is challenged by a myriad of customary and contemporary civic actions for food in developing and developed countries that defend other food narratives. There is a growing evidence that defends the notion that complex problems that affect socio-ecological systems, such as the food-producing systems, require crossing the science-society gap (Constanza 2003), developing a transdisciplinary and reflexive approach, combining non-scientific actors and non-scientific knowledge into the problem solving process (Weaver 2011; Jahn et al. 2012; Dedeurwaerdere 2014;). That is precisely what the multiple customary and contemporary civic actions for food are bringing to the debate on where we are heading in the current food transition.

Food security and food sovereignty discourses explain world hunger, its root causes and responses to it in contrasting ways and hence I have grouped the non-dominant narratives alongside the food sovereignty banner, being aware that the transition, degrowth, commons, or food justice constituencies do not always align, in theory and praxis, with the food sovereignty narrative and leading actors (E.g. La Via Campesina, peasants' associations or indigenous groups). However, they seem to clearly identify the opposing contender, the industrial food system (which will be described in detail later). It is also worth mentioning that food security and food sovereignty are fluid and changing discourses (Jarosz 2014), as narratives are always situated in place and time and carry the subjectivity of the social group that creates and disseminates them. When and where these discourses develop and emerge is central to understanding their oppositions and convergences. Food security and food sovereignty discourses are tied to distinctive political and economic histories, ecologies and identities at the national and local levels. Therefore, there are a multiplicity of interpretations of both discourses and what is presented here is just a brief sketch of the most common understandings by scholars.

The defenders of agroecology recognize the multiple dimensions of food for humans and the close bonds and feedback loops between man-made food producing systems and the ecological functions that sustain those systems (Altieri 1995). Actually, the term agroecology originally referred to the ecological study of agricultural systems (Gliessman 2007). At the heart of agroecology is the idea that agroecosystems should mimic the biodiversity levels and functioning of natural ecosystems (Pimbert 2015). Agroecology encompasses the ecology of the entire food system, human-made ecology as well as natural systems ecology. Moreover, traditional farmer's knowledge is recognized in equal footing to scientific knowledge and presents a remarkable epistemic difference between this discipline and

[3] The value of US agricultural exports to the countries with high undernourishment in the last decade averaged only 0.7% of the value of total agricultural exports (Weir-Schechinger and Cox 2016).

other academic approaches to sustainability. In that sense, agroecology seeks to bring Western scientific knowledge into respectful dialogue with the (mostly Global South's) local and indigenous knowledge used to manage existing agroecosystems (Altieri and Toledo 2011). Partly in response to the negative effects of industrial agriculture, agroecology also came to mean the adoption of sustainable agricultural practices (Gliessman 2017), becoming an integral component of various social movements seeking alternatives to industrial food systems (E.g. food sovereignty, transition towns, de-growth and commons). A sustainable agroecosystem occurs when people care for the environment and care for each other. However, agroecology currently holds multiple meanings, and those meanings may be contested, re-interpreted and adopted by different people and interest groups, de-activating the transformational nature of agroecology, for example being co-opted by corporate narratives, such as climate-smart agriculture (Pimbert 2015). Agroecology can refer to an inter or transdisciplinary science, a set of sustainable farming practices and/or a social movement (Wezel et al. 2009), all the while keeping its strong foundation in ecology. Moreover, it develops a trustful partnership with non-dominant groups of food producers (indigenous people, peasants and family farmers) in order to render relevant their contribution to global food production. For example, their resilience and adaptability in rapidly changing times and their political relevance to tackle the current problems that affect the global food system. Finally, agroecology and food sovereignty combined represent an alternative paradigm to industrial food systems and climate-smart agriculture (Pimbert 2015).

In contrast with the academic origin of agroecology, the food sovereignty narrative emerged from civil society and NGOs and aligns with Marxist political, economic and ecological discourses both in and out of academia. This discourse stresses the importance of analyzing power relations and capitalist development's impacts upon agricultural development, local ecologies, hunger and poverty. Peasant-based social movements emphasize the right of all people to live free from hunger and to realize their full human potential through the autonomous and democratic control of land, water and food-producing systems (Holt-Gimenez and Shattuck 2011). The principles being that food should be chiefly for people, not for profit; food providers should have a saying in governing the food system; food systems need to work in a localized way, embedded in societies and nature; land and resources need to be controlled locally; knowledge, skills and some food-producing resources are a commons that need to be retained and built up; and food sovereignty works with nature.

The first definition of food sovereignty was issued by La Via Campesina in 1996, stressing the challenge to the balance of power at that time, and repositioning the right of producers to decide how and where to produce food and what for. This first definition stated that: "The right of each nation to maintain and develop its own capacity to produce its basic foods respecting cultural and productive diversity. We have the right to produce our own food in our own territory. Food sovereignty is a precondition to genuine food security." (La Via Campesina 1996). Food sovereignty therefore requires that peasants and small farmers must have direct input into formulating agricultural policies at all levels (Wittman et al. 2010; Jarosz 2014). The Nyeleni Declaration of Food Sovereignty later incorporated a collective dimension in the definitions of food security and specifically stated its stance against the commodification of food, knowledge, land, water and seeds (Forum for Food Sovereignty 2007). Finally, in the recent 7th International Conference of La Via Campesina held in Spain (the Euskal Herria Declaration), the word "commons" is firstly mentioned as a resource threatened by privatisation and enclosures (La Via Campesina 2017). The food sovereignty narrative is transnational, national, and local

in its scope (Jarosz 2014) and carries a critical stance of neoliberal international trade policies and the globalized, industrial food system that sustains the commodified valuation of food.

Just to end this brief snapshot of narratives of food, I would like to mention that the peasant-based food sovereignty narrative is sometimes accompanied by an urban-based food justice narrative. Departing from class and gender discrimination regarding access and governance of industrial food systems, this narrative of food justice and community food systems emerged from social struggles and the environmental justice movement (Bullard 1994; Gottlieb and Fisher 1996; Alkon and Agyeman 2011). This narrative is well rooted in the US cities (Allen 2010) and to a lesser extent in Europe and the Global South, where the right to food, food sovereignty and agroecology are more widespread narratives that challenge the industrial food system.

1.2.2.- Defining the industrial food system, sustainable food systems and alternative food networks

Just before I present the theoretical frameworks that support this research on narratives of food (the discourse analysis and the transition framework), I shall describe three concepts frequently mentioned throughout this research, namely "the industrial food system", "the sustainable food systems" and "the alternative food networks".

The industrial food system[4], also known as "neoliberal" (Pechlaner and Otero 2010; Wolf and Bonanno 2014) or "corporate" (Freidberg 2004; McMichael 2005), is a form of farming that refers to the industrialized production of livestock, poultry, fish, forestry products and crops, including for-profit management of hunting and wild food gathering. The industrial food system, as defined by the Union of Concerned Scientists in the US (cited in Horrigan et al. 2012), is the system of chemically intensive food production, developed in the decades after World War II, featuring enormous mono-cropping farms, animal production facilities and long supply chains. These long food chains serve corporate markets at the expense of local food security, peasants and family farmers (McMichael 2013). Another definition, by Michael Pollan (2006), posits the interconnected web of conventional grocery stores, restaurants, advertisers, transporters, distributors, manufacturers, growers and consumers that produces, transforms, distributes and consumes food based on heavy mechanization and use of non-human energy. Industrial food has come to exist by way of the organizations, cultural norms, and social structures that influence the food choices and habits of billions of food consumers.

This system started with the first use of farming machinery during the Industrial Revolution, followed by the identification of nitrogen and phosphorus as critical factors in plant growth and the manufacture of synthetic fertilizers. The discovery of vitamins and antibiotics and their role in animal nutrition enabled certain livestock to be raised in large numbers, indoors, using feeding mixes and reducing their exposure to adverse natural elements. After World War II, the system witnessed a tremendous development in synthetic pesticides, shipping networks, reduced trade barriers, new technologies (the

[4] In this research, I will rather use the term "industrial food system" instead of the most common "industrial agriculture" to incorporate all food-producing activities that have been industrialized and do not fall within the agricultural term such as fishing, forest foods and hunting and gathering. Moreover, the "industrial food system" also includes the transformation, processing, transport, selling, consumption and wasting. This concept does not only embraced an industrialization process but also entails the full adoption of capitalism and more recently a neo-liberal narrative and praxis.

Green Revolution, plus GMOs and ultra-processed food products). These developments, together with the need to sell colonial (sugar, coffee, banana) and post-colonial (maize, soybean) crops shape the current industrially-based and profit-driven food system.

At the core of industrial food production are (a) monocultures (growing single crops intensively on a very large scale and relying heavily on chemical inputs such as synthetic fertilizers and pesticides), (b) confined animal feeding lots (large-scale facilities where animals can barely move and are fed with high-calorie, grain-based diet, often supplemented with antibiotics and hormones to maximize their weight gain), and (c) economies of scale to maximize profits (Booth and Coveney 2015, 5). The farms and feeding lots are short-term, yield-focused, profit-maximizers, trading off long-term ecological sustainability for short-term crop productivity (Foley et al. 2011), using increasingly privatized natural inputs such as seeds, water and knowledge (Magdoff and Tokar 2010). Moreover, the system is characterized by producing ultra-processed foods made from substances extracted and refined from a few multi-purpose crops (i.e. corn, wheat, soybean, oil palm, sugar) that are cultivated to supply those components to long food chains (Ludwig 2011). Long-chains require the production of raw food components at very low costs (by means of mechanized systems and low-waged workers) with value added through the transport and conversion into more profitable food products.

In this system, agri-food corporations are major agents who organize stable conditions of production and consumption and influence governance by sovereign states and international institutions (such as EU, WTO or World Bank) (Friedmann and McMichael 1989). The production and processing of food is becoming increasingly concentrated (fewer and larger transnational corporations, with fewer small producers and small businesses), automated and fast-paced (which has implications for public health) and promotes oligopolies and power concentration due to merges and acquisitions (Lang and Heasman 2015).

In the Cambridge English Dictionary, one of the meanings for agro-industry states “farming considered as a business”[5]. Under this definition, farming is not necessarily a livelihood, but merely a business activity where the farm is seen as a factory with “inputs” such as pesticides, feed, fertilizer and fuel, and “outputs” such as corn, chickens, and so forth. The goal is to increase yield and decrease the costs of production, typically by exploiting economies of scale. The industrial food system values natural resources as low as possible by minimizing production costs and externalizing environmental damages, producing cheap commodities to be sold to the maximum amount of people (Moore 2015). It is basically a “low-cost” food system. Most of the meat, dairy, eggs, fruits, and vegetables available in supermarkets are produced using these methods of industrial agriculture.

This rationale exerts a great pressure on the Earth environment, overconsuming and polluting waters (Gordon et al. 2008), depleting soils (Montgomery 2007), destroying biodiversity, endangering public health via disease outbreaks, pesticide exposures and corporate-driven obesity (Kremen et al. 2012), and contributing to climate change with one third of total Green House Gas (GHG) emissions (Tilman et al. 2002; Foley et al. 2011). Meat production contributes disproportionately to these problems because it contributes greatly to GHG emissions and it involves a large energy inefficiency, making animal raising more resource intensive than other forms of food production (Horrigan et al. 2002; Foley

[5] http://dictionary.cambridge.org/dictionary/english/agro-industry

et al. 2011). Ultra-processed food, made of ingredients coming from industrial cash crops (corn, oil palm, soybean, sugar) plus salt, increasingly dominates household diets in Western and emerging countries (Garnett 2013b). Today's industrial agriculture is considered unsustainable because it is eroding natural resources faster than the environment can regenerate them and because it depends heavily on resources that are nonrenewable (e.g., fossil fuels and fossil aquifers) (Lynch et al. 2011).

Although the industrial food system certainly creates employment, this employment is low paid (Gollin et al. 2014) and suffers from harsh conditions (Holmes 2013). The long food chains promoted by this type of food production draw farmers into supply chains that ultimately supply far-away supermarkets and food processors, rather than subsistence and local markets (Clapp and Fuchs 2009). As providing decent employment and rural livelihoods are subordinate to maximizing production and reducing labor costs (Kremen et al. 2012), industrialized agriculture can play a role in rural depopulation (Hazell and Woods 2008).

Although the classical approach to food system typologies in the second half of the 20th century was portrayed as a typical dualism (industrial food system versus peasant or family-farming) (Whatmore et al. 1987), further research of typologies of farming entities have split the latter into two groups: entrepreneurial agriculture and peasant agriculture (van der Ploeg 2003; van der Ploeg 2014). While it is not the aim of this research to explain in detail the differences, I assume the "food as a commodity" narrative is dominant in the industrial food system, but I cannot assume with any certainty, its prevalence in the small to medium size entrepreneurial agriculture so dominant in Europe (van der Ploeg 2016) or in the peasant food system.

In any case, the industrial food system, as described here, shall be differentiated from small-scale farming (Stevenson et al. 2014), also termed as family farming (Graeub et al. 2016; Suess-Reyes and Fuetsch 2016) and the peasant web (ETC Group 2013), typologies that are shaped by the sociological definition of peasants (van der Ploeg 2013) and the economic definition of small or family farming (FAO 2014).

The next important concept that needs to be defined is "sustainable development". The idea of sustainable development was conceived and adopted by world nations under the aegis of the UN in 1987 and defined as "the development which meets the needs of current generations without compromising the ability of future generations to meet their own needs" (WCED 1987, para 27). The concept entails economic and social development, in particular for people with a low standard of living, while protecting the natural resource base and the environment, thus preserving the environment for future generations. Sustainable agriculture, as the component of sustainable development that affects food production, recognizes that natural resources are finite, acknowledges limits on economic growth and encourages equity in resource allocation (Horrigan et al. 2002). Sustainable agriculture gives due consideration to long-term interests (e.g., preserving topsoil, biodiversity, and rural communities) rather than only short-term interests such as profit. It is also place specific and culturally-determined and based on a sound combination of scientific and non-scientific knowledge (Dedeurwaerdere 2014). Sustainable agriculture also encourages eaters to become more involved in food production by learning about and becoming active participants in their food systems, driving the paradigm shift from passive food consumers to active food citizens.

A fair and sustainable food system is defined by the FAO-sponsored High Level Panel of Experts as "a food system[6] that ensures food security and nutrition for all, in such a way that the economic, social and environmental bases to generate food security and nutrition for future generations are not compromised." (HLPE 2014). This aspirational food system is one that restores ecosystem services, enhances human welfare, and promotes community-based economic development (Miles et al. 2017), and in that sense it will be considered in this work.

However, the food sustainability agenda is becoming commodified (or "trade-ified") meaning that international trade is becoming normalized in global governance fora as a key delivery mechanism for food system sustainability (Clapp 2017). This is happening through constantly repeated narratives in different fora that stress the importance of trade, mostly international, to achieve sustainability and fairness at local, national and international levels. However, as defended in multiple places within this research, there is a need to trigger a paradigm shift that sees food and food systems otherwise, not just as a source of profit but as multi-functional systems that enable human life, environment stewardship, landscape management and heritage custody (Marsden and Morley 2014; ECA 2016).

Finally, another concept that will be mentioned often here is that of Alternative Food Networks (AFNs). They are forms of social innovation developed between producers and consumers, including but not restricted to, direct marketing (Food Buying Groups), Community Supported Agriculture programs (CSA), farmers' markets and community growing/ buying/ gleaning clubs and transition networks (Goodman et al. 2012). Compared to the industrial food system, AFNs tend to eliminate (or reduce to the minimum) the intermediaries between producers and eaters (thus reducing food miles and saving intermediary costs). They also prioritize local production from agro-ecological producers and family/peasant farming, incorporate collective governance and participatory decision-making, promote conviviality, direct involvement of eaters and producers in food governance and, importantly, do not prioritize profit-maximization at the expense of other non-economic benefits that are deemed important by the community (i.e. environmental, ethical or social considerations, autonomy or social cohesion). However, AFNs are not yet widely perceived as a potentially powerful innovation that may counter-balance and perhaps, in the future, even replace the narrative and praxis of the industrial food system. They seem to be caught in a "local trap" (Marsden and Franklin 2013), due to an overemphasis on local embeddedness and place-based heterogeneity. This "local trap" marginalizes AFNs and hinders their potential for transforming the industrialized, conventional food system (Si and Scott 2016).

1.3.- THEORETICAL FRAMEWORK

1.3.1.- Framing food

As already mentioned, food is a resource with multiple meanings and different valuations for societies and individuals. Food can be rightly considered as an essential resource for our survival (De Schutter and Pistor 2015), a societal compounder (Ellul 1990, 53) or a subject to exert or contest power (Sumner 2011). Food shapes morals and norms, triggers enjoyment and social life, substantiates art and culture (gastronomy), affects traditions and identities, relates to animal ethics and is shaped by power and

[6] A food system is broadly defined as the full set of activities ranging from production, processing, and distribution to consumption of food, including the feedbacks that operate between these activities and influence their behaviour. (Ericksen 2008; Ericksen et al. 2010).

control. Therefore, its multiple and relevant meanings cannot be reduced to just the tradeable dimension. Actually, many scholars agree that food should not be considered as a commodity (Castree 2003; Rosset 2006; Zerbe 2009), although just a few dare to value it as a commons (Dalla Costa 2007; Akram-Lodhi 2013; Roberts 2013; Rundgren 2016). The epistemological or phenomenological valuation of food shapes the politics to be applied to food governance (Szymanski 2015). So, by defining what food is, we are also describing what and who we are, and how we govern food.

In this research, I depart from a phenomenological construction of food meanings, since the understanding of food is always "situated" and "plural". Meaning food narratives are always generated by situated individuals that are embedded in a specific time and place and subjected to a particular context and knowledge. How we value the different food dimensions is context, culture and time-dependent and the mechanisms through which we grow, distribute, consume and value food is constructed through a larger social and historical process of development and globalization (Friedmann 1999), involving the politics of meaning (Mintz 1985) and the imposition of hegemonic discourses by the dominant ruling elite. This diversity of food understandings implies the absolute hegemony of food narratives at global level is an illusion. Food can be interpreted, described and governed in multiple ways, and accepting that other value-based narratives of food are equally valid is a powerful tool to explore the ethical and political implications of food for humans. As a consequence, there shall be no narrative of food that can claim a superior moral precedence over the others. The valuation of food as a commodity however conflicts with this rationale.

1.3.1.a.- Food systems are grounded on food narratives

In 2008 the global food system was hit by a sharp rise in major food commodities prices (Von Braun 2008), a rise that peaked again (with lower intensity) in 2011 (Tadesse et al. 2016). Those two consecutive crises placed global food security high in the global agendas (Sommerville et al. 2014), but also exposed the major fault-lines, inequalities and pernicious effects of the dominant system of food production, termed as the industrial food system in this thesis.

Today, the industrial food system, although not representing the majority of food producers or feeding the greatest share of human bellies (today 70% of food produced for human consumption is produced by small-scale and family famers) is situated at the center of the global food system (Grey 2000). Its main purpose is to feed people through a system of market relationships (Rastoin and Ghersi 2010), maximizing profits and minimizing production costs. The industrial food system, being highly heterogeneous in terms of its structure and geographic space, creates a need to differentiate typologies that separate landholdings, food chains and retail premises governed by big transnational agri-food corporations and those governed by mechanized, technologically driven medium-sized farmers. However, this is not the objective of this research, which is not to analyze the food systems themselves, but the underlying narratives of food that sustain them.

This industrial food system is identified in this research by applying the terminology of the Multi-Level Perspective in transition theory (Geels and Schot 2007; Smith et al. 2005; Farla et al. 2012), assuming its guiding narratives are the dominant ones and applying the hegemony concept developed by Gramsci (1971) as applied to ideas and systems of governance.

In any case, the global food system (including the capitalist, entrepreneurial and peasant food systems) is the main driver of planetary transformation (Newbold et al. 2016; TEEB 2015; Whitmee et al. 2015), and the way we produce and eat food in the future will greatly determine our chances to maintain the Earth within stable planetary boundaries (Rockstrom et al. 2016). Indeed, agriculture contributes to roughly 30% of Green House Gases (GHG emissions), the production of crops and animal products releases roughly 13% and the rest is due to land use change and deforestation.

This global food system, although mostly formed by family farming of small land plots (FAO 2014; Herrero et al. 2017), is dominated by a narrative sustained by food corporations and echoed by a majority of governments that largely pursue the privatization of common resources, mechanization and endless growth with finite resources aimed at profit-maximization. This industrial food system is in crisis for multiple reasons, internal and external, mirroring the cracks that are recurrently emerging in the dominant economic model, Neoliberal Capitalism (E.g. the Seventeen Contradictions by Harvey [2015] and the Five Systemic Disorders by Streeck [2014]). Free-market economics is failing and we need a total re-envisioning of the way we organize our economy and society (Chang 2010, 252).

The current neoliberal economic model of endless growth is pushing us inexorably towards the limits of natural resources and planetary life support systems (UN 2012b). Limits that we have already surpassed in four out of nine global thresholds: climate change, loss of biosphere integrity, land-system change and altering the biogeochemical cycles of phosphorus and nitrogen (Steffen et al. 2015). Climate change and biosphere integrity are those boundaries that can significantly alter the Earth System, driving us into a new, less hospitable state. In this multi-crisis scenario, the quest for different guiding narratives of transition becomes a matter of utmost importance in the formation of new policies, legal frameworks and technical innovations. This research aims to contribute to the understanding of the hegemony of the "commodity" narrative and the alternative "commons" narrative, whereby food is no longer considered, traded and valued as a pure commodity but it is valued, regulated and governed as a commons.

1.3.1.b.- Understanding how food narratives are framed

In the last decade, there has been a growing interest around food narratives and framings, including food security, nutrition security, food sovereignty, food justice and food democracies (Tirado et al. 2013; Edelman 2014; Booth and Coveney 2015; Cadieux and Slocum 2015). This has led to a better understanding of narrative formation and its policy implications, such as how narratives are formed, who is behind them, what are the moral, political and technical cornerstones and how they shape policies and regulations. Different typologies of narratives and framings have been proposed for sustainable food and agriculture in Belgium (six interpretative frames in Van Gorp and van der Groot 2012), food security in the EU CAP reform (seven frames in Candel et al. 2014), urban agriculture in US and Canada (six frames in McClintock and Simpson 2017), food security and nutrition in Spain (eight frames in Ortiz-Miranda et al. 2016) and food security in the UK (eleven frames in Moragues-Faus 2017).
Some scholars have underlined the inadequacy of conventional approaches that are grounded around oppositional narratives (E.g. technological productivism vs agroecology, rural vs urban, food security vs food sovereignty or protectionism vs free trade) because they are unable to capture the complex dynamics of food systems (Misselhorn et al. 2012; Candel 2014; Sonnino et al. 2016; Moragues-Faus

2017) or address the systemic nature and multiple causes of the global food crisis (Freibauer et al. 2011, Lang and Barling 2012). However, the dichotomy between food as a commodity and food as a commons has so far not been explored in academia, or at least barely addressed if we look at the meagre academic references analysed in Chapter 3. Additionally, based on psychological theories of human perception, people still frame complex debates regarding problems and solutions of the current food systems in dichotomist narratives (Vanderplanken et al. 2016).

To address this issue, this research focuses on the different valuations of food embedded in different narratives on food security. For example, the role attributed to different mechanisms to allocate food, the diverse views of multiple dimensions of food and the types of political attitudes and governing mechanisms that are prioritised to achieve specific goals in transition pathways.

Of course, the prevailing neoliberal paradigm presents "global markets, agrarian biotechnologies and multinational corporate initiatives as the structural preconditions for alleviating world hunger" (Nally 2011, 49), and requires food to be framed and understood as a "commodity" to substantiate and justify its trade as a mono-dimensional good, where non-economic dimensions are not accounted for.

New concepts developed from the ideas of food democracy, food citizenship, food sovereignty, community food security, food justice and food commons are being invented, re-constructed and co-generated by different constituencies (urban, rural, eaters, producers, wealthy, poor), emphasizing civil society and collective mechanisms of governance and participation (Candel 2014; Sonnino et al. 2016). In a word, a growing body is presenting the need for "commoning" the food system, with the "commoning" narrative framed in different forms. Therefore, there is a need to explore further key concepts that can serve as bridging devices in the entrenched food security debate (Moragues-Faus 2017), and how those concepts are mobilised across different constituencies and deliberation spaces (i.e. academia, policy arenas, social movements and the general public) to reach a convergence of frames (Candel 2014).

It is therefore quite relevant to understand the competing narratives of food that are constructed, defended and accepted by different stakeholders in the complex dynamics of the global food system (Lang and Heasman 2004), and this research aims to contribute to that endeavour.

1.3.2.- Theory of discursive analysis: Narratives and framings of food

The way human beings perceive, interpret and act in the world is informed by our knowledge, values, moral grounds, assumptions, presuppositions, personal subjectivities, political ideologies and religious beliefs. All of them shaping the paradigms, narratives and framings that help us to understand the facts, events and historical pathways life is compounded of. Everyone's knowledge is constructed in narratives that categorize the world and link phenomena into a coherent view (Talja et al. 2005). Hence, people's assessments normally depend on world-views, values or paradigms which, in turn, affect the framing of events, problems, solutions and consequences (Kuhn 1962). Evidently, this way of thinking and acting is also applicable to the food and agriculture system, including practices, policing and research (Thompson and Scoones 2009; Vanloqueren and Baret 2009; Rivera-Ferre 2012).

Although the analysis of narratives, frames and discourses initially originated in the realm of psychology, discursive tools are now used in multiple disciplines, such as anthropology, sociology, politics and transition studies. The discourse analysis aims to bring to the fore the manner in which the communicator of a message uses key discursive elements in order to frame a certain topic, experience or idea, in a certain manner, so the recipients of the communication will share that manner. Discourse analysis has a strong theoretical support for (1) acting equally to speaking, and (2) the social construction of reality via knowledge production and power balances affecting the meaning of statements (Laclau and Mouffe 1985; Keller 2011; Fairclough 2013).

In recent years, discourse analysis has produced some interesting, scholarly papers to analyse how people, media and politicians define problems in the food system related to food security, nutrition, food justice, sovereignty and the right to food etc. at global and national levels (see previous section). Narratives of food employed by people involved in transition pathways in the food system can shed new light on driving ethos, priorities and aspirational goals.

However, the valuation of food as a commodity or a commons, a social construct determined by time and place-situated consensus, has not been properly explored to date. The valuation of food may also entail competing narratives, such as those found in the food security paradigm, termed as a "fractured consensus" by Maye and Kirwan (2013) or containing "diverging, sometimes conflicting claims" (Candel et al. 2014). In the current crises-affected global food system, the different transition pathways to be followed will be steered by different narratives of food, framing different problem priorities and proposing different solutions that require different (if not opposing) policies and legal frameworks, as shown in climate change (O'Brien et al. 2007) and epidemics (Leach et al. 2010b). Given the important role of valued-based narratives in policy-making and transition governance, framing food as a commons or a commodity does actually matter, since different policy alternatives, legal regulations and aspirational goals will be triggered by different understandings of what food is.

So, in the following section I will explore some conceptual elements of the discursive analysis, defining the narrative approach I will be using in this research and delimiting the differences between narratives (also termed as discourses[7]) and frames. Additionally, I will explain my stance on choosing the narrative concept to explore the different valuations of food as a commodity or commons.

1.3.2.a.- Framing as a social construction of a phenomenon

The "framing" concept is very salient in the discourse theory applied to research on social movements (Ferree and Merrill 2000). Framing draws attention to the significant and often influential "meaning work" performed by activists in constructing and deploying their own interpretations of reality, including problem definition, causal interpretation, moral evaluation and treatment recommendations (Entman 1993, 52; Benford and Snow 2000). Framing works to locate, perceive, identify and label (Goffman 1974, 21). In academic terms, framings can also be defined as mental models, derived from a given discourse, describing social-specific representations of information about reality (Pahl-Wostl 2007). In plain terms, frames are mental structures that allow human beings to understand reality and

[7] Some authors use discourse and narratives as exchangeable terms to examine the meaning making by food movements (Allen 2004). I will rather use the term "narrative" in this research.

they are “the social construction of a phenomenon” (Rivera-Ferre 2012). Repetition can embed frames in the brain, and frames define our “common sense”. There is also a more restrictive understanding of framing as the way the media and the public represent a particular topic (Van Gorp and van der Groot 2012), but in this research I will use the broader definition.

Framing may also be an aspirational project since social movements compete with a host of other actors including states, corporations, and international institutions over the naming and interpretation of food-related frames, such as the right to food, food security, and food sovereignty. Each conveys its own distinctive vision of how the global food system ought to be structured in the future (Friedmann 2005; Fairbairn 2012). In that sense, framing helps to motivate and shape actions (Snow 2008, 385).

1.3.2.b.- Meta-narratives or paradigms

Although not the subject of this research, some scholars working in discourse analysis and theory of knowledge posit a hierarchical structure of discourse elements, placing meta-narratives (or paradigms) at the top of the pyramid. Meta-narratives are more abstract narratives “in which we are embedded as contemporary actors in history” (Somers 1994, 619). By embedding the narratives in broader paradigms, our social identity is conformed, making sense of the world (Vanderplanken et al. 2016). This is usually done unconsciously and implicitly, particularly when one’s own narrative reflects the dominant world view (Freibauer et al. 2011). Meta-narratives build on concepts and explanatory schemes and reflect the interaction between individual narratives and institutional dynamics (Somers 1994; Sheehan and Sweeney 2009). Although different nuanced vocabularies can be found, in general terms “paradigms” incorporate “narratives” that incorporate “frames”. That explains why the Ecologically Integrated Paradigm incorporates the food sovereignty and the agroecology frames (Lang and Heasman 2015) whereas the Productivist Paradigm (De Schutter 2014b) incorporates sustainable intensification and global free trade (Ortiz-Miranda et al. 2016).

1.3.2.c.- Differences between frames and narratives

Although framing and narratives are both well-documented discursive features of social movements, the difference between them is often overstated. In this research I follow Oliver and Johnston (2000) and Ferree and Merrill (2000) who posited the differences between narratives (which they called discourses), frames and ideologies. Frames are cognitive orderings that relate events to one another. It is a way of talking and thinking about things that links idea elements into packages (Ferree and Merrill 2000, 456). One particular frame can be seized upon by multiple ideologies. Frames specify how to think about things, but they don't point to why it matters. On the other hand, narratives acknowledge not only a cognitive but also a normative or value dimension, thus incorporating in the discourse what Ferree and Merrill (2000, 455) defined as ideology. Some authors consider that frames also involve subjective and value judgments (Beddoe et al. 2009; Leach et al. 2010a), however, a broader agreement posits that frames, unlike narratives, do not ground thinking in what is normatively good or bad about the situation, and therefore include the narrator’s values in the framing.

Therefore, my concept of narrative in this research encompasses frames plus values (a normative consideration). Like Fairbairn (2012), however, I will use the narrative analysis as a conceptual grounding, rather than employing the classical methods of frame and narrative analysis

(methodologies of discourse research used in psychology, anthropology or sociology). The usefulness of narratives in this research will be assessed in relation to the mobilization and transformational power of agents in transition systems. Narratives can be deployed simultaneously as discursive strategies of regime elites and niche innovations. In the following section, I will present the most relevant features of narratives and their relationships with political action and selection of preferred and non-preferred policy options.

1.3.2.d.- Narratives: Frames plus values

The word "narratives" can have two rather different meanings in discourse analysis: The first equates to stories, an account of a series of events that occur over time and are interpreted by the teller so their ordering has meaning (Bruner 1991; Connelly and Clandinin 2006, 479). In that sense, narratives offer opportunities for capturing actors' perceptions of that experience (Ingram et al. 2014). The second meaning, the one to be applied in this research, states that narratives are reasoning devices that can be broken down into moral bases, problem definition and proposed solutions (Van Gorp and van der Groot 2012; Candel et al. 2014). I will analyse the value-based narratives of food to explore how the valuation of food, as a commodity or as a commons, informs the framing of current problems found in the food system, the proposed solutions (policy options) and the effect of frames on food-related stakeholders (see Entman 1993; Hänggli and Kriesi 2012 for specific examples).

Narratives are considered as social constructs that frame the construction of problems, the proposed solutions and the moral grounds that substantiate both. Narratives shape the transition pathways (Fairbairn 2012; Geels et al. 2015) and the changing conditions of the landscape (Vanderplanken et al. 2016). Narratives are the reference framings that condition the policies of the possible and discard non-accepted political beliefs considered as undoable (Goffman 1974; Wright 2010), thereby influencing philosophical debate, policy making, public discourse, consumer behaviour and economic rationality (Kaplan 2017).

The role of narratives in "constructing" the perceived reality is nicely illustrated by people's perception of industrial food corporations in the US. A Kellog Foundation research (2012) showed Americans have very positive perceptions of various actors in the food system, namely supermarkets and packaged food companies, despite their proven role in driving the obesity pandemic, polluting the environment with harmful agro-chemicals, ill-treating livestock in feeding lots and contributing to GHG emissions which accelerate climate change. In fact, this research highlights that there is no groundswell of public dissatisfaction calling for government intervention in the food system, and thus no more public policies or citizen control are deemed necessary.

Therefore, a narrative serves the interests of certain groups to frame problems in specific ways (highlighting some features and neglecting or obscuring others), transferring ownership and legitimacy of processes (transition pathways in my research) to the group that sustains a specific narrative (Sutton 1999). As different groups hold different and diverging interests, narratives are inherently riddled with conflict, controversy and negotiation over the meaning of specific words and ideas, because they include a variety of speakers with different interests and orientations who are communicating with each other (Gamson 1992; Steinberg 1999).

In that sense, understanding the individual agents that use specific food narratives (E.g. Who they are, where they are placed, how they use the narrative to frame specific problems in the food system, how different agents with specific food narratives interact with each other and how the groups condition the food narrative) becomes important to understand how the valuation of food, a social construct, shapes the transition pathways in the food system, the policy options and the viable/non-viable solutions. This research seeks to analyse how food related actors use narratives to make sense of the complex dynamics of the food system. A system that is in transition due to the multiple crises that it has to confront, and narratives of transition agents are pivotal in guiding the means, goals and vision of transition pathways.

1.3.2.e.- Agents to instrumentalize and construct narratives

The framing literature has been rightly criticized for failing to capture the human agency behind the frame, overshadowing emotions, social pressures, internal motivations, social learning and moral values (Benford 1997; Fairbairn 2012). Discourse analysis, by restricting its scope within the discourse itself and not so much in the constructing agents, neglects the situated conditions that influence the elaboration, distribution and hegemony of narratives (a process termed the Genealogy of the Idea after Foucault [1993]), even though the individual actors are key agents in the production and maintenance of ideas and meaning (Schiff and Levkoe 2014).

Narratives of food operate as rhetorical devices, ideologically biased, used by "human agents to persuade other human agents into action" in ways that serve political and economic agendas (Littlejohn 2008), framing problem boundaries and presenting ideational solutions (Kaplan 2017). They are a mechanism for people to connect with others who share similar meanings and differentiate from others that defend different narratives (alterity after Ingram et al. 2014) and to translate into targets for policy interventions (Sonnino et al. 2016).

Food narratives include debates about equality and power, natural or man-made, proprietary schemes, market rules, state policies and duties and individual rights. Thus, food narratives are inherently political discourses, not only because they include conflict and diverse standpoints that need to be negotiated but because they debate the core questions of politics: "Who gets what, when and how?" (Lasswell 1958).

Since the framing process is dialectical and evolving (Benford and Snow 2000), this research will encompass the historical process of the construction of food narratives, the relationships between individuals, narratives of food and political attitudes in transition (individual agency), the contemporary interactions of agents in collective arrangements in food transitions (relational agency) and the international implications of government-supported narratives. Since narratives condition the way of framing problems and presenting solutions, the dominant narrative of food as a commodity produces social realities (Nally 2014) that restrict the types of market-based policies and the possible solutions by eliminating people-based and state-based policy options based on other non-economic dimensions of food (i.e. food as a human right, food as a public good or food as an essential life enabler).

1.3.3.- The multi-level perspective of Transition Theory

Socio-technical transitions have a great deal to do with understanding the interactions between innovative niches, stabilising regimes and the overarching landscape, either as institutional dynamics or interactions between drivers and barriers. It is also about understanding the role that individuals and organizations play in these interactions, the values they hold and the social learning they undertake between aspirational values, narratives and governance mechanisms. Transition agendas will only be advanced if people engaged in food transition pathways (either in regimes or niches) can navigate social-ecological spaces and engage with multiple, often conflicting values, to try and find common ground. Transition pathways are open and experimental processes that rely on the multiple individual agencies of people working together, developing social learning on a variety of options to construct new meanings and praxis of sustainable and fairer food systems. Although a more detailed exposition of the Multi-Level Perspective (MLP) on Sustainable Transitions Theory will be presented in chapters 4 and 5, in this introduction I would like to emphasize the relevance of agents of transition and the underdevelopment of that issue in the transition theory.

The Multi-Level Perspective on Sustainable Transitions is a theoretical framework that explains the transition pathways towards an enhanced sustainability between different stages of socio-economic systems (Geels 2002; Geels and Schott 2007; Smith et al. 2005). As explained before, the global food system is transiting from a multiple crises stage (growing hunger and obesity, negative impacts on climate, biodiversity, forests, soils and human health) towards an aspirational, sustainable one and therefore this theoretical framework seems appropriate to analyse the importance of food narratives for agents of transition and how these narratives inform policy options in transition pathways.

The three key elements in this theory are (1) the innovative niches, where innovations are nurtured, (2) the dominant socio-technical regime in any given sector (E.g. energy, food, transport, communications) compounded by norms, culture, policies, technologies and institutions, and (3) the broader landscape, where religions, political systems (E.g. democracies) and dominant economic models (E.g. capitalism) inform the setting where the interactions between regimes and niches take place. In general terms, the regimes are quite stable and resilient to change, with multiple lock-in mechanisms that prevent disruptions and support each other. This has been nicely analysed in the food system by the International Panel of Experts on Sustainable Food Systems (IPES-Food) in its recent report (IPES-Food 2016). And yet, regimes do actually change, either triggered by internal pressures from within the niches or external changes in the landscape. So far, the most common explanations have been legal, policy or institutional changes, obscuring the role of human agency and power balance in steering transitions. And yet, it seems rather obvious that the agency of actors also plays a relevant role in steering transitions and should, therefore, be prioritized in the analysis (Farla et al. 2012).

1.3.3.a.- The poorly-studied agents in transition

The lack of human agency in the transition theory framework has been a recurrent critique by authors who have analysed the politics of transitions (Meadowcroft 2009; Shove and Walker 2007) and how the balance of power between groups plays a role in steering transitions (Lawhon and Murphy 2012). In response to those critiques, one of the theorists of the MLP theory, Frank Geels (2011), recognised this important role and suggested that further research would be needed in the future.

Agency in transition is structured by routines, rules, habits and conventions and can be understood as the motivations, beliefs, values and narratives of individual agents steering or influencing the transition pathways (Smith et al. 2005; Genus and Coles 2008). Human agency in transition theory obviously drinks from the theory of agency in development and the theoretical approaches to multi-dimensional poverty undertaken by Amartya Sen, who defined agency as "an assessment of what a person can do in line with his or her conception of the good" (Sen 1985). For some authors, human agency, either individual or relational, is fundamentally cultural and the role of narratives is central in its underpinning (Kashima et al. 2008).

The MLP theory was initially applied to explain socio-technical transitions in domains that were not so deeply rooted in people's vital needs and culture, such as energy, transport or natural resource, so agency in transition could be downplayed as an explanatory driver of transition pathways. However, the MLP framework has increasingly been used to understand transitions in the agricultural and food systems (Vanloqueren and Baret 2009; Darnhofer 2015). As the desire for food is the most powerful driver of human agency (Malthus [1798] 1872; Grodzins-Gold 2015), conflict and contestation are inherent to food systems because they involve the production, distribution and access of a vital resource for humans that greatly structures our societies and largely shapes our cultivated planet. So, understanding transitions in the global food system cannot be fully undertaken without addressing the individual and relational agency of food system actors.

In that sense, this research will contribute to understanding the poorly-studied "agency in food systems in transition", exemplified here as actual people in existing institutions, either as individual agency or relational, and the narratives of food that they hold, linking narratives with political stances and food policy preferences. After analysing the construction of the two food narratives under analysis, namely food as a commons and food as a commodity, this research will go deeper into the understanding of individual agents[8] working in different institutions in the regime and niches and the relational agents[9] in collective niches of transition. Consumers and citizens play an active role in the construction of common meanings around sustainable food systems, based on their knowledge of specific contexts, their particular epistemic regards, their intrinsic values and the social learning they promote within niches and between niches of transition (Popa et al. 2015). Since the everyday social practices of food production, access and consumption are co-constitutive of the socio-technical pathways in which the agri-food system evolves (Spaargaren et al. 2012), the analysis of individual and relational agency and their narratives will contribute to shed light on drivers and goals of transition pathways in the food system.

1.4.- RESEARCH OBJECTIVES

The main goal of this research is to unfold the different narratives of food, based on the commodity/commons features. Those features are social constructions that have enormous, real implications. By understanding the construction and translation of those food narratives into

[8] Individual agency includes agency connected to moral valuations without considering the working institution and the official mandates.

[9] Relational agency examines the influences of governing mechanisms, social learning and networking in connected collective actions.

governing mechanisms, I seek to disentangle the relationship between the normative valuation of food, the preferred/non-preferred policy options and legal frameworks, the personal attitudes within the transition pathways of the food system and the governance mechanisms (at individual and institutional level) shaped by those narratives. More specifically, the analysis seeks to understand (a) the construction of the narrative of food as a commodity or a commons in academia, (b) its use by individual agents working in the regime and niches (food-related professionals forming a virtual community of practice), (c) its use by relational agents in networked innovative niches (alternative food buying groups) and (d) its use by governments in international negotiations. By exploring the construction and implications of those food narratives in different loci and by different agents, I seek to contribute to the development of a normative theory of food as a commons, a different valuation of food that may free policy options not yet explored due to normative lock-ins and political disdain.

In order to explore those narratives, this PhD research will use a combination of deductive[10] and inductive[11] methodologies of research to test hypotheses while uncovering a normative framework to explain the phenomenological approach to food as a commons in specific situations. Initially, I will use a deductive analysis to understand the research hypothesis, the two general research questions and the six specific research questions related to food valuations, narratives and policy options. However, due to the limited research and scholarly publications that sustain one of the narratives to be explored, namely food as a commons or public good (see Chapter 3 for a detailed analysis), inductive methodologies will also be used across the different chapters to come, with a grounded theory of food as a commons informed by the collected data from the case studies. The inductive analysis will seek to (a) condense raw textual data in brief formats; (b) establish links between research questions and summary findings of raw data; and (c) develop a framework of the underlying structure of experiences and processes that emerge from the raw data (Thomas 2006).

[10] Deductive analysis refers to data analyses that set out to test whether data are consistent with prior assumptions, theories, or hypotheses identified or constructed by an investigator (Strauss and Corbin 1998).

[11] Inductive analysis refers to approaches that primarily use detailed readings of raw data to derive concepts, themes, or a model through interpretations made from the raw data by the researcher without the restraints imposed by structured methodologies (Thomas 2006), what "allows the theory to emerge from the data" (Strauss and Corbin 1998, 12).

Table 1: Research Questions (RQ) and Working Hypotheses (WH) used in the PhD Thesis

PhD RQ: How do people value food? How does the value-based narrative of food (as commodity or commons) condition policy options and transition pathways in food systems?			
Hypothesis: Valuing food as a commodity or as a commons (a social construct or phenomenological regard) conditions the accepted/non-accepted set of policies, governing mechanisms and legal frameworks that can be proposed and implemented, privileging one transition pathway over the others.			
1st General RQ Why has food never been treated as a commons, given its material and cultural importance to individuals and societies?	Understanding the narratives of commons	**Specific RQ 1:** How have the different schools of thought defined the commons and where has food been placed in this typology?	**CHAPTER 2:** Epistemic regards on food as a commons: plurality of schools, genealogy of meanings, confusing vocabularies (*submitted to Journal of Peasant Studies*)
		WH 1: The prevalent meaning of commons is shaped by the economic epistemology and vocabulary, obscuring other understandings. When applied to food, the dominant narrative regards food as a commodity undervaluing other non-economic dimensions relevant to humans and justifying market mechanisms as the most appropriate allocation method.	
	Understanding the narratives of commons applied to food in Academia	**Specific RQ 2:** What is the role of academia in the construction of the dominant narrative of food as a commodity?	**CHAPTER 3:** The idea of food as commons or commodity in academia. A systematic review of English scholarly texts (*published in Journal of Rural Studies 2017*)
		WH 2: Academia has been instrumental in the construction of the value-based narrative of food as a commodity. The economic understandings of the commons and food are ontological (defining the nature of goods), thus preventing and accepting other phenomenological understandings.	
2nd General RQ What would be the change in the food system if food were valued and governed as a commons? Three case studies plus a prospective analysis of a non-dominant transition pathway.	Food narratives of individual agents in regime and niches	**Specific RQ 3:** How does the value-based narrative of food (as a commodity or commons) influence individual agency in transitional food pathways?	**CHAPTER 4:** Food as commons or commodity? Exploring the links between normative valuations and agency in food transition (*published in Sustainability 2017*)
		WH 3: Valuing food as a commodity is the dominant narrative of individual actors working in the regime (who adopt gradual reforming stances), whereas the consideration of food as a commons is dominant in those agents working in transformational niches. The valuation of food is correlated to specific food policy options in regime and niches.	
	Food narratives of relational agents in innovative niches	**Specific RQ 4:** How is relational agency influenced by dominant narratives, governance mechanisms, social learning and networking in niches?	**CHAPTER 5:** The governance features of social enterprise and social network activities of collective food buying groups (*published in Ecological Economics 2017*)
		WH 4: The narratives of food in transformative niches are not homogeneous, what triggers different governing arrangements and preferred policy options. The construction of a common narrative in those connected niches depends on specific governance features, social learning and mutual legitimacy.	
	Food narratives of governments in international negotiations	**Specific RQ 5:** How does the dominant narrative of food condition preferred food policy options in international negotiations?	**CHAPTER 6:** No right to food and nutrition in the SDGs: Mistake or success? (*published in BMJ Global Health 2016*)
		WH 5: The narrative of food as a commodity is dominant at governmental level thus proposing market-based mechanisms to govern food production and distribution. The non-dominant narrative of food as a commons opts for human-rights based mechanisms.	
	Policy implications of considering food as a commons	**Specific RQ 6:** How does the food commons narrative help in designing a different transition pathway in the food system?	**CHAPTER 7:** Transition towards a food commons regime: re-commoning food to crowd-feed the world (*published as chapter in peer-reviewed book 2017*)
		WH 6: The historical process to commodify food has been long and multi-faceted. Likewise, the process needed to re-commonify food will take decades and require to be polycentric and informed by a food narrative that equally values economic and non-economic dimensions of food.	

1.5.- METHODOLOGY AND RESEARCH QUESTIONS

This thesis attempts to understand how people value food. It explores the value-based narratives of food as a commodity or a commons, to understand how the socially-constructed valuation of food shapes the acceptable and non-acceptable policies designed to achieve the aspirational goals that are part of the narratives. The research hypothesis states that "valuing food as a commodity or as a commons (a social construct or phenomenological regard) conditions the accepted/non-accepted set of policies, governing mechanisms and legal frameworks that can be proposed and implemented, privileging one transition pathway over the others". Table 1 (above) provides a structured presentation of research questions and working hypotheses. The two general research questions behind this thesis are the following:

1.- *Why has food never been treated as a commons, given its material and cultural importance to individuals and societies?*

In order to respond to that question, there will be a need to understand how different people have interpreted the "common" label, obtaining a clear idea of what commons mean to people, how commons have been analyzed, theorized and constructed by different scholars and "commoners", and how and why the commons category has been applied to food. Two specific research questions (RQ) have been elaborated here (see RQ 1 and 2 in Tables 1-2), the first one enquiring on the construction of narratives of commons and its multiple meanings and the second question applying those narratives of commons to food. By understanding the genealogy of the vocabulary of the commons and the evolution of the commodification of food during the 20th century, I will be able to situate the past and present interpretations of the commons and the value-based narratives of food, in order to better understand the rationales that tie and separate the concept of "food" from the commons narratives.

As the natural continuation of the first General RQ, the second question below addresses the legal and political consequences of considering food a commodity or a commons, because my research hypothesis states the way our society value food molds the food system we opt for.

2.- *What would be the change in the food system if food were valued and governed as a commons?*

This question will be analyzed through three case studies and one prospective research using the food regimes theory. The first case study analyzes the links between the two food narratives under study, specific transformative stances in the food system and preferred/non-preferred food policies. This research will incorporate the food narratives of individual agents working in the regime and different niches, thus representing the food valuations found in the food landscape. The second case study addresses the interaction between the food narratives, the governing mechanisms and the social interactions of alternative food networks. It unveils the differences between transformative stances and the mechanisms that co-construct narratives of food based on different priorities. This case study deals with food narratives of relational agents in innovative niches only. Finally, the third case study investigates the policy implications of existing (and dominant) food narratives of specific states in international negotiations on global food governance. The dominant consideration of food as a commodity leads to market mechanisms as the privileged means to govern the food production and achieve the Zero Hunger Goal, whereas the consideration of food as a commons would opt for rights-

based mechanisms. Finally, a prospective analysis is undertaken to explore alternative policy options that could be followed if the non-dominant narrative of food as a commons is privileged.

In order to answer the research questions, several working hypotheses have been elaborated (see Table 1) to explore the genealogy of the food narratives and the policy implications. Those hypotheses will be tested in different chapters using different methodologies (see table 2) and theoretical frameworks, although they will always be framed by the discursive and transitional theoretical frameworks explained above. These specific questions and working hypotheses will tackle food policy preferences at the individual level in regimes and niches, political attitudes in transition pathways of the food system of individuals acting in groups, preferred policy options of governmental institutions and locked-out policy alternatives that have been barely explored to date.

Table 2: Specific research questions and methodological tools used in this thesis

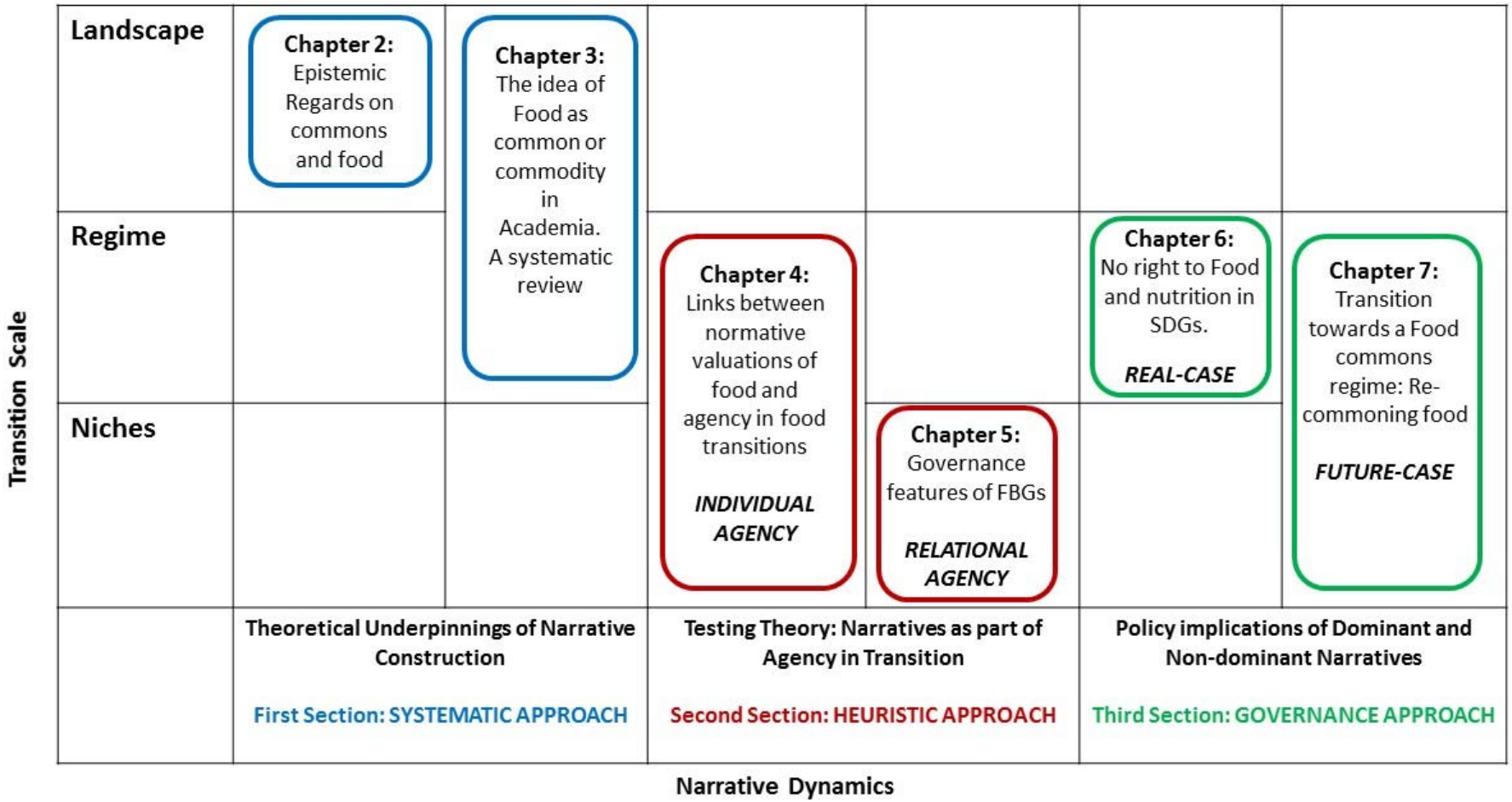
Research Questions (RQ)	Methodological Tools
RQ 1: *How have the different schools of thought defined the commons, and where has food been placed in this typology?*	Heuristic approach to three major epistemologies defining what commons are (political, legal and economic schools), plus the activists' definitions, based on an ample literature review to present historical developments of schools of thought.
RQ 2: *What has been the role of academia in the construction of the dominant narrative of food as a commodity?*	A systematic review of all published papers (peer-reviewed, academic thesis and grey papers), in English, using the Google Scholar tools with specific search terms (including "food + commodity", "food + commons", "food + private good", and "food + public good"). Following the PRISMA methodology for screening. Content analysis by reading all papers and synthesizing.
RQ 3: *How does the value-based narrative of food (as a commodity or commons) influence individual agency in transitional food pathways?*	A survey of food-related professionals working in the private sector, public sector and civil society. A structured questionnaire with different types of closed questions (multiple choice, pairwise comparisons, Likert's scale, ranking) submitted via Twitter to an online community representing the ample variety found in the regime and niches. The goal with this sample is to represent the most relevant narratives in the landscape. The questionnaire was based on previous work done by the researcher in the BIOMOT project (Motivations for Biodiversity).
RQ 4: *How is relational agency influenced by dominant narratives, governance mechanisms, social learning and networking in innovative niches?*	A survey of leaders of collective food buying groups in Belgium, as a type of innovative niche that challenges the narrative, goals and governing mechanisms of the industrial food regime. A semi-structured questionnaire with open and closed questions (multiple choice options) conducted face to face. The questionnaire also used experience gained with the BIOMOT project (Motivations for Biodiversity).
RQ 5: *How does the dominant narrative of food condition preferred food policy options in international negotiations?*	Content analysis of the most relevant documents and diplomatic statements by the US and EU on the right to food in international negotiations, plus a legal screening of relevant EU Human Rights frameworks.
RQ 6: *How does the food commons narrative help in designing a different transition pathway in the food system?*	Literature review on the industrial food system, the food regime theory and alternative policy options.

In addition to the three case-studies included in this thesis, four other cases were sampled in order to test the relevance of food narratives. I carried out a detailed survey of 37 individuals holding key positions in the public sector (government and international development institutions), representatives of the private sector involved in food and civil society leaders, all of them working in the food and nutrition security system of Guatemala. The face to face questionnaire included questions

related to internal motivations to fight hunger, food valuations, preferred food policies related to the Zero Hunger Programme under implementation and relational questions regarding advocacy coalitions and social network analysis. In addition to that, the very same questionnaire used in chapter 4 was applied to the members of the Food Policy Council of Cork City (Ireland) in a joint research undertaken with Dr Colin Sage, Department of Geography of University College Cork. A specific section on food valuation was included in the Food4Sustainability questionnaire that was undertaken with 65 leaders of the food buying groups (a subset of the sample analysed in Chapter 5). The results have been analysed but were not included in this research due to time constraints. Finally, a particular subset of 4 BIOMOT cases (agro-biodiversity initiatives in Belgium, UK, Slovenia and Germany) were analyzed to understand the importance of the cultural dimensions in customary food-producing systems. In three of those cases, some preliminary analysis has been carried out and draft results are aligned to the high relevance assigned to the non-tradeable dimensions of food, defending food narratives that differ from the commoditised vision of food.

To conclude this methodological part, in Figure 1 (below) I have presented the organizational scheme of this PhD thesis. The vertical axis depicts the three components of the multi-level perspective of the transition theory (after Geels and Schot 2007), namely the landscape, the regime and the niches. The horizontal axis is divided into three sections that correspond to the three approaches to the food narrative research: the systematic approach to the theoretical underpinnings of food narratives, the heuristic approach to test hypotheses of agents in transition, and the governance approach to explore the policy implications of dominant and non-dominant narratives. Each section includes two chapters. The combination of both axes provides a graphical display of the working locus of each chapter in the transition scenario and the type of approach adopted in the research of narrative dynamics.

Figure 1: Organisational scheme for PhD Research: scales and dynamics for the analysis of food narratives of agents in transition



Source: the author

1.6.- LIMITS

This research may face multiple problems due to the innovative nature of its hypothesis, the lack of previous case studies to be used as guiding references and the absence of a structured theory of food as a commons to be tested. On the contrary, the theoretical elements that substantiate the consideration of food as a commodity and private good are abundant and they reflect the hegemonic consensus. Therefore, this research can be termed as an embryonic "critical analysis" to pulse other narratives of food that are either incipient in contemporary food initiatives or have been marginalized in customary food systems developed by indigenous groups, peasants, pastoralists and hunter-gatherers. Those non-dominant narratives of food that do not accept its commodification are enrooted in different "epistemologies of the South", as nicely depicted by sociologists Boaventura de Sousa Santos (2014), colonised cultures (Dussel 2013) and non-Western cosmovisions (Gudynas 2015). In those places, socially-constructed valuations that regard food as a commons can be found where non-monetized social norms govern food exchanges and where rights-based rules guarantee access to food to those who cannot produce it by themselves. However, those narratives are not dominant in the globalised world, and the commodified vision of food largely prevails in global trade and international relations, pervading the dominant narratives of transition in the regime and also in many niches.

One important limitation of this research is that it mostly explores food valuations of Westerners and Western civilization and does not properly consider other food epistemologies from the Global South. Additionally, this research mostly investigates the narratives of food eaters (food professionals working in food security issues, members of alternative food buying groups or governments), and not the narratives of the 2.5 billion small scale farmers, pastoralists, forest dwellers and artisanal fisher folk that still provide most of the world's food through localised food systems (ETC Group 2009). As already expressed by Davila (2016), in reviewing Mardsen and Morley's (2014) book, when analyzing the narratives of food systems and the alternative paradigms we shall avoid an excessive focalization in industrialized food systems in Western countries, no matter how dominant it may be, to enlarge the debate by including other narratives from the Global South and emerging economies (China, India, Brazil or Nigeria). I fully subscribe to that statement. I would also add the need to include narratives of food producers and small-scale and large-scale landholders. Only when Western and Global South discourses align in rejecting the commodified valuation of food, an opportunity will emerge for a real global transition towards a non-commodified food system.

Additionally, in Chapter 3, there is an under-representation of professionals working in medium and large agri-food corporations, which represent a very influential constituency in crafting and advocating for a commodified narrative of food. Although more than 100 questionnaires were sent to multiple food companies, just a few responses were collected. In fact, the private sector individuals represent only 17% of total responses. In that sense, specific case studies with large agri-food corporations (either with direct questionnaires or through discourse analysis of their corporate documents) are highly recommended to check whether the narrative of food as a commodity prevails in those stakeholders as expected. Additionally, more research specifically targeting peasants and small food producers in the Global North and Global South will also be needed to explore their understandings of food dimensions.

As mentioned before, this research should be considered as the beginning of a journey to understand the moral grounds and the policy implications of valuing food as a commons (or a public good), a social construct that does not prevent food being traded in the market, but certainly reduces the predominance of the tradable dimensions. This narrative can certainly inform a tighter control of market rules by civic groups and states, in what has been termed a "food democracy" (De Schutter 2015). As it took decades for capitalism and its neoliberal version to absolutely commodify every aspect of food production and consumption, it will certainly take decades to re-commonify food. This research is just one step on that direction. Further limitations of this research are explained below.

1.6.1.- The dualistic typology of food narratives is reductionist

Despite the complexity of food systems unveiled by previous research (Reilly and Willenbockel 2010; Godfray et al. 2010), the ideational representations of food narratives are often depicted in dualistic terms, such as productivist versus post-productivist, or mainstream versus alternative (Sonnino and Marsden 2006). In this research I will also apply a dualistic typology of narratives based on two valuations of food (commons or commodity) for the sake of reaching an understanding on the transformational power and the policy implications of both extremes. And yet, I fully recognize these two ideational typologies are somehow fictitious because they represent rather pure narratives that are rarely found in real life. Actually, most of the food-related stakeholders may have multiple combinations of elements from both narratives, with nuanced understandings of food, both as a commons and commodity. Those individual understandings of food meanings (Szymanski 2016) reflect the diversity and complexity of farming systems (Vanwindekens et al. 2014). Yet, dualistic and simple typologies are still useful tools for humans to understand complex systems. Vanderplanken et al. (2016) have shown that dualistic meta-narratives still matter as useful constructs to insert the individual ontological narratives regarding the problems, challenges and transition pathways in the food system.

Therefore, although I recognize that this PhD research approaches food valuations with a dual lens, it is just a first approach to a narrative that has been barely explored from the conceptual point of view (What does it mean that food is valued and governed as a commons?). Also, as a first approach the dualistic typology seems to be relevant in exploring the meanings of both narratives and their explanatory power. In subsequent analyses and case studies that may include other constituencies, including, for instance, workers in agri-food corporations, food customers in supermarkets, indigenous groups and subsistence peasants (just to name a few diverging groups that are closely related to food and are thus food stakeholders), a more nuanced approach to food narratives will surely be elaborated to fine-tune the analysis.

1.6.2.- Limited academic development of the "food commons" narrative

The dominant narrative that values "food as a commodity" and consequently defends the market as the most suitable mechanisms to govern its production and distribution is grounded in the economic theory of private and public goods developed by US economic scholars after the Second World War (Samuelson 1954; Musgrave 1959; Buchanan 1965; Ostrom and Ostrom 1977). This theoretical approach to goods combines two features (rivalry and excludability) to classify goods and services as private or public, with the former ideally being distributed through market mechanisms. Once the

exchangeability, in monetary terms, of any private good becomes its most relevant dimension, this good becomes a commodity (Appadurai 1986).

On the contrary, the theoretical rationale that sustains the alternative narrative of "food as a commons" (or as public good) is barely developed. A preliminary literature research has only found some conceptual elements to support the idea of food as a commons in Dalla Costa (2007) and Azetsop and Joy (2013), with the philosopher John O'Neill (2001) defending food as a public good. Dalla Costa posits that food will be reconceived as a commons when the entire food producing system is valued and governed as a commons, linking this common narrative with the idea of food as a human right because it is essential for everybody's survival. Azetsop and Joy (2013) use four meanings of the common good theory to explore nutritious food, using "common good" as a framework, rhetorical device, ethical concept and practical tool for social justice. They finally defend food as a common good, linking again this consideration to its legal obligations as a human right. Finally, O'Neill (2001) supports the idea of food as "a normative public good" based on the different ethical and political meanings of excludability, invoking an important difference between "can be" and "ought to be" excluded. A good is a public good anytime individuals "ought not" to be excluded from its use. A good from which individuals can be excluded is not necessarily one from which they ought to be excluded. Evidently, being that food is essential for everybody's survival, it qualifies as a resource that none ought to be excluded from using.

1.6.3.- Exploring untested methodologies to enquire about food as a commons

In principle, no other academic paper has been found where a heuristic methodology has been carried out to analyze the consideration of food as a commodity or a commons, or at least where both narratives are contrasted. As the direct question may puzzle the interviewees (because he/she may not understand the concepts, may interpret the concepts differently or be influenced to provide socially-desirable responses), there will be a need to develop an "ad hoc" questionnaire where different elements of both narratives are contrasted in order to better understand preferences in food narratives. The results of this questionnaire will not be comparable with other cases studies, but they will serve as references for subsequent analyses.

1.6.4.- Nearly unexplored agency in food system transitions

This research will combine two theoretical approaches to explore narratives (Discourse Theory) of individual and relational agents in food systems in transition (Multi-level Perspective of Transition Theory). It will contribute to the limited literature of "agents in transition" and how value-based narratives, held by individuals, shape public policies (the permitted and non-permitted set of policy options that can be implemented and funded). Moreover, this research will also analyze how those policies, the aspirational goals and the framing of problems inform the different transition pathways. In this regard, as the agency of actors is key to understanding past transitions and steering future transitions, more research is needed.

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CHAPTER 2:

EPISTEMIC REGARDS ON FOOD AS A COMMONS: PLURALITY OF SCHOOLS, GENEALOGY OF MEANINGS, CONFUSING VOCABULARIES

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"The real voyage of discovery consists not in seeking new lands, but in seeing with new eyes"
Marcel Proust, French writer

2.1.- INTRODUCTION

The commons are back…if they were ever gone. The multiple global crises the world has been facing in the last decades have prompted scholars, policy makers and activists to seek for solutions that enable us to live a satisfying, fair and sustainable life within planetary boundaries. The commons appear as one of those promising transition pathways to replace the neoliberal model due to a proven historical record of resilience, collective governance and sustainability and, secondly, an inspirational narrative based on solid moral grounds. Commons thinking conveys a strong denial of the idea that society is and should be composed of atomized individuals, living as rationale consumers seeking individual profit maximization and always competing with other individuals to thrive[12]. However, the narrative of the commons was arrested in the 20th century by possessive individualism (Macpherson 1962), rational choice (Schelling 1984), social Darwinism (Leonard 2009) and the famous "tragedy of the commons" (Hardin 1968). Instead, the commons discourse recognizes that people shall live their lives as aware individuals deeply embedded in, and not acting against, social relationships and the environment. Moreover, individuals' active participation is essential to realizing collective and personal goals, moving away from a purely individual rights-based, market-based and private-property worldview.

The commons entered the political and social agenda in the 1980s, growing in parallel with the commodification process that was accelerated in the last quarter of the 20th century (Appadurai 1986). Although, for decades the commons have been dismissed as a failed system of governance and resource management (Bloemen and Hammerstein 2015), they have gradually been rehabilitated in the legal, political and economic domains, especially in the environmental and knowledge realms (Benkler 2013; Capra and Mattei 2015). There is a growing recognition that the, so far, hegemonic market-state duet, with their capitalist system and individualist ethos, is inadequate to tackle the global and multiple crises we, as a society, confront these days. Moreover, new socio-economic paradigms are emerging as alternative narratives and praxis to the hegemonic neoliberal version of capitalism (i.e. happiness, de-growth, *Buen Vivir*, resilience, transition, sharing economy, peer-production). Innovative commons-based initiatives are mushrooming all over the world, often in response to the economic crisis and austerity policies, with examples ranging from the local level (e.g. the maintenance of communal forests owned by parishes in Galicia villages), the national level (e.g. the path breaking initiative promoted by the government of Ecuador to collectively design public

[12] This idea is epitomized by the Latin sentence "*Homo homini lupus*" created by Plautus (254-184 B.C.) and rendered popular by Thomas Hobbes (1588 – 1679). The opposite narrative of cooperation, collectivism and solidarity is however defended by authors such as de Waal (2006, 3), Bowles and Gintis (2013) or Kropotkin (1902).

policies that can support knowledge commons[13]), to the regional level (e.g. the first European Citizens' Initiative that demanded water be treated as a public good and commons[14] and members of the European Parliament establishing a Commons Intergroup)[15].

The commons are all over. They are, at the same time, a very ancient and rather innovative framework to govern natural resources and non-material items that are essential to human survival. Actually, one can say the history of human civilizations is a history of commons and public goods (Wolf 2012) which has different meanings for different people (see Box 1). It is precisely this antiquity and essentialness that explains the multiple meanings and often diverging interpretations of this rather polysemic word. The commons fulfil religious, cultural and environmental functions, and are of particular importance for securing the livelihoods of poorer members of society, including women and the landless (Federici 2014; Fuys et al. 2008). Additionally, there are many subsistence commons that rely upon self-governed access and use of forests, fisheries, pasturelands, farmlands, coastal lands, bodies of water, wild game, and other natural resources. An estimated two billion people around the world depend on commons for their daily food and everyday needs (Weston and Bollier 2013; Fuys et al. 2008).

Box 1.- What do commons mean today for people?

Tracing the genealogy and evolution of the meaning of commons may help us explain the prevailing significance to the elites and the common people (Foucault 1993), thus informing the entry points to unveil other meanings that were either prevalent in ancient times or that could unfold in coming futures. In this way, one could inquire on the origins of the current understanding of the commons, which appears to be the result of the evolution of the concept across history since the Middle Ages. Additionally, the genealogical considerations also help question how the economic definition of the commons, that was crafted by Western scholars and utilized in a specific context with clear objectives, became dominant and why it still prevails todays.

Over time, the word "commons" has assumed several different meanings, no longer just restricted to natural commons, material goods or local scale, but also referring to non-material goods (e.g. knowledge, software), political institutions and services (e.g. global food safety, peace) and global issues (e.g. climate change and ozone layer). Some known expressions of the term commons are "commonwealth", "communalism", "common land", "the UK House of Commons", "for the common good" and others that imply the co-operation and collaboration of people in society, living together and working in their common interests. More specifically, in the popular meaning, commons are resources owned and managed "in common" because they are beneficial for all members of the community. However, the idea of commons is also subject to misunderstanding and confusion. For example, the economic concept of the commons (or public goods) should not be mistaken with the expressions "for the common good" or "for the public good", which is usually an application of a collective ethical notion of the good in political decision-making. Another typical confusion is to think that commons are goods provided, or to be provided, by the public sector or the Government. Although it is often the case, they may also be produced by private individuals and firms, by non-state collective action, or they may not be produced at all (e.g. naturally-made as sunlight). Additionally, the

[13] http://floksociety.org/ [Accessed August 14, 2017]
[14] http://www.right2water.eu/ [Accessed August 14, 2017]
[15] http://commonseurope.eu/ [Accessed August 14, 2017]

commons contain public, collective and private properties, over which people have certain traditional rights.

However, the ubiquity and importance of commons for human societies is not equaled by the consideration assigned to them by the ruling elites and ruled citizens in urban areas. Although widespread, the commons are not usually seen, because we are not taught to appreciate them in this apparently, dichotomist world (acknowledging either privately-owned or state-owned goods). Among the several examples of life-enabling commons that are not given due consideration here, there are pollinators' and soil fungi's roles in maintaining agriculture as we know it, the unpaid work (usually done by women) to take care of elders and ill people affected by chronic diseases, the regulatory work the sovereign states undertake to maintain currency stability at global level (balancing the speculative movements often undertaken by corporate financial actors) and the stewardship of beaches, sea cliffs and estuaries by communal, local and national entities that enable us to enjoy free access to coastlines. From sea food to public squares, from Mozilla software to public libraries or cooking recipes, commons are so close to our daily lives and yet so undervalued in our commoditized economy.

More importantly, the notion of the commons has being extensively and increasingly used as a paradigm of convergence of different struggles against neoliberal capitalism and the multiple enclosures it entails. The term can be seen as a catch-all concept (Perilleux and Nyssens 2016) with academic contributions evolving in parallel with practical developments by activists. However, this widespread use of the commons terminology, often in a very uncritical way, has infused them with a mystic aura of social avant-garde and all the virtues of horizontal and fair governance (Verhaegen 2015). In doing so, it risks becoming an empty slogan. As Rodota already warned in 2013, if "everything is a commons, nothing is a commons" (Rodota 2013, 8). Therefore, the commons vocabulary should be better defined and their conceptual boundaries determined, so as to defend its uniqueness and prevent the void of its transformational power.

2.1.1.- The aim and components of this chapter

In this section, I seek to shed light on the different epistemic views that have addressed the private/public and commodity/commons nature of resources and goods in general, and then analyze how those schools of thought have explored the normative valuation of food, assigning food to the different categories of private good, public good, commons, common pool resource or commodity[16]. Although the meanings and implications of the "commodity" and "commons" labels will be further explained throughout this chapter, a brief description of both concepts is also presented here to facilitate the reading. A commodity is a special kind of good or service associated with capitalist modes of production and embedded in the market society (Radin 1996). Commodification, the process whereby a good of service, that was not previously meant for sale, enters the sphere of money and market exchange (Gómez-Baggethun 2015), is a situation in which its exchangeability for some other thing is its socially relevant dimension (Appadurai 1986). At the other end of the spectrum, commons are material and non-material goods that benefit all people in society and are fundamental to society's wellbeing and people's everyday lives. They are jointly developed and maintained by a community and

[16] Although the main objective of this text is to understand the different epistemic regards that value food as a commodity or a commons, other closely related normative discourses considering food as private or public good will also be considered.

shared according to community-defined rules (Kostakis and Bauwens 2014). Those rules and practices, defined as "commoning", have instituting power to create and define any given good as a commons (Dardot and Laval 2014).

I depart from the absolute commodification of food as one of the underlying causes of the current crisis of the global food system. One that consumes 70% of fresh water resources, depletes arable soils, encourages deforestation, contributes to more than one third of global warming gases, pushes biodiversity to the verge of extinction, erodes human-made germplasm diversity, evicts small farmers and peasants from their farms to produce cash crops, wastes one third of total food produced and uses more than 50% of available food for non-human consumption. This food system needs to change course and the driving narratives that justify it shall be re-considered and further debated in light of new societal developments, political consensus and scientific evidence. In that sense, the question of what type of food system we aspire to craft cannot be divorced from the question of how we value food, what type of food we want to eat, with whom we share, cook and eat food, how we expect to steward the systems that yield our food and what type of livelihood we wish for the producers of the food we eat. If we aspire to a food system that is based on the notion and principles of commons, we need not only to explore the idea of food as a commons, but also to define what we mean by commons.

In order to do so, I firstly situate and discuss the different schools of thought (or epistemologies) on the commons, classifying the approaches into four schools (economic, legal, political and grassroots activists), and then I provide conceptual clarifications on the applicability of the "commons" concept to food under different epistemic regards. Epistemology is how we know about the world, meaning the different stances to collect, analyze and interpret data, inputs and stimuli from natural and human-made events. Epistemologies determine what constitutes acceptable sources of evidence, acceptable methodologies to analyze and interpret reality and acceptable findings (Tennis, 2008), and they can be pragmatic, theoretical, positivistic or empiricist, among others. Obviously, what one thinks food is, depends upon how one perceives and judges it, and those different conceptions are connected to different beliefs and ways to know (Kaplan 2012). Different realms of academic disciplines have addressed the commons and food by using different cognitive tools, accumulated knowledge and personal values, all of them forming particular epistemologies.

Throughout this chapter, it can be noted how the different meanings of the commons to different people and scholars often results in incommensurable epistemologies and vocabularies, creating confusion and even rejection of the idea of food being considered as a commons. These contradictions between vocabularies, meanings and epistemologies will be analyzed in the discussion and conclusion parts. As a matter of fact, none of the major authors approaching the commons has described food in these terms (Karl Polanyi, Karl Marx or Elinor Ostrom).

2.1.2.- Specific research question and highlights

Research question 1: How have the different schools of thought defined the commons, and where has food been placed in this typology?

Understanding how different academic disciplines have approached the commons will help with situating the different typologies, definitions and vocabularies. This plurality of epistemic regards has

created some confusion around the concept of "commons", and especially on how this concept (an evolving social construct) could be applicable to food or food systems. The dominant narrative of food regards this essential resource as a private good, after the influential economic epistemology, to be commodified and deprived of all the non-monetized dimensions. I explore here, how we reached such a hegemonic narrative.

HIGHLIGHTS

- Four distinctive academic and non-academic epistemic regards for understanding and interpreting the commons and the valuation of food as a commodity, commons, public good or private good are presented, namely the economic, legal and political schools of thought, plus the grassroots activist's approach.
- Reconstructing the genealogy of the meanings of commons and food in Western societies throughout the 20th century and to now, enable us to recognize the multiplicity of values and meanings to different people, cultures and historical periods, so food valuations are always situated and evolving.
- The theoretical, reductionist and ontological approach to the commons in general and food in particular, by the economic school of thought (epitomized by "Food is…") became the hegemonic narrative in the global food system of the 20th century, influencing the political discourse and being influenced by the dominant meta-narratives of that period (capitalism, individualism, endless growth, concurrence and absolute, individual property among others).
- Different epistemic regards use different vocabularies for similar entities (e.g. water is a private good for economists, a public good for legal scholars and a commons for some political scholars), or similar terms with different meanings (e.g. commons, public good, common-pool resources, common good). Whatever the plurality, the economic vocabulary and meanings have become pervasive in the policy arena and scientific domains far beyond the economic milieu.
- In contrast to the economic epistemology, the narrative of commons is relational and transformational. It is relational because the commons meanings cannot be detached from the communities that created them (place and time-dependent) and thus, the approach to the commons is always phenomenological (i.e. "food as…"). In that sense, food can be considered and governed as a commons if societies so consider (either a local food network, city, region, country or inter-governmental institution). Additionally, the consideration of food as a commons can be compatible with capitalist modes of production (as political scholars subscribe), or colliding with the market ethos of profit maximization, individual competition and selfishness (as activists defend). The reforming or transformational attitudes will certainly depend on the commoners' intentions. In Chapter 4, a case study will highlight the links between value-based narratives of food and political stances in the food system in transition. Additionally, in Chapter 5, the links between relational agency, governing mechanisms and food narratives will be explored in innovative niches of food system transitions.

This chapter will be centered around the following sections: Firstly, different typologies of commons will be presented and discussed, so as to portray the richness and complexity of the concept of commons already yielding multiple definitions and real-life examples; then an extended section will be devoted to the four epistemologies of commons considered, namely the economic, legal, political and activist schools of thought, the latter being the only non-academic one. Once the approaches to

commons have been analyzed, there is a section on epistemologies of food, where I explore the applicability of the different understandings to food resources in particular. In this section, the normative nuances are exposed and the dominant narrative on food as a commodity is debunked. Moreover, the similarities and differences between the consideration of food as a commons and a public good are analyzed in this section. Finally, in the discussion and conclusions, I defend the idea that all but the economic epistemology accept the idea that food can be valued and governed as a commons, but the hegemonic dominance of the economic narrative and vocabulary, in the second half of 20th century, has overshadowed the other understandings of food as commons. However, due to the multiple crises the current globalized food system is experiencing (climate change as a threat to food production, rising obesity pandemic, hunger still prevailing in a world of plenty, food wasted which maintains artificial scarcity, open food markets only seeking profit maximization and not guaranteeing all people access to enough food, the industrial food system being the major driver of exhaustion of Earth's natural resources), other narratives of food are either emerging within contemporary, alternative food movements or revamped within customary food systems. Those narratives are legitimized by the academic epistemologies as well as the grassroots activists.

2.2.- DIFFERENT TYPOLOGIES TO DESCRIBE THE COMMONS

As discussed above, before I explore the epistemic views on commons and food, it is important to understand the different typologies that have been constructed to classify the commons. The diversity that is so inherent to the commons (multiple collective arrangements, proprietary regimes, varied natural and immaterial resources, cultural considerations, cosmovisions) is mirrored by the diversity of approaches, typologies and epistemic regards that have analyzed the polysemic meanings of the commons. The first typology hinges on the normative purpose while the second one is grounded on the resource characteristics. The first one distinguishes between moral and operational notions, the normative approach being the one that explores what commons should do and are meant for, and the operational approach (the one that describes what commons actually do), by analyzing the resources and the governing mechanisms. The second typology, however, departs from the resource characteristics to define the ontological approach that embraces the situated commoning and the purpose. Although different, they are all characterized by incorporating, in the definitions, three analytical components of the commons: resource, the governing mechanism (commoning) and the normative purpose.

2.2.1.- Operational and normative definitions: useful, real and transformative

On the one hand, the commons can be interpreted as shared resources (material or immaterial) that are governed by a certain community with self-regulated rules. On the other hand, seen through a moral lens, the commons can be interpreted as goods that benefit society as a whole and are fundamental to people's lives, regardless of how they are owned, produced or governed.

The operational rationales, fitting better with the scientific epistemologies, are then enriched by both utilitarian narratives and descriptive narratives. The former place the emphasis on describing the practical aspects of ownership and management, the definition of boundaries and proprietary regimes, the nature of the resource and the community that manages and owns the commons. It seeks to prove that commons are useful for human livelihood and the sustainability of the resource, both material

and non-material. The latter are based on historical accounts and current research on the commons, rendering explicit how the commons were created by communities and governed by different peoples and cultures in the past and by non-dominant cultures at present. This rationale aims to render visible the customary and contemporary commons and to understand how they managed to endure for such a long period (e.g. alpine meadows) and how they are created de-novo in our society (i.e. Wikipedia).

The normative narratives are more aspirational, utopian and justice-based, detailing how the commons could become a moral alternative to the dominant hegemonic discourses of capitalism, individualism and competition. In this sense, the commons are presented as alternatives to the multiple crises that are intertwined within the economic model, planetary boundaries, energy, the environment and essential resources for humans, such as food, water, land and seeds.

2.2.2.- Ontological and phenomenological approaches: theoretical constructions, instituting power

This typology is rooted in Ancient Greek philosophy and defines the commons using two sets of attributes: the intrinsic features of the goods and resources (either material or immaterial, such as knowledge and international agreements) and the perceptions, values and social practices that humans have around any given resource or action. This typology has been used by Van Tichelen (2015), Perilleux and Nyssens (2016) and Ruivenkamp and Hilton (2017) with different variations.

The ontological approach, also called “essentialist” by Van Tichelen (2015), determines that a good is characterized by its intrinsic attributes. In other words, the inner properties of the good (its nature) determine its relational bonds with humans and therefore the property regimes are the most adequate institutional design to achieve a purpose. This approach is atomist (commons can be subdivided into resources with natural characteristics, boundaries, rates of growth, proprietary regimes and institutions that govern them) and helps understand how specific parts of the commons function. However, it tends to ignore the relational components, the phenomenological approaches and the impact of social norms and place-and-time constraints. In that sense, this approach is often used in academic and normative circles, largely in economy-dominated milieus. It has been adopted, with a nuanced reductionist consideration, by the neoclassical economists that developed the theory of public and private goods (see later in this chapter). And yet, ontological categories and closed legal definitions are exactly the kind of mindset the commoners living and working in commons seek to challenge.

On the other hand, the phenomenological approach understands the commons as a social construction (commons are determined by people in particular circumstances) and hence they are always situated (Szymanski 2016) and relational (Verhaegen 2015). This approach pivots around people acting together as the agents that assign value to resources, and therefore design the most appropriate ways of governing those resources to achieve concrete goals. Based on moral grounds, some goods have to be considered, owned and governed as a commons because they are essential to humans. The proprietary rights and the governance mechanisms can be diverse, as long as the main goal is achieved: Guaranteed access to all, of those essential goods, as a matter of social justice and legal entitlement. Although commons are often associated with property regimes and governing mechanisms (Perilleux and Nyssens 2016), they cannot be solely and always described based on who owns and who governs them. Actually, commons can be owned privately and governed by public institutions (Gerber et al.

2008) (Eg. hunting permits in private lands in Switzerland), be owned collectively and governed by the state (Serra et al. 2016) (e.g. communal forests in Portuguese *baldios*), or be owned publicly and governed by private entities under regulated conditions (Allouch 2015) (e.g. beach concessions to hotels in many countries).

Between those two typologies, Perilleux and Nyssens (2016) consider Elinor Ostrom, an economist that researched the political, institutional and behavioral features of commons, common-pool resources and commoners, as a sort of bridge between theorists and practitioners. She and her colleagues navigated between the different but complementary epistemic regards, the ontological economic view and the phenomenological constituting power, with hundreds of real case-studies investigated in detail, in multiple countries and scenarios.

Finally, an interesting phenomenological classification has recently been developed by Etienne Verhaegen (2015), according to whom, commons can be analyzed as institutions, universal rights, social practices and politics.

Utilitarian commons (Useful institutions). Understanding commons as useful institutions puts emphasis on their utilitarian purpose. This approach sees the self-regulated, governing mechanisms as a useful and efficient way to govern natural resources. It studies in detail the nature of the local resources, their boundaries and the characteristics of the governing communities. Commons are defined as shared resources, governed collectively, which can be owned in different forms (private, public and collective). This approach rejects the resource-based definitions, such as the economists', as well as the property-based definitions, such as the legal scholars'.

Moral commons (commons as universal rights). For the supporters of this understanding, considering any given resource (material or non-material) a commons, is grounded on its essentiality to human survival and its irreplaceability by other resources, and qualifies the resource as a universal right to be governed as commons (Rodota 2013, 8). These commons shall be accessible and benefit all (for the common good), including the present generation and the coming ones, simply by a matter of justice. By applying a moral rationality to the concept, this understanding surpasses the utilitarian approach described above and connects it to the understanding of commons as public goods beneficial to the community.

Social commons (commons as social practices). This understanding defends that it is the social practice of commoning[17] that makes the commons, and through the commons the individuals re-affirm their autonomism, such as the social bonds with other members and a common set of values that give a meaning to their lives (Verhagen 2015). Commoning creates new rules, moral principles and valid narratives, and has even instituting (Dardot and Laval 2014) or constitutional power (Capra and Mattei 2015). A commons arises whenever a given community decides it wishes to manage a resource in a collective manner, with special regard for equitable access, use and sustainability. This approach downplays the importance given by the previous approaches to entitlements to, membership and boundaries of commons and, conversely, raises the profile of commons as a space of autonomy and

[17] Commoning is defined as doing things together for the common good of myself, the others and the coming generations, based on a moral ground different from the prevailing one of capitalism.

self-governance. This approach to the commons may choose three different pathways to develop. (1) Being totally apolitical in their goals, (2) political disaffection with broader constituencies, or not willing to get engage in social claims (often termed as alter-hegemonic constituency), and (3) the political activism and self-awareness of working at community level, but with a greater global objective (often dubbed as counter-hegemonic)[18]. The first type would remain here whereas the latter two would be better placed in the next type.

Political commons (commons as transformational politics). Many scholars and activists from different disciplines understand the commons as a transformational narrative that aims to de-commodify multiple spheres and resources. The commons are perceived as an alternative narrative that opposes free market logic and the central sovereign state, as both entities are locked in a mutually supportive dialectical relationship, as nicely depicted by Polanyi (1944) in the theory of the double-movement and recently by Capra and Mattei (2015) in the *Ecology of Law*. Commons became counter-hegemonic (McCarthy 2005; Johnston 2008) and used legal reforms and political claims to gain legitimacy, visibility and leverage power. People participating in commons can be profiled as *Homo cooperans* (De Moor 2013), an archetypical representation radically different from the dominant narrative of *Homo economicus*.

After this quick review of different typologies to understand and classify the many commons human societies have designed, I will explore, in further detail, four schools of thought on the commons, to understand how different methodological tools and knowledges have yielded a diversity of meanings, vocabularies and opposing conceptions both synchronically and diachronically.

2.3.- EPISTEMIC REGARDS ON COMMONS: PLURALITY OF MEANINGS AND DEFINITIONS

There is little doubt that the academic and grassroots "commons landscape" is complex and varied. It embraces different epistemic regards, academic approaches and operational constituencies. The commons have different readings (Mattei 2013a), each one with its different trajectories and implications. Legal, political, economic, cultural and ecological approaches talk about commons and inform knowledges and ideologies that are then reflected in the creation of different schools of thought and vocabularies that examine, interpret and influence our understanding of the nature of the commons. As resources that are important for human beings, commons have "multiple personalities" (Wall 2014) and therefore multiple phenomenologies (Mattei 2012) and vocabularies are accepted to describe them. This builds upon the notion of legal pluralism (Engle-Merry 1988) and institutional diversity (Ostrom 1990). The plurality of definitions of the commons in the public and academic discourses renders difficult to reach, a consensus on which resources, situations and policy decisions are deemed to be considered as commons or for the common good. This situation affects food directly, with its commons category being strongly contested in academic and political domains (Vivero-Pol 2017a; Vivero-Pol and Schuftan 2016). One source of discrepancy of understanding the commons, stems from the fact that collective ethical notions of what a commons is, as defined by a community (social construct), are combined with individual theoretical approaches by influential thinkers (those coming from the economic school) and binding political decisions made by elites (political approach to commons).

[18] See Vivero-Pol (2017a) for a detailed analysis of both political streams.

Different realms of academic disciplines have addressed the commons by using the epistemologies (cognitive tools and accumulated knowledge) that characterize each discipline, be that economics, law, history, politics or grassroots activism. These epistemologies have been blended with dominant ideologies and politics, as academia is often influenced by the ruling elites (Wallerstein 2016). These varied approaches to a complex, place-based and multi-faceted theme have shaped the different meanings and implications of the commons that we have at present. These understandings have evolved into an interdisciplinary approach (Laerhoven and Berge 2011) that now seeks to expand beyond the academic walls to incorporate the meanings of common practitioners through a different scientific paradigm, called transdisciplinary research for strong sustainability (Dedeurwaerdere 2014). That is where the epistemic regard and praxis of grassroots activists and commoners enter the scene. However, the need for a stable definition of the commons is not yet resolved (Benkler 2013), neither by the legal school (Hess and Ostrom 2007) nor by the political one, although it was indeed achieved by the economists and granted them a dominant position in the academic debate on what commons are and how they shall be governed and owned.

Therefore, with such a rich array of proponents and practitioners, the academic theory of the commons cannot be uniform, coherent or consolidated, and there are colliding theoretical approaches that underline tensions and fault-lines, revealing the different epistemic regards to resources and practices that are essential to human societies and individuals. In the following sections, I will present the genealogies of the most relevant epistemic approaches to commons, tracing back the historical developments, the most relevant proponents and their definitions and typologies of commons. I will start with the one that became dominant in the 20th century and beyond (the economic approach to commons), followed by the legal, political and grassroots activists' schools.

2.3.1.- The economic school of thought: intrinsic properties of goods

2.3.1.a.- The Neoclassical theory of public goods

The economic school approached the commons by exploring the nature of the goods. In particular, the debate on the nature of public and private goods in the economic vocabulary can be traced back to the 1950s, with seminal texts by Paul Samuelson (1954) and Richard Musgrave (1959). However, the concept of public good and its role within the political economy was previously mentioned by David Hume (1711-1776) and Adam Smith (1723-1790)[19], and later developed by the German school at the beginning of 20th century (Sturn 2010). Richard Musgrave, in his Ph.D. thesis and subsequent article in the Quarterly Journal of Economics (Musgrave 1939), drew attention to the problem of collective goods that were not produced adequately in the market system for different reasons. When Samuelson took up the concept in the 1950s, economists, and the world at large, favored an active role for the state in the economy (Samuelson 1954; 1955) with Keynesian macroeconomics being at its peak (Desai 2003).

[19] Adam Smith already observed that some goods are regularly underprovided simply because profits cannot be recaptured by the suppliers of those goods. And when markets cannot provide such advantageous goods, governments should.

Although Samuelson's mathematical definition, based on two binary features (rivalry and excludability), is widely disseminated in non-nuanced models of public goods, the qualitative understanding of the specificity of pure public goods owes more to Musgrave's emphasis on the impossibility of exclusion (Demarais-Tremblay 2014). In the original terms, Samuelson used rivalry[20] as the main feature to divide goods into those of private consumption and those of public consumption. Rivalry refers to the extent to which the use of a good by one person precludes its use by someone else. A good that is non-rivalrous can be used by an additional person without reducing its availability to others. Samuelson also mentioned that the marginal cost of producing one additional item is zero: it does not cost anything when another non-rivalrous good is produced and one extra person consume the good. Musgrave (1959), posited excludability (whether someone can be excluded from benefiting, once the good is produced) and not rivalry as the relevant distinction between public and private goods. Samuelson agreed that rivalrous goods could be provided more efficiently by the markets, whereas Musgrave defended the same for those excludable. In the same rationale, Cornes and Sandler (1994) argued, several years later, that non-excludability is the crucial factor determining which goods must be provided by the public sector. Non-excludability indicates that once a good is produced, the benefits cannot be separated or appropriated by the producer or owner of the good, and those individuals who do not pay for it cannot be excluded from consumption.

Figure 1: Four types of goods after the neoclassical economic school of thought on the commons

	Excludable	Nonexcludable
Rival	**Private Goods** Food and clothing Car House	**Commons Goods** Fish in open sea Atmosphere Public waterways
Nonrival	**Low-congestion Goods** Cable television Satellite radio Online WSJ	**Public Goods** Tax-based: Nuclear umbrella The law Indirect private funding: Search engine On the air TV

Source: Musgrave and Musgrave (1973)

Pure public goods exhibit the characteristics of complete non-excludability and complete non-rivalry, while goods characterized by complete excludability and rivalry are termed "private goods". Individuals can be prevented from using private goods by multiple exclusion mechanisms that may include enforceable property rights, physical barriers (fences, commercial secrets), excessive pricing or patents. Between those two pure extremes, a series of so-called quasi- or impure public goods are

[20] Non-rivalry was originally referred to as "jointness of consumption" in Samuelson's words.

characterized by different degrees of non-excludability and non-rivalry. Figure 1 presents the two-entry table that classifies goods based on rivalry and excludability. These two properties, which economists use to classify goods, will be extensively discussed later, with regard to food. Additionally, Box 2 further elaborates on two additional categories that contributed to define and nuance the economic typology of goods, where common goods, in economic terminology, are included.

Box 2.- The nuanced ontological categories: common and club goods

The neoclassical theory, as originally proposed, seemed to be highly utopian, describing a non-existent world which renders difficult the discovery of appropriate examples that could illustrate well the typologies (public and private goods). Exemptions were the norm, so a more nuanced approach to the theory had to be elaborated, as Samuelson himself conceded (Samuelson 1955), and Varian (1993) then went further, that most goods do not exhibit excludability and rivalry in pure form: no good resembles the pure public goods of economic theory in real life. A significant number of public goods are non-excludable or non-rival, only to a degree (Hampson and Hay 2004). Therefore, other typologies for the so-called impure public goods were constructed, laying in the gradient between pure private and pure public goods (Holtermann 1972). The so-called mixed goods were thus added to the neoclassical theory: "club goods", excludable but non-rival (Buchanan 1965) (e.g. a toll road) and rival "common goods" (also called "common-pooled resources"[21] or subtractable in Ostrom's terms), which are not purely non-rival but difficult to exclude from access and enjoyment (Ostrom and Ostrom 1977; Ostrom et al. 1994, 4) (e.g. high sea fish).

Common goods are natural or human-made resources where one person's use subtracts from another's use, and where it is often possible, but difficult and costly, to exclude other users outside the group from using the resource (Ostrom 1990, 337; Ostrom 2009). They are formed by a resource system, the complete self-replicating and renewable stock (that can be considered as a public good) and resource units (that are more like private ones). Many common goods include food-producing resources such as fisheries, forests, tropical and alpine grasslands, wild game, seashore sea fruits, irrigation systems and agriculture. Like public goods, common resources suffer from problems of "excludability" (i.e. it is physically and/or institutionally difficult to stop people from accessing the resource). Like private goods, they are also "subtractable" (or "rivalrous"), whereby the use of the resource by one person diminishes what is available for others to use (Robson and Lichtenstein 2013), and they suffer from depletion through over-use and free-riding (Sands 2003).

Actually, this type of goods was the main subject of the "tragedy of the commons" controversy (see in Box 1, the contentions between Garret Hardin's and Elinor Ostrom's arguments). Across history and societies, a great variety of institutions, legal systems, customary traditions and social norms have been set up to govern these common goods, under multiple forms of common-property and open-access regimes that have successfully endured until now, and perfectly described in practical and theoretical terms by Elinor Ostrom and the neo-institutional economists.

[21] Actually, Ostrom (1990) started using the term "commons" to define common-pooled resources (forest, water, lobsters, seeds) but at the end of her career the term also included non-material goods (knowledge, computer codes) (Hess and Ostrom 2007).

Club goods are those where the costs and benefits are shared among, and limited to, a specific group of individuals, the so-called "club". Hunting, fishing licenses and game reserves are food-related examples. Club goods can be either publicly or privately provided and often result in the creation of monopoly power. Sometimes club goods are provided by the public sector and funded either entirely through user fees, or through a combination of user fees and taxpayer subsidization (e.g. public buses). Alternatively, private firms may provide the good or service, with regulatory oversight to regulate the price, as has often been the case in the price of staple food.

2.3.1.b.- Tenets of market-based life: The economic approach is partially theory and partially ideology

The neoclassical theory defining public, private and common goods is grounded in the epistemic view of nature and society provided by the economists of the 20th century (largely after the WWII and based on influencing figures such as John Locke, David Hume, Thomas Paine, Thomas Hobbes or Adam Smith), and it cannot be disembedded from the dominant narratives and the political and economic systems that conformed the regime where the economists were working. In that sense, the reductionist approach to nature (made of individual species or separated territories governed by sovereign states) and humans (rational and selfish individuals who seek to maximize their utilities) that was prevalent in the second half of 20th century is mirrored by the economic approach to private and public goods that has crafted the dominant narrative and lay people's understanding about the commons (Mattei 2013a).

Most of the proponents of the neoclassical theory (Samuelson 1954; Musgrave 1959; Ostrom and Ostrom 1977; Buchanan and Musgrave 1999) use highly theoretical terms in a utopian market exchange, whereby every human acts under rationale choice principles[22] having, in every moment, all the information needed to take the most optimal decision. However, these conditions are quite far from real-life human behavior. Additionally, authors like Pickhardt (2002) observed that the production and consumption of private goods always involve externalities that affect us all. Those externalities (negative, such as air pollution and positive, such as global connectivity) are both non-rival and non-excludable, thereby combining both public and private good characteristics. That would mean that most goods have mixed characteristics of private and public goods, and thus the theoretical distinction is rather artificial and highly hypothetical. That may explain why numerous economists, implicitly recognizing the fundamental flaws of the original definition, came up with additional explanatory terms and more nuanced typologies, such as collective goods, club goods, social goods, public contract goods, common resources, impure public goods, semi-commons and merit goods (Musgrave 1959; Buchanan 1965; Demarais-Tremblay 2014).

And yet, however dominant the economic epistemic narrative may be now, critiques have existed since the 1990s. Several authors have criticized the economic approach as narrow, reductionist and an academic exercise devoid of any historical root or legal consideration, undervaluing those goods not capable of being allocated by monetized market transactions (Holcombe 1997; Stretton and Orchard 1994). More specifically, Samuelson's classic formulation was considered as "an austere simplification

[22] The theory of rational choice, as defended by Mancur Olson or James Buchanan posits that individuals are short-term utility maximizers, rationale beings where irrational subjectivity does not play a role in behaviour.

that produced a rarefied concept, a mythical beast, without any counterpart in, and therefore without any applicability to, the real world (Cornes and Sandler 1994), "useless for policy purposes" and "pure theoretical fiction" (Desai 2003) or "merely a scholastic exercise" (Musgrave 1983).

Moreover, this economic theory of public/private goods has been misused to harm and discredit the commons as inefficient (Hardin 1968) and backwarded (anti-modern), and hence justify the only two options that should be pursued: The legitimacy of government's public provision and power coercion and/or the enclosure of collectively owned resources to become either state-owned or private-owned (Holcombe 1997). According to Wall (2014), the stringent assumption of economic rationality together with methodological reductionism lead scholars to an oversimplification of commons analyses. The alternative narrative, supplied by capitalism first and neoliberalism later, posited the main tenets against the commons as: The market provision of goods is superior to commons-based systems or state-provision (Sekera 2014); humans behave like competitive, selfish gene carriers (Dawkins 1976) that seek to maximize self-interested utilities under a behavioristic rational choice (Schelling 1984); open commons management will be always sabotaged by free-riders (Olson 1965; Hardin 1968); absolute proprietary regimes in private hands shall be the most sacred right of all (Nozick 1974) and individualism and property rights shall be the pillars of societal development, rejecting altruism and a welfare state (Rand 1964). This narrative succeeded in becoming the hegemonic paradigm, due to the historical circumstances that rendered it adequate to sustain the neoliberal phase of capitalism that was initiated in the 1970s and exploded after the end of the Cold War. Evidently, those proponents were systematically ignoring the importance of empathy, social relationships, embeddedness and culture to understand and interpret the existence and governing institutions of the commons.

2.3.2.- The legal school of thought

The legal approach to the commons is driven by the question: Who owns what resource? Or who has what legal entitlements to any given resource? Thus, the proprietary rights and the entitlements are the basis to define the commons. The legal proprietary regimes, being nothing but social contracts situated in specific times and places, have varied between societies, civilizations and historic periods within civilizations. In this section I will first undertake a brief journey of proprietary regimes, starting with the Roman Empire, a basic pillar of the European legal corpus, to understand how the commons were approached from the legal point of view.

2.3.2.a.- How the Romans understood proprietary regimes

In Western culture, the Romans established legal differences between goods that belong to individuals (*res private or singularum*), the State (*res publica*), everybody (*res communis*) and nobody (*res nullius*) (Milun 2011, chapters 2-3). While the economic definition of public-private goods only appeared in the 1950s, societies have been governing resources for millennia, based on a mix of institutional settings including commons, public goods and private goods. The history of the commons in Europe can be traced back to Ancient Greece (Macé 2014), although commons and collective arrangements to manage them already existed since the formation of hunting-gathering societies (Henrich et al. 2006; Bettinger 2015). However, it was not until the Roman Empire that they were enacted in the legal code. Thanks to the Byzantine Emperor Justinian, who between 529 and 533 A.D. mandated to compile all different Roman codes that were relevant to govern social life, certain commons (air, running water,

the sea and the coastlines) were considered as *res communes* (shared things) in the body of law (Buckland 1931, 91). The *res communes*[23] can be used by all but acquired by none (Mears 2008, 83) so they were legally protected from private enclosure and privatization. The Roman law set differences between the commons, the public goods (*res publicae* that are common to all and usually owned by the state) and those goods that belong to none now (*res nullius*) but can be owned in the future (wild animals, seafood, unexplored territories). The commons were recreated in Medieval Europe (12th and 13th centuries), based on territorial resources and new institutions designed to own and govern those resources collectively (De Moor 2011). In the Middle Ages, competitive uses of lands between farming, pasture and woods were conflicting with each other due to demographic pressure, and the first enclosure acts by kings and feudal landlords signaled the growing imbalance between those resources owned and governed by private or state hands and those that were customarily owned and governed by communities, parishes, villages and tribes. Commons had a primarily economic function, sharing the risk to manage and produce essential goods for the survival of the community members, plus acting as a social welfare system and a source of communal bonds (De Moor 2015, 2). This social function of the commons was especially important for women, who, having less title to land and less social power, were more dependent on them for their subsistence, autonomy and sociality (Federici 2014). Later on, several waves of enclosures swept Europe's commons, being especially relevant those of the 18th and 19th century and well-studied in England (Neeson 1993) and Spain (Lana Berasain 2008).

Nowadays, those legal typologies are still functional, although nuanced and adapted to new realities in many countries (Europe as a token). In the international legal regime they are being relegated to oblivion by the market and state narratives and political doctrines, based on Hobbes' and Locke's legacy (see below). For instance, this typology still exerts an important leverage on the political and legal approach to natural resources under no territorial sovereignty, such as manganese nodules on the sea floor, the governance and sovereignty rights of the Antarctica, the oceanic fishing rights and the management and pollution rights of the atmosphere. Today's fish and wild game are still treated as *res nullius,* "no-man's resources" that no one owns in principle but they get owned once caught or hunted. Water and air are, however, changing their legal consideration with the privatization schemes rampaging all over the world (e.g. exploitation schemes of underground water for corporations and carbon trade schemes, which enable polluters to acquire rights to pollute everybody's air).

Regarding fish stocks, the customary Law of the Sea convention adopted the *res nullius* approach (a fish or seafood, while still alive and swimming belongs to no one, and it is only when captured that it becomes the absolute property of the fisherman), while legal scholars argued that fish should also be viewed as *res communis* (e.g. Common Heritage of Mankind) and therefore protected and governed differently by an international body created for that purpose (Kent 1978).

At present, the former *res communis* should be understood as resources belonging to all members of the community that could be ascribed to the public domain or the common heritage of mankind (Baslar 1997). They should belong to all of us, but we must first claim our rights to them, all of us. In modern legal doctrine, and in order to prevent the absolute privatization of every resource on Earth, former

[23] "By the law of nature these things are common to mankind—the air, running water, the sea and consequently the shores of the sea".

res nullius and *res communis* considerations should be granted special legal protection, since property is not a permanent thing but a relationship amongst people about things (Sider 1980).

2.3.2.b.- The founding fathers of modern property

Private property refers to a kind of system that allocates particular goods to particular individuals to use and manage as they please, to the exclusion of others (independently from the need and from the utility that others may obtain from the resource) and to the exclusion of any detailed control by society. Though these exclusions make the idea of private property seem problematic, philosophers have often argued that it is necessary for the ethical development of the individual and for the creation of a social environment in which people can prosper as free and responsible agents.

The idea of attaching certain duties to property had a considerable tradition in British normative thinking, and later exerted a tremendous influence over European and American discourses. *Thomas Hobbes (1588-1679)* was still cautious about superseding proprietary rights to other fundamental rights for people to survive, since the law's function was to protect all our fundamental rights. He said, "if the law stood between an individual and the loaf of bread he needed to carry on living, then the law ceased to have meaningful content"[24]. Later that century, *John Locke (1632-1704)* made property rights conditional on non-wastage of the good, by stating that people should not enclose more land than they could work on. During the 18th century, the foundational pillars of absolute proprietary regimes were masterminded by Hume, Smith and Paine. For *David Hume (1711-1776),* property (and justice) was an artificial idea, not natural or God's creation, created by humans since nature itself never defined property. In that sense, Hume disagreed with Locke's view that private property was an extension of the self, through the labor exercised on any natural resource, although he thought property regimes were nothing but a social construct. On the other hand, *Thomas Paine (1737-1809)* classified property in two types: (1) Natural property, or that which comes to us from God, such as land, air, water and wild food; and (2) artificial or acquired property, a human invention. The second type of property could be distributed unequally, but the first type rightfully belongs to everyone equally. It is the "legitimate birthright of every man and woman, not charity but a right" (Paine 1797). Finally, it was *Adam Smith (1723-1790)* who defined the normative principles of proprietary rights that were foundational to the very structure of society, and they had to be enforced in all cases and under any circumstances. Indeed, absolute proprietary rights for individuals became the central supporting pillar of his ideas for a free-market society (Smith 1776). His thesis was that humans' natural tendency towards self-interest results in prosperity for all. Along those lines, unrestricted free trade, where everyone would aim at maximizing their own profit, would promote greater prosperity for all than would state-regulated mechanisms. His rationale was that collective public goods, for the common good, would be promoted through individual selfishness.

2.3.2.c.- Locke: My own labor appropriates res nullius and res communis

Nevertheless, the rationale that has exerted the biggest influence in modern property regimes, all over the world, is the labor theory of property elaborated by John Locke and also known as the principle of

[24] Actually, a legal provision defending bread-stealers stayed in place in many European countries since it was considered morally fair although not always legal.

first appropriation. Locke, in his Second Treatise on Government (Locke 1688), justified an individual's ownership of part of the world's resources (God's gift to humankind), either land, water, food or minerals, by stating that when a person works, their labor (that is a product of their person) enters into and improves the object (subject of work) and thus the mixed object (natural commons plus personal work) becomes the property of the worker (Locke 1688; Widerquist 2010). This theory justifies the homestead principle, which holds that one gets permanent ownership of an un-owned natural resource (*res nullius* or *res communis* in Roman law) by working on it.

However, and it is very relevant that Locke also held that one person may only appropriate resources if "... there is enough, and as good, left in common for others" (Locke 1688, chapter V, par. 33)[25], what is known as "the Lockean proviso" after another libertarian political philosopher from a different epoch, Robert Nozick (1974). Locke concluded that people need to be able to protect the resources they are using to live on, as their property, and that this is a natural right. It is worth mentioning that Locke took for granted that the supply of essential natural resources (land, water, seeds, food) was virtually unlimited at his time, with an entire American continent yet to be adequately exploited and vast areas of Africa and Asia to be explored.

However, Locke's doctrine should be subject to two additional *provisos* (the original proviso, drafted by Locke, that there is enough and as good left for others), after Timmermann´s (2014) interpretation of Locke´s treatise: Firstly, the resources we mix labor with are unowned and secondly, retaining ownership is subject to the avoidance of wastage. None of these *provisos* are satisfied in the current organization of the industrial food system, so the time has come to rethink the legal consideration of food as an absolute private good.

2.3.2.d.- Modern legal evolutions of proprietary regimes

After Thomas Hobbes, John Locke and Adam Smith, private property, individual freedom and autonomy would be melted together to yield the fundamental discourse to substantiate capitalism: Only through individualism, absolute property rights and competition may anyone thrive in life and achieve the proposed goals. Cooperating with peers and collective rights (features that characterize the *Homo cooperans*) are superseded by individual competition with own means (*Homo economicus*).

Following an interpretation of Locke's property theory, modern legal and political scholars translated the notion of having a "natural right" to enjoy the fruits of one's labor directly into having an "absolute right" to own, manage and destroy natural resources that are essential for human survival, namely food, water and air (Timmermann 2014). Locke's narrative whereby individual property emerges as a natural consequence of one's own labor over a natural object was later complemented with another utilitarian ideology: The absolute primacy of (a) proprietary rights over any other type of right and (b) markets over states. Private property and free markets are more efficient than collective or state

[25] Locke posited "Nor was this appropriation of any parcel of land, by improving it, any prejudice to any other man, since there was still enough and as good left, and more than the yet unprovided could use. So that, in effect, there was never the less left for others because of his enclosure for himself. For he that leaves as much as another can make use of does as good as take nothing at all. Nobody could think himself injured by the drinking of another man, though he took a good draught, who had a whole river of the same water left him to quench his thirst. And the case of land and water, where there is enough of both, is perfectly the same".

property or governance (Alchian and Demsetz 1973), and without the right of absolute alienation[26] property is not well-defined and leads to inefficiency (Coase 1960). The Coase Theorem[27], although inapplicable to economic realities, due to its high degree of abstraction and given hypothesis, was instrumental in re-affirming the usefulness of enforced private property regimes. Subsequently, policies and legal frameworks were devised to protect, maintain and reproduce that specific narrative of property and market supremacy (Capra and Mattei 2015). The emergence and consolidation of absolute private property rights for individuals is a story of evolutionary success (Coase 1960; Demsetz 1967), leading to more complex property regimes and experimenting with tragic trends along the way (Lopes et al. 2013). During the 1970s and 80s, influential voices of the neoliberalism (Rand 1964; Nozick 1974) posited that respect for individual rights was the absolute standard and the only legitimate state is a minimal state that restricts its activities to the protection of the rights of life, liberty, property and contract.

However, private property is not an absolute term that allows the owner to do whatever they want with the owned good. In many cases, certain limitations exist in how far right holders are allowed to actively modify or destroy the object (Strahilevitz 2005). Although substantial liberties on how to manage the owned object are acknowledged, the multiple types of proprietary rights that can be found in the world on different types of resources has led to the idea that proprietary rights are a "bundle of rights" (Honoré 1961; Schlager and Ostrom 1992). According to these authors, property regimes are pluralistic because five bundles of rights (access, withdrawal, management, exclusion and alienation) are independent from each other and can be combined in different ways with the three types of proprietary regimes: private property, state property and collective property (see Figure 2). Recently, reflecting on the plurality of historical developments of institutional settings governing natural resources, legal scholars developed intermediate categories such as semicommons (Smith 2000).

Common property is a formal or informal property regime that allocates a bundle of rights to a group (Schlager and Ostrom 1992). Such rights may include ownership, management, use, exclusion, and access to a shared resource:

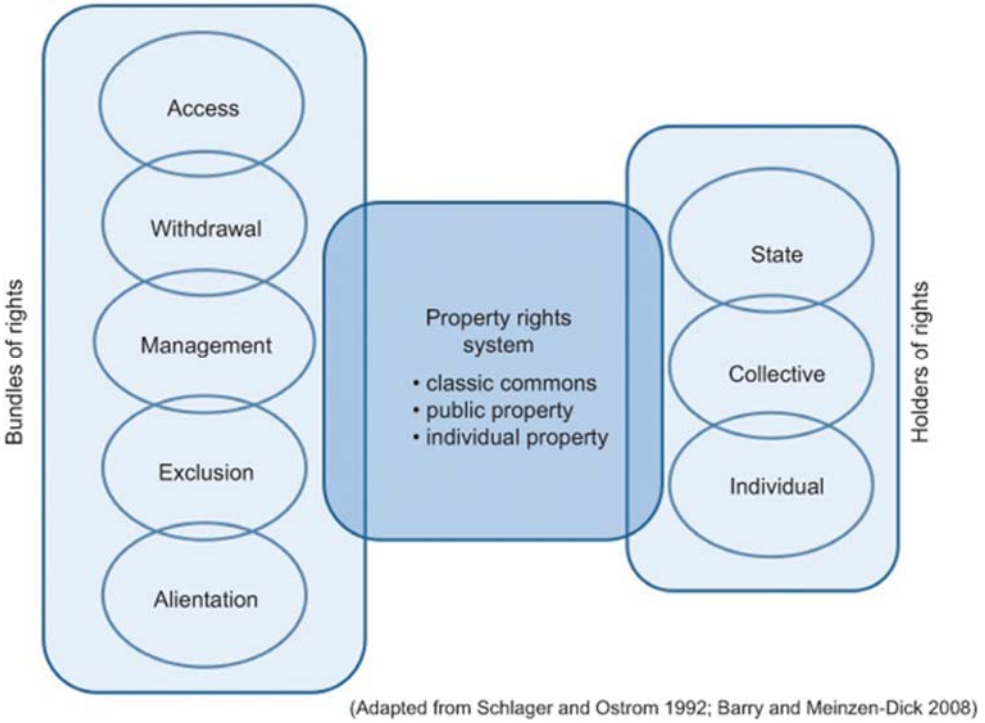
a) Access: The right to enter a defined area and enjoy its benefits without removing any resource.
b) Withdrawal: The right to obtain specified products from a resource system and remove that product from the area for prescribed uses.
c) Management: The right to participate in decisions regulating resources and making improvements in infrastructure.
d) Exclusion: The right to participate in the determination of who has, and who does not have, access to and use of resources.

[26] Absolute alienation is one of the five categories of proprietary rights that sets that you can do with a property of your own whatever you like to do it: prevent the others to have access to it, transfer your rights to anyone, destroy it for ever or make it disappear from the market (see Schlager and Ostrom 1992).

[27] It is summarised as "as long as private property rights are well defined under zero transaction cost, exchange will lead to the highest valued use of resources". Therefore, private property is a key condition for market mechanisms to operate and non-absolute property rights hamper efficient market exchanges to reach a Pareto optimality. See: https://en.wikipedia.org/wiki/Coase_theorem [Accessed August 14, 2017]

e) Alienation: The right to sell, lease, bequeath or otherwise transfer any, or all, of the component rights.

Figure 2: Bundles of rights in property regimes



2.3.d.e.- The collective ownership struggles to exist

Although the realms of the State and the Market, after Hobbes and Locke, have monopolized the debate about ways of organizing human life, resource management, food provision and the like during the 20th century (Mattei 2011), as we have seen above, proprietary rights are not restricted to private individuals, entities or the state. Since the Roman Empire, three type of proprietary regimes existed, and they still exist now: private, state and collective. The collective ownership can also be combined with collective governance, either one or both together, and commons can also be found in private or state-owned land. It is often found that, in common lands, the owner's rights are somehow restricted, and other people, usually local residents, pastoralists and walkers have some rights over the land. These people are known as commoners. Commoners have some rights and entitlements whereas the landowner retains other rights, such as rights to minerals, infrastructure construction or selling without changing commoner's rights to use. In a common property system, resources are governed by rules whose point is to make them available for use by all or any members of the society, regardless of who legally owns the resources. A tract of common land, for example, may be used by everyone in a community for grazing cattle or gathering food. A park may be open to all for picnics, sports or recreation. The aim of any restrictions on use is simply to secure fair access for all and to prevent anyone from using the common resource in a way that would preclude its use by others.

Collective ownership struggles to survive in spite of legal rules being a tool in the elite's hands to encroach, enclose, privatize and restrain access to the commons (Soto-Fernandez 2014). However,

legal regulations can also be turned into an instrument for defending the commons and its inhabitants from the encroachments of financialized commodification (Capra and Mattei 2015), regulating and protecting the commons in many countries (Law of Goods in the Public Domain, Constitution art 132 in Spain and the Countryside and Rights of Way Act 2000 in the UK). Actually, the protective power of the inclusion of the commons into constitutional provisions is deemed essential by some scholars to sustain the long-term common good of societies (Mattei 2013b). Commons owned by collective property and enshrined in legal frameworks are relatively well protected from commodification, since they cannot be sold, transferred, alienated, mortgaged, divided or the object of individualized possession, and so they express a qualitative logic, not a quantitative one. We do not "have" a commons, we "form part of" a commons, in that we form part of an ecosystem, of a system of relations in an urban or rural environment; the subject is part of the object. Common goods are inseparably united, and they unite people as well as communities and the ecosystem itself. Actually, commons can often be defined by its "inappropriability". In other words, that appropriating something as one's private property is not permitted because that thing is reserved for common use (Dardot and Laval 2014, 583).

In that sense, and more recently, progressive and engaged legal scholars are reinterpreting the commons through a different analysis of proprietary regimes. Good examples to illustrate this reinterpretation are how privatizations are understood to be stealing every citizen's proportional share in publicly-owned commons that were created by nature or supported by public budgets and taxes (Bailey and Mattei 2013), and how the Commission Rodota in Italy is seeking to legally protect the third type of proprietary regime based on collective ownership, and render it legally different from private and state property. There seem to be a wide array of legal innovations that commoners are inventing to build a new socio-economic order, by constituting new rules and norms for their common production, governance and property modalities such as Land Trusts in US and squatting public places in Istanbul (Tarik square), Rio de Janeiro, Athens and Barcelona.

Table 1. Legally-based definitions of the commons

Author	**Definition**
Simpson and Weiner (1989)	Commons are provisions provided for a community or company in common; also the share to which each member of the company is entitled.
Lessig (2001)	A commons is any collectively owned resource, held in joint use or possession, to which anyone has access without obtaining permission from anyone else.
Sandel (2009)	A commons describe a specific resource that is owned and managed in common, shared and beneficial for all members of a community.

Summing up, for legal scholars, a commons refers both to a physical good and the communal or collective proprietary rights governing it. See Table 1 (above) for three legal definitions of the commons. Regarding types of property rights, they can be private (granted to individuals, legal entities and corporations), public (state-owned) or collective property (legally recognized in many national and international legal frameworks). Most current territorial commons are based on ancient rights, customary institutions, indigenous traditions or complex governance arrangements rooted in customary laws. A commons, thus implies both "open access" and "shared participation" in the governance and benefits, outside of market and state mechanisms (Blackmar 2006, 49-50), although

collective property can be considered either as a category of its own (Rose 1986) or as a type of private property.

2.3.3.- The political school of thought

2.3.3.a.- The consideration of anything as a commons is a social construct

Initially, most political scholars during second half of 20th century were aligned with the ontological definition of public goods provided by economists (non-rival and non-excludable) and thus usually understood "public goods" and "commons" as inter-exchangeable terms (Severino 2001). The former being mostly used in the political debates, at national and international level, and the latter being predominantly applied to natural resources governed by communities at local level. However, the last two decades witnessed a growing number of authors questioning whether the ontological and hegemonic definition of public goods, given in neo-classical economics, is adequate at all (Wuyts 1992; Stretton and Orchard 1994; Desai 2003; Moore 2004; Sekera 2014; Dardot and Laval 2014), proposing instead a socially and politically derived definition. They have argued that the extent to which a good is perceived as a private or public good, does not depend as much on its inherent characteristics as on the prevailing social values within a given society about what should be provided by non-market mechanisms (Deneulin and Townsend 2007). The degree of excludability and rivalry depends, not only on the nature of the good, but also on the definition and enforcement of property rights, regulations and sanctions, all of them political constructs. Society can modify the non-rivalry and non-excludability of goods that often become private, or public, as a result of deliberate policy choices (Kaul and Mendoza 2003), as both properties are neither ontological to the goods nor permanent. This phenomenological approach to the commons is a defining feature of the academic community of political scholars.

However, a customary understanding that equates commons with jointly managed natural resources still prevails in many academic circles. In this approach, the core element of the commons definition is the natural resource (either a forest, a pastureland, a coastal area or a river), a material good produced by nature or, more recently, immaterial resources and situations, namely knowledge, peace and genetic code. This approach identifies commons with the economic definition of common-pool resources, rival but not excludable and, by doing so, both accepts and departs from the reductionist economic definition of public goods and commons. And yet, for many other scholars, commons are not just things, resources or goods, but self-regulated social structures and community processes, including the consciousness and autonomy of thinking, learning and acting together to govern material and non-material resources for everybody's sake.

Along these lines, an important schism can be identified between a) those that approach the commons by understanding the nature and evolving characteristics of the resource to be governed and b) those that prioritize the governing community and its features (i.e. what is dubbed as "commoning") as the most salient identifier of commons. The former, evolving from the neo-classical political economy, seems to gather a constituency that sees no problem in reconciling commons with capitalism, sovereign states and the neoliberal narrative. Whereas the latter sees "commoning" as a transformative and counter-hegemonic alternative to the profit-driven economic system, termed as capitalism, and the States that so wholeheartedly support it. The latter also sets differences between

commons as human social constructs to be applied to material or immaterial resources from common-pool resources (in economic terminology), that are restricted to natural resources (Sekera 2014; Dardot and Laval 2014). In the next section, I will explore both political streams in detail.

2.3.3.b.- Two political approaches to commons: resource or governance based commons

The political school of thought on commons can be clustered in two opposing streams, based on the primacy of the primary subject of analysis, either the resource or the governing community. Those who analyze the properties of the resource, although recognizing that rivalry and excludability can be molded by societal norms and technology, accept that commons are defined by these two features, the same features used to describe public goods. Actually, it is not rare to find, within this constituency, many scholars that use both terms interchangeably (a misunderstanding that will be addressed later on), especially when dealing with Global Public Goods and Global Commons.

Transformative-wise, those two streams also present another distinctive characteristic: The resource-based scholars see the commons as self-regulated, governing systems that can co-exist with current forms of free-market, private property regimes and absolute sovereign states (the proponents of Global Public Goods). Conversely, the governance-based proponents conceive the commons as a transformative narrative, enrooted in history but innovative enough to challenge the hegemonic duopoly formed by the neoliberal market and the state (i.e. Dardot and Laval 2014; Capra and Mattei 2015 or Wall 2014), a consideration shared with the activist's school to be explained later on.

In order to analyze the political approach to the commons, this section will dissect the different positions, namely the socially-driven consideration of commons based on resource properties, or the alternative stance that posits that commons are defined by the "commoning" actions undertaken by self-organized communities.

Resource-based Commons can co-exist with neoliberal markets. The most influential group of political scholars in this stance are those who developed the theoretical approach to Global Public Goods (GPG), merging, under this label, the former economic categories of public goods and common goods (or common-pool resources). Global Public Goods, also termed as Global Commons (Buck 1998; Brousseau et al. 2012), found their origins in two seminal books sponsored by the UNDP (United Nations Development Programme) (Kaul et al. 1999, 2003), following the pioneering study of Kindleberger (1986). This concept, derived from the economic theory of public-private goods, called for a return to public action, beyond the national sovereign jurisdiction, to highlight the need for greater cooperation across states in a global context of increased interdependencies, planetary threats and the appearance of a global citizenship conscience (Hugon 2004). In other words, Global Commons-GPGs produce benefits that are available worldwide and across social strata. In political terms, a Global Commons-GPGs is a good with benefits that are strongly universal in terms of countries (covering more than one group of countries), people (accruing to several, preferably all population groups) and generations (extending to both current and future generations, or at least meeting the needs of current generations without foreclosing development options for future generations) (Hjorth-Agerskov 2005). They are universal, in that all actors can benefit from their production; non-excludable, in that no actor can be denied their benefits; and non-rival, in that the cost of a good does not go up with additional consumers (Burnell 2008). They are the building blocks of different civilizations (Wolf 2012). Therefore,

they transcend national boundaries and require collective action for their provision and maintenance. An International Task Force on Global Public Goods was launched in 2003 to translate the theoretical concept of global public goods into a more practical tool for policymakers. But actually, the movement that was meant to strengthen the idea of Global Commons-GPGs with feasible policy implications was actually weakening the narrative, since it was including so many topics that it ended up becoming "a catch-all term to which people can attach anything they want" (Carbone 2007), or "a buzzword used for so many ideas that it threatens to become an empty concept" (De Moor 2011).

Global Commons-GPGs cover a very large spectrum of global issues including fresh air, knowledge, global climate, the stratospheric ozone layer, outer space, Antarctica, high-seas fisheries, international waters, migratory wildlife, avoiding financial instability, the International Court of Justice, universal public health, social security and peace among others. Some of these resources, such as the global climate, have the economic characteristics of public goods: No state can be prevented from consuming them, and the consumption of such goods by one state does not diminish the amount available to others. Other resources, however, are clearly common-pool resources in the economic understanding. For these resources, such as fisheries, consumption by one state depletes the resources, leaving less for others.

Profit driven market suppliers lack incentive to invest in producing the global commons either because (a) their benefits are spread so broadly that their value cannot easily be captured by the seller and it is impossible to charge users individually, or (b) the return on investment is too uncertain (i.e. agricultural research). The Global Commons-GPGs can be created and paid for collectively, where the profit-driven market will not produce them and there is no effective mechanism to privatize the resource or situation (e.g. clean air, weather data collection etc.), or there are such significant positive externalities that society determines must be available to all regardless of ability to pay (e.g. food, water, education, health and even emergency services).

Environment and climate may be the ultimate examples of a global commons, meaning something that is shared across borders, across generations, by all populations, and that all depend on to thrive (Kaul and Mendoza 2003). Most Global Commons-GPGs were originally considered as national public goods or local commons that, in the wake of globalization, have now gone global. Commons-Public Goods are provided at national level by governments, such as public health, economic stability or the road network (Brousseau et al. 2012). At international level they are naturally-produced (genetic resources, atmosphere, stable climate) or man-made (internet, financial stability), being regulated in some cases by semi-sovereign international institutions (e.g. the ISO (International Organization for Standardization) regulatory framework and the Codex Alimentarius).

The Global Commons-GPGs have been clearly embraced by the institutions that sustain the regime or the "institutional mainstream", thus proving their suitability to conform to the dominant narrative of capitalism and the lack of transformative power, considering their origins in the neoclassical economic doctrine of public goods. That explains why the Global Commons-GPGs have been included in the working programme of the World Bank (2013), the European Commission (EU 2014), the Global Environment Facility[28] and inter-governmental panels (ITFGPG 2006). This understanding of global

[28] https://www.thegef.org/events/our-global-commons-international-dialogue [Accessed August 14, 2017]

commons can co-exist perfectly with the current form of neoliberal capitalism, just requiring some international public actions, voluntary guidelines to corporate actors and minor adjustments in policies and international law.

Governance-based commons as an alternative to capitalism. For this group of engaged scholars, the commons are not about the nature of a good, but about the governance regime for resources created and owned collectively (Workshop on Governing Knowledge Commons 2014). By "commons" we do not mean things (rivers, forests, land, etc.), information or knowledge content, or places defined by their material properties, but rather a sense of doing things together because we need or want to do it for different reasons. Commons can be distinguished from non-commons by the institutionalized sharing of resources among members of a community (Madison et al. 2010, 841), what is often known as "commoning". It is "commoning" together that confers a material, or non-material, common resource its commons consideration (Dardot and Laval 2014). The primary focus of commons is not on resources but on interpersonal and human/nature relationships (Bollier and Helfrich 2015) and, therefore, the human-made consideration of what a commons is, requires a specification for each place in our own time (Friedmann 2015).

Commoning, as a form of governance, differs from the market allocation mechanism based on individual profit maximization and the state governance based on command and control. It demands new institutions, goal setting and forms of interaction, thereby forming the bedrock to support a new moral narrative, a new transition pathway, a new economic model and a new relationship with nature and the planet Earth. Commons implies a collective production of a good that is not available for private and individual appropriation (Dardot and Laval 2014) and it implies community governance, ownership and control (Bloemen and Hammerstein 2015). Commons are a system of decision-making, collective ownership and value-based purpose that defies the for-profit ethos of the market and the state's fundamental principles (delegated power, elite ruling for the common good and sovereign decisions). Commons are not about maximizing individual utilities, selfish individualism or legitimizing the use of force, but about collective decisions, institutions, property and shared goals to maximize everybody's wellbeing.

This approach, to define the commons based on the socially-constructed governing mechanisms, is shared by many other authors coming from both the activist school (Bollier and Helfrich 2015b; Bloemen and Hammerstein 2015) and the historical school (Linebaugh 2008). Commons are nothing but self-regulated social arrangements to govern material and immaterial resources deemed essential for all; are place and time restricted and vary according to different societies, circumstances and technological developments.

2.3.3.c.- An evolving historical construct with fuzzy vocabulary

With the arrival of the capitalism ideology and the neoliberal decades (1980 until present) many public goods and commons, that were still functional, ended up being privatized. In any case, the social considerations of goods and services are often evolving, being privatized or statized depending on needs, political circumstances and place-based determinants. For example, in the USA, fire services were once a business run for profit, but they are now a public service; meanwhile in Portugal, fire services have remained a voluntary contribution to society, not privatized until the recent austerity

policies. Historically, schools and tutoring were available only to those who could pay, and street lighting was purchased by wealthy pedestrians from lamp carriers. Moreover, the consideration of goods as public or commons varies from place to place: things that are public goods in one country may not be so in another. Health care for all has long been a public good in many European countries, Canada and elsewhere, but not in the USA. And in Medieval Europe, hospitals were run and funded privately by churches, the Royal Court or charities, motivated not just by compassion but also by fear of infection and death (Cipolla 1973). Summing up, both commons and public goods are historical constructs[29], which arise above all else, from collective political decisions made on economic, technological, cultural, social and geopolitical bases specific to a particular period in history.

This epistemic school, in contrast to the rather precise terminology on commons, private/public goods and private/public/collective proprietary rights found in the vocabularies used by the legal and economic epistemic schools, is rich in fuzzy meanings and terms with a plurality of interpretations, such as "the public good", "the common good", "commonwealth" and "public interest". The difficulties in differentiating the concepts of GPGs and Global Commons also illustrates this situation. Public goods or commons are different from the concept of "the public good" or "the commons good", which are ethical concepts and moral views of what is in a society's interest (Sekera, 2014). The public or common good is a collective ethical notion in political decision-making that may be interpreted in a utilitarian way as "to maximize the good for the maximum amount of people possible", or with a rights-based approach, such as "a set of minimum thresholds for everybody". This fuzziness in interpreting and using different terminologies for similar goods, or embracing terms for different goods, does not help in defining the nuances and political implications of public goods and commons.

2.3.4.- The grassroots and activists' school of thought

2.3.4.a.- Commons, an opposing narrative to capitalism

This heterogeneous group is formed by social activists, urban and rural commoners and some engaged scholars that are simultaneously practitioners in common initiatives, and thus the epistemic regard on the commons is less consistent and more diverse. It is a common understanding within this school that capitalism greatly developed, by enclosing the commons and privatizing otherwise communal resources owned collectively and governed by the community (Magdoff and Tokar 2010; Kostakis and Bauwens 2014)), resources that Hardt and Negri (2009, 41) posited as "autonomously produced commonwealth". The neoliberal market system opposes the mere existence of the commons, because they represent an alternative regime for meeting needs and thus a threat to the hegemony of the market to allocate scarce resources to meet human needs (Bollier and Helfrich 2015a).

This epistemic regard believes the current neoliberal economy has an inappropriate core DNA, since it combines a false belief in the infinity of material resources and endless growth, with the belief that immaterial resources, which are abundant in nature, should be artificially maintained scarce, through legal (IP rights) and political means (e.g. seed policies banning distribution of local landraces not

[29] The term "historical constructs" refers to sets that are moulded by the historical conditions (political, economic, technological, cultural) that render them unique. As social constructs, they are born in a particular society in a particular time period, live, evolve and finally disappear, either mutating, transforming or being forgotten.

included in the official national catalogue in EU countries). Therefore, this constituency regards the commons and the free-market economy as colliding entities and the commons-based transition narrative as an alternative to the neoliberal model (De Angelis and Harvei 2013). However, the same author has underlined the paradox that existing commons are essential to both capitalist reproduction, in its current form, and the development of anti-capitalist alternatives (De Angelis 2007). So, what sustains the unstoppable race to resource depletion, led by the insatiable appetite of capitalism for profit maximization and capital accumulation, can also become its nemesis. The commons feed a counter-hegemonic struggle against the industrial and globalized neoliberalism and are an important element, though not the only one, of the emancipatory movement from the *Homo economicus* paradigm (De Moor 2013). They are called, by Caffentzis (2012), "anti-capitalist commonists". Once you begin to take the commons seriously, nicely described by Le Roy (2015), "the whole edifice on which modern Western civilization is based, previously believed to be well-founded, collapses onto itself: the state, the law, the market, the nation, work, contracts, debts, giving, the legal personhood of private entities, private property, as well as institutions such as kinship, marital law and the law of succession, are suddenly called into question."

2.3.4.b.- Defining a new narrative for sustainable and fair transitions

The narrative and vocabulary of the commons is not being advanced by scholars, corporate interests or political parties, but by people doing things by themselves: A multitude of customary and contemporary commoners, practitioners and thinkers on the periphery of conventional politics. That narrative provides a sound alternative to the dominant neoliberal discourse but, contrary to the latter, is still under construction in the innovative niches found in the margins of the dominant regime.

The practical commoners and theorists of the activist school reject the economic definition, based on rivalry and excludability, as reductionist and rigid (Helfrich et al. 2010) and they argue that any theoretical framework to understand the commons must learn from real-life practices and experiences of commoning in multiple context-based loci (Bollier and Helfrich 2015). This group is re-creating a new narrative to define the commons, one based on vocabularies gathered from the other epistemic academic schools and filtered and validated through their daily, practical actions as commoners.

Commoning is a radical concept because it insists upon the active and conscious participation of people in shaping their own lives, meeting their own needs and maintaining a shared purpose (Bollier and Helfrich 2015a). In doing so, commoning and commons become political, as they define the self-governing rules of a specific community and how this community is embedded in the larger landscape (natural and institutional). The commons trigger a moral economy, different from the one that dominates market exchanges and the state-citizen social contract, and they foster social connections, stewardship of resources and an escape from market culture. Commons are defined as a new political rationality that must replace the neoliberal rationality, or even a different Worldview (Dardot and Laval 2014: 572).

McCarthy (2005) highlights how the activist school of thought only has weak bonds with the economic and legal schools and with their main subjects, namely common-pool resources and collective property regimes. The explanations may lay in the purported goal to surpass the reductionist views of those two epistemic regards based on the ontological nature of the goods and legal property frameworks, to

emphasize the relational "commoning" dimension (also present in one stream of the political school) and the freedom to decide what a commons "is", and how we institute commoning practices over a common resource based on collective decisions.

For this group, commons are a political movement that presents an alternative narrative with evidence-based policy options, different from the dominant discourse and historical influence, but efficient and resilient institutions that are neither market-based nor state-driven (cf. Mattei 2011; Hard and Negri 2009; Dardot and Laval 2014). Furthermore, this school of thought is associated with critical approaches to the philosophical, political and epistemic pillars of absolute sovereign states and neoliberal markets.

2.3.4.c.- How do commoners define their commons?

Although traditionally, the term "commons" simply referred to natural resources, after the influential economic school, commons are richer and deeper. Actually, commons can arise whenever a distinct community chooses to manage a resource in a collective manner, with a special regard for equitable access, use and sustainability (Bloemen and Hammerstein 2015). Value creation and stewardship in commons-based systems occur through the active participation of a community of people. In line with the political approach to commons, people's interactions to devise their own locally appropriate, agreed rules for managing resources that matter to them, create the commons. Along those lines, four definitions of commons by grassroots activists can be enlightening for this stream (see Table 2).

Table 2. Definitions of commons by grassroots activists and practitioners

Bollier (2011)	A commons arises whenever a given community decides that it wishes to manage a resource in a collective manner, with special regard for equitable access, use and sustainability.
Helfrich et al. (2010)	The Commons is a general term for shared resources in which each stakeholder has an equal interest.
Siefkes (2007) Kostakis and Bauwens (2014)	Commons are material and non-material goods which are jointly developed and maintained by a community and shared according to community-defined rules.
Bloemen and Hammerstein (2015)	Commons refer to shared resources, the communities that manage them and the specific rules, practices and traditions that those communities devise. They are goods that benefit all people in society and are fundamental to society's wellbeing and people's everyday lives, irrespective of their mode of governance.

Those definitions often include an operational notion and a moral notion to define what a commons is. The operational conceptualization may put emphasis on the resource or the social practices around it (governance, institutions, customs), often dubbed as "commoning"[30], a joint process for creating things together to meet shared goals. In any case, the resource becomes co-mingled with social practices and diverse forms of institutionalization, producing an integrated system that must be considered as a whole.

[30] For Silke Helfrich (2016), a conceptual leader and grassroots activist, commoning requires (a) maximal openness and transparency, (b) subsidiarity as a driving principle, (c) active use of deliberation and consent over consensus decision making, and (d) explicit commitment to steward commons and communities.

On the other hand, a moral notion would say commons refer to goods that are fundamental to people's lives and benefit the society as a whole, regardless of how they are governed. By being essential to people, commons morally "belong" to people (Bloemen and Hammerstein 2015). The socially-driven definition of anything as a commons, is first a moral decision that is subsequently regularized and legitimized by norms, traditions, legal frameworks and policy decisions. The activist movement for commons thus carries a deeper and subversive moral claim on who owns Earth's resources, questioning Locke's underlying rationality to justify private property and the appropriation of natural resources.

In a nutshell, for this school, material/non-material and natural/man-made commons are compounded of four elements: (a) natural and cultural resources, (b) the communities who share the resources, (c) the commoning practices they use to share equitably, and d) the purpose and moral narrative that motivates and sustains the commoning practices of the community. The commons take a community and ecological perspective that sustains its endurance through time and resilience to shocks. This philosophy moves away from a purely individual rights, market and private property based worldview.

2.3.4.d.- Homo cooperans replaces Homo economicus

The commons express a strong denial of the idea that society is and should be composed of individual consumers, utility maximizers and competitive selfish gene carriers, to use just three terms often used to dub the analytical construct of *Homo economicus*. Commons and commoning also confront social Darwinism, the conceptual framework that applies Darwin's theory of species evolution to human relationships, paralleling the market, a social construct, with nature. Social Darwinism sustains individualism, competition, conflict and survival of the fittest. The dominant market morality tends to cast individualism as the ultimate fulfillment of autonomous humans and to denigrate collective activities as "inefficient" or "utopian", as if individual and collective interests were somehow mutually exclusive.

The commons breaks with this individualistic, mechanistic and competitive vision that has progressively transferred the idea of collective rights to individuals (e.g. human rights), collective ownership of private property, bundles of rights over a resource (to the absolute right to sell and destroy) and, finally, collaborative work and individual jobs. Instead, the commons discourse points to the possibility that people can live their lives as cooperative citizens, deeply embedded in social relationships, having a holistic and ecological view of the world, based on relationships of reciprocity, negotiated rules, cooperation and community.

Actually, many relevant scholars have posited that cooperation and reciprocity should be considered distinctive features of humankind (Aristotle, Mauss 1970; Illich 1973; De Moore 2015; Bowles and Gintis 2013) and recognized as a behavior that humanity used to survive on this planet (Kropotkin 1902 interpreting Charles Darwin). But this issue has long been contentious, between the different defenders of competition and cooperation as the fundamental driving forces of human behavior and therefore, human flourishing. Already in Kropotkin's years, Thomas Huxley, a biologist, championed the Hobbes' philosophy (*Homo homini lupus*) that saw struggle, fighting, and competition as the most important tenets in the survival and evolution of human society. Kropotkin, based on extensive field research in Siberia, strongly objected to the Hobbesian notion that defined humanity as no more than

selfish individuals that require an authoritarian State (Leviathan) to maintain peace and prosperity. He maintained that mutual aid was a factor that is both biological and voluntary in nature, and an enabler of progressive evolution.

2.3.4.e.- Commons as a third way to organize society and govern resources important for humans

Mainstream economists, political scholars and many practitioners have long assumed that there are only two major avenues for governing things in an efficient way, state control and provision and the market distribution mechanism (Bollier 2010). And yet, other economists, such as Elinor Ostrom and the neo-institutionalists, showed, with multiple examples, that there are efficient and resilient ways to govern natural scarce resources other than market mechanisms and state regulations, namely the self-regulated collective actions to govern common-pool resources (the commons). Governing the commons proved to be efficient, productive and resilient (Ostrom 1990). Commons-based governance is at work wherever people focus on a commons goal, whenever they share a vision, and whenever they self-organize to get something done, invented or produced, whether that cooperation is modest and local or ambitious and global.

And this type of governance mechanism was not only applied to natural resources but it is also successfully applied to governing immaterial resources such as knowledge, software and democratic tools in what is often termed as "Commons-Based Peer Production" (CBPP). CBPP can be defined as any process whereby individuals can freely and openly contribute to a common pool of knowledge, code, design or hardware, necessarily coupled to trust, shared goals and participatory governance (no dependence between free contributors), that creates a commons that is useful to all and open to new contributions. It is based on the mutualization of immaterial resources and the means of production. This type of production mode, in the Internet and computer programming sector, can often out-perform the market in terms of creativity, efficiency, social satisfaction and political freedom (Benkler 2006). In the food system, there are growing examples of open agricultural hardware communities, such as AdaBio Construction in France, which shares the designs of agricultural machines for eco-agriculture and similar projects, such as Slow Tools, Farm Hack, the Open Tech Collaborative and Open Source Ecology.

2.3.4.f.- Converging old and new commons

The renaissance of the ancient and marginalized commons (usually place-restricted natural commons in rural areas) and the invention of new ones (largely linked to knowledge commons and physical human-made infrastructures) are initiatives triggered by the multiple crises our society is experiencing (economic model, governing model, environment). Therefore, the commons are broadly perceived as a radically different narrative (grounded on different values and goals) and an alternative pathway beyond the market-led solutions and the state-promoted policies.

This epistemic school is rather active, from struggling to defend old commons from current modes of enclosure and commodification (e.g. land grabbing or privatization), to inventing new commons in the knowledge domain (Creative Commons Licenses, online services and digital content) and in the cities (food councils, squatting squares and abandoned buildings, undertaking community initiatives). Those activities, and the accompanying narratives, are part of a larger rejection of neoliberal globalizing

capitalism and non-representative practices in current democracies. The theory and praxis of the commons within this constituency can be seen, respectively, as counter-hegemonic and alter-hegemonic civic movements against capitalism and its worst formulation, the neoliberalism (Vivero-Pol 2017a).

2.4.- EPISTEMOLOGIES OF FOOD

This section unfolds how the different schools of thought have regarded food by using their epistemic tools (values, knowledge, vocabularies and ideologies) to produce multiple, often incompatible understandings. Actually, the dominant understanding is that food is not a commons, but a private good and a commodity instead. Although a small group of historians, political and legal scholars and grassroots activists could disagree with this hegemonic consideration, based on non-economic epistemologies (cf. Vivero-Pol 2017b for a systematic review of how scholars have addressed the commons-commodity valuation of food, Chapter 3). The different rationales are presented in detail below.

2.4.1.- The economic epistemology of food

2.4.1.a.- Revisiting the economic approach: social constructs can be modified

In strict economic terms, food is rivalrous. If I eat a cherry it is no longer available for others to eat. However, cherries are continuously produced by nature (wild cherries) and by human beings (cultivated cherries), so there isn't a limited number of cherries on Earth. As long as the replenishment rate outpaces the consumption rate, the resource is always available, and food is considered a renewable resource with a never-ending stock, such as air. This renewal characteristic could play against the rivalrous consideration, as there should always be food on Earth, either produced by nature or cultivated. Food produced by nature, and harvested in a sustainable way, seems to be unlimited and available worldwide. So, the food I eat would not prevent others from eating food, although they could not eat the same piece I already ate. Actually, despite current adverse circumstances (rising world population, climate-related constraints to food production, exceeding planetary boundaries, over-exploitation of natural resources), the world is producing far more food than is needed to adequately feed everybody and satisfy other non-consumption uses. However, one third of the total food produced is wasted, and more than 40% of non-wasted food is used to feed livestock and produce biofuels.

Excludability means that it is possible for one person to prevent someone else from using the good. Excludability is usually determined by ownership or property rights (Sands 2003), and the owner of a good can limit access to it. According to Ostrom, excludability is the ability of producers to detect and prevent uncompensated consumption of their products (Ostrom and Ostrom 1977), although this feature cannot be applied to wild foods. In that sense, the debate on who owns nature-made wild food is rendered pivotal to understand the proprietary rights over food. Economists also point out that because of their non-excludability, public goods get under-produced or over-consumed and that idea fits well with wild food and human demand. The degree of excludability and rivalry depends on the technological nature of the good and the definition and enforcement of property rights. Theoretically speaking, food is also excludable as we can prevent anyone from getting access to food, either by

physical means, by pricing it at unaffordable costs, or by making it illegal to access food without paying a price (even when it would be thrown away). However, should that food exclusion be enforced without reservations, that person would die of starvation and thus, it would eliminate the subject who tried to access the good, either private or public. In the next section, the normative reasons to prevent excludability with regards to food will be further elaborated. One could argue that currently most food has a price in the market, and that price deters many people from freely accessing the food. Although this is true, it is a superb example of a social construction that can be modified by social norms, as proprietary rights and the centrality of exchange values are nothing but a set of social and legal norms, whose nature and specificities are determined by each society. Many societies have considered, and still consider, food as a common good (as well as forests, fisheries, land and water). At the same time, different civilizations and communities have assigned, to natural resources, a connotation different from the one based on price tags and the exchange of commodities. If the examples exist, it is therefore a matter of making them visible and thinking of new political and legal frameworks to recognize the common nature of food.

If food, as a commodity, is a social and legal construction, the main features traditionally assigned to food (excludability and rivalry) by the neoclassical economic school can be contested or at least revisited. (See several food-related elements in Table 3 below). In that sense, it is worth mentioning that both characteristics are neither ontological to the goods nor permanent, but mostly social constructions whose nature evolves along time and depending on societal norms. As evidence, there are plenty of cases where social actors have already modified the non-rivalry and non-excludability properties of goods, so that they are either enclosed or made available as a result of deliberate policy choices (Kaul and Mendoza 2003)[31]. That has clearly happened to food, and yet the privatizing trend can be reversed and the rivalrous/excludable features of food can thus be modified if society so desires. In the next section, the excludability feature is modulated by moral considerations. Excludability is thus a normative property, not an ontological one.

2.4.1.b.- The normative non-excludability of food: Between the economic ontology and the political construction based on moral reasons

As we have seen above, public goods in the economic sense are goods from which access by individuals cannot be excluded. However, there is an ethical and political sense of the term “public good” that needs to be distinguished here, invoking an important difference between “can” and “ought to”. That is, a good is a public good anytime individuals “ought not” to be excluded from its use. This is the condition the philosopher John O’Neill (2001) rightly called “a normative public good”. The economic and normative meanings are logically distinct. A good from which individuals can be excluded is not necessarily one from which they ought to be excluded. Actually, Light (2000), drawing on those distinct rationales, posited a distinction between public goods and publicly provided goods, where the latter refers to goods that ought to be provided as if they were public goods.

Following that rationale, the case against the consideration of food as a private good with absolute property and exclusionary rights, should not be that food is not rival or excludable, as cultivated food can easily be excluded from consumption (natural food is no so evident though), and it is indeed rival

[31] See a further discussion in the next section of the political school of thought.

in that consumption. It is rather a case that it ought not to be excluded for many reasons, the most relevant being its essential nature as a vital resource for the human body. With food being considered a private good, there are, at present, more than 800 million hungry people that cannot eat adequately, because they lack monetary resources or food-producing factors, many of which need to be paid for (seeds, water, land, fertilizers, agro-chemicals and machinery). All food has a price in the market, but the state-run compensatory mechanisms are neither universal nor well-funded. In this system, 165 million children under five are chronically undernourished and more than 3.5 million children die every year on hunger-related causes.

Table 3. Food-related elements and its excludable-rivalry features

		Rivalry *The property of a good whereby one person's use diminishes other people's use*	
		Low	**High**
Excludability *The property of a good whereby a person can be prevented from using it*	**Difficult**	**PUBLIC GOODS** *Free-to-air television, air, street lighting, national defense, scenic views and universal health care etc.* **1. Emergency management for zoonotic diseases** **2. Cooking recipes** **3. Gastronomy knowledge** **4. Safe food supply system** **5. Traditional agricultural knowledge** **6. Genetic resources for food and agriculture** **7. Regulation of extreme food price fluctuations**	**COMMON POOL RESOURCES** *Timber, coal and oil fields etc.* **1. Ocean fish stocks,** **2. Edible wild fruits and animals**
	Easy	**CLUB GOODS** *Cinemas, private parks and satellite television etc.* **1. Patented agricultural knowledge** **2. Hunting in game reserves** **3. Fishing and hunting licenses**	**PRIVATE GOODS** *Clothing, cars and personal electronics etc.* **1. Cultivated food,** **2. Privately owned agricultural land** **3. Genetically modified organisms** **4. Patented improved seeds**

Note: The examples in italics are coming from Hess and Ostrom (2007), whereas the examples in bold are food-related elements (material and non-material goods or services).

Food certainly qualifies as one of those goods whose consumption ought not to be excluded to anyone, because that would mean firstly undernutrition and ultimately starvation to death. Consequently, food ought to be a commons, in the sense of being available to all, as it is essential to all and the *sine quae non* pillar of human life. The goods that any community defines as normative public goods, from which members should not be excluded, defines the relationships of need, care and mutual obligations that are constitutive of that community (O'Neill 2001), since social norms may deny exclusive property rights over certain common goods. The arguments about the public provision of health or education

are based on these types of social norms. Defining food as a good from which no member ought to be excluded is nothing but a political construct that helps define which type of community, society and nation we want to be members of.

Furthermore, the ideas of food commons or food as a public good that are at odds with current mainstream thinking, can also be justified by applying a nuanced approach, developed by one of the founding fathers of the economic approach to public goods. Robert Musgrave (in Sturn, 2010, 304) insisted that public goods be "duly regarded as the conceptual basis for specific mechanisms of the public economy, entailing collective choices and the institution-based enforcement of their outcome". So, he accepted that public goods were a result of political decisions, although Samuelson rejected that notion (Demarais-Tremblay 2014). Adding to that debate another relevant and respectful voice, John Kenneth Galbraith (1958, 111) stated that public goods are "things that do not lend themselves to market production, purchase and sale. They *must be provided for everyone* if they are to be provided for anyone, and they must be paid for collectively or they cannot be had at all" (italics are provided by author). In line with the political-economic dialectical debate, Musgrave (1959) introduced a new category of merit goods, defined as commodities that an individual or society "should have on the basis of needs", rather than ability or willingness to pay. Merit goods provide services which should apply universally to everyone in a particular situation, a view that Ege and Igersheim (2010) link to the concept of "primary goods" found in Rawls (1971, 62)[32]. Examples include the provision of food stamps to support nutrition, the delivery of health services to improve the quality of life and reduce morbidity, subsidized housing and education. When consumed, a merit good creates positive externalities[33].

2.4.2.- The legal regard of food: Common lands with food-producing commons

The historical diversity mentioned above is reflected in the current world's richness of proprietary schemes over natural resources (Schlager and Ostrom 1992), where different bundles of rights can be identified and assigned to specific food resources. The private arrangements that dominate industrial agriculture are not equally as prevalent in other areas of the world, where subsistence, traditional and agro-ecological types of agriculture are the norm. Actually, in numbers, two billion people in poor, rural parts of the world still depend on the commons (forest, fisheries, pasturelands, croplands and other natural resources) for their daily food (Weston and Bollier 2013), with over 2.6 billion living in, and actively using, forests and drylands actively managed in commons or through common property arrangements (Meinzen-Dick et al. 2006). A great majority of small-scale, traditional farmers still have mixed proprietary arrangements for food resources (Bove and Dufour 2001), such as the 500 million sub-Saharan Africans that still rely on communal lands, being just one small example (Kugelman and Levenstein 2013). The FAO estimates that about 500 million hectares around the world are dedicated to agricultural heritage systems that still maintain their unique traditions with a combination of social, cultural, ecological and economic services that benefit humanity (Altieri and Koohafkan 2007).

[32] According to Rawls (1971), primary goods are those goods supposed to be desirable for every human being, just as they are also useful for them ("every rational man is presumed to want"). Rawls, who divided them into natural and social, mentioned many good such as health, civil and political rights, income and wealth. Those primary goods were then the common base for his definition of the principle of justice. Quite oddly, he never mentioned essential resources for humans, such as food, water and air, although we cannot forget that Rawls was a political philosopher of liberal traditions, quite distant from Marxist or Keynesian positions.

[33] An externality being a third spill-over effect which arises from the consumption or production of the good/service

With regard to forests, over the last 30 years there has been an official transfer of tenure rights of forests to communities (amounting more than 250 million hectares) in Latin America, Africa and Asia (White and Martin 2002; Barry and Meinzen-Dick 2008; Sunderlin et al. 2008), resulting in slightly over 30% of all forests of the world being owned or managed by communities under legally-based collective proprietary schemes (Vira et al. 2015). The remaining land tenure of forest areas in developing countries is 61.3% administered by governments and just 8.7% administered and owned by private firms and individuals. This process of devolution (also termed as forest reform) is transferring different bundles of rights to local communities (represented by diverse constituencies, namely villages, ethnic groups and associations, etc.) and national laws integrating customary land tenure are increasingly recognized at national and international levels (Knox et al. 2012). Actually, many forest areas, often classified by national law as public lands, are in many places actively managed by their inhabitants, very often through common property arrangements.

Moreover, in a highly privatized and increasingly neoliberal Western Europe, despite centuries of encroachments, misappropriations and legal privatizations, common lands harboring common resources (that can either be governed through collective arrangements or owned collectively) still amount more than 12.5 Million ha (EUROSTAT[34]), or 5% of EU land, although other estimates increase this figure to 9% when total land, including forest, mountainous and coastal areas is considered (Brown 2005 in Brown 2006a). Although the current design of the EU CAP is dis-encouraging collective institutions to manage the commons (Sutcliffe et al. 2013), common lands represent 9% of the surface of France (Vivier 2002), 10% of Switzerland, 7.1% of Romania (Sutcliffe et al. 2013), 5.4% of Portugal (Serra et al. 2016, 172), 4.2% of Spain (Lana-Berasain and Iriarte-Goni 2015) and 3.3% of the United Kingdom. European common lands are often pastures, grazing shrub lands, forests, coastal strips and mountainous areas with peaks, estuaries, beaches, riverbeds, lakes and marshes. These commons are widespread, rich in biodiversity (Brown 2006b), strongly linked to family farming (Sutcliffe et al. 2013) and may be owned by public bodies, private organizations or individuals and yet are characterized by multiple and inalienable rights.

In the United Kingdom, common lands are a mix of usage rights to private property and commonly-owned lands[35]. Local residents, called commoners, often have some rights over private land in their area[36], and most commons are based on long-held traditions or customary rights, which pre-date statute law laid down by democratic Parliaments. The latest data indicate England has circa 400.000 ha (3%) registered as common land[37], Wales 175.000 ha (8.4%) and Scotland 157.000 ha (2%), amounting to a total 732.000 ha of the United Kingdom[38]. Common lands in Spain, those owned by communities and not being part of state-owned territory, amount 2.1 million ha, according to the most accurate agrarian census. These lands, with more than 6600 farming households, that depend entirely on them for earning their living, are grounded on legal principles that ensure the preservation of the

[34] With statistics only reflecting data from 13 EU members and referring only to available agricultural land, not including forest or coastal areas.
[35] A good and well-known example is the 500 practising commoners in the New Forest, Hampshire.
[36] The Countryside and Rights of Way Act 2000 gave the public the right to roam freely on registered common land in England
[37] http://webarchive.nationalarchives.gov.uk/20130123162956/http://www.defra.gov.uk/wildlife-countryside/protected-areas/common-land/about.htm [Accessed August 14, 2017]
[38] Author's estimate based on previous data. Northern Ireland has not been included in this estimate.

communal condition of the property, as they cannot be sold (unalienable), split into smaller units (indivisible), donated or seized (non-impoundable), nor can they be converted into private property just because of their continued occupation (non-expiring legal consideration) (Lana-Berasain and Iriarte-Goni 2015). The 1978 Spanish Constitution (Article 132/1) included an explicit reference to the commons, also defined in the Municipal Law of 1985. Ownership corresponds to the municipality or commonality of the neighbors and its use and enjoyment to the residents. In Galicia, Spain's autonomous region, there are over 2800 communal forests, owned by neighbors, representing 22.7% of total surface total surface (600,000 ha). They are owned and managed by associations of resident neighbors[39], inhabiting visigothic-based parishes[40] a legal term recognized in the 1968, 1989 and 2012 laws[41] (Grupo Montes Vecinales IDEGA 2013). The commoners that inhabit those parishes get several inputs needed for small-scale farming from those communal forests, such as feed for livestock, manure, cereals, firewood and medicinal plants. Recently, many wind generators have been installed in those lands, yielding additional revenues for the neighbors.

Common lands were pivotal for small farming agriculture throughout Europe's history, as they were a source of organic manure, livestock feed and pastures, cereals (mostly wheat and rye in temporary fields), medicinal plants and wood (De Moor et al. 2002). Peasants pooled their individual holdings into open fields that were jointly cultivated, and common pastures were used to graze their animals. Their utility to human societies enabled them to survive up to the present day, and customary food initiatives, based on common resources and non-monetized food values, are still alive and closer to us than we think. However, the relevance of the socio-economic importance of the food-producing commons in Europe is hardly noticed by general media and hence neglected by the public authorities and the mainstream scientific research. And yet, they survive by being meaningful to the Europeans living nearby. Anyone can forage wild mushrooms and berries in the Scandinavian countries under the consuetudinary Everyman's Rights[42] (La Mela 2014; Mortazavi 1997), the Spanish irrigated *huertas* (vegetable gardens) are a well-known and healthy institution (Ostrom 1990, 69-81) and there are thousands of surviving community-owned forests and pasturelands in Europe, where livestock are raised free-range, namely *Baldios* in Portugal (Lopes et al. 2013), *Crofts* in Scotland, *Obste* in Rumania (Vassile and Mantescu 2009) and *Montes Vecinales en Mano Comun* in Spain (Grupo Montes Vecinales IDEGA 2013). Finally, one current example can serve as a memory of former flourishing food-producing systems. In the medieval village of Sacrofano (Roma province, Italy), a particular and ancient Agricultural University (Università Agraria di Sacrofano[43]) still serves local residents by governing 330 hectares of fields, pastures, forests and abandoned lands, where the citizens residing in the municipality can exercise the so-called rights of civic use (customary rights to use the common lands).

Outside Europe, there are also documented examples of live and functional food-producing commons in Fiji (Kingi and Kompas 2005), Nigeria (Ike 1984), the world-famous examples of US lobster fisheries

[39] Those who have "open house and a burning fireplace" what means they regularly inhabit that house, either owned or rented. Therefore, commonality, as a proprietary entitlement to use common resources, is not inherited but granted by living in the community.

[40] http://montenoso.net/ [Accessed August 14, 2017]

[41] Law 13/1989 (10 October) de *Montes Vecinales en Man Común* (DOG nº 202, 20-10-1989) and Law 7/2012 (28 June) de montes de Galicia.

[42] Legislation in Finland (www.ym.fi/publications) [Accessed August 14, 2017]

[43] The term "Università" derives from the ancient roman term "Universitas Rerum" (Plurality of goods) while the term "Agraria" refers to the rural area. http://www.agrariasacrofano.it/Storia.aspx [Accessed August 14, 2017]

(Acheson 1988; Wilson et al. 2007) and Mexico's Ejidos (Jones and Ward 1998) to name a few. In various other countries, such as Taiwan, India, Nepal and Jamaica, land ownership of ethnic minorities is also granted as common land.

2.4.2.a- The right to food: Empowering or disempowering the food commons?

Value-based narratives of transition, largely condition the preferred policy options, inform the thinkable and unthinkable alternatives and shape the enabling legal frameworks that can steer transition pathways. In that sense, as a rationale defended in this thesis, the human rights dimension of food is one of the elements that cannot be exchanged in the market, and it confers an important legal and political primacy to guarantee food access to every human being. The right to food is one of the few "fundamental" (in legal terms) human rights, since it is associated with the right to life, the right to be and the Rooseveltian "freedom from want". This individual right is compounded with an immediate dimension (to be free from hunger) and a progressive realization, once hunger has been satisfied, to have access to adequate food or the means to produce it.

Although the right to food defends the enforceability of actions to guarantee access to a vital resource that is absolute, and thus not mediated by cultural preferences, political ideas or place and time particularities, the mere construction of food and eating as personal entitlements is subject to ample controversies (as we will see later, with their absence in the SDG document and the weak developments at national and international levels). However, on the positive side, the social construction of food as a right, is understood in a commons sense in most cultures (Hossain et al. 2015), which shouldn't come as a surprise.

A growing number of countries are including this right in their constitutions and legal frameworks (Knuth and Vidar 2011; Vidar et al. 2014; Vivero-Pol 2011), the jurisprudence is mounting, with more than 60 cases where this right is used as a legal rationale (IDLO 2015) and hunger-struck populations, judges and lawyers are becoming more aware of their procedural possibilities (Vidar et al. 2014). And yet, the dwindling road to the right to food has not been fast or easy, and several lessons can be drawn from the achievements to date. Some authors perceived the right to food as a useful policy guide, to question the balance of power in food systems (De Schutter 2013), avoiding the "we have a situation" analysis that neglects the main causes of evident symptoms (chronic and acute malnutrition, obesity and hunger-related deaths). In that sense, the right to food can be seen as a subversive analysis of the root causes of malfunctioning food systems (Lambek 2015).

The rights-based approach to food has certainly been assessed positively by numerous researchers, calling it the "glue of diverse constituencies" (Callenius et al. 2014) and an "aspirational driver of social struggles" (Hossain et al. 2015) opening up spaces for civil society participation and monitoring (Lambek 2015; Vivero-Pol 2011) and mutually reinforcing and enriching food sovereignty (De Schutter 2014; Lambek 2014). When dealing with legal approaches, the due process becomes as important as the final output (Vivero-Pol 2010), either when constructing right-to-food based legal frameworks, or when claiming justiciability and redress of right-to-food violations. There are hence many indications that support the empowering features of this right.

And yet, the human rights approach to food is not only rejected by some states (as explained in Chapter 6) (Messer and Cohen 2007; Margulis 2015), international organizations (i.e. G8, G20, WEF, WTO, WB, IMF) and corporations (Lambek 2014). It is also accused, by some grassroots movements, as mostly top-down (from state to citizens) and not sufficiently emancipatory. The right to food, as well as all the other human rights, places a great burden on state obligations (Claeys 2015a), the State being the main responsible agent and guarantor of its citizens' rights. This leads to the oft-cited case of having a state violating the same right it was supposed to guarantee, pointing to a clear clash of roles (Lambek 2015). Moreover, being an individual entitlement, this approach neglects or undervalues the customary collective rights and the collective duties other members of society have, vis-a-vis their own peers, thus neglecting the responsibility of consumers, trans-national corporations and non-state actors such as foundations and NGOs (Narula 2015). The human rights framework is heavily associated with responsible national policies and enforceable legal frameworks (Claeys 2014), both of them the state's responsibility. Human rights also require a deep technical and legal knowledge to be claimed and defended by those who have the right violated or by average citizens. That is why both the rather technical formulation and the way of "progressive realization" (Vidar et al. 2014) fail to capture the imagination of hungry communities (Claeys 2015a).

Grassroots activists and commoners recognize the usefulness of the right-to-food tool to denounce food inequalities, but they also point to the dominance of the Western, liberal and individualist conceptions of rights and state-centrism (Charvet and Kaczynska-Nay 2008; Claeys 2014), putting the emphasis in legal and political rights that sustain economic liberty and democratic equality, but undervalue or even neglect socio-economic rights and collective customary rights, grounded on fraternity, cooperation and collective governance with responsibilities and entitlements. Furthermore, the state monopoly in crafting, approving, implementing and supervising the "official", internationally recognized human rights, disempower citizens and communities to create their own binding rights, duties and entitlements, vis-a-vis the other members. This rationale is nicely illustrated by two recent claims by the food sovereignty movement, namely their quest for a new "right to food sovereignty" (Wittman 2011; Clays 2015b) and the international diplomatic campaign to draft and approve an international declaration of Peasant's Rights (Vandenbogaerde 2015). Summing up, too much emphasis in state-driven, individual human rights may certainly disempower self-regulated, collective actions for food and civic "commoning" practices in a food commons regime. And, as a reaction, counter-hegemonic emancipatory movements that seek to govern their own livelihoods do not cease to propose new rights from the bottom up (Claeys 2012).

2.4.3.- The political regard of food as a commons and a public good

Although many natural resources, services and political achievements were included as examples of the Global Commons-GPGs literature[44], little attention has been paid to the global commons related to agriculture and food security concerns (FAO 2002), and food and nutrition security (FNS) was not mentioned once in the literature reviewed. Since the Global Commons-GPGs stemmed from the

[44] The long list of GPGs proposed by some relevant references includes measuring standards, definitions of property rights, currency exchange rates and trade liberalisation (Kindleberger 1986); international economic stability, international security, the global environment, humanitarian assistance, knowledge (Stiglitz 1999); peace and security, the control of pandemics, natural public goods (the environment, biodiversity, climate), trade openness, international financial stability and knowledge (International Task Force on Global Public Goods 2006).

economic definition of public goods (where food is plainly defined as a private good), no food-related natural resource or human-made service, situation or agreement was deemed to merit the consideration of GPGs. Only recently, some authors have started to elaborate rationales to justify why FNS should also be treated as a Global Commons-GPGs (Page 2013; Vivero-Pol 2015).

However, applying the reductionist economic rationality in strict terms, food can be considered as non-rival as long as the consumption rate does not exceed the production rate, which has been the case for many natural products up to the mid-20th century (Vivero-Pol 2013). Moreover, based on moral reasons, food is a non-excludable good, in the sense that no one ought to be excluded from their consumption or they would perish. It is therefore a Normative Public Good (O'Neill 2001).

Food and Nutrition Security fits nicely with Kaul et al. (1999)'s definition of GPGs, namely "outcomes that tend towards universality in the sense that they benefit all countries, population groups, and generations". As everybody eats, no matter where, how and when, and disregarding gender, race, religion, political ideology and class, we can conclude that FNS for all shall be re-constructed politically, legally and economically as a commons (public good) at national level and a Global Commons-GPG at world level. In accordance with the political approach to the public good theory, FNS shall be provided to societies, as a whole, as it is in everybody's interest, and the state and other relevant stakeholders, such as private sector and civic movements, have an obligation to do their best to do so. This idea was previously suggested by Hans Page (2013) in a New York University working paper, but it seemed to have a short trajectory and it was not echoed at all in international fora.

2.4.3.a.- Food as a commons: Essentiality and commoning define the alternative narrative

So, for many political scholars, food can be regarded as a commons by the act of food commoning (producing, transforming and eating food together, based on multiple reasons and not exclusively reduced to profit maximization). Food is jointly produced, transformed, distributed and eaten by different people, using different resources (many of them commons as well), and it is therefore a product of many hands, often eaten together since commensality is still the norm all over the world. This valuation of food as a commons is more evidently done at a local level, in place-restricted rural and urban communities. Although the food commons are better expressed at local level, the underlying narrative can be expanded from niche to niche until the place-restricted meaning covers a broader area and a much greater constituency.

The weakness of the public good approach to food lies in the top-down approach to governance from state institutions based on policies and laws (command and control type of politics) and the reliance on market-efficient services at the expenses of communities, people and alternative means of distributing resources. Food as a public good could be monopolized by the state, and people's participation could be neglected. Legal institutions based on commons favor the bottom-up initiatives of citizens to counter the traditional private sector-state divide and to respond to threats to our common heritage, and the urgency to produce GPGs seems to justify a turn to new public-private partnerships and trust funds in development cooperation (Cogolati 2016).

However, under a commons approach to food, communities are placed at the center of the governing and stewardship process to manage and benefit material and non-material resources essential for their

livelihoods. This approach basically recasts the traditional idea of development, based on private property and wealth accumulation, and instead focuses on reflexive democracy, participation, community-based development and rights-based approaches (e.g. food, water, clean air, land and seeds as human rights), indigenous rights, self-determination, the right to communal ownership and peasant rights. Additionally, in the case of food, its essentiality for human survival adds another feature that supports its valuation as commons: Food should be denied to no human.

2.4.3.b.- Commons or public goods? Both oppose commodification with nuanced meanings

Although "food- as a commons" and "food as a public good" may share some conceptual, practical and aspirational elements, they cannot be equaled. It will thus be necessary to render explicit the differences and similarities between both considerations. The political scholars rather opt for developing the concept of public goods, transferring the primary responsibility to the state, whereas the activists prefer to develop the idea of commons, retaining the leading role for development in the same communities that create, govern and enjoy the commons. This difference is analyzed in this section.

As commons belong to everyone and are in everyone's interest, some scholars and policymakers consider they should be protected and governed by the state, to prevent over-exploitation and avoid the "tragedy of the commons" (Hardin 1968). This approach has been used frequently to rationalize central government control of all common-pool resources (Ostrom 1999). However, the concept of public goods and commons encompasses different meanings, as the subjects to whom the goods are subjected are different. The mandate and governing responsibility of public goods falls under the state's responsibility and, therefore, it is the government that controls the public goods on behalf of their citizens. However, the overall responsibility to create, govern and steward a common resource rests in the community (or the society in a broader sense, in a self-organized manner and with their own institutions). The cultural and political embeddedness of the commons in the human societies that both govern and benefit from them, asserts that there is an important role for self-organized governance (civic collective actions), that both challenges and complements formal state control and market mechanisms. So, whereas a public good does not always mean communities that manage their local resources (Quilligan 2012), commons are intrinsically linked to governing communities, though exceptions can also be found in traditional commons still owned collectively by managed by the state (e.g. baldios in Portugal after Serra et al. 2016).

Regarding the "public good" concept, there are also misinterpretations and confusing vocabularies, as in the commons case. An important conceptual difference has to be made between the general understanding in policy making about "the public good", "the common good" and "the public interest" as something that is beneficial (ethically good) at a broader societal level and the well-established but specific meaning of a public good by the economists (Morrel 2009). Public good in political terms, the oldest meaning, should not be confused with public good in economic terms (highly theoretical and recent). Another usual confusion is that public goods are to be provided, or owned, by the public sector. Although it may be the case that governments are involved in producing public goods, this is not necessarily the norm. Public goods may be naturally available, being social situations desired by human societies (such as peace or universal education), or even produced by private individuals and firms (public road network), by civic collective actions or may not be produced at all (stable climate).

2.4.3.b.i.- Public goods as market failures

The founding fathers of the economic approach agreed that public goods were those goods that markets fail to provide adequately, because of their non-rival and non-excludable nature. From the point of view of neoclassic economists and libertarians, they were either under-supplied (Sands 2003) or over-consumed (Hardin 1968) and thus considered as "market failures" that cannot be left to the invisible hand of the free market. A market failure occurs when the positive contributions or negative consequences of an action are not adequately reflected in the market price of the related products. From this perspective, public goods are accessible to growing numbers of people without any marginal cost and because of the inherent "free-rider" problem in the provision of these goods, coercive authority is considered necessary to ensure contribution by all (Olson 1965).

The concept of public goods is also linked to the economic notion of externalities (Cornes and Sandler 1994). An externality refers to a situation where any given action has unintended or unwanted side-effects that benefit (positive externality) or harm (negative externality) another third party that would otherwise not be associated with the action. In general, the benefit, or cost imposed, is not compensated for through market transactions. A pure public good is an extreme case of a good that produces positive externalities. There is, therefore, no profit motivation to lead private firms to supply a socially efficient quantity of such goods. In many cases, markets for public goods will not even exist (e.g. fresh air).

In classic literature, two solutions are normally invoked to tackle this problem of public goods: Hobbes' Leviathan in the form of state policies and regulatory frameworks that guarantee its provision, and the Lockean right to private appropriation and absolute ownership by individuals, with the establishment of property rights which allow excludability and thus facilitate market exchanges. In the eyes of economists, this quality, the wide dispersion of benefits and the impossibility to capture the profit, renders them unsuitable for private entrepreneurship and they are, therefore, best provided for and financed by the state, for the welfare of its citizens (Samuelson 1954; Muraguri 2006). Those pure public goods, provided by the government, are usually financed from tax revenues. Different funding options result in different economic outcomes, in terms of the distribution of the cost burden between taxpayers and the actual users of the good or service.

2.4.3.b.ii.- Public goods as pillars of our societies

While economists label public goods as problems, in the real world public goods are enabling goods and services that individuals and businesses use every day and often enjoy without being aware that someone else is producing and distributing them, which may be other humans or even nature itself. Public parks, pedestrian zones, libraries, the currency stability between countries, the internet, satellites that allow a global coverage for cell phones, food safety regulations that prevent food-borne diseases, agri-biodiversity, wild pollinators and cooking recipes are examples of these public goods to name just a few. Kallhoff (2014) argues that public goods shall be understood differently from the neoclassic economic approach to define how the goods are (ontological approach), instead of how the goods function, are perceived or are working in any specific situation (phenomenological approach). Public goods are those which (a) contribute to social inclusion, (b) support the next generation of the

public, and (c) strengthen a shared sense of citizenship. With such understanding, public goods can only be managed through politics, namely consensus building, collective participation and transparent decision making, inspired by the values of freedom, justice and morality (Stavenhagen 2003).

2.4.3.b.iii.- Commons and public goods: Different social constructs with similarities

Both concepts are still often confused, exchanged or even mentioned as synonyms in the field of development (Severino 2001). For instance, knowledge has been dubbed both as Global Public Goods and commons (Stiglitz 1999; Hess and Ostrom 2007; Frischmann et al, 2014). So, it is worth mentioning the similarities and differences between commons and public goods, to help define the normative concept of food as a commons. Both are not the same in strict terms, although often interchanged in political and everyday debates. Nevertheless, both public goods and commons share certain characteristics that differentiate them from commodities, such as both being desirable by citizens (Hampson and Hay 2004) as they generate tremendous benefits to society and presume a legitimacy of governmental or collective activity (Ver Ecke 1999).

As mentioned earlier, the understanding of the commons privileged in this paper is based on collective decisions about the usefulness of any given resource to the community/society and the agreement to govern it collectively for everybody's interest. Commons are created, by collective choice, to meet unmet social needs, and the decision-making constituency can have clear borders (a community, village, city or country) or have an extended constituency, as in a global commons (the entire humanity). Once created as social constructs by a community, commons can be recognized and protected by law, with different proprietary regimes (private, state or collective), bundles of rights and levels of access, management and withdrawal to that good. Moreover, the allocation mechanisms (market-based, rights-based entitlements, sharing, giving and bartering) can also be negotiated to find the most adequate arrangement. The production and/or delivery of a commons can be contracted out to private agents under specific contracts (e.g. tuna fishing licenses and underground and underwater exploitation agreements).

On the other hand, the concept of public goods is considered a "market failure" by neoclassical economists (Samuelson, Buchanan), because they are not amenable to market production, and as a collective decision that is transferred to the sovereign state for implementation and governance (for instance, the recent referendum in Slovenia that decided that water is to be considered a public good and a commons to be enshrined in the Constitution), usually funded with citizen's taxes and public expenditure. Public goods cannot effectively be produced by the market and/or their externalities are so far-reaching that public intervention is needed to guarantee production and fair distribution.

The consideration of any essential good as a commons or public good, from the political perspective, share several commonalities, such as:

- Both are defined as goods and services essential for human survival (Bloemen and Hammerstein 2015) and deemed desirable as they generate tremendous benefits to society.
- Both can be accessed (or are supplied) to meet a need, not to realize surplus revenue or profit maximization (Sekera 2014).

- Both are the outcome of complex political processes by groups of people (Stretton and Orchard 1994), according to what is perceived as a "public need", rather than containing certain inherent characteristics of non-excludability and non-rivalry (Wuyts 1992).
- Both can only be governed through collective choices, such as consensus building, collective participation, transparent decision making, inspired justice and morality (Stavenhagen 2003) or voted for under a democratic system (Sekera 2014).
- Both are constructed through civil struggles and utilized by enough people so that they benefit more than a privileged few (Moore 2004).

Commons and public goods are governed, owned and produced by self-organized groups or states, because their social or economic benefits are so important that society decides that all citizens should have access to them, regardless of ability to pay.

2.4.3.b.iv.- Commons are led by people (with states), public goods are led by states (with people)

The main difference between both concepts is that commons are created and governed by self-organized people (communities, networks, tribes, civic association, communities of practice, etc.) and the main responsibility for that governance still lies in the community itself (the members of that community), whereas the public goods are generated and governed by the sovereign state, with binding laws and public policies, as the official and hegemonic representation of the community with governing power over the public goods for the benefit of the entire constituency (the citizens).

Commons are usually governed by people (although examples can be found where community owned resources are actually governed by state authorities) and public goods are often governed by states (although examples can also be found where state owned resources are devolved to communities for local governance). Since many types of commons are nowadays legally recognized and protected, it is worth mentioning the national legal structures that protect the commons worldwide as a public good (Sekera 2014).

Resources regarded as commons can only be managed through politics. Consensus building, collective participation, transparent decision making and democratic commitments are key elements to building the politics of the commons, inspired by the values of freedom, justice and morality (Stavenhagen 2003). The commons contain many of the keys to move towards a social model that is sustainable and based on principles of social justice, operating neither strictly under the logic of private property or under state hierarchy. In political terms, commons are defined by entitlements, regulations and sanctions that allow, or prescribe, certain activities for specific groups or people.

Fine-tuning the nuances between both concepts, public goods do not often involve communities that manage their local resources, as it is typically associated with state-owned and government-managed services, without people or community involvement (Quilligan 2012). While public goods lack "commoning", there is no commons without "commoning". That is the key difference. Moreover, while the commons approach is rooted in community wellbeing, sustainability, embeddedness, participation and agreed rules, the public good approach seems to be largely legitimized through a criterion of economic efficiency (Cogolati 2016) and government control and ownership.

Governing public goods at national and international levels, increasingly incorporates multi-donor trust funds, philanthropic foundations and public-private partnerships to elaborate public policies and allocate funds (McKeon 2015), which leaves meagre space for the actual people to decide the public goods that are relevant to them. The current narrative of capitalism and sovereign states reinforces the duopoly that governs commons without the people, and that's why June Sekera (2013) posits that "we need to reclaim the term "public goods" from neoclassical economics with its pejorative connotations, and restore its original but severed connection to the political process and the public economy".

2.4.4.- The grassroots activist's regard of food

2.4.4.a.- Converging narratives of grassroots movements and local food innovations

The food system is complex, and there is an urgent need to combine multiple and partial solutions into a viable transition with shared values and multiple but convergent praxis. Alternative civic food innovations, both customary and contemporary, present multiple narratives to confront the dominant near-monolithic discourse of the industrial food system, they converge on shared values about the valuation of food dimensions and walk-the-talk on building alternative niches. These niches, as yet unconnected nodes of discontent and struggle, can now knit a crowd-sourced alternative to the industrial mainstream. Other than their price in the market, the diverse civic food innovations have the valuation of the food dimensions in common, the convivial aspects of food production, collection, preparation and consumption, and peer participation on an equal footing in designing, constructing and governing locally-embedded food initiatives. Moreover, the other's regard for caring about the other (neighbor, community, city, region or planet) is a distinctive feature of well-nourished communities (Kent 2015).

Local transitions towards the organization of local, sustainable food production and consumption are taking place today across the world. Food is being produced, consumed and distributed through a multiplicity of open structures and peer-to-peer practices, aimed at co-producing and sharing food-related knowledge and items. Civic collective actions for food are generally undertaken, initially at local level, with the aim of preserving and regenerating the commons that are important for that community. Three examples will serve to highlight this movement, the Food Commons in California (USA), the Food Policy Council in Cork (Ireland) and the Walloon Network of Local Seeds (Belgium).

The Food Commons[45] is an initiative launched by a group of scholars, activists and organic agriculture entrepreneurs from California to re-connect food production and consumption. The Food Commons has developed an alternative path to re-build different local and regional food systems where profit maximization, a lack of accountability and the exploitation of common resources are not the norm. This initiative envisions a re-creation of the local and regional food systems based on the stewardship of common resources, community-based organizational and economic models, the science and practice of sustainable agriculture and changes in food and agriculture values. Their main goals are the preservation of common benefits throughout the value chain and to achieve a sustainable, steady-state profitability. Institutionally speaking, the initiative encompasses a) a Food Trust (a non-profit

[45] http://www.thefoodcommons.org/governance/ [Accessed August 14, 2017]

entity to acquire and steward critical foodshed assets), b) a Food Hub (a locally-owned cooperative that builds and manages the physical infrastructure and facilitates the food chain logistics throughout the system) and c) a Food Fund (a community-owned financial institution that provides capital and financial services to foodshed enterprises). These three institutions are designed and governed by the people as members of the Food Commons Initiative.

Local food policy councils are mushrooming in Western countries (Scherb et al. 2012; Carlson and Chappell 2015) and the Cork Food Policy Council[46] in Ireland typifies their goals and motivations. This council is a partnership between representatives from the community, food retail, farming, fishing, restaurant, catering and education sectors, plus the environmental, health and local authorities that seek to influence local food policy, improve equitable access to healthy food and develop sustainable and resilient food systems. It evolved from a local experience, the Holyhill Community Garden, supported by the Cork City Council. The initiative enables people, eaters and producers to re-gain control over the local food system, foster community relations and shared values around local, organic and non-commodified food.

Civic collective actions for food have been mushrooming in Belgium over the last decade. They can largely be regarded as civic movements (e.g. AMAP - Associations to support Peasants' Agriculture and GAS - Solidarity Purchasing Group), or social enterprises (e.g. GAC - Joint Purchasing Groups in Walloonia and Voedselteams and in the Flandre region), considering the importance given to the social bonds between eaters and between eaters and food producers, and the importance given to food products and their accessibility. "Eating better", "improving local economies" and "transforming the food system" epitomize the three main attitudes behind the participation in these collective civic actions. As agents of change, acting in innovative niches, their valuations of food seem to be correlated to their political stances, vis-a-vis the dominant industrial food system. For example, those who consider that being a member of an alternative food buying group has no political intention are split (50%-50%) between those who value food as a commodity and those who value food as a commons. However, those who agree that being a member has a political intention, tend to value food as a commons (73%) rather than a commodity (27%). In brief, although being part of a so-called alternative food movement does not make someone a revolutionary, those who value food differently (as a commons) are more likely to act politically to transform the food system than those who value food as a commodity (Vivero-Pol et al. in prep).

2.4.4.b.- Crowd-sourcing a transformational pathway with food as a commons, public good and human right

However numerous, communicative and transformative those initiatives may be, the varied food innovations taking place in multiple scenarios (contemporary urban settings as well as customary rural villages) are not yet forming a self-aware, alternative movement, but they are big and disrupting enough to present a strong alternative paradigm in the years to come; once they have organized better as a connected polycentric web, recognized their different worldviews and defended their shared values and commonalities of the consideration of food as a commons (Vivero-Pol 2017c). Those different "fields of struggle autonomously marching forward on parallel paths" will form the

[46] http://corkfoodpolicycouncil.com/ [Accessed August 14, 2017]

revolutionary crowd (Hardt and Negri 2004) to confront the hegemonic corporate food system and its dominant productivist paradigm with the vindication of the commons (Dardot and Laval 2014). The pursuit of the commonwealth, common good or Buen Vivir (Gudynas 2011), in a sustainable and fair manner, will serve as a catalyst for the active crowd to become a collective political subject, in a type of collective organization known as techno-politics (Toret 2013), or reflexive governance (De Schutter and Lenoble 2010). And, this new political actor, the many people acting in networked concert, will define the contemporary zeitgeist that will de-construct the vital resource, food, from its absolute commodification, towards a consideration as a commons.

The emancipatory food pathway will not be guided by one single agency of transition, be they Community Supported Agriculture, Food Policy councils, vegans, commoners, transitioners, organic consumers, zero kilometer customers, agro-ecologists, food sovereignty advocates or right-to-food campaigners, but a connected combination of different transformative agents of change. While recognizing the nuances, priorities and particular praxis, each agent will share the valuation of food as a vital resource, important for everybody's and Earth's health and survival and, therefore, a public good politically speaking; a commons philosophically speaking and a human right in legal terms. This minimum set of moral grounds, shared by a multitude of transformative agencies, clearly opposes the consideration of food as a commodity, the narrative elaborated and communicated by the industrial food regime. The alternative food-way will be crowd-fed, by multiple actors with their own narrative around a core moral ground: Food is not a commodity, but a public good, a commons and everybody's right.

2.5.- DISCUSSION

This chapter has unfolded the genealogies and components of different epistemic approaches to commons (as resources plus governing practices) and examined how those epistemologies have understood food. The author considers four epistemic schools to interpret the commons, three from within the academic domain (but whose narratives extend far beyond academia) and one encompassing the understanding of grassroots activists, practitioners of commons initiatives (dubbed "commoners") and some engaged scholars. The defining features of each school of thought are summarized in Table 4.

Table 4. Defining features of five schools of thought on commons

<table>
<tr><td colspan="2" rowspan="2">Typologies of commons</td><td>Ontological (resource-based)</td><td colspan="4">Phenomenological (community-based)</td></tr>
<tr><td colspan="2">Commons as institutions</td><td>Commons as social practices</td><td>Commons as universal rights</td><td>Commons as transformational politics</td></tr>
<tr><td rowspan="2">Operational (What commons do)</td><td>Utilitarian</td><td>Economic</td><td></td><td></td><td></td><td></td></tr>
<tr><td>Descriptive</td><td></td><td>Legal</td><td colspan="3"></td></tr>
<tr><td rowspan="2">Normative (what commons should do)</td><td colspan="2" rowspan="2"></td><td colspan="2">Political</td><td></td><td></td></tr>
<tr><td colspan="4">Grassroots Activists</td></tr>
</table>

Note: The three typologies to classify commons are based on Van Tichelen (2015), Verhaegen (2015), Perilleux and Nyssens (2016), and Ruivenkamp and Hilton (2017)

For legal scholars, commons are usually place-restricted and determined by property entitlements. For economists, commons are determined by the inner properties of the resource. For activists and some political scholars, commons are a human-made praxis of collective governance and self-organized institutions. Therefore, the latter epistemology (to which I subscribe) posits that commons are neither types of resources with ontological properties, nor types of proprietary rights, but rather ways of acting collectively based on participation, self-regulation and self-negotiated principles and goals. Further, this praxis can be local, with clear physical boundaries, as studied by Elinor Ostrom, or embrace the whole human race with a global good. Additionally, activists posit that capitalism evolved to its current status by enclosing and privatizing everybody's commons, so the clash between both narratives is evident.

2.5.1.- Different epistemologies lead to confusing vocabularies

The different academic epistemologies (schools of thought) that theorized the commons have produced multiple meanings for the same terms and different normative valuations for similar resources. Since the commons have become a relevant academic and political topic over the last two decades (Berkes et al. 1989; Van Laerhoven and Ostrom 2007; De Moor et al. 2016), these discrepancies among the different academic epistemologies and between the academic and non-academic constituencies, become politically relevant as how to define what a commons is and how food can be valued are subjects of political debates.

As we have seen throughout this chapter, the vocabulary of the commons includes different interpretations of the same resource (be that water, knowledge or food), different meanings for the same term, tensions between different epistemic schools with their own supporting values and fuzzy meanings for common terms such as the "public good", 'for the common good" and "commonwealth". The diversity of approaches has produced a plurality of meanings for the same term. In Table 5, different understandings of the four epistemic schools on five essential goods for humans are presented. One can see how the normative considerations (private, public and commons) are different and conflicting in some cases and certainly diverse and evolving. That points to the commons-commodity categories as phenomenological and always situated in a particular place and historical period (Mattei 2012; Szymanski 2016).

As a token, the term "Commons" may refer to (a) common-pool resources, understood as material goods in economic vocabulary that are rival in consumption but difficult to exclude (e.g. ocean tuna); (b) commonly-owned goods, material and non-material resources that are owned by a community, collective institution or group and whose proprietary regime and entitlements differ from that of absolute private rights and state ownership (e.g. communal forests in Spain); (c) free-access open knowledge, that may be subject to IP rights, such as creative commons and copyright licenses, or it may belong in the public domain (e.g. cooking recipes and classic books); or (d) abstract, desirable situations that benefit humanity (e.g. peace or universal health in political vocabulary). Finally, contradictory interpretations of similar resources can be found in the literature, with scholars arguing for air as a public good and a commons, because it is not rival and people cannot be excluded from breathing, while others argue that air is rival, because the oxygen in the air breathed by one cannot be breathed by anyone else. The same applies to knowledge or seeds.

Table 5. Different epistemologies' confusing vocabularies on commons and food

Schools of Thought / Resources	Economic Based on rivalry and excludability Reductionists Ontological Commons (or common-pool resources) are market failures	Legal Three types of property, five bundles of rights Reductionists Collective-ownership can be interpreted as a type of private property or category of its own	Political Diversity of social arrangements created by people Phenomenological Co-existence of commons & capitalism	Activist Struggle for old commons, inventing new commons. Commons as an alternative to capitalism
Water	Private good being commoditized	Public-private-collective ownership with different bundles of rights. Recently a human right	Public good (generalized) although scholars & countries support privatization	Commons (res nullius) in historical times and current legal systems, public good and human right
Knowledge	Public good	Complex public-private-collective regimes IP regimes are enclosing access	Knowledge itself as a commons, but physical structures (seeds, books) treated as private goods	Commons
Health	Public good although health services have always been privately provided	Non-defined proprietary regimes. Human right with universal access as entitlement	Public good provided by public & private means	Public goods
Education	Public good although educations services have always been privately provided	Non-defined proprietary regimes. Human right with universal access as an entitlement	Public goods provided by public & private means	Public goods
Food	Private good and Commodity	Public, private and collective property regimes. Human right without universal access as entitlement	Private good provided by private, public and collective means	Owned and managed by collective, public and private entities

2.5.2.- The economic epistemology is hegemonic today

Although we accept the commons have multiple meanings, narratives, vocabularies and supporting values, one school of thought gained supremacy over all others in the second half of the 20th century, the economic epistemic regard. The economic approach to the commons became culturally hegemonic, in the sense that it became widespread beyond the economic academic milieu where it was conceived as a theoretical exercise. It had first reached a high degree of consensus within the discipline and, later on, it served the purposes of the ruling elite (policy makers and private entrepreneurs) to grow their entities (the state and the market), by enclosing and privatizing the commons that once belonged to people and communities. This approach, based solely on the rivalry and excludability, taken to be inherent in the good, is both theoretical and reductionist. Theoretical, because it is extremely difficult to find concrete examples where the two defining features (rivalry and excludability) are fully operationalized and reductionist, because it is evident that reducing the historical, political and legal complexity of commons (created by people) to just two features inherent to the resources, represents an impoverishment of a highly diverse place-based, time-dependent human constructions. The resources, governing institutions, cultural trajectories, dominant narratives and moral principles that sustain the commons are all complex and fluent, as Elinor Ostrom taught us,

so that distorting reductionism and overstated, simple models should be avoided (Frischmann 2013). And yet, the economic meaning of commons is still dominant, reinforced by other normative constructs, such as the tragedy of the commons (Hardin 1968), absolute proprietary regimes, private property as natural law, individualism, social Darwinism, competition over cooperation as main driving motivation, and the theory of rational choice. All of them have become the intellectual pillars that sustain the neoliberal socio-economic regime that is so hegemonic.

2.5.3.- Commons are relational and transformational

The concept that the commons is relational, since it cannot be understood without the particular value-based relations between the community and the resource and within the community itself (Helfrich 2016; Verhaegen 2015). Commons encompasses networking, bond-creation, social learning among citizens, empowerment, caring and emancipatory meanings through community praxis. Actually, as historian Peter Linebaugh said, the concept of commons is best understood as a verb, and the commons are hence needed as a means to rediscover the embeddedness of the individual into society and nature (Clausen 2016). Scholars, activists and practitioners get engaged in the praxis of old and new commons from an everyday life perspective in both urban and rural settings (Walljasper 2010; Shiva 2005). In that sense, Vandana Shiva points out: “each commons is also somebody else's commons”, meaning that while a certain resource system may belong to a certain community, some of its elements may also “belong” to others (both from the human and non-human world) beyond that community.

There are approaches to the commons that can be compatible with capitalist economies of unrestricted capital accumulation (neo-institutionalists or neo-hardiniens, like Ostrom and her followers, as mentioned by Caffentzis 2012), but other approaches to commons are colliding with the basic foundations of capitalism, such as the absolute primacy of individual property over other rights, the absolute sovereignty of the individual consumer over the collective wellbeing, the lack of limits to capital and resource accumulation and competition as the main driver of progress rather than cooperation (McCarthy 2005; Hardt and Negri 2009; Jeffrey et al. 2012; Dardot and Laval 2014; Verhaegen 2015). This represents the major schism between the dominant stream of political scholars and the grassroots activists. Commons are assembled by the aspiration to live beyond the commodification, privatization and the market (Jeffrey et al. 2012), and that is why they represent a different entity, with different values, goals, narratives, ethical principles and functioning. In this sense, the commons are a competitor of the market and the state, a socio-economic, conceptual and practical alternative to re-think the market economy and the public governance (Dardot and Laval 2014) and therefore, a different pathway to transit outside the multiple-crises momentum we live now. From the very moment that we accept the community has an instituting power to create a commons (resource, property regime, governing institution and purpose), we accept the community is bestowed with legal and political powers to regulate the resources important to it, making commoning transformational and counter-hegemonic, since the state aims to retain those instituting powers to issue policies and enact laws and the market aims to retain its supremacy to allocate and govern scarce resources.

2.5.4.- "Food is a commodity": plurality of meanings reduced to one

This epistemic supremacy of economics, notwithstanding the plurality of meanings food is endowed with in different societies, civilizations and historical periods, has imposed its approach to food, despite other epistemic regards, such as the legal, political and activist schools of thought, yet we recognize that food can be valued as a commons, governed as a commons or owned collectively (see Table 5). The iron law of economics, that dictated the reductionist view of food as a private good that is better allocated through market mechanisms, with absolute proprietary rights and treated as a pure commodity, has become the most commonly-accepted narrative since the 1960s, becoming hegemonic, due to the dominant role economics play in politics and societal issues.

The description that best explains the hegemonic narrative of the global food system, is adapted from Gramsci's Marxist philosophy, as described by Bullock and Trombley (1999, 387-388), that a diverse society, with multiple proprietary regimes, multiple valuations of food and multiple political arrangements to govern food is influenced by the economists' approach to goods (nowadays the influencing school of thought that informs the discourse in the ruling class), so that their reductionist approach to food, a narrative based on its rivalry and excludability, is imposed and accepted as the universally valid, dominant ideology that justifies the social, political, and economic governance of the global food system as natural, inevitable, perpetual and beneficial for everyone; rather than an artificial social construct that benefit only the ruling class. Food as a private good and a commodity, as posited by the economists, is quite theoretical, reductionist and ideological; it has proven not to achieve a fair and sustainable food system, and prevents other food policies, based on alternative value-based narratives, to be explored.

2.6.- CONCLUSIONS

The thorough analysis and numerous examples, provided in this chapter, reveal that commons may have multiple vocabularies, being used in different contexts with different meanings, and these meanings (phenomenological) are then interpreted differently by researchers and practitioners with diverse epistemic regards (referred to as schools of thought in this text). And yet, according to the neoclassical economic epistemology, goods are defined solely with respect to two intrinsic characteristics, a definition that is largely academic, reductionist, markedly ideological (constructing a theory that justifies capitalism first and neoliberalism later, yet with a poor reflection of real-life economics and politics, highly theoretical (with numerous examples from real life that contradict the theoretical postulates) and certainly utopian (describing a non-existing world) and therefore, unfit to be directly applied to real life. This particular approach is ontological ("goods are…") instead of phenomenological ("goods as…", "goods considered, valued or functioning as…"), which highly conditions future interpretations of the nature of the goods, and determines the most suitable type of property regime and governing system to manage, allocate and use the resource. In that sense, the private goods are better governed by market systems and owned by private individuals with absolute rights. On the other side, public goods are assigned to governmental institutions since their huge externalities cannot be capitalized by private actors in a market system. There is also a hierarchy of allocation mechanisms and proprietary regimes: The market mechanism is superior to state governance, and private property trumps public property. There is no place for a third way in the dominant discourse, and collective ownership and collective governance are discarded as viable

options to efficiently govern scarce resources. This ontological approach to goods became dominant in the second half of the 20th century, when economics reigned as the dominant scholarly discipline and all-embracing explanatory epistemology (Vivero-Pol 2017b). And, it still is nowadays.

This economic epistemology has trouble understanding the commons as they profoundly challenge a foundational pillar of liberalism (the individual, rational and self-regarding freedom to act) and the subsequent evolution, in neoliberal terms, of the absolute sovereignty of the individual consumer to purchase. The commons regard the individual and the collective as nested within each other, being both equally important to frame the decisions, values and policy beliefs. Since commons can be sketched as a resource plus the commoning, they help re-embed economics in the social context (local) and the natural environment where they are governed.

And yet, other epistemologies of the commons have shown that commons are plural, have had and still have multiple meanings and forms of governance. Governance arrangements for commons have a plurality of goals, not just profit maximization, but capped profits, social justice, intergenerational sustainability, resilience and minimum access to all, plurality of property rights and entitlements (e.g. no absolute primacy of the right to alienate a good), plurality of allocation mechanisms and not just the money-mediated free-market mechanisms based on value in exchange, and plurality of resources, independent from their goods inner characteristics.

2.6.1.- The author's approach to food as a commons

Finally, after having presented the variety of epistemic regards of commons in general and food in particular, I would like to present my own approach to commons and food as a commons. I support the social construction of any given material and non-material resource as a commons, if we human societies, so consider. Commons are forms of governance created collectively for resources owned collectively. This common arrangement is triggered by two important features: the essentiality of the resource to humans, and the desire to institute a collective governance of that resource where every person affected by the resource has a role in its enjoyment and custody. According to those features, food is essential to every human being materially and spiritually, and it has been produced and distributed through non-market mechanisms for more than 2000 centuries, rendering it as a commons.

The definition of food as a commons contains a theoretical framework, an operational notion and a moral notion. The theoretical framework of food as a commons is based on the multiple dimensions of food to humans which, for the sake of methodological appropriateness, have been reduced to six by Vivero-Pol (2017a; 2017b). Those dimensions of food as an essential resource, a cultural determinant, a human right, a public good, a natural resource and a tradeable good cannot be adequately valued by the market through the value-in-exchange method, reducing the multiple meanings of food to a monetary valuation. Food cannot work only as a commodity, it has to be governed as a commons, with the human rights and public good dimensions becoming more relevant.

The operational conceptualization, however, puts emphasis on the social practices around food-producing systems (governance, institutions, and customs). Commoning is the action of cultivating, processing, exchanging, selling, cooking and eating together. For example, when applied to food, commoning may be sharing the art of hunting together (i.e. "monterias' - wild goat or boar hunting by

elite people in Spain, or antelope hunting by Pygmy people in Bostwana), sharing traditional rice landraces in China to combat diseases and pests (Hanachi et al. 2016), the social protocols of auctions of fish captures in Ireland, and all the traditions that express social belonging and solidarity in maize production, harvesting and religious rituals amongst the Guatemalan Mayas.

On the other hand, a moral notion entails that food is a commons because it is, undeniably, fundamental to people's lives and a cornerstone of human societies, regardless of how it is governed or who owns it. By being essential to people, the food commons belong to people and shall be governed by them. In that sense, considering food as a commons carries a deeper, more subversive moral claim on who owns Earth's food and food-producing resources (water, land, seeds and agricultural knowledge etc.), questioning John Locke's rationality to justify private property and the appropriation of natural resources.

The food commons are thus compounded of four elements: (a) the natural and non-material resources (foodstuff, cooking recipes, traditional agricultural knowledge), (b) the communities who share the resources (local, national and global because we all eat), (c) the commoning practices they use to produce, transform and eat food and d) the moral narrative that sustains the main purpose of the food system. For example, produce food sustainably to feed the people adequately; all food commons benefit from a relational approach between the good, the purpose to use that good, the community that agrees on that purpose and the governing mechanisms to achieve that purpose.

The commodification of food that became a global mantra of the industrial food system has neglected the value-in-use of food (the nutritional and cultural qualities that render a natural resource an edible product) and it has been replaced by a monetized value-in-exchange, where empty, cheap but tasty calories of ultra-processed food that fulfils the food safety standards have replaced nutritional, healthy, organic, tasty, locally-embedded and freshly-cooked meals. The original purpose of food (meeting human caloric needs) has been distorted by an ever-increasing share of food allocated to livestock feed, machineries and pharmaceutical products. The entire community of food producers and eaters has been evicted from the governance mechanisms that dictate the legal frameworks, policies and financial support for the global food system. Thus, the eaters can only exert a decision-making power as customers that purchase a cornucopia of processed food, supplied by a shrinking group of transnational food corporations. Food producers, especially the small ones in the Global South, are prone to become food insecure, because they cannot raise enough money with their production to purchase enough appropriate food to satisfy their needs. So, the purpose of the entire food system (producing food for all in a sustainable way) is not achieved.

In that sense, I propose to use the best epistemic tools of each school of thought to understand food as a commons (by the eaters and producers), to be treated as a public good (by the governments) and as essential resource that has to be traded under specific restrictions (by the private actors). The economic school of thought replaces its ontological consideration, of an essential resource with a tradeable dimension, for a phenomenological understanding where the value-in-use can become aligned with the value-in-exchange. The legal school of thought can accept that multiple proprietary regimes and entitlements are valid and functional where food is at stake, and the political school of thought can legitimize different governing mechanisms for an essential resource for human and societal survival (other than market-based allocations) and can devise particular arrangements for civic

food actions, public policies and moral economies to co-exist. Finally, the grassroots activist school of thought reminds us that the ultimate purpose of a successful food system is to feed us all, within planetary boundaries, without mortgaging the food-producing resources of future generations. Unfortunately, this is currently not the case with the dominant industrial food system.

The practice of the commoning has instituting power to create laws, to review existing laws and to establish a different legal and political institutional framework (Charbonnier and Festa 2016; Dardot and Laval 2014; Capra and Mattei 2015; Ruivenkamp and Hilton 2017). This is what actually frightens the consolidated duopoly of the industrial food system (the state and the food market): Self-organized communities and social food movements, based on different narratives and moral grounds (e.g. food as a commons or a public good), may design governing and allocation mechanisms and legal frameworks that are different from those that maintain the globalized free market of food and the state and multi-state institutions (e.g. WTO, Committee of World Food Security). Re-commoning food systems may attack the legal and political scaffolding that sustains the hegemony of the market and state elites over all eaters and more than 2 billion food producers. Being so convivial, relational and important for individuals and societies, food is a perfect agent of change (McMichael 2000), with transformative power (Vivero-Pol 2017a). Re-commoning food may help us to re-create sustainable forms of food production (agro-ecology), new collective practices of governance (food democracies) and alternative policies (food sovereignty) to regain control over the food system by the most relevant actors (eaters and producers), from the current dominant actors (agri-food corporations and governments). Further, the re-construction of the entire food system as a commons is a revolutionary idea defended by some Italian scholars (Pettenati and Toldo 2016; Ferrando 2016).

History has taught us that food has been valued and governed as a commons for centuries in different civilizations, and legal and political scholars demonstrate this consideration is still alive in many customary food systems and it is being reconstructed in innovative contemporary food initiatives. So, considering food as a commons is not a “no place” (wrongly interpreted from Greek οὐ "not" and τόπος "place"), but a “good place” to aspire to (derived from Greek εὖ "good" or "well"), the final goal of a different transition pathway that takes us from this unsustainable and unfair food system towards a better one, where everybody can eat well three times each day, because food is not just governed as a commodity.

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CHAPTER 3:

THE IDEA OF FOOD AS A COMMONS OR COMMODITY IN ACADEMIA. A SYSTEMATIC REVIEW OF ENGLISH SCHOLARLY TEXTS.

CHAPTER 3: THE IDEA OF FOOD AS A COMMONS OR COMMODITY IN ACADEMIA. A SYSTEMATIC REVIEW OF ENGLISH SCHOLARLY TEXTS

"The difficulty lies not so much in developing new ideas as in escaping from old ones"
John Maynard Keynes, British economist

3.1.- SPECIFIC RESEARCH QUESTION AND HIGHLIGHTS

As a follow up of chapter 2, here I study with a systematic methodology (combining quatitative and qualitative analyses) the role of academic scholars to develop, promote, undervalue or even avoid specific value-based narratives associated to food in the XX century. The narratives compared are the consideration of food as commodity and private good (the dominant narratives of the global food system) and the consideration of food as commons and public good (alternative narratives that could unlock policy options not yet explored by the dominant regime). The systematic analysis undertakes a literature review of academic papers between 1900 and 2016 with Google Scholar, using different searching terms related to "food + commons", "food + commodity", "food + public good" and "food + private good". The goal of this analysis is to respond to the specific research question "*What has been the role of academia in the construction of the dominant narrative of food as a private good and a commodity?*"

HIGHLIGHTS

- Academia has privileged the value-based consideration of food as a commodity over commons. Since 1900, only 179 references with food as commons or public good have been found (before cleaning) vs c. 50,000 with food as commodity or private good.
- The economic valuation is rather ontological ("food is…") and blocked other interpretations more phenomenological ("food as…" in specific circumstances) and policy options that are not aligned with the commodity narrative.
- Since the 2008 food crisis, however, other narratives are being explored in academia (food as a commons or public good), as the industrial food system that is grounded in the commoditised vision of food seem to be uncapable to respond to humanity's major challenges such as the growing obesity pandemic and steady hunger, the surpass of physical planetary boundaries and the acceleration of climate change and climatic hazards.
- Valuing food as a commons, nothing but a social construct with a long tradition in human history, would unlock so far unpermitted food policies, therefore widening the policy toolbox to tackle food inequalities and unsustainable impacts in natural resources.

Western academia has been a major contributor to constructing, polishing and disseminating the dominant narrative of the industrial food system, a narrative that shapes and justify public policies, corporate ethos and moral economies. The dominant narrative posits that food is a tradeable commodity whose value is mostly determined by its price. This narrative, although not invented by academics, was justified theoretically and disseminated by economists, the most influential epistemic school during XX century, rising impressively after the first global food crisis in 1973 and the golden

decades of neoliberalism (1980s and 1990s). Scholars largely favoured one option (commodification of food) over the others (food as commons or public good). This narrative sidelined the non-monetized values of food and its essentialness for human survival, and thus many relevant food policy options were automatically discarded because they conflicted with the commodity nature of food. The ontological absolute ("food is a private good") distorts food acting as a commodity in a situated place and time and as something else under different circumstances (i.e. a human right, a common resource). Food was regarded by the entire society as economists said it should be.

However, the hegemonic valuation of food as a commodity is cracking slowly but consistently. This normative view cannot dictate and colonize the multiplicity of food meanings by different past and present cultures. The univocity and apparent neutrality of the economic approach to the public/private/commons goods obscures the power differential that generated that understanding of food and the benefits the valuation of food as a private good generates for those in power. The alternative approach to food as a commons and public good has been struggling to survive as a valid narrative in certain academic circles and it seems to be experiencing a renaissance in the last two decades, especially after the second global food crisis in 2008.

Academia shall be at the forefront in supplying moral foundations, economic possibilities and policy options to sustain the radical change we need in the industrial food system. The consideration of food as a commons could provide the moral ground where customary niches of resistance and contemporary niches of innovation may work together to crowdsource a powerful and networked alternative to produce good food for all within the planetary limits. The consideration of food as a commons can be considered as (a) normative concept and a moral compass for a fairer food transition; (b) social construct, rather epistemological (place-, time- and culture-related) and not ontological; (c) a fundamental right associated to the right to life; and (d) the recognition of a historical reality: the special political consideration granted to food across history and civilisations.

3.2.- PEER-REVIEWED ARTICLE

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The idea of food as commons or commodity in academia. A systematic review of English scholarly texts

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ABSTRACT

Food systems primary goal should be to nourish human beings. And yet, the current industrial food system, with its profit-maximising ethos, is not achieving that goal despite producing food in excess. On the contrary, this system is the main driver of malnutrition on the planet, as well as environmental degradation. Nonetheless, food systems also play a double role as Nature's steward. Deciding which role we want food systems to play will very much depend on the idea we have about food. What is food for humans? The dominant narrative of the industrial food system undeniably considers food as a tradeable commodity whose value is mostly determined by its price. This narrative was crafted and disseminated initially by academics, who largely favoured one option (commodification of food) over the others (food as commons or public good). In this research, the author aims to understand how academia has explored the value-based considerations of food as commodity and private good (hegemonic narratives) compared to considerations of food as commons and public good (alternative narratives). A systematic literature review of academic papers since 1900 has been carried out with Google Scholar™, using different searching terms related to "food + commons", "food + commodity", "food + public good" and "food + private good". Following the PRISMA methodology to clean the sample, a content analysis has been carried out with the 70 references including "food + commons" and "food + public good". Results clearly show that both topics are very marginal subjects in the academic milieu (only 179 results before cleaning) but with a sharp increase in the eight years that followed the 2008 food crisis. On the contrary, "food + commodity" presents almost 50,000 references since 1900 (before cleaning), with a remarkable increase since the 1980s, coincidental with the dominance of neoliberal doctrines. The phenomenological approach to food (epitomised in the "food as" searching term) largely prevails over the ontological approach to food ("food is") except when food is identified as a "private good". This result points to the ontological absolute "food is a private good" developed by the economic scholars as a dominant narrative that locked other valuations of food by legal, political or historical scholars or non-scientific epistemologies. In a world where the industrial food system has clearly proven its unfitness to feed us adequately in a sustainable way, the need for academia to explore other food valuations seems more urgent than ever. Scholars need to approach other narratives of food (as commons or public good) that go beyond the hegemonic and permitted ideas, unlocking unexplored food policy options to guarantee universal access to food for all humans, regardless their purchasing power, without mortgaging the viability of our planet.

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1. Introduction

Nowadays, human activity in the terrestrial biosphere is the single greatest factor modifying the structure of landscapes across the globe (Ellis and Ramankutty, 2008). The human societies living on Earth are already in a new geological era, known as the Anthropocene (Crutzen and Stoemer, 2000; Waters et al., 2016) characterised by one single driver, the human species, being a

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major player affecting Earth's natural variability. Actually, we are mortgaging the livelihood of future generations to maximise economic and development gains in the present (Whitmee et al., 2015) with patterns of overconsumption of natural resources that are unsustainable and far beyond planetary capabilities (Steffen et al., 2015). That may ultimately cause the collapse of our civilisation and our very existence as a species (Barnosky et al., 2012; Horton et al., 2014). And within the wide array of human actions, food production, including agriculture, fishing and food produced for non-human consumption, is the biggest transformer of Earth, contributing significantly to degradation of natural habitats, arable land and losses of wild biodiversity (Scherr and McNeely, 2012; Rockström et al., 2017). Nonetheless, food systems also play a double role as Nature's steward (Brandon et al., 2005; Harvey et al., 2008; Whitmee et al., 2015; Wittman et al., 2016), especially when they are managed under agro-ecological principles (Bengtsson et al., 2005). Deciding which role we want food systems to play will very much depend on the idea we have about food. What is food for humans? How do we regard, value and approach an essential resource for our survival and societal development?

I examine in this paper the role of the academic scholars in developing, promoting, undervaluing or even avoiding specific value-based narratives associated to food since 1900, namely the consideration of food as a commodity (and the associated consideration as a private good); or, alternatively, as a commons (and public good as associated term). Narratives are considered as social constructs intertwined with values, ideological stances, priorities and aspirational beliefs, and they shape the transition pathways (Fairbairn, 2012; Geels et al., 2015) and the referencing framings that condition the policies of the possible and discard non-accepted political beliefs treating them as "naïve", "utopian", "undoable" or "delusional" (Goffman, 1974; Wright, 2010). The value-based consideration of food is therefore regarded as a key element to understand the narratives that sustain different transition pathways in the global food system. In that sense, academia is a major contributor to constructing, polishing and disseminating the dominant narratives that are then shaping public policies, corporate ethos and moral economies (Allen, 2008).

Nevertheless, academia's contribution to define narratives of transition is also conditioned by the context where it takes place, the historical developments and hegemonic positions of powerful actors (Steinberg, 1998), and thus the framing process is dialectical and evolving (Benford and Snow, 2000). Concepts are framed in accordance with the shifting political and discursive situation but they also have a role in shaping the dominant discourse (Ferree and Merrill, 2000). Applying this rationale to our research, academia is not isolated from the dominant narratives that pervade the circles of the ruling and financial elite (Wallerstein, 2016), and therefore its role in shaping a dominant understanding of food as a commodity (hegemonic narrative) or a commons (fringe narrative) is influential to the ruling agents as well as influenced by the ruling agents.

The article is structured as follows: in the first section, recognizing the multiple meanings food is bestowed with, the opposing normative views of food as commodity and commons are explained in detail, including (a) the historical interpretation of the enclosure and commodification of food, a process exacerbated in the last decades of last century; and (b) the renaissance of the valuation of food as a commons by contemporary civic food initiatives (reinventing food meanings) and customary food systems (resisting the transformation of traditional food meanings). The second section presents the methodology that will be used to undertake the systematic analysis of the valuations of food in scholar literature in English since 1900. The main goal here is to understand how the academics have addressed both concepts, with a detailed content analysis of those exploring the fringe narrative (food as a commons or public good). The third section includes the quantitative and qualitative analysis of the research terms associated to the normative valuations in Google Scholar™. The numerical analysis breaks down the four clusters of searching terms related to food as a commodity, private good, commons and public good. The qualitative analysis deepens the interpretation and contextual meaning of food as a commons and public good in the academic literature, with 70 references analysed. The thousands of academic references to food as a commodity renders the in-depth analysis unattainable at this point, although it merits to be done in the future to shed light on the commodification process of food. Finally, the fourth section deals with the conclusions that highlight the widening gap in scholarly knowledge between the normative view of food as a commodity and that of the commons. Academia has been shaped by the dominant narratives of privatisation, enclosures and commodification but it has also shaped and enriched the dominant narratives, especially the economic epistemology of private goods, privileging the commodification of food over its commonification.

2. What is food: a commodity or a commons?

Food is a resource with multiple meanings and different valuations for societies and individuals. As an essential resource for our survival (De Schutter and Pistor, 2015), the desire for food is the most powerful driver of human agency (Malthus, 1798/1872; Grodzins-Gold, 2015). Food can be rightly considered a societal compounder (Ellul, 1990, p53), a network of meanings and relationships (Szymanski, 2014), a subject to gain and exert power (Sumner, 2011) and a means to contest the established power balance (McMichael, 2000). Or all of them together. Moreover, food is nature, culture and religious beliefs. Food shapes morals and norms, triggers enjoyment and social life, substantiate art and culture (gastronomy), affects traditions and identity, relates to animal ethics and determines and is shaped by power and control. Therefore, this multiple and relevant meanings cannot be reduced to the one of tradeable good. The value of food cannot be fully expressed by its price in the market, as the Spanish poet Antonio Machado once nicely said: "only the fools confuse value and price".[1] The six dimensions of food posited by Vivero-Pol (2017a), namely food as an essential life enabler, a natural resource, a human right, a cultural determinant, a tradeable good and a public good, cannot be reduced to the mono-dimensional valuation of food as a commodity. Actually, many scholars engaged with alternative food movements – be that food sovereignty, right to food, transition towns, agroecology, de-growth or alter-globalisation – agree that food should not be considered as a commodity (Castree, 2003; Rosset, 2006; Zerbe, 2009) although just a few dare to value it as a commons (Dalla Costa, 2007; Akram-Lodhi, 2013; Roberts, 2013; Rundgren, 2016). Likewise, none of the well-known critics of the absolute commodification of nature ever questioned the nature of food as a commodity, least to say proposing its reconsideration as a commons (Marx, 1867; Polanyi, 1944; Appadurai, 1986; Ostrom, 1990; Radin, 2001).

Following Ileana Szymanski's analysis (Szymanski, 2015, 2016), food has a multiplicity of meanings some of which oppose one another, a description that perfectly mirrors the different dimensions of food, being some of them contradictory like being a human right and a commodity at the same time. This author, applying the critical feminist approach to objectivity, science and knowledge to food (cf. Longino, 2001), states that food is nothing but a social construction (humans decide what is food and what is not eatable by moral or religious reasons) and the epistemological

[1] "Solo los necios confunden valor y precio" in the original.

valuation of food shapes the politics to be applied to food governance (Szymanski, 2015). So, by defining what food is, we are also describing what and who we are, and how do we govern food.

Two other important elements can be read from her analysis. The first one is the understanding of food is always "situated", generated by individuals that are embedded in a specific time, place and epistemic domain (generating its own knowledge and using a particular vocabulary). Therefore, the ontological or phenomenological meaning of food, expressed in this research as "food is …" or "food as …" respectively, will vary throughout history and geographies, presenting contradictory meanings for different dimensions and having incommensurable vocabularies very often. As a corollary, the valuation of food as a commodity or a commons is always constructed by situated agents, individuals and societies, with specific backgrounds, knowledge-restricted epistemologies and embedded in the dominant paradigms, modes, habits and "a la mode" theories of their times. This approach is shared by other authors that have studied extensively the commodification process (Appadurai, 1986; Lind and Barham, 2004). A personal example may better illustrate this situated construct of food as a commodity or not. A non-distinguishable tomato purchased in a supermarket chain as a commodity will become an ambassador of my Andalusian cooking heritage when I offer it cooked as a gazpacho for free to my guests at home. Cultural frameworks and social contexts define the exchangeability of food meanings and its social consideration as a commodity or a commons.

Secondly, the valuation of food in a univocal manner is an illusion. Food can describe as an item, a practice, a memory, a legal right and a knowledge, or everything together or just some of those meanings. Accepting the multiple dimensions and meanings of food, that may have different weights and relevance for different people or in different circumstances, is a powerful tool to explore the ethical and political implications of food for humans. As a consequence, there shall be no epistemic perspective that can claim the precedence of its definition of food over the others. The monodimensional valuation of food as a commodity, so hegemonic these days, conflicts with this understanding.

How we value the different food dimensions is context, culture and time-dependent, as the way we grow, distribute, consume and value food is constructed through a larger social and historical process of development and globalisation (Friedmann, 1999), involving the politics of meaning (Mintz, 1985) or the imposition of hegemonic discourses by the dominant ruling elite. In the following sub-headings, the author will explore the main features of the two confronting valuations of food that are subject of this analysis: the dominant valuation of food as a commodity and the marginal valuation of food as a commons.

2.1. The enclosure of the food commons

Enclosure is the act of transferring resources from the commons to purely private ownership (Linebaugh, 2008) or the decrease of accessibility of a particular resource due to privatization, transferring common properties "from the many to the few" (Benkler, 2006; Nuijten, 2006). The wealth of commons-based food-producing systems in Europe started to be dismantled soon after the end of Medieval Age, since Royal and feudal landowners begun to enclosure common lands, with Tudor England (Linebaugh, 2008) and Trastamara Spain (Luchia, 2008) as enlightening cases. Through legal and political manoeuvres, wealthy landowners enclosed (privatized) the commons[2] for their own profit, impoverishing many villagers and ultimately destroying villagers' communitarian way of life in what Polanyi (1944) called "a revolution of the rich against the poor". That was the first wave of enclosures in Europe that targeted common resources that were essential to produce food (mountainous land, forests, pasturelands, water reservoirs, fishing areas). Later on, between XVIII and XIX centuries,[3] the second wave took place. The dismantling processes of the communal regime continued, relentlessly pursued by the State and wealthy private owners, based on doctrines that defended the idea that communal property was an obstacle to economic growth and did not guarantee conservation of resources (Serrano-Alvarez, 2014). Finally, in the last 30 years, the common lands are suffering a third wave of commodification and enclosure, usually termed as "land grabbing", spurred by the evolutionary theory of land rights (Barnes and Child, 2012), the dominant neoliberal doctrine and the endless race for non-renewal natural resources. Community-owned lands are presently under huge pressures from voracious States and profit-seeking investment funds, spurred initially by IMF and World Bank in the frame of the structural adjustment programmes and lately by drivers such as growing population, shifting diets (more meat-based), water and soil constraints and climate vagrancies.

This third wave of privatization of food-producing commons systems is theoretically and ideologically grounded on the Demsetzian narrative that considers that rising populations will drive property values and communal resources up leading to increased demand and disputes over natural resources which can only be solved through government-led property formalization (Demsetz, 1967). Actually, Hardin (1968) wrote his famous tragedy based on this rationale. Using this theory, Alchian and Demsetz (1973) stated that the increase in the value of a communal resource would inevitably lead to the privatization (enclosure) of common resources. Fortunately, Ostrom (1990) demonstrated the wrong assumptions of this ideological theory, both from the theoretical and the practical side (thanks to her varied set of successful case studies of common-pool resources).

The enclosure and full privatization of goods owned by no one or by communities explains an important aspect of capitalism's insatiable appetite. Expanding copyrights, issuing permits, restrictive legislation or taxing specific activities are modern mechanisms to enclose previous commons (Arvanitakis, 2006; Hess, 2008; Lucchi, 2013). Several examples can enlighten this process. Fishing from the seashore or collecting mushrooms in the forest used to be free and they now are regulated by license or banned in many areas and certain seasons in most European countries. Plant genetic resources in the form of seeds used to be commons until scientific and technological progresses enabled us to synthesize DNA, modify living organisms and reconstruct genes in the laboratory. Genes and seeds are now subject to copyright licenses. Setting quotas is another way to address the problem of open-sea fisheries (Young, 2003). Another form of enclosure of the commons is developing new markets for the services these commons provide, such as the ecosystem services (Gomez-Baggethun and Ruiz-Perez, 2011). The 1997 Kyoto Protocol was the first attempt to create an international market for permits for greenhouse gases, and perhaps the first steps towards the enclosure of the pure air in the atmosphere.

[2] Also known as common-pooled resources in economic language.

[3] The Inclosure Acts in England (1750–1850) were a series of private Acts of Parliament which enclosed large areas of common, especially the arable and hay-meadow lands and the best pasture lands. In Spain, the "desamortizaciones" of 1836 and 1855, two state-led privatization schemes enacted by Ministries Mendizabal and Madoz, encroached a big share of commonly-owned resources in XIX century.

2.2. The commodification of food

In parallel to the enclosure of food-producing commons, food evolved from a common local resource to a private transnational commodity, becoming an industry and a market of mass consumption in the globalized world (Fischler, 2011). The conversion of goods and activities into commodities,[4] or commodification, has been the dominant force that transformed all societies since at least the mid-XIXth century (Polanyi, 1944; Sraffa, 1960; Harvey, 2005; Sandel, 2013). The process was not parallel in all countries (i.e. the Communist period in the USSR and its allies or the varied penetration of market-led paradigms in customary native societies of developing countries) but it ended up in the dominant industrial system that fully controls international food trade[5] and, although it does not even feed 30% of the global population, has given rise to the corporate control of life-supporting industries, from land and water-grabbing to agricultural fuel-based inputs.

The enclosure mechanisms have played a role in limiting the access to food as a commons. And they have been reinforced by the commodification of food, understood as the development of traits in food products that fit better with the mechanized processes and with the for-profit market-based mechanisms developed by the industrialized food system. Both processes, enclosure and commodification, are human-induced social constructs that deprive food from its non-economic attributes just to retain its tradable features, namely durability, external beauty and the standardisation of naturally-diverse food products. Those features are protected by intellectual property rights. And so we reached the current situation where the value of food is no longer based on its many dimensions that benefit humans. Under capitalism, the value in use (a biological necessity) is highly dissociated from its value in exchange (price in the market) (Timmer et al., 1983), giving primacy to the latter over the former (McMichael, 2009). Actually, many scholars, such as Timmer (2014), believe price is the best signal to shape both production and consumption and therefore the market mechanism is the most suitable institution to solve the problem of hunger.

The commodification of food has often meant distancing the material food resource from its former meanings (Lind and Barham, 2004) or detaching it from its multiple dimensions rather important for our survival, self-identity and community life (Vivero-Pol, 2017a): food as a basic human need to keep its vital functions (Maslow, 1943); food as a pillar of every national culture (Fraser and Rimas, 2011; Montanori, 2006); food as a fundamental human right that should be guaranteed to every citizen (United Nations, 1948, 1966; Vivero-Pol and Erazo, 2009) and food as a marketable product that should be subject to fair trade and sustainable production. This reduction of the food dimensions to one of a commodity explains to many authors[6] the very roots of the failure of the global food system, a system that produces food in excess to adequately feed the whole planet but it is not capable of guaranteeing equitable food access to all by simply using the market rules. This commodification paradigm also embraces the denaturalization of food producing animals that are merely valued and managed as meat-, egg- or milk-factories (Singer, 2001). The conventional industrialised food system is operating mainly to accumulate and underprice food resources and maximize the profit of food enterprises instead of maximizing the nutrition and health benefits of food to all of us.[7] Fully privatized food means that human beings can eat food as long as they have money to buy it or means to produce it, means that are mostly private goods (land, agrochemicals, patented seeds) although not always (local landraces, rainfall, agricultural knowledge). With the dominant no money-no food rationality, hunger still prevails in a world of abundance.

As learned earlier, food is a relational concept or a network of meanings (Szymanski, 2014) and the reduction of those situated meanings to that of an un-situated (ergo globalized) commodity meant more food miles, immoral food wastage, an impoverishment of food diversity and a reduction of food varieties to those who are able to cope with transport hurdles and stay attractive to customer. During this process, the nutrition-related properties of food were neglected and cheap calories became the norm.[8] However, these cheap calories came at great cost to the environment, human health and societal well-being, lowering farm prices of food producers and sustaining cheap rural labour, forcing small-scale farmers to flee to urban areas (Carolan, 2013; Roberts, 2013). Additionally, industrial food systems have managed to alienate food consumers from food producers in socially disembedded food relations, being the latest twist the substitutionism of food commodities (Araghi, 2003), whereby tropical products (sugar cane, palm oil) are substituted by agro-industrial byproduts (high fructose corn syrup and margarine). Globalised commodities are severed from their multiple situated meanings.

Moreover, the commodity perspective of food ignores history and overshadows the existing niches of resistance to commodification, the multiple examples of historical or place-related narratives and actions that not consider food as a commodity or even merely a tradeable food. In thousands of examples worldwide, food is not and actually cannot simply be traded. Moral considerations or legal regulations prevent food to be sold/purchased under many circumstances, due to the interdependencies of other non-economic dimensions of food. Food as non-tradeable essential resource can be seen in the customary and still alive tradition of offering food and water to any guest in the Arabic and Caucasian cultures. Or feeding children with infant milk when mothers are dead, blessed or not being able to feed themselves. Food as a non-tradeable human right can be illustrated by UN- or NGO-led humanitarian aid distributions or food banks distributing food to street beggars. A natural food commons is represented by wild blackberries anyone can collect in hedges, road margins and forests all over Europe, or seafood such as clams, crabs or algae to be freely

[4] What makes any good, action or activity a commodity is the possibility of trading it for profit. Today, not everything useful is a commodity and there are still useful things that can't be bought in the market (Sandel, 2013). Capitalism can be characterized by the production of commodities by means of commodities, as all means of production can also be traded (raw materials, labour, money, knowledge) (Sraffa, 1960).

[5] For instance, just four companies control more than 75 percent of grain traded internationally (Murphy et al., 2012).

[6] There is a growing literature of alternative food movements, activists in developed and developing countries, academic rural sociologists and Keynesian economists that highlight the pervasive nature of food assigned by the industrial food system, denouncing the consideration of food as a pure commodity that can be speculated with, modified genetically, patented by corporations or diverted from human consumption just to maximise profit (Anderson, 2004; Kotagama et al., 2008/2009; Zerbe, 2009; Magdoff and Tokar, 2010). The commons approach to food is gaining track via urban-led alternative food networks, rural food sovereignty movements and progressive academic schools of thought.

[7] For additional critics to the industrialised food system dominated by mega corporations and how these companies have just sought to maximize profit at the expense of nutritional value, original taste, natural diversity of food varieties and local/seasonal markets see also Rosset (2006), Weis (2007), Clapp and Fuchs (2009), Azetsop and Joy (2013).

[8] By cheap calories I mean low-cost sources of dietary energy such as refined grains, added sugars and fats. They are inexpensive and good tasting and, jointly with salt, they form the basis of ultra-processed industrial food. In contrast, the more nutrient-dense lean meats, fish, fresh vegetables and fruit are generally more costly because they are not so largely subsidized (Drewnowski and Darmon, 2005; Monteiro et al., 2011).

available all over the coastlines. The cultural dimensions of particular foods prevent them to be sold in the market, being consecrated water or Holy Bread a good example in the Christian tradition, pork meat in Muslim regions and sacred cows in the Hinduist countries. Finally, food is never traded and considered as a commons (governed by everybody for everybody's sake with particular rules for clearly-defined members) at household level, in festivities and significant celebrations and in a myriad of ancient and present-day indigenous societies. This leads us to explore the second value-based narrative, namely food as a commons.

2.3. The renaissance of the commons with multiple narratives

Over the past years a wave of innovative activism, scholarship and projects focused on the commons has been gaining momentum around the world (Bloemen and Hammerstein, 2015). This growing movement consists of activists fighting international land grabs and the privatization of water; commoners collectively managing forests, fisheries and farmlands; Internet users generating software and Web content that can be shared and improved; and urban dwellers reclaiming public spaces among others. Self-organizing communities take collective action to preserve their local resources, both for themselves and for future generations. Rooted in a traditional nature-use perspective, the current understanding of the commons presents a range of philosophies and practices that embody different meanings, including the dichotomies between material (i.e. seeds) and non-material commons (i.e. knowledge or software) and between commons as resources (the economic narrative that is still dominant, Musgrave and Musgrave, 1973) or commons as a collective way of governing any given resource —what it is known as the political approach to commons as a social construct (Workshop on Governing Knowledge Commons, 2014). The commons, as resources important for human beings, have "multiple personalities" (Wall, 2014) and therefore multiple phenomenologies (Mattei, 2012) and vocabularies are accepted to describe them, building upon the notion of legal pluralism (Engle-Merry, 1988) and institutional diversity (Ostrom, 1990).

And yet, the theory of the commons has barely touched upon food, still considered a realm that escapes the normative doctrine and praxis of commoners and common scholars. Oddly enough, the different epistemologies[9] that have analysed the commons in order to understand its nature, origins, governance, utilities and challenges have rarely considered that food is a commons or can function as a commons. Different scholarly approaches have addressed the real-life commons by using the epistemologies that characterise each discipline, be that history, law, history, economy or politics. The historical scholars, describing institutional diversity to govern the commons in the past, have profiled numerous examples of food being treated as a commons, or a public good, by the ruling authorities (Gopal, 1961; Renger, 1995; Harris, 2007; Linebaugh, 2008; Brown, 2011), but this valuation seems to remain as an "historical construct" that has been overruled by the modern commodification narrative, so dominant and pervasive these days. The legal scholars, although largely emphasizing the positive externalities of private property as a mainstay of economic development, fully acknowledge two other types of property, namely state owned and collective-owned. Collective proprietary rights, often applied to food and food-producing commons, are recognized in many formal legal frameworks worldwide, although their contribution to natural resource management has just started to be recognized after the impressive research undertaken by Elinor Ostrom and her followers. In any case, Ostrom never said that food is a commons. The economic approach to commons, based on two features rivalry and excludability, considers that commons are resources that are rival in consumption but difficult to exclude potential consumers. This approach is rather ontological and absolute, since it determines how the goods are intrinsically and not how they can be considered by the community/society that govern them. Finally, the political scholars have rightly understood and recognised the diversity of social arrangements, across history and in different cultures and political regimes, to govern the commons, and thus consider the commons as social constructs moulded by time- and space-bound values, priorities, environmental constraints and institutional possibilities. Actually, the primary focus of commons is not on resources, material and non-material, but on interpersonal and human/nature relationships (Dardot and Laval, 2014; Bollier and Helfrich, 2015). This approach recognises, after Foucault (1993), that the concept of commons and its materialisation and interpretation by dominant powers across history lead us up to the modern and dominant concept of the commons, that of the economists, the paradigm-shapers of our age (Berman, 2009; Fourcade et al., 2015). The economic approach to the commons is still culturally hegemonic. However, political scholars posit the meanings and understandings of the commons are evolving, situated in space and time, triggered by recurrent crises and reconsidered by different societal arrangements.

In this article, the author subscribes the political understanding of the commons, namely the consideration of commons as a phenomenological regard or a social construct that depends on the collectively-arranged forms of governance for any particular resource, material or immaterial, in a situated place and time. The resources considered and governed as commons are usually those that are deemed important for the society, and hence its governance, production and utilisation has to be done in common. The commons are thus not defined by the ontological properties intrinsic to the goods, as the economic school defends, or its physical characteristics but rather by "the indissoluble bond between the goods and the collective activity that institutes it as commons, takes charge of it and governs it for the commonwealth and not just for maximising individual utilities, profit seeking or selfish individualism" (Dardot and Laval, 2014). So the following two definitions fit well with the approach to food as a commons that will be analysed in this article. The first one is adapted from the P2P Foundation[10]: "commons are material and non-material resources, jointly developed and maintained by a community or society and shared according to community-defined rules, irrespective of their mode of production (private, public or commons-based) and proprietary regime (private, state or collective), because they benefit everyone and are fundamental to society's wellbeing". The second one comes from Robson and Lichtenstein (2013): "commons can be considered any resource, environmental or otherwise, that is subject to forms of collective use, with the relationship between the resource and the human institutions that mediate its appropriation considered an essential component of the management regime". Both definitions put the differentiating feature of commons in its collective governing decision and the essentiality of the resource to everyone. Summing up the idea, Peter Linebaugh's simple definition of the commons as "the resource plus the commoning" seems to be unbeatable. It is

[9] Also termed as schools of thought and representing cognitive tools, accumulated knowledge and associated vocabulary. Those schools of thought on the commons and their different approaches to food as a commons have been studied by the author in his PhD thesis (Vivero-Pol, unpublished).

[10] http://p2pfoundation.net/Commons.

Table 1
Contemporary and customary collective actions for food that value food as a multi-dimensional commons and not as a money-mediated commodity.

Contemporary Civic Food Actions	Customary Civic Food Actions
Beacon Hill Food Forest, Seattle (USA) In less than a hectare, the largest edible garden on public land in the US is a prosperous example of the real sharing economy. Instead of dividing the land into small patches for private cultivation, volunteers cultivate the whole food forest together and share the fruits and vegetables with everyone. Urban foragers are welcome to reap what the community sows. They create and share abundance (Napawan, 2016). Similar examples of cultivation in abandoned urban lots can be found in many other countries (i.e. incredible edible, guerrilla gardens).	**"Caffe sospeso" (Italy)** A tradition that began in the working-class cafés of Naples, where someone who had experienced good luck would order a "sospeso", paying the price of two coffees but receiving and consuming only one. A poor person enquiring later whether there was a "sospeso" available would then be served a coffee for free. Although this customary tradition was almost gone in Naples, it is being re-invigorated in other places (i.e. US, Spain) by contemporary food initiatives (Buscemi, 2015).
Food Buying Groups (Belgium) Several types of place-based initiatives on food production and consumptions are mushrooming in Belgium, adopting different institutional forms such as community supported agriculture, food basket schemes, do-it-yourself vegetable gardens or shareholder's cooperatives. People join those collective actions to answer perceived personal and societal needs and challenges, such as healthy and meaningful food, local and sustainable production, reducing food waste, mitigating climate change and reinforcing local bonds of conviviality (Van Gameren et al., 2015).	**Cacao: the God's gift (Guatemala)** In many Maya ethnic groups of Central America, cacao occupies a place of cultural relevance in daily and spiritual life, second only to maize. In the Ch'orti' Maya groups of Guatemala, cacao is connected to rain ceremonies and local environmental knowledge. The protection of cacao as a sacred tree may help to limit slash-and-burn maize agriculture to sustainable levels (Kufer et al., 2006).

commoning together what confers a material and non-material common resource its commons consideration (Madison et al., 2010; Dardot and Laval, 2014). Such a meaning is the consciousness of thinking, learning, and acting as a commoner with a commons for the common good.

2.4. The alternative concept of food as commons

The consideration of food as a commons rests upon its essentialness as human life enabler and the multiple governing arrangements that have been set up across the world and in history to produce and consume food collectively, within and outside market mechanisms. Moreover, a food commons means revalorising the different food dimensions that are relevant to human beings (value-in use) – food as a vital fuel, natural resource, human right and cultural determinant – and thus, of course, reducing the tradable dimension (value–in exchange) that has rendered it a mere commodity.[11] A food commons regime would be based on sustainable agricultural practices (agro-ecology) and open-source knowledge (creative commons licenses) through the assumption of relevant knowledge (cuisine recipes, agrarian practices, public research), material items (land, water, seeds, fish stocks) and abstract entities (transboundary food safety regulations, public nutrition) as global commons. And it would be governed in a polycentric manner by food citizens (Gomez-Benito and Lozano, 2014) that develop food democracies (Lang, 2003; De Schutter, 2014) which value the different dimensions of food (Vivero-Pol, 2013). The food commons paradigm entails a move to a collective, polycentric and reflexive governance, a shift of power from a state-private sector duopoly in food production, transport and distribution to a tricentric governance system, where the third pillar would be the self-regulated, civic, collective actions for food that are either emerging all over the world (contemporary food movements) or were resisting the neoliberal waves of enclosure of the natural resources they depend on (customary food movements, i.e. indigenous communities, subsistence small farmers, fisher folks) (Vivero-Pol, 2017b). The food commons provides a common space for customary food systems and contemporary collective innovations for food to converge. The examples presented below (cf Table 1) highlight the importance of the non-economic dimensions of coffee and cacao - two of the most traded food commodities today- to different human societies and they enlighten the shared vision of food as a commons so pervasive in customary food systems. While developing a narrative of valuing food as an essential, natural good, produced and consumed with others and thus a bonding tie in human cultures, these alternative food initiatives are the organisational drivers of transition towards a future food system where food is not treated as a commodity, but a commons.

The end-goal of a food commons system, although recognising the value of trade, should not be restricted to profit maximization but to increase food access, build community bonds and shorten distance from field to table (Johnston, 2008). It represents a worldview different from the dominant paradigm of the industrial food system and it is based on shared customary and contemporary models of social organization for food production and consumption, non-monetized allocation rules and sharing practices, principles of peer production based on commons (resources, knowledge, values), social economy and the importance of the commonwealth, happiness and well-being of our communities. The commons dimension of food is about caring, collectiveness, equity, responsibility and stewardship (Helfrich and Haas, 2009). Embeddedness and direct democracy from local to global are also relevant features, linking the food commons with agro-ecology, food sovereignty and urban food systems. The consideration of the commons dimension of food invokes a radical paradigm shift from individual competitiveness and endless growth as the engines of progress towards collective cooperation and de-growth/frugality as the drivers of happiness and the common good. This dimension may certainly sustain a transition pathway that first, provides for sustainable nutrition for all and second, provides meaning and not just utility, to food production, trading and consumption (Anderson, 2004). The commons dimension encompasses ancient and recent history (valuations of food in different civilizations as well as counter-hegemonic social movements such as food sovereignty), a thriving alternative present (the myriad of alternative food networks that trade, share, and exchange food by means of monetized and non-monetized mechanisms) and an innovative, utopian and just vision for the future.

3. Methodology to analyse scholarly texts using google scholar (1900–2016)

In order to understand the evolution and academic treatment of the different social constructs associated to food, a systematic

[11] See Vivero-Pol (2017a) for a detailed explanation of the six dimensions of food and how the valuation of this multi-dimensionality rejects the mono-dimensional consideration of food as a commodity, positioning food more as a public good than a private one.

Table 2
Searching terms in Google Scholar and clusters for analysis.

Cluster name	Searching term
"food + commons"	"food as a commons" "food is a commons" "food commons"
"food + public good"	"food as a public good" "food is a public good"
"food + private good"	"food as a private good" "food is a private good" "privatis(z)ed food"[12]
"food + commodity"	"food as a commodity" "food is a commodity" "food commodity" "food commodities"[13]

literature review was carried out using the Google Scholar™ searching tool with concrete searching terms describing different valuations of food, including commons, commodity, public good and private good. The search was carried out on 19–20 September 2016. The searching terms (non-case sensitive) appearing "anywhere in the article" with "the exact phrase" can be seen in Table 2.

Google Scholar™ index (https://scholar.google.com/) includes most peer-reviewed online academic journals and books, conference papers, theses and dissertations, preprints, abstracts, technical reports, and other scholarly literature including selected web pages that are deemed to be "scholarly" (Vine, 2006; Google, 2016). Recent estimates on numbers indicate around 160 million documents (Orduña-Malea et al., 2014) representing 80–90% coverage of all articles published in English (Khabsa and Giles, 2014). Google Scholar™ is a good tool to be used as proxy indicator to understand the chronology of published scholarly papers and other non-publish academic documents addressing specific issues (Walters, 2007; Lewandowski, 2010), being already used to explore food-related terms (i.e. "convenience food" in Scholliers, 2015).

The time range analysed was defined between 1900 and 2016, with three sub-periods with different number of years: the first half of XX century was clustered together due to the absence of references; then between 1960s and 1990s it was grouped in decades, and the first 17 years of the XXI century were split into two periods in order to analyse the possible impact of the 2008 food crisis in the valuation of food. For the quantitative analysis all the hits yielded by the Google Scholar tool were considered to keep a standardised methodology and due to the impossibility to review and clean the more than 49,000 hits of the "food + commodity" cluster.

Two important limitations in this analysis are the exclusive focus on English scholarly papers, therefore not incorporating other cultural academic schools on the commons/commodities with a long tradition of theoretical and practical knowledge (i.e. French, Italian or Spanish texts)[14]; and the lack of content analysis of the more than 49,000 texts incorporating the idea of food as a commodity, thus not being able to identify if the mention to the searching terms are done in a supportive or conflictual way. Although most of the papers mentioning "food + commons" and "food + public good" do it in a supportive way, it shall not be assumed the same applies to papers mentioning "food + commodity" and "food + private good". In any case, even assuming just one half or one third of total papers are supportive of the "food + commodity" concept, the results and conclusions are still valid, considering the differences between the figures.

For the qualitative analysis of the "food + commons" and "food + public good" results, the PRISMA guidelines for the reporting of systematic reviews were followed (Moher et al., 2015; Shamseer et al., 2015). The database searching using the five searching terms of "food + commons" and "food + public good" (cf. Table 2) resulted in 179 hits, plus the 15 publications that were added based on the author's bibliographical review with other tools. Following the PRISMA methodology to review the results of systematic analysis, 18 references were removed by duplication, 45 and 61 publications were removed by formal reasons and content reasons respectively (cf. Fig. 1 and Table 3 for further details). Finally, 70 publications remained for the qualitative meta-analysis on how and why food has been considered/treated as a commons or a public good in academia (cf. Table 7).

4. Results and analysis

4.1. Quantitative analysis: the dominant food narratives in academia

The quantitative analysis of the research terms associated to the idea of food being considered a commons or a public good yielded no more than 179 hits for the period 1900–2016 (cf. Table 4). This figure contrasts with the more than 49,100 hits of food being treated as a commodity for the same period (cf. Table 5). Moreover, the low figure of food being considered a private good (N = 202, cf. Table 6) does not parallel the huge "food + commodity" figures either. The century-long perspective of scholarly treatment of food as a commodity, a commons, a public good or a private good is presented below for comparative purposes (cf. Figs. 2–4).

Five interesting patterns emerge from a numerical analysis of the academic references:

The nearly absolute absence of any reference to food commons, food as/is a commons or food as/is a public good until this century, with only one reference in the 1960s (being a non-academic text including "food commons" as college dining room), two in the 1970s (Soroos, 1977 plus another reference to a dining room), none in the 1980s and two in the 1990s (Beal, 1994 plus another reference to a dining room). During the same period (1900–2000), the number of scholarly references including food and commodity-related or private good-related terms amounted 11,297, although the latter only amounted a fraction of it (n = 29). So, food as a commodity was a well-established subject of academic research during the XX century, outnumbering by five digits the valuation and treatment of food as a commons (n = 5) or a public good (n = 0).

It is rather evident that "food + commons" or "food + public good" topics are, as of today, very marginal subjects in the academic world (only 179 results since 1900) but with sharp increase in the last 17 years (n = 174 or 97% of total results). The slight increase of 16 references in the eight years prior to the 2008 food crisis has been overshadowed by the ten-fold figure (n = 158) produced in the eight years that followed the crisis[16]. It seems that alternative

[12] Both English (privatised) and American (privatized) terms were combined in one result.

[13] The plural of commodity was included to incorporate also the often-cited plural case. For "commons", however, the plural term usually comprises both, single resource/good or multiple ones.

[14] The commons are gaining momentum in France, Italy and Latin America, with many scholarly publications that would merit a particular research.

[15] Rhetorical uses of the term "food commons" were found in a theological text identifying Christ's Last Supper with a food commons or in a bring-your-plate school dinner dubbed as food commons. Although I recognise the importance of symbolic narratives to imagine aspirational futures, a decision was taken to exclude the symbolic representations from this analysis. However, further research on the rhetoric of food as a commons is highly needed, mirroring the work done by Frye and Bruner (2012), to help re-construct the inspirational imaginaries of food transition.

[16] 38 of those references belong to author's texts or other texts citing the author.

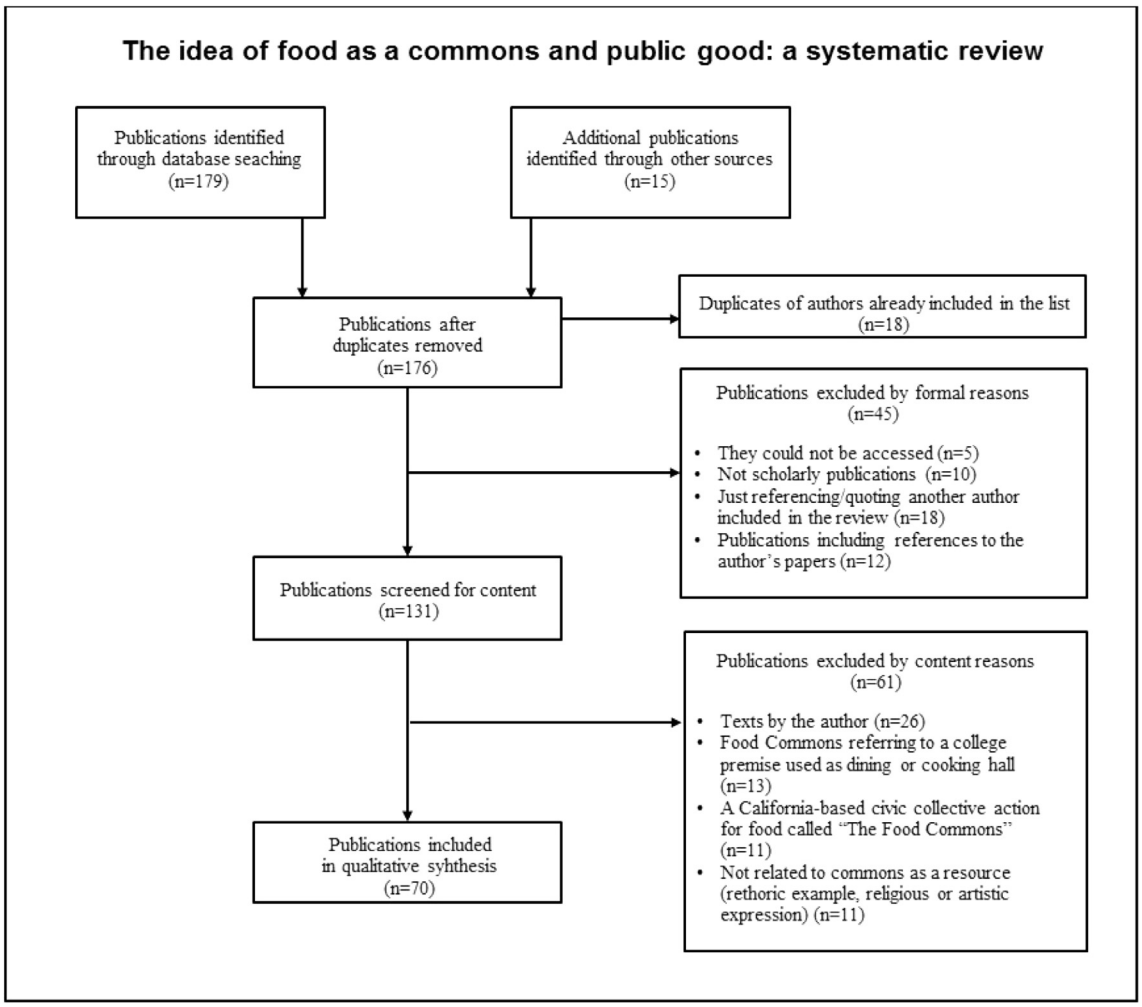


Fig. 1. The PRISMA flowchart for the qualitative meta-analysis of scholarly papers addressing "food + commons" and "food + public good" between 1900 and 2016.

Table 3
"Food + commons": references not considered for the content analysis.

Criteria	"Food as a commons"	"Food is a commons"	"Food commons"	"Food as a public good"	"Food is a public good"	Total
Total hits in Google Scholar	30	4	96	37	12	179
Repetitions of authors already included in the list	10	2	4	2	–	18
Publications that could not be accessed	–	–	3	2	–	5
Not scholarly papers	–	–	6	2	2	10
Publications just referencing/quoting another author (included in the review)	1	–	8	7	2	18
Publications including references to the author's papers	8	–	4	–	–	12
Texts by the author	10	1	10	5	–	26
Food Commons referring to a college premise used as dining or cooking hall	–	–	13	–	–	13
A California-based civic collective action for food called "The Food Commons"	–	–	11	–	–	11
Not related to commons as a resource (rhetoric example, religious or artistic expression)[15]	–	1	9	–	1	11

normative views and political options are being explored in the scholarly *mileu* of food studies as never before in order to find viable (emancipatory, transformative) exit ways to the global food crisis and its discontents.

Regarding trends, and thus downplaying the absolute disparities between "food + commodity" and the other three clusters, the importance or popularity of scholarly papers incorporating the commodification or privatisation of food have also been growing steadily. In this case, and contrarily to expected results, the academic interest on "food + commodity" issues started earlier in the 1970s, triggered by the oil-connected food crises (Headey and Fan, 2008) and the transformation of the locally-produced food into an international trade commodity (Fischler, 2011), and hence preceded the interest in food as a private good that started later in the

Table 4
Scholar texts referring to the "food + commons" and "food + public good" terms.

Period	"Food commons"	"Food as a commons"	"Food is a commons"	"Food as a public good"	"Food is a public good"	Total
	N = 96	N = 30	N = 4	N = 37	N = 12	N = 179
1900–1959	0	0	0	0	0	0
1960s	1	0	0	0	0	1
1970s	2	0	0	0	0	2
1980s	0	0	0	0	0	0
1990s	2	0	0	0	0	2
2000–2007	8	0	0	5	3	16
2008–2016	83[a]	30[b]	4[c]	32[d]	9	158

Note: Literature search is restricted to English-written papers or thesis with an English summary. Duplicates were not removed for quantitative analysis to be able to compare with "food + commodity" where, due to the high figures, a qualitative analysis could not be undertaken to remove duplicates.
[a] 10 hits are the author's texts and 4 are citing them.
[b] 10 hits are author's texts and 8 are citing them.
[c] 1 is author's text.
[d] 5 hits are author's texts.

Table 5
Scholar texts referring to the "food + commodity" terms.

Period	"Food as a commodity"	"Food is a commodity"	"Food commodity"	"Food commodities"	Total
	N = 612	N = 194	N = 13,333	N = 35,005	N = 49,144
1900–1959	6	1	159	572	738
1960s	1	0	124	403	528
1970s	9	6	257	1170	1442
1980s	18	4	613	2410	3045
1990s	53	22	1160	4280	5515
2000–2007	92	37	2120	9170	11,419
2008–2016	433	124	8900	17,000	26,457

Note: Literature search is restricted to English-written papers or thesis with an English summary. Numbers refer to total hits produced by the search algorithm. Duplicates were not removed for quantitative analysis.

Table 6
Scholar texts referring to the "food + private good" terms.

Period	"Food as a private good"	"Food is a private good"	"Privatis(z)ed Food"	Total
	N = 10	N = 30	N = 162	N = 202
1900–1959	0	0	0	0
1960s	0	0	0	0
1970s	0	0	0	0
1980s	0	0	1	1
1990s	0	2	26	28
2000–2007	2	11	44	57
2008–2016	8	17	91	116

Note: Literature search is restricted to English-written papers. Numbers refer to total hits produced by the search algorithm. Duplicates were not removed for quantitative analysis.

1990s, being coherent with the peak decade for neoliberalism and privatizations (Harvey, 2005). On the other side, the alternative considerations of food as a commons or a public good did not start to be progressively addressed by academia until the first two decades of XXI century, initially very timidly (n = 8 for food + commons and n = 8 for food + public good between 2000 and 2007) and then more extensively (n = 117 for "food + commons" and n = 41 for "food + public good" between 2008 and 2016).

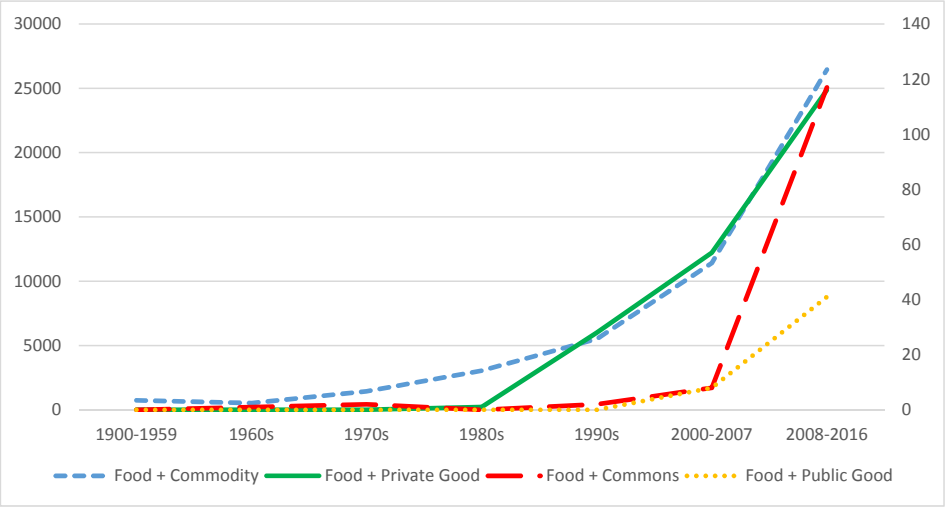
The interest, importance or popularity of "food + commodity + private good", measured by scholarly references, greatly outnumbered those of "food + commons + public good" by three orders of magnitude during the XX century (1442 versus 2 in the 1970s; 3046 versus 0 in the 1980s; 5543 versus 2 in the 1990s) and yet this gap has greatly widened during the 2000–10s with 38,049 references versus 174. It is worth noting that many references included in the former cluster may use the terms in a critical sense, considering the commodification of food as a negative cause or effect of the current crises in the global food system. However, even if one assumes that half or one third of those references comply or defend the valuation of food as a commodity, the supporters of food commodification outnumber by thousands the scholars that have a different political construct of food, as commons or public good. And yet, this alternative option is barely explored (only 70 references in 116 years of science).

The phenomenological approach to food (epitomised in the "food as" search term) largely prevails over the ontological approach to food ("food is") except when food is linked to the "private good" dimension. Considering food as a commons, a commodity or a public good is consistently recognized by a great majority of scholars (more than 75% in all cases, cf. Fig. 5A and B,C) as characteristics external to the food object and thus dependant on the eye of the beholder. Those dimensions are treated as valuations, judgements, moral duties, social constructs or political considerations. It is "us" humans endowing those features on "it" food. It is interesting to note that even with the big (and numerically

Table 7
Systematic review of "food + commons" and "food + public good" in scholarly literature between 1900 and 2016.

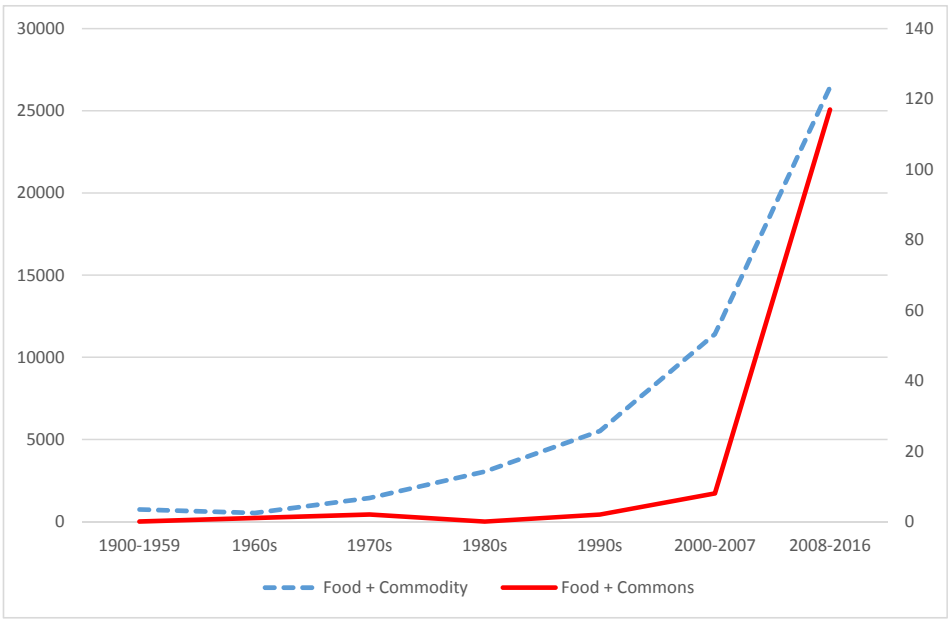
Period	"Food commons"	"Food as a commons"	"Food is a commons"	"Food as a public good"	"Food is a public good"
	Total hits				
	N = 96	N = 30	N = 4	N = 37	N = 12
	References analysed				
	N = 20	N = 10	N = 0	N = 32	N = 8
1900–1959	–	–	–	–	–
1960s	–	–	–	–	–
1970s	Soroos (1977)	–	–	–	–
1980s	–	–	–	–	–
1990s	Beal (1994)	–		Dilley (1992)	
2000–2007	Pretty (2002)	–	–	Pothukuchi and Kaufman (2000) Lerin (2002) Shaffer (2002) Firer (2004) Gurven (2004)+ Almås (2005) Marlowe (2004)+ Henrich et al. (2006)+	Brom (2004)
2008–2016	Johansen (2009) Pessione and Piaggio (2010) Sumner (2011) Lee and Wall (2012)+ Lewis and Conaty (2012) Sumner (2012) Jones (2013) Tornaghi (2013) Peck (2014) Tornaghi (2014a) Tornaghi (2014b) Tornaghi (2014c) Albov (2015) Arce et al. (2015) Tornaghi and Van Dyck (2015) Carruth (2016) Elias (2016)	Dalla Costa (2007)+ Johnston (2008)+ Dowler et al. (2009) Azetsop and Joy (2013)+ Christ (2013)* Negrutiu et al. (2014)* Cucco and Fonte (2015) Karyotis and Alijani (2016)+ Manski (2016) Rundgren (2016)+	–	Bradley (2009)+ Jarosz (2009) Wilson (2009)+ McClintock (2010)+ Arvidsson (2011) People's Food Policy Project (2011) Nelson and Stroink (2012) Wilson (2012) Akram-Lodhi (2013) Lee (2013) Beltrán-García and Gifra-Durall (2013) Page (2013)+ Roberts (2013) Saul and Curtis (2013) Agyeman and McEntee (2014) Bin (2014) Karim (2014) McClintock (2014) Bettinger (2015) Ober (2015) Baics (2016) Di Bella (2016) Hairong et al. (2016)	Fujii and Ishikawa (2008) Caraher (2009) Bratspies (2010)+ Schluter and Wahba (2010)+ Burns and Stohr (2011) McMahon (2013) Taylor (2014)

Note: Own author's references are excluded. References with (*) are citing one of the author's papers on food as a commons or public good (not included in the analysis); and (+) are the 15 additional records identified through other sources.



Note: "Food + commodity" is referred to left axis and "Food" + "private good" + "commons" + "public good" are referred to right axis due to high differences in order of magnitude (tens of thousands vs hundreds).

Fig. 2. Total number of scholarly texts including terms related to "food + commons", "food commodity", "food + public good", "food + private good".



Note: "Food + commodity" is referred to the left axis and "food + commons" to the right one

Fig. 3. Number of scholarly texts including terms related to "food + commodity" and "food + commons".

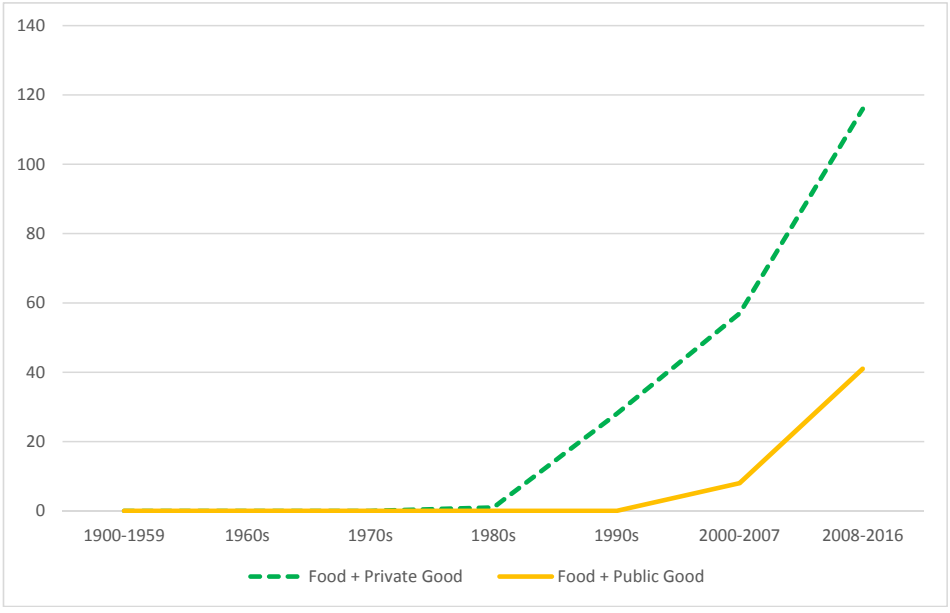


Fig. 4. Number of scholarly texts including terms related to "food + public good", "food + private good".

dominant) "food is/as a commodity" sample, the same percentage is found. And yet, when considering the private good dimension of food, the 40 references analysed portray a radically different academic approach, with 75% of scholarly texts including references to "food is a private good" and only 25% having "food as a private good" (Fig. 5 D). These results point out to a rather ontological approach to food as a private good by the economic epistemology compared to a phenomenological approach to food as public good, a common or even a commodity by other epistemologies and disciplinary domains. The economic school of thought (Samuelson, 1954; Musgrave, 1959; Buchanan, 1965; Ostrom and Ostrom, 1977) considers food is a private good based on just two features (rivalry and excludability), a valuation that not just appears to be reductionists - neglecting the multiple dimensions of food relevant to humans that are not encompassed by the rivalry and excludability determinants- but also absolute, authoritarian and purely theoretical fiction (Cornes and Sandler, 1994; Desai, 2003), defining the very essence of food and not just its utilities.

4.2. Qualitative analysis: exploring the alternatives of food as commons and public good

Prior to the 1990s, there were just one paper on "food commons" (Soroos, 1977) and none on "food as/is a commons or a public good". Food was straightforwardly considered as a private good and/or a commodity, as posited by the dominant narrative

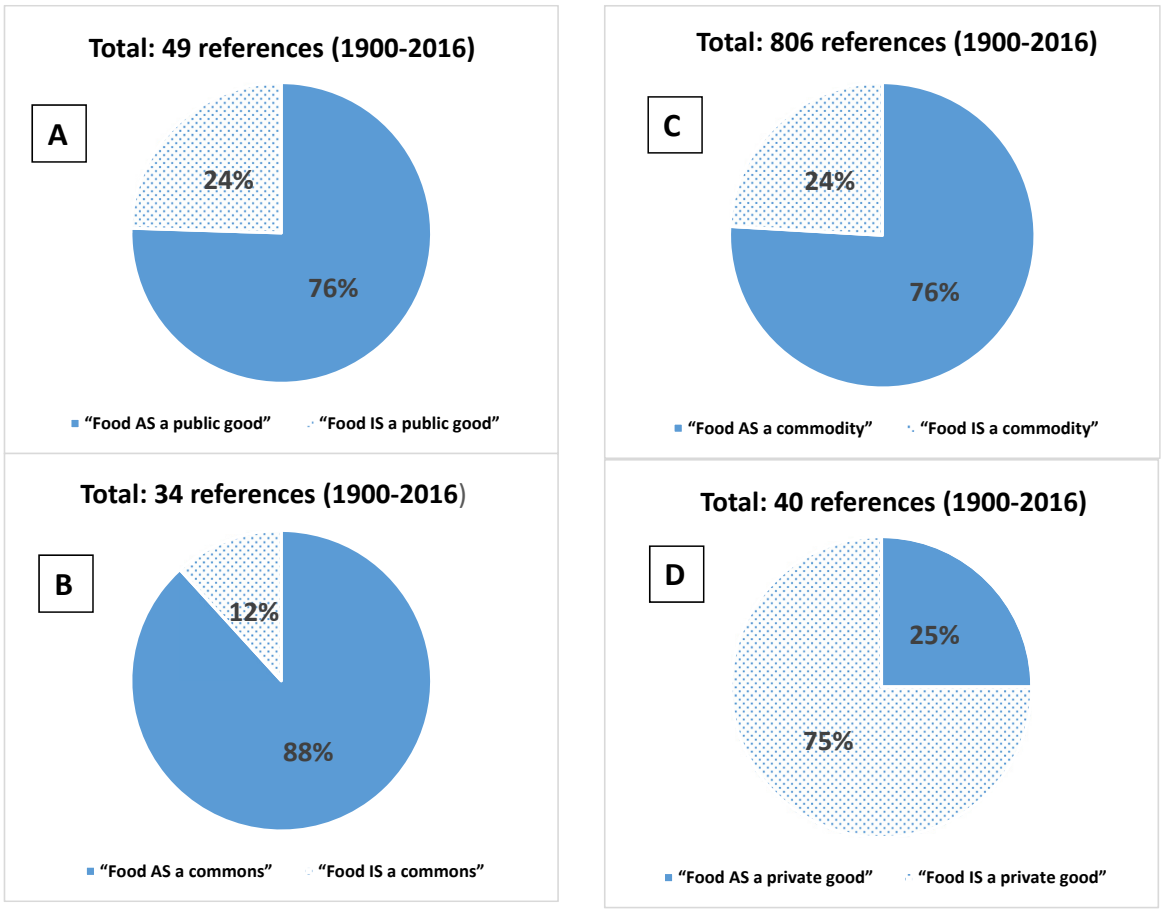


Fig. 5. The phenomenological and the ontological approaches to food in scholarly literature.

developed by the economic school of thought. As a token, between 1900 and 1990, Google Scholar found 5753 references where food is treated and studied as a commodity (see Table 5). During the 1990s, when neoliberalism was rising unstoppably to become the dominant hegemonic paradigm (Harvey, 1996), I found only two mentions: "food commons" by Beal (1994) and "food as a public good" by Dilley (1992). During the same period, 5515 hits associating "food" and "commodity" were reported (cf. Table 5). From 2000 to 2007, the search tool yielded only ten references, eight of them exploring different nuances and case studies where food was treated as a public good, one were was ontologically defined as a public good ("food is a public good" in Brom, 2004) and just one defending the idea of food to be treated as a commons ("food commons" in Pretty, 2002). Finally, since the (so-called[17]) food crisis in 2008 (Von Braun, 2008), the numbers have increased remarkably with 28 references including "food commons" or "food as a commons"[18] and 30 referring to "food is/as a public good" (cf. Table 7). And yet, "food as a commons" barely increased to ten references, two of them mentioning the author's recent papers. Therefore, it is evident the food crisis has triggered an increasing reconsideration of the political nature of food in academia, although this shift is so far rather geared towards exploring the narrative and praxis of "food as a public good" rather than "food as a commons". In any case, this alternative view is still very marginal compared to the hegemonic narrative of the regime (food as a commodity), as it can be seen in the huge amount of scholarly papers devoted to that topic between 2000 and 2016 (37,876 hits, as seen in Table 5, although not all of them shall adopt a positive stance vis a vis the commodification of food, as explained in the methodology).

A content analysis of this academic literature helps us understand how scholars are exploring alternative narratives and specific case studies with regard to food valuations and food transition discourses. The 70 references analysed can be clustered in five groups according to the lenses used to explore the food valuation (historical, political, legal) and the emphasis given to their researches. Firstly there is a group of those who explore the historical consideration of food as a public political issue of concern for rulers and public authorities, with examples ranging from Aristotle's classical Greece, to ancient India, Medieval Europe or present-day hunter-gathering societies. In this group, some scholars also addressed the commodification of food as a process to distance the tradable food dimension from other non-economic dimensions. The second group explores governing mechanisms of food as a public/commons good at different levels with examples moving from the international arena to the household level in Australia, China, Ghana or Cuba, plus local initiatives by civic food networks. The third group considers the relevance of the alternative narratives (food as a commons/public good) as moral compasses for transition pathways with food commons not governed and allocated by the market rules of profit maximisation. The fourth group of scholars is focused on collective actions re-claiming the urban

[17] The author rather opts to refer it as a price spike (Pieters and Swinnen, 2016) or a food price crisis (Headey and Fan, 2008).

[18] It is worth mentioning that the search term "food is a commons" has zero results, other than the publications by the author (excluded from this analysis).

food commons, being those initiatives vehicles for social justice and healthy eating. Finally, the fifth group is formed by those engaged scholars who include the commodification of food as major driver in the development of the neoliberal industrial food system. The latter often reject the consideration of food as a commodity and understand the consideration of food as a public good or a commons as an alternative paradigm that challenges the dominant discourse (counter-hegemonic stance) and/or sustains the alternative praxis (alter-hegemonic stance), being the re-commonification of food part of the emancipatory solution.

4.2.1. The historical analysis of food as a public issue

Several papers historicize the considerations of food as a common or public good and the evolution of the social and economic policies that parallel the evolving moral narratives of food. In that sense, Ober (2015), in his encyclopaedic account of classical Greece, describes the Aristotle's behavioural taxonomy of solitary and social animals, being the production of public goods the distinctive form of cooperation that differentiates solitary animals and herds from social entities. For Aristotle, although both social insects (ants, bees) and humans produce and share food as a public good only humans produce material as well as moral goods (norms, rules, social constructs). That means the material consideration and actions of food as a public good are shared with other animals, whereas its moral valuation is exclusively negotiated within human societies (Aristotle et al., 1920). Likewise, Beal (1994) narrates how an ancient king of India was providing food to thousands of persons in the city, as food was considered as a tool for public policies. This political consideration of food as a public duty (a social construct of each society) has been evolving since the Greek period, and hence one can see how the public control of food prevailed over the private self-interest of peasants and landlords in medieval Europe (Dilley, 1992, p4), what translated into a food system governance based on a complex interaction between private, public and communal proprietary rights and duties. Along the same lines, Bettinger (2015) examined the privatization process of food by aboriginal Indians in California. Initially, hunter-gatherers regarded food as a public good and pooled resources to feed the whole community, severely sanctioning individuals who hoarded for private use. While nuts were considered as a private good, large hunting game (wild animals) were public goods and hunters were obliged to share hunted meat with other villagers. Other authors confirm the public consideration of food by hunter-gatherer societies in Africa and Latin America. Sharing food and eating together was a common feature that helped develop social bonds amongst the Hiwi foragers in Venezuela and the Ache foragers in Paraguay (Gurven, 2004). Moreover, one of the few remaining hunter-gatherer societies that still live a pre-Neolithic lifestyle in Africa, the Hadza of Tanzania, still consider food as a public good since it must be shared with anyone who sees it otherwise the owner can be ostracised (Marlowe, 2004). The relevance of those ancient societies still surviving in modern times is that they show different regards of food, more as a public good or a commons than a private one, and a link to our remote past when all human societies were foragers (Henrich et al., 2006). Besides, one shall not forget that the hunting-gathering period lasted 1000 centuries, till 8000 BC.[19]

Actually, the examples above illustrate the long endurance of social contracts that were crafted by hunter-gathering societies. Social contracts are a minimum set of moral values that determine rules, norms, policies and governance and they emerged as a means to balance the individual and the group interests surrounding their most basic and most important economic activity: food provision (Taylor, 2014)[20]. The moral foundations of the customary food systems[21] were dismantled by the western moral narrative of liberal and individualistic capitalism[22] and enclosure of the common resources.

Later on, the food and agricultural products produced by peasant farmers were at the heart of the emergence of capitalism (Karyotis and Alijani, 2016), that finally reached the present status whereby food is an industrialized product mostly produced uniformly (i.e. natural variations in tomatoes are minimised), safely (i.e. containing as few pathogens or contaminants as possible) and predictable in processing, appearance, cost, preparation and taste (Dowler et al., 2009). The industrialisation and commodification of food brought as a consequence the physical and mental separation between food-producing and food-consuming places and people, contributing to the emotional, intellectual and cultural distancing that people experience in their understanding of and relationship to food (Cook et al., 1998; Morgan et al., 2006; Dowler et al., 2009; Clapp, 2015). And yet, the pre-neoliberal consensus of access to food as a public good was still relevant in the XIX century, as exemplified by analyses of achievements and evolution of the New York City's public market system (Baics, 2016). In this paper, one can see the evolution in the first half of XX century from a tightly controlled system of public markets to an unregulated free market economy.

4.2.2. Governing food as a public/commons good at international, national, local and household level

The second cluster is written by scholars that, after analysing the governance of food systems at international, national and local level, consider food differently, not as a pure commodity to be produced and distributed exclusively according to market rules but as a commons or public good that is better governed by a set of policies and regulations whose main goal is to guarantee fair access to food as a vital resource and right for every human. These scholars develop practical examples on how this different perspective triggers different policies, actions and innovative social initiatives. Food becomes the “uniter” of cultures and generations (Saul and Curtis, 2013), creating communities of mutuality (Pothukuchi and Kaufman, 2000). The idea of considering food as a public good was already detailed by Akram-Lodhi (2013) but it seems that it has not yet gained traction as pointed out by the meagre results found through this Google search.

Based on the idea that Earth's resources are a common possession of humankind, including future generations, Soroos (1977) proposes, in a seminal paper, a practical approach to food governance where international regulated commons would allow for rationale exploitation of natural resources by states while respecting agreed upon limits to national sovereignty, such as agreements reached at that time for fur seals, whales and tuna. He was rather critical to Hardin (1968)'s tragedy of the commons and the Lifeboat approach (Hardin, 1974) to eliminate food assistance to restrain population growth. Additionally, safe and healthy food for everyone is proposed as a feasible policy option as long as food is given the status of a global public good the states have to take care of (Lerin, 2002; Firer, 2004; Burns and Stohr, 2011; Beltrán-García and Gifra-Durall, 2013; McMahon, 2013). Since food and nutrition security becomes an international issue whose benefits are relevant

[19] See here for specific details: http://www2.fiu.edu/~grenierg/chapter5.htm.

[20] In traditional societies, food is treated as a public good although not evenly distributed, as power relations and social norms play a vital role in accessing and distribution.

[21] Built around collective rights, sharing, cooperation and survival of the group.

[22] Primacy is granted to individualism, competition, survival of the fittest, private property, rational choices and utility maximisation.

to all and requiring collective global actions to be achieved, several scholars have posited that it should be considered as a Global Public Good (Bratspies, 2010; Page, 2013), a political understanding that is not yet granted in the international arena or the UN system.

Prioritizing public health and consumer protection over market principles illustrates nicely one major paradigm shift in governance in the case of the EU response to the 2008 food crisis: the consideration of access to healthy food as a public good that requires public intervention through policies, regulations and incentives (Burns and Stohr, 2011). Access to a safe, proper and fair food, considered as a public good, is a question of food democracy and food justice. Along those lines, Di Bella (2016) recommends that public authorities, having a moral responsibility to their citizens' life and rights, should consider food as one of the main fields of their mandate. Other authors from the economic domain arrived to similar conclusions after analysing the origins of food speculative markets and their impact on food prices, and recognizing that speculators and free-riders shall be excluded from the productive cycle of basic goods such as food (Karyotis and Alijani, 2016). Both concluded their paper by saying that food as a "common good" would call for a reconsideration of the role of individuals, firms, organizations and institutions in building a model for preserving and extending the commons. Complementing the economic approach, the rights-based school of thought portrayed food as a public good because of the non-excludability by moral reasons (Bin, 2014).

Then, another group of social scholars posit that transnational movements, such as food justice, food sovereignty and slow food, define food as a public good rather than a market-based commodity (Jarosz, 2009; People's Food Policy Project, 2011). Although several authors defend the idea the food sovereignty movement has defined agriculture and access to food as a public good (Almås, 2005; Arce et al., 2015) by stating that people have a say in how, where and by whom their food is produced (Nelson and Stroink, 2012), I have suggested in other paper that La Via Campesina's traditional claim of food not being a commodity has not been accompanied by the emancipatory alternative narrative of food as a commons or a public good (Vivero-Pol, 2017b). I agree however the way forward to food sovereignty is the production of food as a public good by cooperative and civic food producing initiatives in urban and rural areas (Hairong et al., 2016).

The national case studies are provided by the Cuban and Ghanaian food systems, China's socialist legacy, school food in Sweden and the "Buy Local" campaign in Australia. Wilson (2012) analysed the Cuban case through the lenses of the moral economy with a government that leads with strong hand the food producing system to benefit the maximum amount of Cuban citizens. Cuban policy-makers insist upon a model of national food sovereignty that treats food as a public good rather than a private commodity (Wilson, 2009), a notion that is rooted in the idea of a contract between the state and its citizens, what renders the concept of food sovereignty in Cuba different from its widespread meaning in other Latin American countries. Bin (2014) examines how the dual conception about food as a public good or a market commodity presents a challenge for the Government of Ghana's goal to adequately feed its hunger-affected population. In Sweden, school food holds a unique status as a non-charged, legal right to all pupils in the compulsory school system. School food is a public good and a legal entitlement and specific institutional settings and policies have been crafted to secure the access to that resource to every children (Arvidsson, 2011). Caraher (2009) explores the "Buy Local" campaign in Australia and concludes that food is a public good and not just a commodity, and thus local and national authorities shall act accordingly. Finally, Hairong et al. (2016) argue that food, because of its irreplaceable place in national, ecological and livelihood security, should be a public or semi-public good in China, instead of being a market-distributed commodity, and hence the system that facilitates its production and circulation should be a social and public institution.

At local level, Johnston (2008), Bradley (2009), McClintock (2010), Agyeman and McEntee (2014) and Tornaghi (2014a) analyse the initiatives undertaken by grassroots groups and civic food networks[23] in urban areas as attempts to reclaim the food commons. Those initiatives are experimenting with alternatives to the capitalist organization of urban life while contesting the industrial food narrative (i.e. enclosures leading to privatisation of material and non-material commons) and praxis (i.e. envisioning post-capitalist de-growth, transition towns or peer-to-peer exchanges), re-claiming land appropriation and food sovereignty, and recreating the communal aspects of cultivating, sharing and eating together. As experiments in process, they are not exempted from socio-environmental injustices (Tornaghi, 2013) although their transformative narratives share a set of principles that contest the idea of absolute commodification. Shaffer (2002) and McClintock (2014) highlight how these initiatives seek to subvert the commodity dimension of food, by viewing food as a public good or a binding human right, and therefore prioritising its equitable distribution over profit seeking.

And last but not least, food is regarded as a public good and commons at household level since it is shared by all, eaten together and none is excluded (Fujii and Ishikawa, 2008; Schluter and Wahba, 2010).

4.2.3. Crowdsourcing alternative food policies and transition pathways with a de-commodified food

By using a different vocabulary and rationale, Pretty (2002) argues for food to be considered as a commons rather than a commodity, and for the fundamental importance of human connectedness with nature in interdependent systems. The industrial food system has exacerbated this disconnection between farming and nature, and between food consumers and food producers. The former food commons have been appropriated by enclosures, legal measures or intellectual proprietary rights, with numerous examples ranging from Alaskan salmon fisheries (Lewis and Conaty, 2012) to blackberries so widespread in railroad beds, fence lines and forest edges of western countries (Peck, 2014). Along the same lines, Carruth (2016) coins the term "open source foodways" to refer to a model of ecologically-attuned food production that adapts the lexicon of open digital commons (knowledge commons) to agricultural projects that mix environmental science, amateur knowledge and seeds as agents of public knowledge and resistance; Sumner (2011) explores the links between social justice and the development of a commons-based food system that would provide a fairer and more sustainable food transition; Cucco and Fonte (2015) describe the political dimensions of local food initiatives projects through the lenses of a transformative and emancipatory utopia framework, stating that those alternative pathways can be interstitial ("ignoring the state") or symbiotic ("using the state"); and Lee and Wall (2012) define place-based food clusters around specific food products as food commons. These food commons, which can be legalized as protected geographical labels (appellation d'origine controlee), satisfy the need of value added by producers and the demand of qualitative

[23] Civic Food Networks (CFNs) refer to the network of actors involved in the local food system that, as ecological citizens, partake the responsibility for the sustainability of the food economy and endorse the value of food as a commons and a human right. CFNs aim to guarantee access (both physical and economic) to sustainable food to all people, individuals and communities (Cucco and Fonte, 2015).

differentiated foods by consumers, being more than commodities because they are food with a meaning. That is why these civic food networks operating outside of the dominant food regime serve to honour the cultural values associated with food that cannot be valued by pricing mechanisms (Albov, 2015).

Finally, Roberts (2013), Lee (2013) and Albov (2015) describe how the recent food movements, formed by rural food producers and urban food consumers, are challenging the industrial food system and reshaping a new narrative of food in western societies (Canada, Wales, Finland) where terms such as "food as a public good", "food commons" or "civic food initiatives" are slowly gaining prominence.

4.2.4. Collective actions re-claiming the urban food commons: agriculture and fruit harvesting

The cities and the urban dwellers are agents of innovation and contestation in the era of global food crisis. Urban gardening activists (Crane et al., 2013; Tornaghi and Van Dyck, 2015) are crowdsourcing the civic food commons, building innovative niches of praxis, experimenting in social agriculture and co-creating an alternative narrative of transition. This value-based narrative, meant to inform a different transition pathway, is different from the hegemonic discourse of productivism, individual customers instead of social citizens and commoditised food.

Tornaghi (2014b) provides a practical definition of "the food commons", understood as all those things such as knowledge on how to grow, existence and protection of pollinators, preservation of the genetic qualities of species, availability of land and water to grow food, that render possible to produce food sustainably and to share it equitably. This author, however, does not consider food itself as a commons although acknowledges that is not a commodity either. Other authors restrict the definition to physical places where wild food can be harvested (Jones, 2013) although the engaged scholars are increasingly considering the so-called Food Commons as new loci of action where civil society groups engage in new forms of cultural and economic production of food, based on self-governance (Johansen, 2009), challenging global food regimes and rethinking urban food systems (Tornaghi, 2013).

The "urban food commons" are hence edible landscapes open to all, where food is freely available and distributed through allocation means other than monetised exchanges, such as orchards in public parks, open space community gardens where everyone can plant and everyone can harvest, private property managed collectively to produce food for sharing, and in general projects where common resources (i.e. land, water) are shared for producing food, which is recognised as a right which should be accessible and potentially grown by everyone (Tornaghi, 2014b, 2014c).

Urban food gardens contributes to food justice through its participatory decision-making, community engagement, framing healthy food as a public good, and empowering participants to become emancipated from the industrial food system (Karim, 2014). These self-regulated actions conform the skeleton for reconstructing the social, cultural and political importance of growing and exchanging food outside and beyond monetised relationships (i.e. food is not just sold but shared or wild fruits could be foraged in city trees) (Tornaghi, 2014b).

4.2.5. Commodification as the problem, commonification as the emancipatory solution

The capitalist mindset that shapes the dominant industrial food system has led to the commoditization of food, diverting the main purpose of that system from producing food for human nourishment to producing food to maximise profit (Azetsop and Joy, 2013; Elias, 2016). After the market laws, food is distributed to those who can pay rather than to those who need. Additionally, the commodification of food is seen as undermining people's valuation of food by the nutritional and cultural purposes (Manski, 2016) to ultimately enclosing all the commons that contribute to food production, namely land, water, seeds, fertilisers or agricultural knowledge, and commoditising ecosystem services, such as pollination, photosynthesis or soil regeneration (Rundgren, 2016). Even the ancient and widespread consideration of food as a commons is denied by the hegemonic narrative of the modern food system.

In the last decade, there have been several academic attempts to justify the need to de-commodify food from normative, juridical and practical positions. Dalla Costa (2007) linked the different dimensions of food in stating that "food could only be reclaimed as a fundamental right when it is regained as a commons, a situation that can only be achieved when the food-producing elements are considered as commons as well". In that sense, her holistic approach to the re-commonification is based on the normative principle of respect for: a) human beings (including solidarity and justice), b) the environment, c) health (healthy products and healthy systems) and d) taste. More recently, Azetsop and Joy (2013) ellaborated a critique of the industrial food system using four meanings of the common good as a framework, rhetorical device, ethical concept and practical tool for social justice. The "common good approach" brings about connections between single entities and social networks on the one hand, and individuals and social institutions on the other, moving away from focusing on the individual access to food and individual vulnerability to poor diets to a focus on the social determinants of access.

For a rapidly growing number of engaged scholars, grassroots approaches, urban initiatives, community-supported agriculture and cooperative food ventures are all "reconnecting" the civic food commons with the social economy and the moral values (Dowler et al., 2009; McClintock, 2010), ultimately extending the idea of the commons beyond the physical space where food is produced to be embedded within the public sphere of citizen politics, emancipatory movements and collective actions (Karim, 2014). To do so, all the case studies described in the above-mentioned literature share a non-conventional narrative that regards and value food as a commons or a public good, understanding the commodification of food and the deregulation of the food markets trumpeted by the neoliberal ideology and institutions as a root cause of food insecurity in the world. This does not rule out markets as one of several mechanisms for food distribution, but it rejects the doctrine that market forces are the best way of allocating food (Rundgren, 2016). Therefore, they could endorse, Brom (2004)'s valuation of food: "Food is a special commodity, not only special because it is necessary for our survival; food is also special because it is strongly related to our social and cultural identity". Eating together, cooking and producing part of your own food are emancipatory acts that help de-commodify food and re-embed it with meanings and social bonds (Rundgren, 2016). Following this rationale of the multiple meanings of food to humans, far beyond the market price, Pessione and Piaggio (2010) coined the term "Heritage Food Commons", whereby considering food as a synthesis of nature and culture, a living legacy in continuous transformation. Food is an essential natural resource that is interpreted and reviewed, in popular as well as creative cultures, as cultural phenomena. It is no coincidence that food, together with music and naturally language, is the main tool for preserving memory and therefore the identity of migrant communities all over the world and of all origins. Food is heritage (material and immaterial), thus revealing the identity of a person or community, and a commons, thus being conformed by a local resource, a community and a governance system where the members of the community participate. The authors stressed we all have an ethical duty to preserve that legacy and commons system. Actually, food is so special and important to humans that cannot be

merely treated as a commodity and be effectively safeguarded by the invisible hand of the market (Sumner, 2012).

5. Conclusions

Food being a commodity is the dominant narrative developed by academia during XX century, rising impressively after the first global food crisis in 1973 and the golden decades of neoliberalism (1980s and 1990s). This discourse has been certainly influenced by the primacy of economist's thinking during the second half of the century (Berman, 2009). The power of economists to set the terms of the academic debate on how to value food can be identified as one of the key "lock-ins" maintaining industrial agriculture in place, mirroring other cultural lock-ins supporting GMOs (Vanloqueren and Baret, 2009) or the productivist narrative (IPES-Food, 2016). Academia has been shaped by the dominant narratives of privatisation, enclosures and commodification but it has also shaped and enriched the dominant narratives, especially the economic epistemology of private/public goods, privileging the commodification of food over its commonification. This valuation of food by economic scholars neglects other valid interpretations such as a human right to be guaranteed by the State or a cultural determinant that cannot be traded in the market. The ontological absolute (food is a private good) prevents food acting as a commodity in a situated place and time and as something else under different circumstances (as nicely explained by Lind and Barham, 2004). Food was regarded by the entire society as economists said it should be. In that sense, the reductionist approach to humans (rational and selfish individuals who seek to maximise their utilities) that was prevalent in the second half of XX century was mirrored by the economic approach to private and public goods that crafted the dominant narrative and lay people's understanding about the commons (Mattei, 2013).

This valuation of food as private good and commodity was later on instrumentalised by the ruling elites (governments and corporations) through food policies and regulations that were consistent with this normative and highly reductionist valuation. Hence, for decades food policies were designed and funded to better govern a mono-dimensional commodity whose access is exclusively determined by price and absolute proprietary rights. This narrative sidelined the non-monetized values of food and its essentialness for human survival, and thus many relevant food policy options were automatically discarded because they conflicted with the commodity nature of food. Food could not be provided for free to people that could not pay for it, food producers could not become civil servants to produce food for State's needs, the right to food has been constantly denied by the main advocates of food commodity markets, negative externalities of unsustainable food production were not incorporated in final prices thanks to huge public subsidies to food corporations, trade restrictions to food products were lifted for the benefit of the corporations that control the international food trade, and collective actions for food (including seeds, land, water, knowledge) were restricted, enclosed and even prohibited by stringent regulations that were designed to support the for-profit trade of food commodities, undermining alternative means of exchanging and accessing the food commons.

Nevertheless, the alternative approach to food as a commons and public good has been struggling to survive as a valid narrative in certain academic circles and it seems to be experiencing a renaissance in the last two decades, especially after the second global food crisis in 2008. Only 70 articles including that narrative have been found through a systematic review, compared to the nearly 50,000 articles that deal with food as a commodity (although not of all them contain supportive stances or endorsement of that valuation). The content analysis of these papers has yielded interesting insights such as the long endurance of social contracts that regarded food as a commons. For more than 1000 centuries in human history food has been considered as a commons. Herd leaders, village majors and national rulers have often taken care of their followers' food needs, since the pre-neoliberal consensus was valuing food as a political issue and a power enabler. For a century, scholars barely mentioned that food could be considered as a commons or public good. It was a sort of anathema, a utopian thought or a naïve effort of some fringe scholars. And yet, the last two decades have seen a rapidly rise in academic interest on the issue, exploring the moral, political and cultural implications of that narrative, that clearly confronts the hegemonic construct of food as a private good and commodity.

Outside the scholarly milieu, the situation is pretty similar. A myriad of customary food system and contemporary civic food initiatives are also growing rapidly, resisting the commodification of food and re-claiming the neglected meanings of food for individuals and societies, re-constructing the forgotten narrative of food as a commons and public good that was the norm in human societies all over the world for thousands of years. Indigenous narratives such as Sumak Kwasay or Ubuntu, grassroots initiatives such as the food sovereignty movement lead by la Via Campesina and civic food networks such as the Transition Movement or Slow Food are reclaiming a non-commodified re-valuation of food, a life enabler, a natural resource, a cultural pillar and a binding human right at international level. Those innovative and traditional niches are re-constructing a transition pathway for a fairer and more sustainable food systems out of the dominant narrative of food as a commodity and the productivist transition path.

The hegemonic valuation of food as a commodity is cracking slowly but consistently. This normative view, stemmed from the Western capitalist culture, cannot dictate and colonize the multiplicity of food meanings by different past and present cultures. Actually, other epistemologies (Santos, 2014), cultures (Dussel, 2013), customary traditions (Gurven, 2004; Taylor, 2014) and contemporary initiatives (Tornaghi, 2014b; Cucco and Fonte, 2015) consider food differently, not as a pure commodity whose main goal is profit maximisation, but as a multi-dimensional commons or public good. The univocity and apparent neutrality of the economic approach to the public/private/commons goods (just using two easy-to-understand criteria and then accepting multiple exceptions and nuances to the theory) obscures the power differential that generated that understanding of food and the benefits the valuation of food as a private good generates for those in power. The overwhelming number of academic references on food as a commodity represents the "mono-culture of the mind" that has been perfectly described by Vandana Shiva (1993).

There is a need to break this hegemonic mono-culture of ideas by bringing unconventional and radical perspectives into the debate on possible solutions for a transition towards a fairer and sustainable food system. We need to think outside the "socially-constructed reality" we live in these days, thinking differently from what we are entitled, permitted or accepted to think, breaking narratives accepted-for-granted and seeking utopias that within 50 years may easily become the new accepted normal. And academia shall be at the forefront in supplying moral foundations, economic possibilities and policy options to sustain the radical change in the industrial food system. Following Eric Olin Wright (2010)'s "real utopias", scientific and political evidence points to the need to develop alternative visions to the industrial food system, no matter how little support that may get initially, since the mere fact of proposing alternatives outside the dominant mainstream may

contribute to creating the conditions in which such support can be built, as Victor Hugo nicely wrote[24]. And the power of food to generate a substantial critique to the neoliberal corporate and industrialized food system and to harness multiple and different alternatives shall not be underestimated (McMichael, 2000). Food is a powerful weapon for social transformation. The consideration of food as a commons or a public good can be considered as a utopian thought in three ways, after Stock et al. (2015): as critique of existing and dominant narrative of food as a commodity that sustains the industrial food system; as an alternative that experiments with possible better futures in innovative niches; and as process that recognizes the complexities inherent to transition pathways to change the dominant regime.

The consideration of food as a commons includes sharing, cooperation, re-embeddedness, ecologically-attuned food systems, transformative and emancipatory framings, more meaningful food and a narrative that provides the moral ground where customary niches of resistance and contemporary niches of innovation may work together to crowdsource a powerful and networked alternative to produce good food for all within the planetary limits. Valuing food as a commons will enable food producers to fulfil a role as environment stewards (Ding et al., 2016), eaters[25] to unfold more democratic and participatory food systems (De Schutter, 2014), managers to foster people's engagement in managing their own life-enabling systems (Pretty, 2002; Rundgren, 2016), engaged food professionals to find a common narrative that sustains alter- and counter-hegemomic transformative actions (Vivero-Pol, 2017a) and, last but not least, humans to reconsidered their role in the relational valuation of Nature (Seegert, 2012; Chan et al., 2016). The consideration of food as a commons is:

- A normative concept and a moral compass for a fairer food transition or, following a Kantian rationality, a point of departure and a justification of civic food actions.
- A social construct, politically speaking. This consideration is rather epistemological (place-, time- and culture-related) and not ontological (as considered by the currently hegemonic economic approach to food).
- A fundamental right, legally speaking, associated to the most fundamental right of all, the right to life. This link confers primacy to the right to food over the right to private property.
- The recognition of a historical reality that has been dominant in the greatest part of human beings' existence: the special political consideration granted to food.

Finally, should the complete food system be managed as a commons, it could fulfil a triple role as life sustainer, as a means of passing on our own cultural identity and as a vehicle for the production and stewardship of biodiversity, understood as the wealth and complexity of all living things (Pessione and Piaggio, 2010). Managing food systems as a commons would, ultimately, be the best way to manage the Planet Earth, our common home.

Conflicts of interest

I don't have conflicts of interest.

[24] "There is nothing like a dream to create the future. Utopia today, flesh and bone tomorrow" Victor Hugo, Les Miserables, 1862.

[25] Thompson (2012) (p.64) considers that defining ourselves as "eaters", in opposition to just consumers, may be a more important self-awareness narrative in a global society than establishing, for instance, a nation-state identity.

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CHAPTER 4:
FOOD AS COMMONS OR COMMODITY? EXPLORING THE LINKS BETWEEN NORMATIVE VALUATIONS AND AGENCY IN FOOD TRANSITION.

CHAPTER 4: FOOD AS COMMONS OR COMMODITY? EXPLORING THE LINKS BETWEEN NORMATIVE VALUATIONS AND AGENCY IN FOOD TRANSITION

"It is from the champions of the impossible rather than
the slaves of the possible that evolution draws its creative force"
Barbara Wootton, British sociologist, In a World I Never Made, 1967

4.1.- SPECIFIC RESEARCH QUESTION AND HIGHLIGHTS

Although the absolute commodification of food is deemed by many scholars and grassroots activits to have played a central role in driving the current crisis of the industrial food system, this socially-constructed valuation remains the uncontested narrative to guide the different transition pathways towards fairer and more sustainable food systems. By exploring the normative values in the transition landscape, this chapter seeks to understand how relevant is the hegemonic narrative of "food as a commodity" and its alternative of "food as a commons" to determine transition trajectories and food policy beliefs.

This case study aims to incorporate a rather diverse array of professionals and committed activists working in different institutions (with diversity of mandates, funding sources, size, cultural settings, policy or praxis-related, etc) hence reflecting the multiplicity of food considerations that can be found in the landscape of food transition pathways. It is important to stress this case study will be exclusively focused on understanding the individual agency of food-related individuals without considering the mandate of the institutions where they undertake their activities. So, I explore how individual agency (represented by the self-assigned position in the the food transition landscape and the reforming and transformative political attitudes) is informed by different value-based food narratives. Actually, the research question this chapter aims to respond is: "*How the value-based narrative on food (as a commodity or commons) influences individual agency in regime and niches of transitional food pathways?*"

As a first approach to test whether the way we value food (as commons or commodity) is connected to agency in food systems, the results of this case study shall be regarded as provisional, just yielding preliminary insights on the links between socially-constructed narratives and preferred / non-preferred policy options and individual attitudes of transition. Similar studies could be undertaken with more homogenous constituencies such as alternative niches (community-supported agriculture, organic cooperatives, organic farmers, and indigenous farmers), mainstream institutions (such as UN, EU, governmental development agencies or international NGOs) and private sector enterprises (transnational agri-food corporations, philanthropic foundations) so as to complement these results. Those additional studies may test the hypothesis that the normative valuation of food shapes the attitudes in transition and the preferred policy options (privileging those that get aligned to my personal view of food and discarding those that do not fit with it).

HIGHLIGHTS

- Applying the Multi-level Perspective framework of the Transition Theory to analyse "individual agency in transition", this research has enquired 95 food-related professionals and activists

that belong to an online community of practice on valuation of food dimensions, position in the food system (either working in the regime or innovative niches) and political attitudes towards the food system (namely gradual reformers, counter-hegemonic transformers and alter-hegemonic transformers).

- Results suggest the socially-constructed view of food as a commodity is positively correlated to the gradual reforming attitude, whereas food as a commons is positively correlated to the counter-hegemonic transformers, regardless the self-defined position in the transition landscape (regime or niches). However, no causality can be inferred from this analysis, being the first of its kind, and additional research with different groups will certainly enlighten this correlation. A few specific food policy options are associated to each food narrative (rather commonsensical) but results are not conclusive and additional cases will certainly refine the hypothesis.
- There are multiple loci of resistance with counter-hegemonic attitudes in varied institutions of the regime and the innovative niches, many of them holding the narrative of food as commons. Therefore, this research debunks the widely accepted stereotype that individuals working in the regime just aim to preserve the established socio-technical structures by means of gradual reforms.
- Conversely, alter-hegemonic attitudes of transformation are not positively correlated to the alternative discourse of food as a commons and they may inadvertently or purportedly reinforce the ‘‘neoliberal narrative’’, since they do not question the neoliberal rules to allocate food as a commodity and they may also contribute to de-politicize the food-related actions.
- Food as a commons, presented as a normative and heuristic narrative based on the multiple dimensions of food that cannot be valued in market terms, seems to be a relevant framework to be further explored by social, political and psychological scholars. This narrative could enrich the multiple transformative narratives (i.e. food justice, food sovereignty, de-growth, transition towns, etc) that challenge the industrial food system and therefore facilitate the convergence of movements that reject the commodification of food.

4.2.- PEER-REVIEWED ARTICLE

sustainability

MDPI

Article

Food as Commons or Commodity? Exploring the Links between Normative Valuations and Agency in Food Transition

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Abstract: The food system, the most important driver of planetary transformation, is broken. Therefore, seeking a sustainable and socially-fair transition pathway out of this crisis becomes an issue of utmost priority. The consideration of food as a commodity, a social construct that played a central role in this crisis, remains the uncontested narrative to lead the different transition pathways, which seems rather contradictory. By exploring the normative values on food, this paper seeks to understand how relevant is the hegemonic narrative of food as commodity and its alternative of food as commons to determine transition trajectories and food policy beliefs. Applying the multi-level perspective framework and developing the ill-studied agency in transition, this research enquired food-related professionals that belong to an online community of practice (N = 95) to check whether the valuation of food is relevant to explain personal stances in transition. Results suggest that the view of food as commodity is positively correlated with a gradually-reforming attitude, whereas food as commons is positively correlated with the counter-hegemonic transformers, regardless of the self-defined position in the transition landscape (regime or niches). At a personal level, there are multiple loci of resistance with counter-hegemonic attitudes in varied institutions of the regime and the innovative niches, many of them holding this discourse of food as commons. Conversely, alter-hegemonic attitudes are not positively correlated with the alternative discourse, and they may inadvertently or purportedly reinforce the neoliberal narrative. Food as commons seems to be a relevant framework that could enrich the multiple transformative constituencies that challenge the industrial food system and therefore facilitate the convergence of movements that reject the commodification of food.

Keywords: food valuation; food as commons; food as commodity; transition theory; narratives of transition; agency in transition; transformative agency; counter-hegemonic attitudes; gradual reformers

1. Introduction

"Food is not a commodity". This statement seems to be increasingly concealing agreement from very different constituencies and political leaders, starting from Pope Francisco's headlines-catching encyclical text "Laudato si" [1] with noteworthy thoughts delivered in recent speeches at FAO (2014) and WFP (2016), followed by Via Campesina's representatives in hundreds of conferences [2], the U.S. President Clinton's statement delivered in 2008 ("Food is not a commodity like others... it is crazy of us to think we can develop a lot of these countries by treating food like it was a colour television set" (quoted by Philip McMichael [3])) and ending with numerous researchers from different disciplines [4,5]. Pope Francis, voicing a renewed Catholic Social Teaching (According to some authors [6], former

Catholic doctrine of property was influenced by the classical liberal tradition founded by John Locke [7]. However, the revision of this doctrine brought the principle of the universal destination of the world's goods having precedence over the right to private property (Laudato Si, para 93) [1]), said during his Rome speeches that "it is painful to see the struggle against hunger and malnutrition is hindered by the primacy of profit, which have reduced foodstuffs to a commodity like any other, subject to speculation, also of a financial nature" and that "we have made the fruits of the Earth—a gift to humanity—commodities for a few, thus engendering exclusion", whereas "we are no longer able to see the just value of food, which goes far beyond mere economic parameters". Nowadays, however, the industrial food system continues treating food as a commodity and not as a sustainer of life [8] (p. 11), being its value no longer based on its many dimensions that bring us security and health, but on the tradable features that can be valued and priced in the market. Value and price are thus mixed up, superseding non-economic dimensions, such as being the essential fuel for the human body or its relevance for individuals' and societies' culture. Accepting that the dominant industrial food system is in a deep crisis [9–11], recognizing that multiple stakeholders are looking for different transition pathways out of this crisis [12] and based on the idea that the commodification of food is the major structural cause of this crisis [13], this paper explores the different dimensions of food relevant to humans, how food-related professionals value these dimensions and what valuations are more often found in different loci of the transitional food system, thus contributing to the understanding of the role of agency in steering transition pathways in the global food system.

In this paper, the contemporary industrial food system is identified as the dominant regime, its primary narrative of "food as a commodity" being the hegemonic discourse regarding the valuation of food, after Gramsci's concept of hegemony of ideas [14], and the default political attitudes are interpreted as follows: gradual reforming as the preferred stance by the actors that conform to the regime [15,16] and transformative innovations to be the most prevalent within those respondents working in niches [17,18].

The paper is organized as follows: Section 2 explains the symptoms of the deep crisis that affect the dominant regime of the global food system, here termed as the industrial food system. Those symptoms are then linked in Section 3 to the absolute commodification of food, a social construct identified as the underlying cause that fuels this crisis. Section 4 provides an introduction to the multi-level perspective of socio-technical transitions and explains the meanings of agency in transition and agency in food systems. Section 5 moves beyond the theoretical approaches to agency to explain the three proxy indicators used to understand agency in this paper, namely the transition locus, the political attitudes and the valuation of food, as well as the different typologies created. Section 6 describes the methodology, justifies the appropriateness of the global sample (understood as a community of practice with web-based connections) and describes the interviewees. Results are presented in detail in Section 7, firstly with descriptive results of the agency variables and then detailing the correlation and regression analyses. Section 8 incorporates the discussion of the main results and the implications of the different valuations of food dimensions and regime-niches' dialectical relationships. The paper concludes in Section 9 with the recognition that the normative way we value food, either as a commons or a commodity, shapes our attitude in the transition scenario. Finally, there is a call to food-related scholars from different disciplines to critically engage with the unfolding of the alternative narrative of "food as a commons" where the multiple dimensions of food, other than the economic ones, are equally and properly valued. Due to space restrictions, Supplementary Materials for Section 5 (agency variables), Section 6 (methodology) and Section 7 (results) and three appendixes are included at the end of the article.

2. The Food System Is Broken

The global food system is in crisis —when referring to global, the author is mostly referring to the industrial food system that conforms the dominant regime— and therefore, multiple tensions are pushing for exit alternatives to this crisis stage (called transition pathways in this research). The current economic model of endless growth is pushing us inexorably towards the limits of natural resources

and planetary life support systems, limits that we have already surpassed for four out of nine global thresholds [19]. Human beings are becoming the main cause of planetary transformation, leading us to a new era that has been termed as the Anthropocene by geologists [20] or the Capitalocene by sociologists [21]. Within the human-made set of activities that are drastically transforming Earth, food-production leads the way [22]. Agriculture, the economic activity forty percent of the world's population relies on for their livelihood [23], is the main driver of Earth's destruction. Although the need for a drastic shift has become commonly accepted by many scholars from different disciplines [10,24], the transition pathway to follow is still subject to dispute.

Globally speaking, we have a troublesome relationship with food, as more than half the world eats in ways that damage their health [25]. Obesity and undernutrition affect an estimated 2.3 billion people globally [26], and we have still 795 million undernourished people in the world [27]. The ironic paradoxes of the globalized industrial food system are that 70% of hungry people are themselves food producers [28]; food kills people [29,30]; food is increasingly not for humans (a great share is diverted to biofuel production and livestock feeding [31]); and one third of global food production ends up in the garbage every year, enough to feed 600 million hungry people [32]. The side-effects of the industrial food system can be summarized in high water waste [33]; the impoverishment of the nutritious properties of some foods [34]; an overemphasis on the production of empty and cheap calories that increase obesity; soil degradation and biodiversity loss amongst others.

Due to this crisis, multiple voices call for a paradigm shift, although the values, narratives, economic and moral foundations of that new aspirational and inspirational paradigm are not yet elucidated. There are several narratives of transition on where do we want to go and how are we going there. Nevertheless, it is worth mentioning that, despite this call for "a paradigm shift", major analyses on flaws in the global food system and the very existence of hunger do not question the very nature of food as a private good [25,35–37]. Yet, there is a growing consensus in certain areas of academic research, as well as within the transformational social movements that consider the absolute commodification of food as one of the faulty rationales that are leading us to this crisis. This commodification obscures other non-economic dimensions that are quite important for individuals and society as a whole.

3. Commodification as a Major Cause of This Crisis

The conversion of goods and activities into commodities has been a dominant force transforming all societies since at least the mid-nineteenth century [38,39], a process that has led to today's dominant industrial system that fully controls international food trade [28] and increasingly exerts a monopoly over agricultural inputs, such as seeds [40], water [41], land [42], agro-chemicals or machinery [43], while failing to feed the world's population in a sustainable manner. Considering food as a commodity refers to unbranded or undifferentiated items from multiple producers, such as staple grain, beef meat or fresh vegetables that are largely valued by its price in the market. What makes food a commodity is the reduction of its multiple values and dimensions to that of market price, being profit maximization the only driving ethos that justifies the market-driven allocation of such an essential for human survival [44]. Profit-seeking explains why food is wasted and food is actually not meant to feed people. The industrial food system basically operates to accumulate and underprice highly caloric food resources and maximize the profit of enterprises instead of maximizing the nutrition and health benefits of food to all [45,46]. As a commodity, international food trade that only accounts for 23% of global food production [47] is dominated by a few transnational companies [45].

The social construct of food as a commodity denies its non-economic attributes in favor of its tradable features, namely durability, external beauty and the standardization of naturally-diverse food products, leading to a neglect of the nutrition-related properties of food, alongside with an emphasis on cheap calories. These cheap calories are low-cost sources of dietary energy, such as refined grains, added sugars and fats, which, inexpensive and tasty, together with salt, form the basis of ultra-processed industrial food; the more nutrient-dense lean meats, fish, fresh vegetables and fruit are generally more costly because they are not so highly subsidized [48]. They not only come at great cost to the

environment (the sustainability issue), but also human health (the obesity issue) and social relations (eating alone is mounting). The "low cost" industrial food system that delivers cheap food —food is cheap in just one specific sense: more calories produced with less average labor-time in the globalized commodity chain system [49]—to a large proportion of the world's population is based on capitalism's greatest strength, namely its capacity to create and appropriate cheap natures, these being labor, food, energy or raw materials [50].

Under capitalism, the value in use (feeding people) is highly dissociated from its value in exchange (price in the market) [51], giving primacy to the latter over the former [52]. Food as a pure commodity can be speculated on by investors —speculation on food commodity futures represents the most extreme effect of the commodification of food [10] with no recognition of its dimension as an essential element of life—modified genetically and patented by corporations, or diverted from human consumption just to maximize profit, the latest twist on this being the substitutionism of food commodities [53], whereby tropical products (sugar cane, palm oil, etc.) are replaced by agro-industrial and pharmaceutical by-products (for high fructose corn syrup, margarine, etc.). In the dominant narrative of the industrial food system, food is valued as a commodity and a tool of power, while humans are merely seen as consumers whose only way of asserting their autonomy is via the ultimately pointless choice between food brands [54]. Food agency is restricted to the "sovereign act of consuming", which leads to a loss of agency to govern a vital resource.

To many, this reduction of the food dimensions to one of a commodity explains the roots of the failure of the global food system [55,56]. Moreover, market rules not only put prices to goods, but in doing so, markets corrupt their original nature [57]. The commodification of food crowds out non-market values and the idea of food as something worth caring about, such as recipes associated with some types of food, the conviviality of cooking or eating together, the local names of forgotten varieties and dishes or the traditional moral economy of food production and distribution, materialized in the ancient and now proscribed practices of gleaning and famine thefts. Those food-related qualities can neither be valued nor regulated by the market, which is why the treatment of food as simple commodity results often in social upheaval [16].

4. Theoretical Premises of "Agency in Food Transitions"

The Multi-Level Perspective (MLP) on sustainable transitions is a theoretical framework that explains the transition pathways towards an enhanced sustainability between different stages of socio-economic systems [58,59]. As the global food system is transiting from a multiple crises stage towards an aspirational sustainable one, this framework is judged as appropriate to be used here. Key elements in this theory are the innovative niches, the dominant regime and the broader landscape, as well as the interactions between these three elements [60]. Niche-innovations may gradually develop through learning processes, the expansion of social networks and supporting constituencies, as well as the articulation of appealing visions and expectations [61], in what is termed as the narrative. Socio-technical transitions may take different pathways, and they involve contested processes in numerous loci, multiple social groups, diverging narratives of transition, clashing ideologies and vested interests, many of which are outside the immediate control of policymakers.

However, the transition theory, as originally formulated, seems to be insufficient to explain the forces that enable the fittest niches to become relevant competitors of the mainstream regime and how some of those niches may co-exist, confront or replace the mainstream all along the transition pathway. A fine-tuned analysis of driving agents in the socio-technical regimes has to be conducted so as to understand the main role of agency, exemplified here as actual people in existing institutions holding specific values or defending a particular narrative, the power balance of different agents and the hegemonic paradigms.

Human agency in transition drinks obviously from the theory of agency in development and the theoretical approaches to multi-dimensional poverty undertaken by Amartya Sen, who defined agency as "an assessment of what a person can do in line with his or her conception of the good" [62].

People who enjoy high levels of agency are engaged in actions that are congruent with their values [63] or their own interests [64] (p. 15); human agency, either individual or collective, is fundamentally cultural, and the role of narratives is central in its underpinning [65].

Along those lines, agency in transition can be understood as motivations, beliefs and values of individual agents steering or influencing the transition pathways [66], and its conceptualization in transition theory has not been properly addressed, being a recurrent subject of critique by authors that analyzed the politics of transitions [67,68]. Actually, although it is the agency of actors that drives transitions [69], agency-sensitive analysis of sustainable transitions has been very rare in the first period of the transition academic research. As a sort of defense, Geels responded that transition trajectories and alignments were always enacted by social groups (or in our particular research, a community of practice) [59].

In the last few years (and especially since the 2008 food crisis), the MLP framework has increasingly been used to understand transitions in the agricultural and food systems [70–73], transitions spurred by the generalized feeling that the 2008 crisis of international food prices was just a symptom of a broader and structural problem in the globalized industrial food system. As food production and consumption practices are essentially social, cultural, as well as biological [54], understanding "agency" beyond the socio-technical innovations, enabling legal frameworks and policies that frame transitions is pivotal to interpret the dynamics of change and the struggle between transition trajectories. Food is one of the structures of society [74] (p. 53); the desire for food is the most powerful driver of human agency [75]; and food has been associated with agency [76], power [77] and a means to contest the system [78]. Therefore, conflict and contestation are inherent to food systems because they involve the production, distribution and access of a vital resource for humans that greatly structures our societies and largely shapes our cultivated planet. Therefore, understanding transitions in the global food system cannot be fully undertaken without addressing "individual agency of food system actors", either in the form of the powerful agency of regime actors trying to protect their status and only accepting gradual reforming proposals or as transformational agency aimed to revolutionize the system, a position that can be materialized as counter-hegemonic constituencies (i.e., food sovereignty, agro-ecology) or alter-hegemonic ones (i.e., transition, de-growth, commons).

5. Agency Variables Explained

This research aims to elucidate the "individual agency in food systems in transition" that informs different scales and depths of change, has different views on production and consumption, takes inspiration from different academic disciplines, represents different views on policy and embodies different epistemological and normative assumptions. It is important to stress that we are analyzing human agency (people's values and narratives and political attitudes) and not institutional agency or mandates. Although the author recognizes the complexity and nuances of personal positions, food valuations and attitudes of transition cannot be encapsulated in two or three typologies (as presented below); this research is a first exploratory analysis of different food valuations, and this reductionism is necessary at this point to glimpse broad correlations. Further research and more samples will be required afterwards to test the results of this paper. To explore agency, this research uses three proxy variables based on where interviewees position themselves in the transition landscape, what political attitude they adopt and how they value food. The former two variables are explained in detail with extensive literature in Supplementary Materials whereas the valuation of food dimensions is discussed below. The three variables are briefly summarized as follows:

(a) The self-consideration of the position of the respondent's food-related activity in the food system transition landscape being either regime or niche, after the MLP theory.

(b) The political stance of the food-related activity the interviewee is involved with—vis à vis the (existing) food system—is defined here as reforming or transformative, being the latter split into alter-hegemonic and counter-hegemonic. Reformers advocate for incremental changes, adjustments and moderate shifts as long as the core features of the system remain untouched.

Transformers seek a more profound and drastic change in structures, values and the balance of power. Alter-hegemonic works towards an incremental erosion of structures within interstices and edges, whereas counter-hegemonic promotes a complete up-rooting of the deep structures that preserve the status quo.

(c) The valuation of different food dimensions, primarily comparing economic and non-economic dimensions, enable us to classify the respondent's regard as valuing food as a commodity (mono-dimensional approach) or a commons (multi-dimensional approach). The conceptual framework of the multiple dimensions of food important for humans (see Figure 1) has been drafted by the author in previous papers [79,80] and refined in the paragraphs below. The valuation of these dimensions corresponds to a perception of "food as a commodity", when the economic tradeable dimension prevails over the non-economic ones; or "food as a commons", when the different dimensions are equally and properly valued, and the tradeable dimensions does not obscure the non-economic ones.

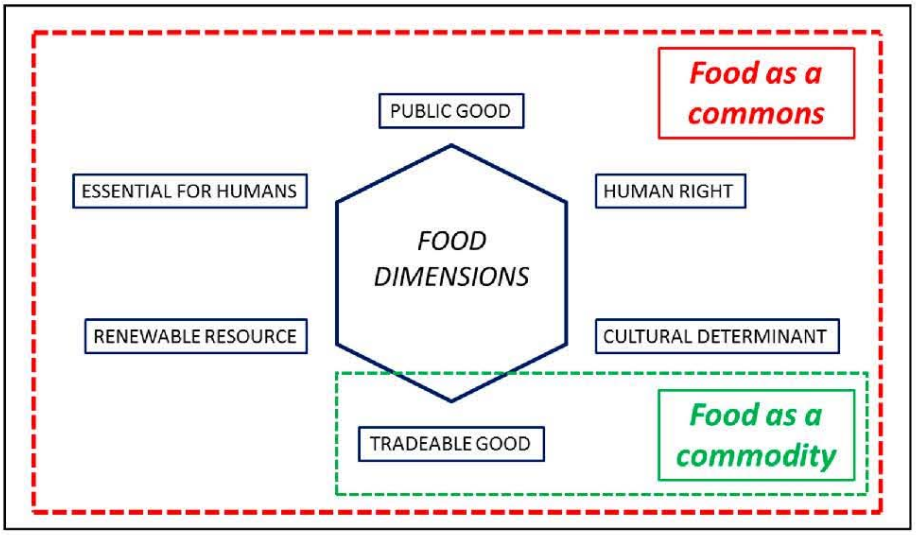

Figure 1. The six dimensions of food relevant to humans and explored in this research.

5.1. The Multiple Dimensions of Food Important to Humans

Food is one of the three essential resources humans require to keep their vital functions, along with water and air. Food is, first and foremost, a satisfier of the human need of subsistence [81] that impacts strongly our capabilities and agency [82]. Food as a resource, and eating as the act of satisfying that need, is an absolute or categorical need because it is determined by our biological requirements, which exerts particular demands on moral agents and public policies [83]. As an absolute need, it is neither substitutable nor negotiable, as it cannot be considered as a social construct. In that sense, an essential principle is applicable to absolute human needs: nobody´s non-substitutable need may be sacrificed to the desires or lesser needs of any group of other people [84] (p. 24).

Along those lines, influential scholars considered the existence of "primary goods" from which the other goods are derived (Rawls's "merit goods" [85] or Polanyi's "livelihood of man" [86]), those goods deserving a special treatment in our society. A just society requires that all humans have the capability to live the lives they have reason to value [82], and in order to do so, it is unacceptable on normative grounds that every human cannot satisfy his/her food needs when we already grow enough food to feed adequately the current and the expected population [27,87] and that food scarcity is artificially created through human-made enclosing mechanisms and political and institutional choices [88].

Being that vital need absolute and the same in all cultures and in all historical periods [89], access to adequate food has been re-constructed as a human right (a social construct that is context-specific)

in the second half of the XX century [90]. In that sense, food is formally considered a binding human right recognized under international law. The right to food protects the rights of all human beings to feed themselves in dignity, either by producing their own food, by purchasing it or by receiving it from welfare systems, as enshrined in Article 25 of the Universal Declaration of Human Rights [91] and Article 11 of the International Covenant on Economic, Social and Cultural Rights [92]. Designating a good as a human right means under no jurisdiction and no circumstances may that good be denied to anybody [93] (p. 120).

It is worth mentioning that during the same period, a parallel social construction was also built up by economists around the public and private nature of goods, a classification based on just two features (excludability and rivalry) that posited that food was a private good and thus an appropriate candidate to be better allocated by market forces instead of public institutions [94]. However, those two features are nothing but another social construct, and society can modify the (non)-rivalry and (non)-excludability of goods that often become private or public as a result of deliberate policy choices [95]. In the case of food, the excludability of a good that is so essential to human beings shall be tempered by the compulsory fulfillment of a basic right to life if the specific moral grounds of any given society in any given point of time are so considered.

Additionally, none can deny the importance of food as a foundational pillar of culture and civilizations. Everything having to do with food, such as its collection, capture, cultivation, preparation and consumption, represents a cultural act [96]. In many countries, social life pivots around meals, and there are shared values about what is good food [97]. Not just society-wise, food is also central to our identity as individuals and as members of a society [98]. For centuries, food was cultivated in common and considered a mythological or sacred item, and fits production and distribution has been (and still is) thus governed by non-market rules, being in many cases produced, distributed and eaten in commons [99]. Food plays a key role in creating social bonds with relatives, friends and colleagues, since humans tend to eat together (commensality), thus reflecting the social relationships of individuals [100].

Although today, most foods are derived from cultivated plants and domesticated animals, a substantial part of the global human diet still comes from wild plants and animals. Natural ecosystems are an almost unlimited source of edible plants and animals, ranging from game and bush meat, fish and fowl, to vegetables, fungi or fruits [101]. In highly urbanized Europe, with a deep penetration of industrial modes of food production, wild food is still consumed by more than 100 million people and provided by more than 150 species [102]. The marine species represent another interesting case to portray. Fish stocks, especially those in international waters, are generally accepted as global commons [103], and the same assumption remains in place for fish stocks in coastal areas, although termed as national commons [104]. With regard to ownership of nature's resources, the controversy on who owns, governs or has entitlements over natural food resources has a long history, being a debate originally held by philosophers and rulers (i.e., Aristotle, Roman Emperors or feudal lords; see [105,106]), but since Locke, being largely dominated by economists [107,108].

However, food dimensions do not stop here, as food is also a tradeable good since the origin of settled agricultural societies. As explained earlier, food trade has existed since the beginning of human settlements, but it was always tightly controlled by those in power (government) since food is a good like no other. Food exchanges, monetized or not, were done under strict public governance and always with the primary purpose of feeding people, since non-economic dimensions of food were also valued and protected. Profit maximization was not the only driving ethos of food production and distribution, but earning a living and feeding humanity. However, the commodification of food created an industry of selling food just for profit, not for feeding.

Finally, food has also a public dimension that has not been so far properly valued, a dimension that jointly with the others renders food as a commons and invalidates its treatment as a mono-dimensional commodity. We subscribe that the consideration of any given good as private or public is a result of "deliberate policy choices" made by any given society at any given period in history [95,109] based on moral grounds, perceived needs, dominant paradigms, shared values and socially- and

politically-derived agreements. Actually, public goods can be generated through collective choices (i.e., voting in a referendum to declare water a public good to be enshrined in the Constitution, such as the recent case in Slovenia) and be owned through private, public and collective proprietary regimes [110] with different proprietary rights [108]. Public goods, in the political sense, can be produced by governments because the market does not or because a society decides that all citizens should have access to them because their social or economic benefits are important or essential, regardless of the ability to pay. Food evidently qualifies as such. A regime that considers food as a public good would be governed in a polycentric manner by food citizens [111] that develop food democracies [112], which adequately value the different dimensions of food. Actually, the development of "food citizenship", in opposition to "food consumers", requires moving beyond food as a commodity [113].

5.2. Multidimensional Food as a Commons

There are multiple definitions of commons, being as diverse as the schools of thought that posit them. Economic, political, legal and historical scholars have all produced definitions on the commons. For the sake of this paper, commons are compounded by a resource and a governing community. The resources—tangible and intangible—can be accessed and used by the community that governs their management and steward their survival. The concept is applicable at the local, national and global level, if the community notion is extended to the population of the planet. The consideration of food as commons rests upon revalorizing the different food dimensions that are relevant to human beings, thereby reducing the importance of the tradable dimension that has rendered it a mere commodity. This multi-dimensionality endows this resource with the commons category. Food as a commons is compounded by a resource (any living material, either produced naturally or cultivated, that may be eaten by humans) and a governing community, which can be local (food buying groups), national (collecting licenses for wild mushrooms or game hunting) or international (i.e., the International Convention for the Conservation of Atlantic Tunas), and whose proprietary regimes may be private, public or collective, being the primary goal to secure that all members participate in the governance and the benefits of that resource. Every eater should have a saying in how the food resources are managed (an idea that has been termed as food democracy), and every eater should be guaranteed a fair and sufficient access to that resource, regardless of his/her purchasing power. The end-goal of a food commons system should not be profit maximization, but increased food access, building community and shortening the distance from field to table [114]. The food commons encompasses ancient and recent history (customary valuations of food in different civilizations, as well as modern and urban civic collective actions for food), a thriving alternative present (the myriad of alternative food networks that share, barter and exchange food by means of non-monetized mechanisms) and an innovative, utopian and just vision for the future [115].

Regarding the valuation of the six food dimensions, the assumption of this research is as follows:

(a) The recognition of these food dimensions is universal, whatever age, gender and culture (although food as a human right is contested in some countries), but individuals differ in the weight and priority assigned to each dimension.
(b) Food dimensions matter to humans as they shape our relationship to food and food-producing systems.
(c) The valuation of food dimensions triggers human agency and the political stance vis à vis the food system, being an important factor in separating a food consumer from a food citizen.
(d) Societies value food dimensions differently in specific historical and geographical contexts
(e) Food dimensions connect multiple elements and drivers that interplay in the food systems, as well as other issues, such as biodiversity, climate change, gender and poverty.

6. Materials and Methodology

Describing the Sample: Food System Professionals with Social Network Profiles as Agents of Change

The research hypothesis is that the way people value food is correlated with the political stance vis à vis the existing food system adopted by individuals. In order to test that hypothesis, the author decided to ask food-related professionals working in different institutions, countries and socio-economic circumstances so as to pulse the dominant narratives of transition that can be found in the landscape (using a terminology borrowed from the transition theory). This case study gathers different actors having in common a strong interest in food, an influential role in the local, national or international food systems and being active in social networks (they all have a Twitter™ profile where they tweet on food-related issues). The interviewees are thus considered as agents of change and members of a community of practice. A community of practice, after Lave and Wenger [116], is a group of people who shares a craft or a profession (food issues here), and they share experiences over time, common sense-making and self-regarding, either physically or virtually [117]. It is through the process of sharing information and experiences that the members of this community learn from each other and develop common discourses and shared values. Therefore, the food-related professionals active in web-based social networks are part of a broad constituency that is trying to change the global food system from within. They all have agency to steer the transition of the global food system, and they choose food as a means of forging social and economic justice [118]. A questionnaire was sent to them (see Supplementary Materials for the sampling methodology and the questionnaire).

The sample, in numerical terms, consists of 38 food activists in national or international NGOs, 25 food scholars, 15 civil servants in local, national and international institutions and 17 professionals in for-profit food entities. There are social entrepreneurs and food activists working or volunteering in social innovations geared towards improving the sustainability and fairness of food production and consumption, paid professionals and civil servants working in institutions that exert a leverage on the global governance of the food system (UN, EU, ministries, international and national NGOs), academics (senior and PhD students) focused on analyzing the nuances of the food system and innovative civic collective actions for food, either legally formed or self-regulated, that are building alternative niches to the dominant industrial food system regime. The activists are mostly senior professionals with more than 3 years of food-related experience (one fourth has actually an extensive experience on food issues). Country wise, there are respondents from 21 countries in all regions, U.S. (14), the U.K. (11) and Belgium (8) being the best represented and having only one respondent from Africa (Kenya) and Asia (Indonesia). In Tables S3–S5 of Supplementary Materials there are lists with the food actor's position, institution and country. Regarding food activism, most of them (91.6%) are socially-/environmentally-conscientious eaters, either choosing often local and organic food or recycling and reducing waste (see Table S1 in Supplementary Material).

Within the self-described sectors of food activity, the not-for-profit sector prevails (see Table S1 in Supplementary Materials), with almost half of the respondents, the public sector represents one third and the for-profit sector the least represented (17.9%). It is worth mentioning that this sample does not include people working for agri-food companies, either big transnational corporations or small-medium enterprises, which actually represents a limitation to interpret the results of this analysis. The different agri-food corporations and private initiatives contacted (nearly 70) did not reply to the questionnaire. This bias towards not-for-profit and public institutions (either state or civic) will be considered in the analysis. In that sense, due to the methodological bias, the global sample cannot pretend to depict the variety of food values and food policy beliefs that are present in the global landscape (as food valuations by important players in the industrial food system are almost absent), but to represent the dominant food policy beliefs in the two major types of alternatives to the dominant industrial food discourse: the reformers and the transformers. Likewise, the reforming stance cannot be split into two streams to fine-tune the analysis (i.e., neoliberal and gradual reformist), because the neoliberal stream would surely be under-represented.

7. Results

The descriptive statistical results of the three agency variables (position in the transition landscape, political attitude and food valuation) plus the preferred food policy beliefs are presented in the Supplementary Materials to avoid the excessive length of the main text. In this section, only the correlation and regression analyses of the studied variables will be included.

7.1. Correlation Analysis

In order to understand the relationships between the three agency variables, univariate correlations were done between the variables at first level. The self-placement in the transition landscape (regime/niches) is not significantly correlated either to the political stance of the food-related activity or to the valuation of different food dimensions (cf. Table 1). The respondents working in the regime (N = 34) are equally likely to be gradual reformers (N = 12), counter-hegemonic transformers (N = 11) or alter-hegemonic transformers (N = 11). However, the respondents from the niches (N = 61) are three times more likely to be transformers (N = 48) than to be gradual reformers (N = 13) (cf Table S6a). Yet, this correlation is not significant at the 95% level. Regarding the valuation of food, those working in the regime are more likely to be multi-dimensional (N = 20) than mono-dimensional (N = 14), a situation that is mirrored in the niches where multi-dimensionals (N = 39) almost double mono-dimensionals (N = 22). From the transitional perspective, the self-described position of any given food activist in the food system landscape cannot be significantly correlated with his/her political attitude vis à vis the existing (or desirable) food system nor with his/her valuation of different food dimensions.

Table 1. Correlations amongst the agency variables.

	MO	MT	RE	NI	GR	TR
Mono-dimensional cluster (MO)	1					
Multi-dimensional cluster (MT)		1				
Regime (RE)	0.050	−0.050	1			
Niches (NI)	−0.050	0.050		1		
Gradual Reformer (GR)	0.272*	−0.272 *	0.152	−0.152	1	
Transformer (TR)	−0.272*	0.272 *	−0.152	0.152		1

* Correlations significant at 95% level.

On the contrary, the valuation of food (economic vs. non-economic dimensions) is significantly correlated with the political stance vis à vis the food system (cf. Table 1). Those who consider themselves as gradual reformers (N = 25) are positively correlated with the mono-dimensional valuation of food (N = 15), whereas the transformers (N = 70) are significantly correlated with the multi-dimensional valuation of food (N = 49) (cf Table S6b).

To fine tune this analysis, the initial agency variables where broken down into second level variables (cf. Table 2). In this view, the self-placement in the transition landscape shows significant and positive correlations with the political stance in two cases: the alter-hegemonic attitude is correlated with revolutionary niches and counter-hegemonic actions with small-niches. It is worth mentioning that those who describe their food-related activity as "a revolutionary niche" (N = 18) are more prone to "build a different food system" (N = 12) than to "struggle against the existing one" (N = 3). Conversely, those who "struggle against the system" in niches (N = 21) are more likely to consider themselves more humbly as "small niches" (N = 11) and not as "revolutionary" (N = 3) (cf. Table 3).

With regard to the food dimensions, those who value food as a strongly mono-dimensional good (N = 18) are significantly correlated with the political stance vis à vis the food system, positively in the case of being a gradual reformer (N = 10) and negatively in the case of counter-hegemonic transformers (N = 2) (cf Table S6b). Conversely, the multi-dimensional valuation of food (N = 59) is positively correlated with counter-hegemonic transformers (N = 25) and negatively with gradual reformers (N = 10). In this case, the alter-hegemonic political stance (N = 38) is not significantly correlated with

any particular valuation of the food dimension. Those who seek to "build a different food system" can be Strongly Mono-Dimensional (SMD) (N = 6), Mildly Mono-Dimensional (MMD) (N = 8) or Multi-Dimensional (MTD) (N = 24). More specifically, the alter-hegemonic transformers working in revolutionary niches (N = 12) are split into mono-dimensional (N = 3) and multi-dimensional (N = 9). Finally, the intermediary group of those who value food as MMD (N = 18) is not significantly correlated with any political stance or placement in the transition landscape.

Table 2. Correlations amongst the split agency variables.

	SMD	MMD	MTD	RE	SNI	ANI	RNI	GR	AHT	CHT
Strongly Mono-Dimensional (SMD)	1									
Mildly Mono-Dimensional (MMD)		1								
Multi-Dimensional (MTD)			1							
Regime (RE)	−0.024	0.087	−0.050	1						
Small Niche (SNI)	0.001	−0.128	0.102		1					
Alternative Niche (ANI)	−0.010	0.116	−0.085			1				
Revolutionary Niche (RNI)	0.040	−0.096	0.045				1			
Gradual Reformer (GR)	0.321 *	0.016	−0.272 *	0.152	−0.145	0.068	−0.105	1		
Alter-Hegemonic (AHT)	−0.065	0.043	0.017	−0.116	−0.072	−0.040	0.263 *		1	
Counter-Hegemonic (CHT)	−0.230 *	−0.060	0.235 *	−0.021	0.210 *	−0.021	−0.174			1

* Correlations significant at 95% level.

Table 3. Political stance and food valuation in niches (N=61).

			Mono-Dimensional N = 22	Multi-Dimensional N = 39
Self-placement in the transition landscape	Political stance vis à vis the food system (self-placement)	N		
Small-niche N = 21	Gradual reformer	3	2	1
	Counter-hegemonic	11	2	9
	Alter-hegemonic	7	2	5
Alternative N = 22	Gradual reformers	7	5	2
	Counter-hegemonic	7	5	2
	Alter-hegemonic	8	5	3
Revolutionary N = 18	Gradual reformer	3	2	1
	Counter-hegemonic	3	1	2
	Alter-hegemonic	12	3	9

7.2. Regression Analysis

Finally, a regression analysis was carried out (cf. Table 4) between the only agency variable (valuation of food) that is significantly correlated with political attitude, the preferred food policy beliefs that are significantly different and the other independent variables (country, age, gender, food-related experience, self-described sector of food activities and personal involvement in food activities). Additionally, two questions from the pairwise list were also included, as they proved to be relevant. Multiple regressions have been run by using different combinations of variables, and Table 4 presents the combinations that better represent the outcome variable. Although the regression does not explain causal relationships, the gradual reforming attitude is positively and strongly correlated with a strongly mono-dimensional valuation of food as a commodity and a middle age public sector employee that defends two dominant mantras so characteristic of the industrial agriculture paradigm, namely "the current food system is capable of producing sustainable food" and "food has to be beautiful and cheap", chiefly to facilitate food access (lowering the price) to urban consumers, disregarding rural producers. As those respondents are arguably concerned with the sustainability of the current food system, they work to improve the situation by supporting gradual reforms that merely adjust the system flaws and reverse the side-effects, since the system is capable of producing better food without the need of a drastic change. It is worth mentioning that members of this group are negatively correlated with "being part of a group to increase public awareness", which may suggest that they are not particularly active food activists. The list of respondents that fit with this group is presented in Supplementary Materials (cf Table S10).

Table 4. Regression analysis with food valuation and other independent variables.

Dependent Variable: Political Stance via à vis the Food System						
	Gradual Reformers *N* = 25 (against 70)			**Counter-Hegemonic Transformers *N* = 32 (against 63)**		
		Signif	**Coef.**		**Signif.**	**Coef.**
Independent agency variables						
Valuation of food (confronting economic and non-economic dimensions)	Strongly Mono-dimensional	(+) ***	1.8822	Multi-dimensional	(+) **	0.8109
Food policy beliefs	Current food system capable of producing sustainable food	(+) ***	1.5076	Living organisms (seeds or genes) shall not be patented by individuals or corporations	(+) ***	1.4797
	Food has to be beautiful and cheap	(+) ***	1.2485	Freedom from hunger is a human right as important as the right not to be tortured	(+) **	0.8400
Control variables						
Country	Hunger stricken country	(+)	0.5344	Hunger stricken country	(+) ***	1.4226
Age	Age between 31–50	(+) **	1.0998	Age above 50	(-)	0.3354
Gender	Male	(+)	0.5327	Male	(+)	0.1632
Food related experience	Between 3–10 years of experience	(-) **	0.7608	More than 10 y	(+)	0.0171
Self-described sector of food activities	Public sector	(+) **	0.8536	Self-regulated collective action Informal arrangement	(+) ***	1.1255
Personal involvement in food activities	Being part of a group to increase public awareness	(-) **	0.8363	Sensitizing close relatives	(+)	0.3762
	Probability > *F* = 0.0007 Observations *N* = 95			Probability > *F* = 0.0008 Observations *N* = 95		

Note: Maximum likelihood estimates of the probit models. Significance (Signif.) *** statistically significant at the 1%, ** statistically significant at the 5% level. The numbers in the table are the coefficients (Coef.) of the regression equation. Note that the table shows associations, not necessarily causal relationships.

On the other side, the counter-hegemonic transformative attitude is strongly correlated with the multi-dimensional valuation of food as a commons and a job in a self-regulated collective action with informal arrangements in a hunger-stricken country (i.e., civil society in the Global South). Two human-rights and commons-based policy beliefs are strongly preferred by this group, namely the opposition against patents on living organisms and the preference of freedom from hunger as a human right. In this regression, age, gender, food-related experience or personal involvement in food activities (either as self-producer, committed consumer or food activist) do not seem to have explanatory power to determine the political attitude vis à vis the existing food system and the valuation of food dimensions. The list of respondents that corresponds to this profile is presented in Supplementary Materials (cf Table S11).

8. Discussion

This research examines the links between the valuation of food, the transformative attitudes, the self-positioning in the transitional landscape and the preferred food policy beliefs of a community of practice formed by food-related professionals active in social networks. The estimated total size of this community is counted in millions, and therefore, the sample is far from being representative. Moreover, it is rather diverse, coming from 21 countries and more than 85 different institutions, although most of them are aware food consumers and two thirds committed food activists. Yet, this diversity may be considered a good representation of individuals working in the global food system, therefore sampling the values and shared beliefs on food found at landscape level. This research shall thus be seen as a first case-study with direct interviews on how people value food (either as a commons or a commodity) and how and if this valuation shapes food policy options and political attitudes.

The main weaknesses of the sample lays in the low representation of professionals working in the for-profit sector (only 17.9%), whereas one third is working in the public sector (33.7%), and almost half of the respondents are situated in the not-for profit third sector (48.4%). That unequal distribution in the respondent's institution profit-orientation seems to be correlated to the lower figures of mono-dimensional respondents. However, this correlation has not been further explored in this paper.

8.1. Great Diversity in the Regime and Niches Is Not Always Transformational

Common sense states that people working in the regime would trend to maintain the status quo. Yet, contrary to expectations grounded on transition literature [119,120], our research shows the respondents working in the regime (mostly in not-for profit institutions) can adopt diverse attitudes to change the food system (reformist, counter-hegemonic or alter-hegemonic), being none more likely than the others. Therefore, gradual reformers are not dominant in the regime. Besides, gradual reformers are equally split between the regime and niches. Finally, the valuation of food is not so evidently biased towards mono-dimensionality (41.2%), with multi-dimensionality still prevailing (58.8%). Therefore, the regime encompasses a great diversity of political attitudes and food valuations. Platitudes, generalities and stereotypes mask a more complex relationship between individual attitudes, institutional mandates and self-regarding.

On the other side, the niches are supposed to be loci of contestation [121], which is confirmed in this research as the respondents from the niches being three times more likely to be transformers than to be gradual reformers, as expected by the literature —however, the correlation is not significant, which may be due to the sample diversity, the low representation of the private sector, the low sample size or any other statistical artefacts. Yet, 21.3% of niche respondents only aim to reform the regime. The valuation of food as a multi-dimensional resource almost doubles the mono-dimensional valuation, although the figures are not statistically significant.

Working in regime institutions or so-called alternative niches is not significantly correlated with any specific political stance or food valuations. Not all confrontational or revolutionary food activists are working in the fringes, nor do all regime civil servants see food as a commodity and just want

to maintain the status quo by promoting minimal reforms. It is important to notice that reformers and transformers can be found either in the dominant regime or in the innovative niches, as the self-perception of anyone's position in the food system transition and the political stance vis à vis the dominant narratives are personal attitudes and do not necessarily correspond to the institutional mandate or the real political decisions. Actually, the dominant regime accepts a certain amount of deviation from the hegemonic narrative and plurality of actions within the main transition pathway (i.e., organic niches, waste reduction), whereas the innovative niches (by default, aimed at changing or modifying the regime performance) present different degrees of confrontation with the regime, from gradual reforming to radical reversing, from working in fringes to embedding [16].

Within the same organization, multiple individual attitudes vis à vis the transition in the food system may be harbored. In that sense, transformative collective actions for food do not escape from having internal contradictions with regard to political attitudes [16], as we have seen in this study, with members of civic collective actions having a mono-dimensional view of food as a commodity (i.e., citizen initiative "Despertemos Guatemala" or Disco Soup Paris and Lille).

8.2. Valuation of Food Is Correlated with Political Attitudes in Food Transitions

However diverse the sample may be, the results respond to the first question of this research and show that the way each food professional values food, either as a commons or as a commodity, is significantly correlated with the political attitude adopted vis à vis the food system, regardless of the self-assigned position of the respondent's institution in the transition landscape. Those who consider themselves as gradual reformers, either working in the regime or in niches, are positively correlated with the mono-dimensional valuation of food, whereas the transformers, either alter or counter-hegemonic, are significantly correlated with the multi-dimensional valuation of food as a commons. Due to the sample size and statistical limitations, causal analysis cannot be inferred (the results cannot claim that those who see food as a mono-dimensional good adopt a reformist attitude in the food system, or vice versa), but the relationships are relevant. An important cautionary reminder: this relationship apply to members of not-for-profit institutions and public workers, and it cannot be extrapolated to private sector professionals. Further research is needed to further understand the private sector attitudes.

Deepening the analysis, those who value food as a strongly mono-dimensional good (the hardliners of food as a pure commodity) are positively correlated with gradual reformers and negatively with the counter-hegemonic transformers. Conversely, the defenders of a multiple-valuation of food as a commons are positively correlated with counter-hegemonic transformers and negatively with gradual reformers. It is worth mentioning that the alter-hegemonic transformers (those who seek to "build a different food system") are not significantly correlated with any particular valuation of the food dimension, nor any locus in the transition landscape, and yet, they often tend to consider themselves as working in "revolutionary niches". As expected, the intermediary and diverse group of those who value food as mildly mono-dimensional (that could also be interpreted as mildly-multidimensional) cannot be correlated to any political stance or placement in the transition landscape.

8.3. Alter- and Counter-Hegemonic Attitudes Challenge the Regime Differently

Although alter- and counter-hegemonic attitudes are both considered innovative and transformative, the way they challenge the system differs, and that may be partially explained by the different valuation of food they hold. Many alter-hegemonic professionals, whose attitude can be defined as alternative or interstitial, are aware of the major fault lines of the current system, but at the same time recognize the paramount difficulties to change the dominant regime, so they prefer to work through incremental erosion (i.e., Food Cardiff, Food Ethics Council), in fringes not fully explored by the regime (i.e., Commons Strategies Group, Australian Food Sovereignty Alliance), ignoring the state (i.e., Food Guerrilla, Commonsfest), locally (i.e., Group de Consum Ecologic I local del Terraprim) and doing things rather than protesting (i.e., Local Organic Food Co-ops Network). Generally speaking,

they rather prefer building a different food system at the local level that satisfies their aspirational goals and the day-to-day access to healthy and fair food.

On the other side, the counter-hegemonic position seeks to uproot deep structures and build a new configuration based on different values. The position is thus quite political, denouncing flaws and inequalities and having a marked normative contestation [122]. The results confirm this definition since the normative (and different) valuation of food as a commons is positively and significantly correlated with this group and not with the alter-hegemonic one. Our results are also aligned with Johnston [114], who stated that reclaiming the commons characterized the counter-hegemonic potential of food-related activities. Actually, civic collective actions for food—food-related actions promoted by individual people, civic movements (legally formed or self-regulated) or formal non-governmental organizations that seek to produce, transform, distribute and consume food differently from the industrial food system—where citizens are devoting leisure time to food-related activities have been termed as counter-hegemonic [123], as they are innovative in their means, values, governance systems and institutional setup, develop alternative narratives to the dominant regime, and many of them seek to challenge, disrupt, modify or replace the regime practices, these days epitomized by the industrial food system. In our sample, the following respondents represent that group well: Souper Saturday, Incredible Edible Bratislava, Slow Food Youth Network, Confitures Re-belles, Re-bon Gleaning Network, Proyecto AliMente, Falling Fruit and Part-time Carnivore.

Plenty of scholars [16,114,124] have pointed out that the alter-hegemonic attitude may not be transformative enough, since it does not question the structural principles of neoliberal markets. This constituency may inadvertently reinforce the "neoliberal narrative" through: (a) their discursive emphasis on personal responsibility, voluntary action, competition and efficiency [125]; (b) de-politicizing food politics and placing the transformative agency on the shoulders of conscientious consumers, innovative entrepreneurs and well-intended volunteers [126]; (c) emphasizing entrepreneurial solutions and local market linkages, thus obscuring the importance of state duties and citizen entitlements [127]; and (d) having a local focus rather than a national one [128], thus contributing to the process of devolution often associated with neoliberalism [129]. By de-politicizing food politics, these initiatives conform with the discourse that re-labels citizens with a right to food guaranteed by the State into consumers with food choices and responsibilities. There are 14 respondents that consider themselves alter-hegemonic and yet do align with the neoliberal narrative of food as a commodity (see Table S5 in Supplementary Materials). Among those, one can find social entrepreneurs, ministerial officers, European university researchers, international NGOs and members of food councils.

8.4. Combining Agency with Food Policy Beliefs

Regarding the second question (policy beliefs associated with valuations of food), the analysis shows that only two policy beliefs out of 12 (16.6%) are significantly different between the strongly mono-dimensionals (SMD) and the multi-dimensionals (MTD), but both fit with the "a priori" expected pattern. Although food policy belief preference is rather dispersed, logically mirroring the sample diversity, some significant patterns have been identified that link the mono-dimensional cluster with the non-preference of certain food policy beliefs that clearly challenge the dominant narrative of the neoliberal industrial food system, such as "banning financial speculation of food products" [130], "prohibiting patents on living organisms" [131] or "establishing Universal Food Programmes to guarantee food to those who cannot afford it" [132] (see Tables S8 and S9 in Supplementary Materials).

In all of the relative preferences and in half the absolute ones, the mildly-mono-dimensionals (MMD) score between the SMD and the MTD except in one very striking policy belief, the consideration that "Food and nutrition security is a global public good", where SMD preferences are similar to MTD ones (around 72%) and much higher than MMD preferences. This policy belief emerges as the most preferred by the most contrasting groups. It is rather awkward to see the commodity hardliners defend that food policy belief. Usually, the only food-related elements that were accepted by the neoliberal mainstream as global public goods were those that facilitate free trade and transboundary

competition [133] (p. 43), such as binding WTO agreements, mechanisms to guarantee stability in food markets [134] and strategic food grain reserves [135]. Global public goods are goods that are governed in a common manner as they are beneficial for every human being [95]. Although providing an explanation is beyond the scope of this paper, one suggestive justification may lay in the world "global" that firstly deviates from the idea of food as a public good at the local or national level, positioning the debate to international fora where binding obligations become often diluted; and secondly, it conveys a moral meaning where many people can find a common ground ("food is important for individuals and societies"; "food is a special resource"), but by being global, it does not threaten the institutional set up of the current national food systems. It is perceived as desirable and harmless and, at the same time, being a beautiful aspirational sentence that fits well with a socially-desirable response with no practical implications (at least not in the respondent's view).

9. Conclusions

The dominant narrative in the industrial food system justifies food to be produced at the lowest cost and to be sold where the utilities are the highest, disregarding social and environmental consequences. Since this system is in crisis, perhaps time has come to think outside the permitted ideas and value food as a commons to be governed for everybody's interest. Once the way we see food is modified, policies, legal frameworks, incentives and governance arrangements will also change.

This paper explains the normative consideration of food as a multi-dimensional commons, with six economic and non-economic dimensions that are equally relevant to human beings. Due to that relevance, food cannot be solely left to money-mediated profit-seeking rules for production, allocation and access. This consideration is a political social construct, and we have explored how relevant it may be to sustain transformative alternatives of transition.

It is worth mentioning that this social construct is at odds with the most prominent alternative discourses that are confronting the hegemonic productivist narrative. After an exhaustive scrutiny (see Vivero-Pol for a systematic review of scholarly literature [136]), only a few authors that consider food as a commons have been found [137,138]. Citizens and consumers accept as "normal" the social construct privileged by the elites that justifies the commodification of food, and thus, the manufacturing of consent emerges from a bottom-up normalization [14,139].

This research has found that the socially-constructed view of "food as a commodity" is associated with the reformist attitude, no matter where the person positions himself/herself (regime or niches). Conversely, "food as a commons" is a belief associated with the counter-hegemonic transformative attitude. Exceptions can be found in each group, and yet, the correlations are strongly significant and commonsensical.

The results contribute to agency-sensitive analysis in food transitions by validating the hypothesis that the way food professionals value food is related to the political attitude with regard to the existing food system and its transition trajectories, although no causality can be inferred by this sample. In other words the normative consideration of food shapes the priorities for action (political attitude) and, to a certain extent, specific food policies we support/accept (preferred policy beliefs). Since beliefs and values drive transition pathways, the consideration of food as a commons will certainly open up new policy options and regenerative claims in the future.

Moreover, the hegemonic consideration of food as a commodity is challenged from within and outside. Multiples loci of resistance with counter-hegemonic attitudes are challenging the hegemonic paradigm. These diverse people in rather diverse institutions have a set of shared food policy beliefs and a convergent regard of food as a commons. If power is exercise in multiple locations with paradigms normalizations, counter-hegemonic resistance defending food as a commons requires multiple projects to de-normalize the assumed paradigm associated with the hegemonic industrial food system.

The multiple valuation of food as a commons may enrich the diversity of transformative alternatives (food justice, food sovereignty, de-growth, commons, epistemologies from the South,

transition towns, veganism, right to food, food security, nutrition transition), including those more transformative or more reformist. The commodification of food will consist of a long-term incremental process to dismantle the absolute reliance on market logic [114], a process that is led by transnational food movements in the international arena [140], but that needs to be complemented and re-enforced by local food movements working in customary and contemporary alter- and counter-hegemonic niches in order to build a "globalization from below" [141]. Eat locally, but re-claim globally.

Supplementary Materials: The following are available online at www.mdpi.com/2071-1050/9/3/442/s1, Table S1: Simple and composite variables, Table S2: Composite variable to analyse mono- and multi-dimensionality of food valuation, Table S3: Gradual Reformers (N = 25), Table S4: Counter-hegemonic Transformers (N = 32), Table S5: Alter-hegemonic Transformers (N = 38), Table S6: Features of individual agency in food system transitions, Table S7: Several examples of counter-intuitive agency in food system transition, Table S8: Preferred Food Policy Beliefs and political stance clusters, Table S9: Preferred Food Policy Beliefs and valuation of food dimensions, Table S10: Gradual Reformers + Strongly Mono-dimensional (N = 10), Table S11: Counter-hegemonic Transformers + multi-dimensional (N = 20).

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Abbreviations

The following abbreviations are used in this text:

BIOMOT	Motivational strength of ecosystem services and alternative ways to express the value of biodiversity
BRAIN-be	Belgian Research Action through Interdisciplinary Networks
EU	European Union
FAO	Food and Agriculture Organisation of United Nations
GENCOMMONS	Institutionalizing global genetic-resource commons. Global Strategies for accessing and using essential public knowledge assets in the life sciences
GMO	Genetically-Modified Organisms
MMD	Mildly Mono-Dimensional
MTD	Multi-Dimensional
MLP	Multi-Level Perspective on sustainable transitions theory
NGO	Non-Governmental Organization
OECD	Organisation of Economic Cooperation and Development
SDR	Socially-Desirable Responses
SMD	Strongly Mono-Dimensional
U.K.	United Kingdom
UN	United Nations
U.S.	United States of America
WTO	World Trade Organisation

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sustainability

Supplementary Materials: Food as commons or commodity? Exploring the links between normative valuations and agency in food transition

José Luis Vivero-Pol

1. Agency Variables Explained

1.1. Variable 1: Self-placement in the transition landscape: regime or niches

As we have seen, the MLP theory is articulated around three elements or loci of action: the landscape, the regime and the niches. Both regime and niches are places where agents of transition act and interact, whereas the socio-technical landscape is the context where transitions occur, constituted by the "cultural and normative values, broad political coalitions, long-term economic developments and accumulating environmental problems that broadly shape industrial and technological development trajectories" [1] (p. 34). Rules, norms, values, beliefs and narratives dictate the collective shared understanding that sustains a particular landscape where regime and niches are embedded. Changes at the landscape level, for instance, may put pressure on the regime, and create openings for new technologies.

Regimes are constituted by the institutions, conventions, rules, and norms that guide the uses of particular technologies and the everyday practices of the producers, workers, consumers, state agencies, public authorities, civil society organizations, private and business actors and scientists who participate in the regime. These rules and practices exist within the minds of regime actors. Regime rules, relationships, and practices are interrelated with niches and the third level, the landscape. The regime shares organisational and cognitive routines [2] that may be more or less codified, stable and universally agreed upon by stake-holders [1]. The stability of the regime is a dynamic one, meaning that innovation still occurs but is of an incremental nature (gradual reforming as it is referred to in this paper) and locked into a particular socio- technical trajectory [2, 3]. So, we will assume *a priori* the dominant political attitude vis a vis the existing food system in those who position themselves as agents working in the regime is gradual reforming. If, however, intra-regime or external factors create misalignments or tensions among the actor-groups involved, the system can destabilize and open up to new kinds of technological innovations that may be developed within niches [4].

Niches are loci where innovation and learning occur and social networks are built. Agents working in niches aim to advance more sustainable alternatives to those present in the existing socio-technical regime [5]. Niches are also locus of contestation of regime values, practices and transition orientations [6] and therefore the most likely expected political position in niches would be that of a transformational nature. However, actors working in innovative and transforming niches may also unintentionally reinforce or legitimise the regime structures they are trying to change [7], what is termed as the "paradox of embedded agency" [8]. By understanding the alignment and diversity of political stances of actors working in niches we can shed light on niche convergence, competition or embedding in the regime dominant pathway.

1.2. Variable 2: Typologies of political attitudes vis a vis the food system

The political stances adopted by an individual or institution with regard to the dominant food system that conforms the regime, using the MLP terminology, could be enrolled into the following two broad stances: reformist or transformative. This dichotomy is somehow contested because it reduces a complex debate to two extreme positions, which both have serious shortcomings. In this research, however, those dichotomies are necessary to incorporate personal attitudes towards transition pathways, as reflected in the transition theoretical framework, and they do not represent clear-cut positions in real life. Along those lines, several authors have proposed different typologies

for political stances, either focused specifically on the food system [9], framed in the MLP transition theory [10], dealing with social movements at large [11] or transformational civic initiatives in particular [12, 13]. In this paper, both the reformist and th*e* transformative stances are subject of a nuanced approach and thus different sub-stances (herewith called "streams") can be identified.

The gradual reformers

The reformist stance envisages some incremental changes in the organization of production, institutional arrangements, daily life practices, technology and purchase behaviour, but maintains core features of the status quo. Underlying values of the reformist approach are, among others, a belief in progress through patented knowledge and markets being the primary allocation mechanism between producers and consumers. This stance represents the political and academic orthodoxy inspired by neoclassical economics and includes sustainable intensification [14], campaigns to educate consumers and change eating behaviour or labelling GMO products.

Following Erik Holt-Giménez and Annie Shattuck [9], we can distinguish two streams in this stance: the neoliberal (also called corporative) and the gradual reformist. The former seeks to reproduce the corporate regime (the basic definition of a food regime is a "rule-governed structure of production and consumption of food on a world scale" [15]) that emerged in the 1980s with the current neoliberal phase of capitalism [16], and it is characterized by the monopolistic agri-food corporations, globalized food chains, rising demand of animal protein, links between food and fuel, ultra-processed food, liberalized global food trade, foreign land grabbing schemes and depletion of food-producing natural resources (water, phosphates, arable land, soil biodiversity, genetic resources) [17, 18]. The latter, recognizing the faultlines that triggered two recent food price crises, aims to mitigate the social and environmental externalities of the industrial food regime. It calls for mild and gradual reforms to the regime (i.e. safety-nets, corporate social responsibility, reducing food waste, certification for niche markets), seeks to mainstream less socially and environmentally damaging alternatives and invents different narratives, apparently new and transformative, but actually compatible with neoliberal values and the capitalistic logic of the food system [19-22]. Many international NGOs and so-called alternative movements fall in this category.

In the current global food system, neoliberal and reformist trends reflect the two directions of capitalism's double-movement (Karl Polanyi argued that alternating periods of unregulated markets followed by state intervention to regulate them, based on welfare concerns, were a cyclical part of capitalism and ensured the existence of the liberal state itself [23]) and they are integral part of the dominant regime with their tensions resulting in a fine-tuning of the neoliberal project rather than a substantive change in direction [12]. The Polanyi's double-movement is consistent with Gramsci's power struggle between the ruling class and civil society, whereby the former seeks hegemonic power over the latter by imposing cultural and ideological narratives.

The transformers

Contrarily to the reformist stance, the transformative discourse and praxis is profoundly emancipatory, and thus necessarily pluralistic [24, 25] and reflexive [26]. And yet, although transformative practices in the agri-food system are more radical than the gradual reformist positions, for some authors they do not necessarily presume the abandonment of capitalism or economic growth as underlying paradigms [10]. The priorities for radical change and the alternative pathways are rather diverse, falling in this stance advocates of "new economics" [27], "de-growth" [28], "sharing economy" [29] or "transition towns" [30]. Some typical actions in these groups are self-provisioning, collaborative consumption, local currencies, time banks, peer-to-peer production or Do-it-Yourself economy [31].

In this article, the author uses two different typologies to analyse the transformative attitudes of food professionals vis a vis the dominant food system: the counter-hegemonic and the alter-hegemonic streams. These typologies are based on Raymond Williams's work on social movements [11] and Erik Olin Wright's analysis of civic initiatives according to their relationship to State institutions [13]. What Williams described as ''alternative'' and ''oppositional'' were defined by

Wright as "interstitial" and "ruptural" respectively. And in this article will be treated as "alter-hegemonic" and "counter-hegemonic". We have preferred to use those labels because they fit well with the proxy preferences posed in the questionnaire. The gradual reformers are those who responded their current food-related activity "improves the existing food system", the alter-hegemonic are those who "build a different food system" and the counter-hegemonic are those who "struggle against the existing food system".

Alter-hegemonic institutions or individuals work towards an incremental erosion of the political-economic structures and they arise within the interstices and edges of the food system [11], trying to subvert it with a vision of food justice and civic responsibility [12]. Good examples could be initiatives that provide food where markets have failed (i.e. the City Slicker Farms in Oakland,California, a food justice-oriented initiative that provides free and low cost food to local residents in low-income neighbourhoods [32]) or those using vacant lots in urban areas to cultivate edible plants (i.e. the Incredible Edible movement in UK, http://incredibleediblenetwork.org.uk/) [33]). Interstitial transformations (or "ignore the State strategy") build alternative institutions and deliberately foster new forms of social and emancipatory relations [13]. As also theorized in the MLP, interstitial transformations operate in innovative and protected niches at the margins of the hegemonic regime (the industrial food system in our case). They are action-based initiatives with more praxis than normative work and they are often not perceived as a threat to the elites ruling the dominant regime. At least, not initially. And yet, cumulatively and perhaps unintentionally, such initiatives create alternative transition pathways and narratives for non-commodified economic and social relations [34].

Counter-hegemonic institutions or individuals seek to create a new structural configuration (institutions, rules and moral ground) through a complete up-root of the deep structures that preserve the status quo [35]. They are grounded on the idea that confrontation and political struggle will create a radical disjuncture that would trigger a rapid change rather than an incremental change over an extended period of time [11] and they contest the hegemony of neoliberal globalization through a radical transformation of society [36]. Epistemologically, this stream is nurtured by critical theories aimed at debunking the mainstream position and giving voice to neglected actors, arguing for a major overhaul of core societal features (neoliberalism, consumerism, primacy or growth and private property, individualism, competition), and shifting to a new value-system. Wright describes this stream as "ruptural" [13], McClintock as "subversive" [12], Geels et al. as "revolutionary" [10], and Holt-Gimenez and Shattuck as "radical" [9]. Counter-hegemonic approaches are extremely political [25] and thus they can be politically unpalatable for many constituencies and policy makers [10]. This stream has been critised for being elitist [37], being distanced from concrete experiences of real-world producers and consumers [38] or offering little in terms of practical transition pathways as there are difficulties in diffusing and up-scaling radical local initiatives [39].

2. Methodology

A self-administered online questionnaire with 21 questions (cf Questionnaire in point 6) was placed in SurveyMonkey™ and distributed via Twitter™ to the researcher's network of contacts. Three rounds of direct tweets were sent between July and November 2014 and responses were collected until January 2015. Therefore, all the participants have a Twitter™ profile that it is used to communicate, among other things, on food-related issues. Over 725 questionnaires were launched and 104 responses were collected. After cleaning those with incomplete responses, no food-related experience or not tweeting on food issues, a final sample of 95 was ready for analysis. Correlation and regression analysis were done using STATA software 14.0. The list of independent variables (simple and composite) and the three agency variables are presented below (cf Table S1).

Table S1. Simple and composite variables.

Variable	%	Description	# Questionnaire
INDEPENDENT VARIABLES			
Country			
Hunger-stricken country	14.7%	Country where the initiative is largely carried out or headquartered has chronic malnutrition or undernourishment rates above 10% in latest figures	Country where the respondent is based (or the institution is headquartered when not known)
Non-hunger stricken country	85.3%	Country has chronic malnutrition or undernourishment rates below 10%	
Age slot			
Below 30 years	28.4%		4a
Between 31-50 years	52.6%		4b, 4c
Above 50 years	19%		4d, 4e
Gender			
Male	51.6%		4f
Female	48.4%		4g
Food-related experience			
Never	0%		5a
Less 3 years	35.8%		5b+5c
Between 3 and 10 years	39%		5d+5e
More than 10 years	25.2%		5f
Self-described sector for food-related activities			
Private sector	6.3%	For-profit sector accounts for 17.9%	3a
Public-Private Partnerships	11.6%		3c
Public Sector	33.7%	Third sector (not-for-profit) represents 48.4%	3b
NGO/Civil Society Sector (legal entity)	30.5%		3d
Self-regulated Collective action (informal arrangement)	17.9%		3e
Personal involvement in actions for food transition			
Committed Production	57.9%	Producing food themselves	8a
Committed Consumption	89.4%	Choose locally produced food products	8b
Committed Consumption	88.4%	Eat organic/ecological foodstuff (88.4%)	8c
Committed Consumption	73.7%	Recycling food in different ways to minimise food waste at home	8d
Committed Food Activism	59%	Sending e-mails about food-related issues to my friends	8e
Committed Food Activism	81%	Being part of a group whose purpose is to increase public awareness on the food system/hunger	8f
Committed Food Activism	64.2%	Sensitizing close relatives or colleagues in order that they change their food habits	8g
Committed Food Activism	43.2%	Financially supporting an organization that works for a more secure food system/anti-hunger actions	8h
AGENCY VARIABLES			
Self-placement in the transition landscape			
Regime	35.8%	Those who responded "mainstream" (25.3%) or "conventional" (10.5%)	7d, 7e, 7f, 7g, 7h, 7i
Niches	64.2%	Those who responded "small niche" (22.1%), "alternative" (23.1%) or "revolutionary" (19%)	7a, 7b, 7c, 7j, 7k, 7l, 7m, 7n, 7o
Political stance vis a vis the food system			
Gradual Reformers	26.3%	Those who responded activity that "improves the existing food system"	7a, 7d, 7g, 7j, 7m
Transformers	73.7%	Those who responded activity that "struggles against the existing food system" (33.7%) or "builds a different food system" (40%)	7b, 7c, 7e, 7f, 7h, 7i, 7k, 7l, 7n, 7o
Counter-hegemonic	33.7%	Those who "struggles against the existing food system"	7b, 7e, 7h, 7k, 7n
Alter-hegemonic	40%	Those who "builds a different food system"	7c, 7f, 7i, 7l, 7o
Valuation of food dimensions (clustering method explained below)			
Strongly Mono-dimensional	18.9%	At least 2 out of 4 economic dimensions are preferred (see below for further explanations on how this variable was constructed)	14a, 17a, 18a, 19a
Mildly mono-dimensional	18.9%	Only one out of 4 economic dimensions is preferred	14a, 17a, 18a, 19a
Multi-dimensional	62.1%	None out of four economic dimensions is preferred	14b, 17b, 18b, 19b

Note: own data collected via online self-administered questionnaire. Data in parenthesis are percentage of affirmative responses for each question.

2.1. Position in the transitional landscape and political attitude

The self-placement in the transitional landscape and the political stance vis a vis the food system were measured in the same question 7 by presenting different statements to describe the food-related activity the respondent was involved in, consisting on a combination of five transition loci ("mainstream", "conventional", "small-niche", "alternative" and "revolutionary") and three political stances ("improves the existing food system", "struggles against the existing food system" and "builds a different food system").

Those who responded "mainstream" or "conventional" have been placed at the regime, whereas those who opted for "small-niche", "alternative" or "revolutionary" have been considered as niches. Respondents describing the food-related activity they are involved in as "improving the existing food system" will be clustered as reformers. The transformers may adopt two attitudinal stances: a) Counter-hegemonic if they selected "struggling against the existing food system" and b) Alter-hegemonic if "building a different food system" was selected. Due to low numbers of responses from enterprises and corporations, the reformist stance will not be split into sub-groups.

2.2. Valuation of food

Contrasting economic and non-economic food dimensions

This construct is meant to measure the respondent's valuation of the mono and multi-dimensionality of food. It has been elaborated based on four pairwise questions (see appendix 2, questions 14, 17, 18 and 19). Question 15 will not be considered for this analysis because, although question 15 also confronts economic and non-economic food dimensions, option b ("Food is a natural resource that it is better exploited by the state") carries two different and probably conflictual elements (natural resource and state) and hence we cannot be sure whether people reject option b for the fact that food is a natural resource or because they refuse governmental control. Actually, this mistrust for state-led food production is shared by two opposing constituencies, the gradual reformers that prefer mono-dimensional food and the alternative counter-hegemonic that value food by its multiple dimensions, and therefore the question will not be considered for the analysis. In the pairwise questions, the interviewee had to choose between two sentences, either normative (14, 19) or descriptive (17, 18), that present a clear contrast between the economic dimension of food (as a commodity) and other non-economic dimensions such as food as a human right, a natural resource or a commons.

In Table S2, the four pairwise questions are presented. The economic dimensions are phrased in a radical way that clearly emphasizes the commodity nature of food to avoid nuances. They contrast food access as exclusively determined by money-mediated means of exchange or by other means. A respondent is assigned to the mono-dimensional cluster if at least in one out of the four questions the economic dimension is preferred over the non-economic (questions 14a, 17a, 18a, 19a). When the economic dimension is preferred in at least two out of four questions, the respondent will be assigned to the sub-cluster Strongly Mono-dimensional, otherwise it remains in the Mildly Mono-dimensional sub-cluster. In case none of the economic dimensions are preferred in the four questions, the interviewee will be considered as part of the multi-dimensional cluster.

For the purpose of this research, the mono-dimensional cluster includes respondents that opted for market-minded or for-profit sentences when forced to choose and therefore we assume economic dimensions of food are dominant over non-economic. In economic terms, the value-in-exchange prevails over value-in-use of food, and food is largely valued as a private good after the economic school of thought (excludable and rival after Samuelson [40]. Conversely, the multi-dimensional cluster is compounded by those who preferred public-minded or not-for-profit sentences and hence we assume that non-economic dimensions of food are also highly valued, perhaps even overweighting the importance of economic dimensions. In any case, we consider in this cluster the

economic dimension, however important it may be, is not dominant over the non-economic and food is valued as a multi-dimensional good where the value in use prevails over value in exchange.

Table S2. Composite variable to analyse mono- and multi-dimensionality of food valuation.

	#	Economic Dimension	% (N=95)	Non-economic dimension	% (N=95)
Strongly mono-dimensional *At least 2 out of 4 economic dimensions are preferred*	14	14a. Food, as a scarce resource, has to be distributed according to market rules	11.6%	14b. The State has the obligation to guarantee the right to food to every citizen	88.4%
	17	17a. Food is a natural resource that it is better exploited by the private sector	12.6%	17b. Food is a natural resource that it is better exploited by citizens	87.4%
Mildly mono-dimensional *Only one out of 4 economic dimensions is preferred*	18	18a. Food is a commodity whose access is exclusively determined by the purchasing power of any given customer	28.4%	18b. Free food for all is good	71.6%
Multi-dimensional *None of the four economic dimensions is preferred*	19	19a. The best use of any food commodity is where it can get the best price, either fuel, feeding livestock or exporting market	16.8%	19b. A bread loaf (or a culturally-appropriated equivalent) should be guaranteed to every citizen every day	83.2%

Understanding food policy beliefs

Additionally, in order to understand which food policy beliefs are more characteristic of the most relevant agency variables an analysis of relative and absolute preferences of food policy beliefs has been carried out based on questions 9 and 20 in the questionnaire (cf Questionnaire in point 6). The first set (beliefs 1-6 in Table S8) encompasses relative preferences simply describing agreement-disagreement with policy beliefs that are clearly multi-dimensional and commons-oriented. This set of policy beliefs includes some yet aspirational policies discussed in academic circles and current claims by the most transformative food agents such as the food sovereignty movement. As it may be unlikely to oppose to the rather aspirational policies, this set is hence prone to socially desirable responses (Socially desirable responding (SDR) refers to the tendency of respondents to give answers that make them look good and that conform to what they think is expected from them or is the right thing to say. People are especially motivated to engage in SDR where societal norms or the norms of referent groups might deviate from their own opinions [41,42].) and main purpose of this set is hence to determine the food policy beliefs that draw the stronger opposition rather than analysing the preferences. In a Likert scale of 5 items, the two higher levels (strongly agree and agree) were coded as "preferred". The second set (beliefs 7-12) aims to understand the absolute preference within a group of contrasting and often confronting food policy beliefs, a set that includes extremely neoliberal, moderate conventional, state-driven and transformational food policies. Three beliefs ought to be ranked and those ranked with highest priority (either 1st or 2nd) were considered as "preferred".

3. Complete List of Food-Related Professionals by Political Stance Vis a Vis the Current Food Syste (Tables S3–S5)

Table S3. Gradual Reformers (N=25).

N	Institution	Position	Country	Self-placement in the transition landscape	Political stance in the food system	Valuation of food dimensions
2	Citizens' Initiative "Despertemos Guatemala"	Member of the Steering Committee	Guatemala	NI-AL	GR	MO-ST
65	CIHEAM/IAMM	PhD Candidate on metrics of Sustainable Diets and Food Systems	International (France)	NI	GR	MO-ST
68	Katholieke Universiteit Leuven	PhD research on multisensory gastronomic experiences	Belgium	NI-RV	GR	MO-ST
30	Gorta Self Help Africa	Nutritional adviser	Ireland	RE	GR	MO-MI
44	Vrije Universiteit Brussel	Researcher on integration between taste and hearing	Belgium	NI-AL	GR	MO-MI
53	Universidad del Valle de Guatemala	Researcher on ethnobotany and agroforestry	Guatemala	NI	GR	MO-MI
4	University of Alberta	Researcher on Indigenous food security	Canada	NI-AL	GR	MD
22	Katholieke Universiteit Leuven	PhD researcher on small holding conservation agriculture	Belgium	NI-AL	GR	MD
41	FEWS NET Famine Early Warning Systems	Regional Food Security Analyst.	Guatemala	NI	GR	MD
49	Hunger Solutions Minnesota	Employee	USA	RE	GR	MD
56	European Commission	Officer dealing with food and nutrition security governance	International (Belgium)	RE	GR	MD
62	The cotswold chef	Chef and social entrepreneur on food issues	UK	NI-RV	GR	MD
79	Member of local food groups	Food activist, researcher at university in physics	USA	RE	GR	MD
18	Wageningen University	Researcher on EU governance of food security	Netherlands	RE	GR	MO-ST
33	Rust Belt Riders Composting	Employee and co-owner of the cooperative	USA	NI-AL	GR	MO-ST
93	FAO	Officer on Food Security and Nutrition	International (Italy)	NI-AL	GR	MO-ST
36	Bioversity International	Regional representative in Central America	International (Italy)	NI-AL	GR	MO-MI
42	Oxford University	Senior researcher	UK	RE	GR	MD
50	University of Sussex	Research on market access to diverse and nutrient food	UK	RE	GR	MD
94	UK Agricultural Biodiversity Coalition	Employee	UK	RE	GR	MD
5	Global Harvest Initiative	Executive Director	International (USA)	RE	GR	MO-ST
40	European Commission	Public servant dealing with Food Security	International (Belgium)	RE	GR	MO-ST
59	FANTA Technical Assistance Project	Food Security specialist	USA	RE	GR	MO-MI
66	International Institute of Rural Reconstruction	Program associate for food and nutrition security	International (Philippnes)	NI-RV	GR	MO-ST
84	Ministry of Foreign Affairs	Responsible for food and nutrition security policies	Netherlands	RE	GR	MO-ST

Table S4. Counter-hegemonic Transformers (N=32).

N	Institution	Position	Country	Self-placement in the transition landscape	Political stance in the food system	Valuation of food dimensions
72	Citizens Co-op	Member of the voluntary Board of Directors	USA	NI	TR-CO	MO-ST
74	Universidad Central del Ecuador	Researcher on Short Alternative Food Supply Chains	Ecuador	RE	TR-CO	MO-MI
83	Provincial Government of Galapagos Islands	Consultant on food security issues	Ecuador	NI-AL	TR-CO	MO-MI
3	Oxfam Intermon	Policy and advocacy advisor on food, agriculture, climate change	Spain	RE	TR-CO	MD
6	Shareable	Journalist writing on ways to democratize the food system	USA	NI	TR-CO	MD
13	Souper Saturday	Volunteer activist	UK	NI-AL	TR-CO	MD
17	Radboud university	Researcher on motivations to act for nature and agro-biodiversity	Netherlands	RE	TR-CO	MD
21	Researcher, anti-poverty activist, journalist	Researcher, anti-poverty activist, journalist	Spain	RE	TR-CO	MD
23	Slow Food Youth Network	Member of the network secretariat	International (Italy)	NI-RV	TR-CO	MD
27	Commons Abundance Network	Member working in educational activities	International (USA)	NI	TR-CO	MD
29	Re-Bon Réseau de glanage nantais	Volunteer member	France	NI-AL	TR-CO	MD
48	Ecologistas en Acción	Employee	Spain	NI-AL	TR-CO	MD
64	Eastern Mediterranean Public Health Network	Executive director, health researcher	International (Jordan)	RE	TR-CO	MD
75	Taranaki District Health Board	Doctor and food bank volunteer	New Zealand	NI	TR-CO	MD
76	UN Standing Committee on Nutrition	Technical officer	International (Italy)	RE	TR-CO	MD
78	Part-Time Carnivore	Member	UK	RE	TR-CO	MD
80	Providencia Municipality	Public Servant	Chile	NI-AL	TR-CO	MD
81	Greenpeace International	Senior Ecological Farming Campaigner	International (Netherlands)	NI-RV	TR-CO	MD
96	Université Catholique de Louvain	Senior Lecturer and researcher on agro-ecology	Belgium	RE	TR-CO	MD
98	Falling Fruit	Co-founder and board member	USA	NI	TR-CO	MD
24	Disco Soup Paris	Member	France	NI-RV	TR-CO	MO-ST
26	Disco Soupe Lille	Member	France	NI-AL	TR-CO	MO-MI
97	Food activist and journalist	Food writer and journalist	Argentina	RE	TR-CO	MO-MI
14	Incredible Edible Bratislava	Volunteer activist	Slovakia	NI	TR-CO	MD
25	Confitures Re-Belles	Social entrepreneur, co-founder	France	NI	TR-CO	MD
32	University of Manitoba	PhD researcher on indigeneous peoples' access to foods in forests	Canada	NI	TR-CO	MD
55	Fair, Green and Global alliance	Coordinator	Netherlands	NI-AL	TR-CO	MD
67	Proyecto AliMente	Core member and media activist	Mexico	NI	TR-CO	MD
70	FLACSO-Ecuador	Researcher	Ecuador	RE	TR-CO	MD
95	FAO	Staff at Secretariat Regional Hunger-Free Latin America Initiative	International (Italy)	RE	TR-CO	MD
54	International Forestry Students' Association	Director	Indonesia	NI	TR-CO	MD
99	Plant a fruit	Member	Kenya	NI	TR-CO	MO-MI

Table S5. Alter-hegemonic Transformers (N=38).

N	Institution	Position	Country	Self-placement in the transition landscape	Political stance in the food system	Valuation of food dimensions
51	Food Forward Toronto	A consultant, chef and food activist	Canada	NI	TR-AT	MO-ST
39	Organic food Consumer	High School Teacher and part-time organic food producer	USA	NI	TR-AT	MO-ST
85	Save the Children UK	Policy and Advocacy Adviser in Nutrition -Hunger Team	UK	RE	TR-AT	MO-ST
1	Social Entrepreneur and food activist	Social entrepreneur, lecturer, researcher, food and agriculture consultant	Australia	RE	TR-AT	MO-MI
19	Universite Catholique de Louvain	PhD researcher on legal issues affecting biodiversity, seeds and commons	Belgium	RE	TR-AT	MO-MI
46	World Food Programme	Liaison Officer with donors	International (Italy)	RE	TR-AT	MO-MI
47	Transfernation	Founding member and director	USA	NI-RV	TR-AT	MO-MI
92	Food Cardiff	Member of the secretariat	UK	NI-AL	TR-AT	MO-MI
7	CommonSpark	Commons activist and founder	USA	NI-RV	TR-AT	MD
8	Doors of perception	Motivational speaker, writer, social activist on sustainability and innovation	France	NI	TR-AT	MD
12	Kaskadia	Transition Communicator and Commons Activist	USA	NI-AL	TR-AT	MD
20	Katholieke Universiteit Leuven	Senior researcher	Belgium	RE	TR-AT	MD
28	Australian Food Sovereignty Alliance	Member of the steering committee	Australia	NI-RV	TR-AT	MD
35	Food Guerrilla	Food activist	Netherlands	NI-RV	TR-AT	MD
37	International Development Consultant	International Development Consultant	Spain	RE	TR-AT	MD
52	GoMarketing Digital Communications	Digital Media Consultant	Ireland	NI-RV	TR-AT	MD
57	Katholieke Universiteit Leuven	PhD researcher	Belgium	NI	TR-AT	MD
58	CommonsFest	Organiser	Greece	NI-RV	TR-AT	MD
61	University of Sussex	Senior researcher	UK	NI-RV	TR-AT	MD
63	Oslo and Akershus University College	Lecturer on public health and nutrition	Norway	RE	TR-AT	MD
69	Katholieke Universiteit Leuven	PhD researcher	Belgium	NI-RV	TR-AT	MD
88	WWF	Staff member working on food security and sustainability	International (Belgium)	RE	TR-AT	MD
87	FLOK Society	Researcher at the core steering group	Ecuador	NI	TR-AT	MD
89	Grup de Consum Ecològic i Local Terraprim	Group member	Spain	NI-AL	TR-AT	MD
90	Building Roots Toronto	Team member	Canada	NI	TR-AT	MD
100	Local Organic Food Co-ops Network	Co-operative member and staff	Canada	NI-RV	TR-AT	MD
43	Wageningen University	Researcher and lecturer on food and agriculture issues	Netherlands	RE	TR-AT	MO-MI
77	UMeFood - University of Maine	Member of a graduate student group	USA	NI-AL	TR-AT	MO-MI
86	Oxford University	Senior Visiting Research Associate on socio-ecological challenges	UK	NI-RV	TR-AT	MO-MI
16	Food Ethics Council	Staff member	UK	RE	TR-AT	MD
34	Commons Strategies Group	Commons activist, thinker, lecturer, co-founder	International (Germany)	NI-AL	TR-AT	MD
60	Humanitarian & food assistance worker	Humanitarian and food assistance professional	Spain	NI-AL	TR-AT	MD
73	Africans in the Diaspora	Staff supervising food and agriculture investment portfolio	USA	NI	TR-AT	MD
91	Scaling Up Nutrition	Staff at SUN secretariat	International (USA)	NI-RV	TR-AT	MD
82	Stockholm Resilience Centre	Senior Researcher	Sweden	NI-AL	TR-AT	MD
9	Ministry of Foreign Affairs	Responsible to follow up food and nutrition in the multilateral context	Netherlands	RE	TR-AT	MO-ST
11	Social Entrepreneur, agricultural consultant	Change Manager, lecturer, researcher, focussed on innovation	New Zealand	NI-AL	TR-AT	MO-ST
71	GoMarketNC	Founder	USA	NI-RV	TR-AT	MO-ST

4. Descriptive Results of the Agency Variables

4.1. Position in the transition landscape and political attitude

Data show (cf Table S6) that 35.8% (N=34) of respondents are acting in the dominant socio-technical regime (either termed as "conventional" or "mainstream") whereas 64.2% (N=61) are in innovative niches (considered as "small" N=21, "alternative" N=22 or "revolutionary" niches N=18). The political attitude the respondents adopt vis and vis the existing food environment where they carry out their activities can be described as "improving the existing food system" (N=25, 26.3%, Gradual Reformers) or transforming the food system (N=70, 73.7%, Transformers). Then transformers can be split up into those who "struggle against the existing food system" (N=32, 33.7%, counter-hegemonic transformers) and those who "build a different food system" (N=38, 40%, alter-hegemonic transformers).

Table S6. Features of individual agency in food system transitions.

Self-placement in the transition landscape	Political stance vis a vis the food system (self-placement)		N	Mono-dimensional N=36 (37.9%)		Multi-dimensional N=59 (62.1%)
				Strongly N=18 (18.9%)	Mildly N=18 (18.9%)	
Regime N=34 (35.8%)	Gradual Reformers		12	4	2	6
	Transformers	Counter-hegemonic	11	0	2	9
		Alter-hegemonic	11	2	4	5
Niches N=61 (64.2%)	Gradual Reformers		13	6	3	4
	Transformers	Counter-hegemonic	21	2	3	16
		Alter-hegemonic	27	4	4	19

(a)

Political stance vis a vis the food system		Self-placement in the transition landscape	N	Mono-dimensional N=36 (37.9%)		Multi-dimensional N=59 (62.1%)
				Strongly N=18 (18.9%)	Mildly N=18 (18.9%)	
Gradual Reformers N=25 (26.3%)		Regime	12	4	2	6
		Niches	13	6	3	4
Transformers N=70 (73.7%)	Counter-hegemonic	Regime	11	0	2	9
		Niches	21	2	3	16
	Alter-hegemonic	Regime	11	2	4	5
		Niches	27	4	4	19

(b)

	Reformers N=25 (26.3%)		**Counter-hegemonic** N=32 (33.7%)		**Alter-hegemonic** N=38 (40%)	
	Mono-dimensional	**Multi-dimensional**	**Mono-dimensional**	**Multi-dimensional**	**Mono-dimensional**	**Multi-dimensional**
Regime N=34 (35.8%)	12		11		11	
	6	6	2	9	6	5
Niches N=61 (64.2%)	13		21		27	
	9	4	5	16	8	19
Total	15	10	7	25	14	24

(c)

After analysing the self-placement in the transition landscape and the mandates and political attitudes of the institutions where the respondent is working, no clear pattern emerged and nonsensical affiliations, not corresponding to the theoretical position of the institutions according to literature, were rather common (i.e. a FAO staff working in a regional initiative positioned himself as

counter-hegemonic transformer, a Dutch diplomat in the Ministry of Foreign Affairs claimed to be an alter-hegemonic transformer and a co-worker in a local cooperative to collect and recycle household food waste considered his activity as reforming gradually the food system). In Table S7, two counter-intuitive examples are presented for each diverging cluster. Two niche not-for-profit civic actions are presented with gradual reforming attitude and a strongly mono-dimensional valuation of food. On the other side, respondents from two UN institutions working in the regime adopt a counter-hegemonic transformative attitude valuing food as a multi-dimensional good. With such diversity, responses will be solely analysed at individual level and not at institutional level, and institutional affiliations will only be used in the discussion and not for analysis. Only the self-described sector of food activity will be used for the regression analysis, as the correspondence between the self-description and the reality was double-checked by the author.

Table S7. Several examples of counter-intuitive agency in food system transition.

N	Name of Institution	Description	Position	Country	Self-placement in the transition landscape	Political stance in the food system	Valuation of food dimensions
A.- Gradual Reformers + Strongly Mono-dimensional							
2	Citizens' Initiative "Despertemos Guatemala"	Advocacy and activist collective initiative to raise awareness about the most pressing problems affecting the country and what citizenship and civil society can do to address them. Chronic malnutrition, affecting nearly 50% of under-five children, is a priority issue. The Initiative "I have something to give" (Tengo Algo que Dar) was launched in 2012 to mobilise young urban people to get acquainted to malnutrition problems in the rural areas. http://despertemosguatemala.org/web/	Member of the Steering Committee	Guatemala	NI-AL	GR	MO-ST
33	Rust Belt Riders Composting	Service-fee organic waste removal initiative available to Cleveland residents (US). It is organised as a co-operative run and owned by the workers. We divert compostable organics from entering landfills by working with community gardens to cultivate high quality compost www.rustbeltriderscomposting.com	Employee and co-owner of the cooperative	USA	NI-AL	GR	MO-ST
B.- Counter-hegemonic Transformers + multi-dimensional							
76	UN Standing Committee on Nutrition	Policy advocacy and knowledge-sharing. The mandate of the UNSCN is to promote cooperation among UN agencies and partner organizations in support of community, national, regional, and international efforts to end malnutrition http://www.unscn.org/	Technical officer	International (Italy)	RE	TR-CO	MD
95	FAO	The Hunger Free Latin America and the Caribbean Initiative is a commitment by the region to eradicate hunger within the term of a generation (2025). It was launched in 2005, the secretariat is provided by FAO and get funds from Spain, Brazil and Mexico. It works in public policies, budget allocations, legal frameworks, strategic thinking, capacity building and communication and awareness. http://www.ialcsh.org/es	Staff at Secretariat Regional Hunger-Free Latin America Initiative	International (Italy)	RE	TR-CO	MD

Note: NI-AL: Niche-Alternative, RE: Regime, GR: gradual Reformer, TR-CO: Transformative Counterhegemonic, MO-ST: Strongly Monodimensional, MD: Multi-dimensional

Contrarily to expectations, within the regime one can find similar numbers of gradual reformers (N=12), counter-hegemonic transformers (N=11) and alter-hegemonic transformers (N=11), being transformative attitudes twice as frequent as reforming ones. So, gradual reformers are not dominant

in the regime. Besides, gradual reformers are equally split between the regime and niches (N=13 and N=12 respectively). Finally, the valuation of food is not so evidently biased towards mono-dimensionality (41.2%), as it could be expected, with multi-dimensionality still prevailing (58.8%). In this case, the absence of respondents for for-profit institutions and agri-food corporations has certainly influenced the lower presence of mono-dimensional views. So, the regime of not-for profit institutions encompasses a great diversity of political attitudes and food valuations. On the other side, the niches are supposed to be loci of contestation what is confirmed in this research, with 78.7% of respondents adopting a transformative stance (34.4% counter-hegemonic and 44.3% as alter-hegemonic) and the valuation of food as a multi-dimensional resource (64%) almost doubling the mono-dimensional valuation (36%) although figures are not significant.

In the regime, whereas gradual reformers and alter-hegemonic transformers are equally split between mono-dimensional and multi-dimensional, the counter-hegemonic are predominantly multi-dimensional (9 out of 11). In niches, however, although counter-hegemonic ones remain largely multi-dimensional (16 out of 21), gradual reformers are mostly mono-dimensional (9 out of 13) and alter-hegemonic are largely multi-dimensional (19 out of 27). So, three different patterns can be drafted by these results: gradual reformers vary between equally split or largely mono-dimensional, alter-hegemonic are split or largely multi-dimensional and counter-hegemonic are always largely multi-dimensional. The gradual reforming and alter-hegemonic political stance may be inclined to be mono or multi-dimensional depending on the transition locus where it stands (regime or niches). However, the counter-hegemonic attitude is consistently more prone towards multi-dimensionality regardless the loci of transition.

Valuation of food

The third agency variable will be analysed by contrasting economic and non-economic food dimensions. Two groups are identified: a group compounded by those who largely regard food as mono-dimensional resource (N=36, 37.9%) and another with those who consider it as a multidimensional resource (N=59, 62.1%) (cf Table S6(a), S6(b)). In the former group, the strongly mono-dimensional equals the mildly mono-dimensional (N=18, 18.9%). As mentioned earlier, respondents working in institutions that could epitomize the core narrative of the dominant regime, such big agri-food transnationals or governmental officers are either absent (the former) or not sufficiently represented (the latter), so these results will have to consider that absence.

Food Policy Beliefs

In Table S8, total figures for preferred policy beliefs are presented. In the first set (relative preferences), as expected, all food policy beliefs but one ("*The legal minimum wage should be always equal to the price of the food basket in every country*") are preferred by more than 70% of respondents, with one belief ("*Every citizen should be entitled to get a minimum amount of food (or its money equivalent) to eat every day*") almost reaching complete unanimity (90%). The second set yields a rather unexpected food policy belief, namely "*Food and Nutrition Security is a global public good*", with 69.4% of respondents placing it as an absolute preferred belief, being the only one that gets a simple majority. The second most preferred is "*if food is distributed according to the market rules, we will never achieve food security for all*" (47.3%) and the least preferred is also related to the previous one as "*Current market rules with less state intervention will enable us to reach a food secure world*" (5.2%).

The absolute and relative preferences of food policy beliefs and food dimensions in the three groups of gradual reformers, counter-hegemonic and alter-hegemonic transformers are rather homogeneous (cf Table S8). Differences in beliefs are minimal as only one food policy belief ("*Living organisms, such as seeds, animal breeds or genes shall not be patented by individuals or corporations*") is significantly different between gradual reformers (64%) and counter-hegemonic transformers (96.9%). Additionally, there are differences, although not statistically significant, between gradual reformers and alter-hegemonic transformers: "*the current food system is capable of producing food in a sustainable way*" (28% and 5.3% respectively). But in general terms, there are no significant differences in preferred food policy beliefs among the three groups that have different political stances vis a vis

the food system. That may be attributed to the reduced sample size and lack of significance of differences; the delivery of socially desirable responses (mostly in the subset 1 of relative preferences) and the marked diversity of professional backgrounds, life-stories, institutional affiliation, food-related experience, country of origin, personal involvement in actions for food transition, values and knowledge of the respondents. Further research will be done by the author with more geographically-restricted and homogeneous groups.

Table S8. Preferred Food Policy Beliefs and political stance clusters.

Preferred Food Policy Beliefs	Total sample	P value	Gradual Reformers N=25	Counter-hegemomic Transformers N=32	Alter-hegemonic Transformers N=38	#
Relative preference: Simply describing agreement-disagreement, not confronting different beliefs						
1.- Food is a common good that shall be governed by citizens and being beneficial for all members of society	81 (85.3)	1	19 (76)	27 (84.4)	35 (92.1)	9a
2.- Every citizen should be entitled to get a minimum amount of food (or its money equivalent) to eat every day	90 (94.7)	0.953	22 (88)	30 (93.8)	38 (100.0)	9b
3.- The legal minimum wage should be always equal to the price of the Food Basket in every country	55 (57.9)	1	11 (44)	20 (62.5)	24 (63.2)	9c
4.- The financial speculation of food products should be banned by law	73 (76.8)	1	18 (72)	26 (81.3)	29 (76.3)	9d
5.- Free food programmes should be part of Universal Food Coverage to those that cannot afford it	73 (76.8)	1	16 (64)	25 (78.1)	32 (84.2)	9e
6.- Living organisms, such as seeds, animal breeds or genes shall not be patented by individuals or corporations	77 (81)	0.066	16^{a} (64)	31^{b} (96.9)	30^{a} (78.9)	9f
Absolute preference: selecting and ranking different and contrasting beliefs						
7.- Food can be at the same time a private good and an essential resource for our survival and identity	26 (27.3)	1	11 (44)	6 (18.8)	9 (23.7)	20a
8.- Current market rules with less State intervention will enable us to reach a food secure world	5 (5.2)	1	1 (4)	0 (0.0)	4 (10.5)	20b
9.- The current food system is capable of producing food in a sustainable way	14 (14.7)	0.711	7^{a} (28)	5^{ab} (15.6)	2^{b} (5.3)	20d
10.- The state has an important role in producing, distributing and guaranteeing food for all the citizens	34 (35.7)	1	9 (36)	11 (34.4)	14 (36.8)	20e
11.- If food is distributed according to the market rules, we will never achieve food security for all	45 (47.3)	0.981	7 (28)	18 (56.3)	20 (52.6)	20g
12.- Food and nutrition security is a global public good	66 (69.4)	1	15 (60)	24 (75.0)	27 (71.1)	20h

Note: N=95. Differences have been measured using Fisher's exact test and p-values are corrected by Holm's correction. Percentages of preferred policy beliefs are not comparable between sets of questions. Percentages are in parenthesis.

When the clusters formed by the valuation of food dimensions are considered, only two food policy beliefs are significantly different between those who value food as a mono-dimensional good and those who value food as a multi-dimensional one: "*Living organisms, such as seeds, animal breeds or genes shall not be patented by individuals or corporations*" (55.6% of strongly mono-dimensional and 89.8% of multi-dimensional) and "*If food is distributed according to the market rules, we will never achieve food security for all*" (22.2% of strongly mono-dimensionals [SMD] and 57.6% of multi-dimensionals (MTD]) (cf Table S9). Both preferences are rather coherent with expected beliefs. Additionally, there is another belief that present differences although not significantly "*If food is distributed according to the market rules, we will never achieve food security for all*" with a low support by SMD (22.2%) and more

than double in MTD (57.6%). In all the three policy beliefs, the group that values food as a mildly mono-dimensional (MMD) good stands between the SMD and the MTD. This situation is also repeated for most of the 12 beliefs analysed what confirms this group encompasses an intermediate set of mildly mono-dimensional or mildly multi-dimensional that share values and policy beliefs with both extremes. In any case, as seen in the previous Table S8, the differences in preferred food policy beliefs among the groups that value food dimensions differently are not so remarkable, with just two out of 12 beliefs having significant differences. This absence of marked differences can be attributed to the unintended bias in the sample (with no agri-business corporations and just a few private sector representatives), to the type of questions (phrasing, socially desirable responses, pairwise choices) or to real convergence of food policy beliefs in this global sample. More research will have to be done to ascertain this issue.

Table S9. Preferred Food Policy Beliefs and valuation of food dimensions.

Preferred Food Policy Beliefs	Total sample	*p* value	Strongly Mono-dimensional N=18	Mildly mono-dimensional N=18	Multi-dimensional N=59	#
Relative preference: Simply describing agreement-disagreement, not confronting different beliefs						
1.- Food is a common good that shall be governed by citizens and being beneficial for all members of society	81 (85.3)	0,734	12 (66.7)	16 (88.9)	53 (89.8)	9a
2.- Every citizen should be entitled to get a minimum amount of food (or its money equivalent) to eat every day	90 (94.7)	0,554	15 (83.3)	17 (94.4)	58 (98.3)	9b
3.- The legal minimum wage should be always equal to the price of the Food Basket in every country	55 (57.9)	1	9 (50)	10 (55.6)	36 (61)	9c
4.- The financial speculation of food products should be banned by law	73 (76.8)	1	11 (61.1)	13 (72.2)	49 (83.1)	9d
5.- Free food programmes should be part of Universal Food Coverage to those that cannot afford it	73 (76.8)	1	11 (61.1)	14 (77.8)	48 (81.4)	9e
6.- Living organisms, such as seeds, animal breeds or genes shall not be patented by individuals or corporations	77 (81)	0,082	10[a] (55.6)	14[ab] (77.8)	53[b] (89.8)	9f
Absolute preference: selecting and ranking different and contrasting beliefs						
7.- Food can be at the same time a private good and an essential resource for our survival and identity	26 (27.3)	0,011	11[a] (61.1)	6[ab] (33.3)	9[b] (15.3)	20a
8.- Current market rules with less State intervention will enable us to reach a food secure world	5 (5.2)	1	3 (16.7)	0 (0)	2 (3.4)	20b
9.- The current food system is capable of producing food in a sustainable way	14 (14.7)	0,651	1 (5.6)	6 (33.3)	7 (11.9)	20d
10.- The state has an important role in producing, distributing and guaranteeing food for all the citizens	34 (35.7)	1	4 (22.2)	8 (44.4)	22 (37.3)	20e
11.- If food is distributed according to the market rules, we will never achieve food security for all	45 (47.3)	0,325	4[a] (22.2)	7[ab] (38.9)	34[b] (57.6)	20g
12.- Food and nutrition security is a global public good	66 (69.4)	1	13 (72.2)	10 (55.6)	43 (72.9)	20h

Note: N=95. Differences have been measured using Fisher's exact test and p-values are corrected by Holm's correction. Percentages of preferred policy beliefs are not comparable between sets of questions. Percentages are in parenthesis.

The belief of "banning patents on living organisms" is opposed by half of the SMD but preferred by 90% of MTD, whereas the belief that "food can be a private good and en essential resource for our survival" is the second most preferred belief in absolute terms by SMD (60%) but only by 15% of MTD. Although not statistically significant, the impossibility of market-driven food security is just preferred by one fifth of SMD but almost 60% of MTD. Additionally, although the importance of minimum wage to guarantee an adequate amount of household food has been proven successful by

health economists [245-246], this economic measure touches one of the most sensitive issues of the neoliberal doctrine, namely the liberalisation of wages with no minimum thresholds as a means to activate the economies [247-248]. Understandably, this policy belief splits the sample in two nearly equal clusters (55% of preferred, 45% opposed or neutral), and there is no significant differences between SMD, MMD and MTD.

5. Political Stance and Valuation of Food Dimensions: Comparative Clusters in Regression Analysis (Tables S10–S11)

Table S10. Gradual Reformers + Strongly Mono-dimensional (N=10).

N	Name of Institution	Description	Position	Country	Self-placement in the transition landscape	Political stance in the food system	Valuation of food dimensions
2	Citizens' Initiative "Despertemos Guatemala"	Advocacy and activist collective initiative to raise awareness about the most pressing problems affecting the country and what citizenship and civil society can do to address them. Chronic malnutrition, affecting nearly 50% of under-five children, is a priority issue. The Initiative "I have something to give" (Tengo Algo que Dar) was launched in 2012 to mobilise young urban people to get acquainted to malnutrition problems in the rural areas. http://despertemosguatemala.org/web/	Member of the Steering Committee	Guatemala	NI-AL	GR	MO-ST
5	Global Harvest Initiative	A corporate advocacy group that works on policy analysis, education and advocacy about the solutions to improve agricultural productivity and conserve natural resources and to improve food and nutrition security. The biggest transnational agri-food corporations are members. www.globalharvestinitiative.org	Executive Director	International (USA)	RE	GR	MO-ST
65	CIHEAM/IAMM	The IAMM is one of four Mediterranean agronomic institutes of the International Centre for Advanced Mediterranean Agronomic Studies (CIHEAM), an intergovernmental organisation created in 1962 by the OECD and the Council of Europe and composed of 13 member states. http://www.iamm.fr/	PhD Candidate on metrics of Sustainable Diets and Food Systems	International (France)	NI	GR	MO-ST
68	Katholieke Universiteit Leuven	Joint collaboration between the Laboratory of Experimental Psychology at KULeuven and the Acoustic Sensing Lab of Vrije Universiteit Brussels http://ppw.kuleuven.be/home/english/research/lep	PhD research on multisensory gastronomic experiences	Belgium	NI-RV	GR	MO-ST
93	FAO	United Nations Organisation for food and agriculture www.fao.org	Officer on Food Security and Nutrition	International (Italy)	NI-AL	GR	MO-ST
33	Rust Belt Riders Composting	Service-fee organic waste removal initiative available to Cleveland residents (US). It is organised as a co-operative run and owned by the workers. We divert compostable organics from entering landfills by working with community gardens to cultivate high quality compost www.rustbeltriderscomposting.com	Employee and co-owner of the cooperative	USA	NI-AL	GR	MO-ST
40	European Commission	The EC is the European Union's politically independent executive arm. It draws up proposals for new European legislation, and it implements the decisions of the European Parliament and the Council of the EU. http://ec.europa.eu/index_en.htm	Public servant dealing with Food Security	International (Belgium)	RE	GR	MO-ST
66	International Institute of Rural Reconstruction	A training institute with an international scope created by Dr Y.C. James Yen, a Chinese entrepreneur and social activist, that launched a rural education programme in China that targeted more than 200 million peasants. Currently working in more than 15 countries, mostly in Asia and Africa. http://iirr.org/	Program associate for food and nutrition security	International (Philippnes)	NI-RV	GR	MO-ST
18	Wageningen University	Dutch university specialised in food and agricultural issues with a remarkable international outreach http://www.wageningenur.nl/en/wageningen-university.htm	Researcher on EU governance of food security	Netherlands	RE	GR	MO-ST
84	Ministry of Foreign Affairs	Governmental institution responsible for foreign affairs, international trade and Development Cooperation. https://www.government.nl/ministries/ministry-of-foreign-affairs	Responsible for food and nutrition security policies	Netherlands	RE	GR	MO-ST

Table S11. Counter-hegemonic Transformers + multi-dimensional (N=20).

N	Institution	Description	Position	Country	Self-placement in the transition landscape	Political stance in the food system	Valuation of food dimensions
3	Oxfam Intermon	International development and humanitarian NGO, based in Spain, but a member of the international network of national OXFAMs. Implementing field projects and high-impact research and advocacy campaigns focused on inequality, justice, human rights, food security, water and livelihoods. http://www.oxfamintermon.org/	Policy and advocacy advisor on food, agriculture, climate change	Spain	RE	TR-CO	MD
6	Shareable	Shareable is a nonprofit news, action and connection hub for the sharing transformation. We've told the stories of sharers to millions of people since 2009. www.shareable.net	Journalist writing on ways to democratize the food system	USA	NI	TR-CO	MD
13	Souper Saturday	We provide meals through a soup kitchen and a safe non-judgemental social environment for homeless and otherwise impoverished people in Edinburgh, Scotland https://soupersaturdayblog.wordpress.com	Volunteer activist	UK	NI-AL	TR-CO	MD
17	Radboud university	EU-funded project on motivational attitudes and collective actions for nature, including agro-biodiversity and agricultural schemes. www.biomotivation.eu	Researcher on motivations to act for nature and agro-biodiversity	Netherlands	RE	TR-CO	MD
21	Researcher, anti-poverty activist, journalist	Lecturing courses on food justice and food systems' visualization. I also blog and advocate on food related issues. Former OXFAM Policy coordinator and advocacy campaigner. Writing a blog on development, justice, media, poverty, hunger in El Pais journal	Researcher, anti-poverty activist, journalist	Spain	RE	TR-CO	MD
23	Slow Food Youth Network	The SFYN unites groups of active young Slow Food members from all over the globe. The local groups create original events aimed at raising awareness about food issues and providing means to take action. Such as the Disco Veggies, people cook fresh but unwanted fruit and vegetables that would otherwise have been discarded. The meal was prepared and distributed for free at the sound of music provided by DJs, encouraging a dance celebration. http://www.slowfoodyouthnetwork.org/	Member of the network secretariat	International (Italy)	NI-RV	TR-CO	MD
27	Commons Abundance Network	Web-based clearing house on Commons. The Commons Abundance Network (CAN) is an emerging co-learning, research, innovation and action network operating both offline and online as an incubator or laboratory for transformative action towards commons based abundance. http://commonsabundance.net/home-page/about/objectives/	Member working in educational activities	International (USA)	NI	TR-CO	MD
29	Re-Bon Réseau de glanage nantais	French gleaning network to reduce foodwaste by harvesting with volunteers fields that were not supposed to be harvested (over production, esthetic criteria), and redistribute this food to caritative organisations (foodbank mainly). Part of European Gleaning network. http://re-bon.wix.com/re-bon	Volunteer member	France	NI-AL	TR-CO	MD
48	Ecologistas en Acción	Ecologists in Action is a federation of over 300 environmental groups distributed all over Spain. It develops social ecology, which means that environmental problems stem from a model of production and consumption increasingly globalized, which also derives from other social problems. Awareness campaigns on GMOs, agro-ecology or legal actions against those who harm the environment, while also running innovative & alternative projects in several places. http://www.ecologistasenaccion.org/rubrique9.html	Employee	Spain	NI-AL	TR-CO	MD
64	Eastern Mediterranean Public Health Network	EMPHNET is a group of epidemiologists & public health workers who work to prevent and control diseases, to conduct multidisciplinary research, and to translate research into practice in the Eastern Mediterranean Region. They address nutritional issues related to hunger and obesity in partnerships with WHO, Columbia University, US Centre for Disease Control. http://www.emphnet.net	Executive director, health researcher	International (Jordan)	RE	TR-CO	MD
75	Taranaki District Health Board	Medical doctor (general practitioner) leading the Whanau Pakari Healthy Lifestyle Programme, promoting healthy lifestyles for children in low-income and maori neighbourhoods of New Plymouth, considered as food deserts. Obesity is triggered by ultra-processed easily available food and this doctor works to prevent those eating habits. http://www.tdhb.org.nz/patients_visitors/documents/Whanau_Pakari_info_Families.pdf	Doctor and food bank volunteer	New Zealand	NI	TR-CO	MD

76	UN Standing Committee on Nutrition	Policy advocacy and knowledge-sharing. The mandate of the UNSCN is to promote cooperation among UN agencies and partner organizations in support of community, national, regional, and international efforts to end malnutrition http://www.unscn.org/	Technical officer	International (Italy)	RE	TR-CO	MD
78	Part-Time Carnivore	Small non-profit campaigning organisation based in Cardiff aimed to cut consumption of intensively produced meat. Around 40 institutions have been involved in the campaign http://www.parttimecarnivore.org/	Member	UK	RE	TR-CO	MD
80	Providencia Municipality	At the municipality of Providencia, in Santiago, we are developing an urban agriculture plan/strategy. The main objective is to validate urban agriculture as a tool that improves quality of life and helps people become more aware of food systems, facilitating the transition to a more sustainable one. http://www.providencia.cl/	Public Servant	Chile	NI-AL	TR-CO	MD
81	Greenpeace International	Campaigning on global food and agriculture issues. Objectives: transition to agroecology, by switching investments from pesticides, GM, monocultures, etc. to ecological farming and through mass mobilisation of people as consumer, eaters and citizens http://www.greenpeace.org/international/en/	Senior Ecological Farming Campaigner	International (Netherlands)	NI-RV	TR-CO	MD
96	Université Catholique de Louvain	Interdisciplinary research projects on food transition, agro-ecology, conventional agriculture and livestock and lecturing. Also some conferences on agroecology http://www.uclouvain.be/eli	Senior Lecturer and researcher on agro-ecology	Belgium	RE	TR-CO	MD
98	Falling Fruit	Nonprofit initiative based in Boulder, Colorado that encourages urban foraging throughout the world by crowdsourcing maps with availability of free fruits, vegetables and wasted food. Just in 2014, in Boulder 10,000 lbs food picked, over half donated, 20 events, 215+ volunteer participants. Our hope is to encourage people to see food (even that growing on private property, especially if it is going to waste) as a commons. We can grow so much more food in cities by even just replacing our current landscaping, if only we decide food is a priority and a public good. www.fallingfruit.org http://fruitrescue.org/	Co-founder and board member	USA	NI	TR-CO	MD
14	Incredible Edible Bratislava	Planting herbal gardens, vegetables and trees around town, in vacant lots and abandoned places to grow food for all. We've planted several orchards and there are more to come. Reproducing the Incredible Edible movement originated in Todmorden, UK. https://www.facebook.com/IESVK	Volunteer activist	Slovakia	NI	TR-CO	MD
25	Confitures Re-Belles	Two young social entrepreneurs launched this idea in Paris (Oct 2014). Jar and marmalade producers for short-circuit shops. A gourmet idea to fight against food waste https://www.facebook.com/ConfituresReBelles	Social entrepreneur, co-founder	France	NI	TR-CO	MD
32	University of Manitoba	Protected forests can challenge access to food in conjunction with agribusiness and weak implementation state legal frameworks and/or international human rights. Running a blog presenting research results. http://farmsforestsfoods.blogspot.be/ http://umanitoba.ca/	PhD researcher on indigeneous peoples' access to foods in forests	Canada	NI	TR-CO	MD
55	Fair, Green and Global alliance	The Fair Green and Global (FGG) alliance is an alliance of six Dutch civil society organisations. Both Ends, ActionAid, Clean Clothes Campaign, Friends of the Earth Netherlands, SOMO and Transnational Institute. The development, promotion and scaling up of inspiring examples of sustainable development in developing countries including those related to access to food and food security www.fairgreenandglobal.org	Coordinator	Netherlands	NI-AL	TR-CO	MD
67	Proyecto AliMente	Promoting a social movement to think critically on food issues and the food chain. First campaign "que no te den la espalda" supports breastfeeding in Mexico. Soon to be part of Alianza por la Salud. Organising events on food related issues: where are we? how did we get here? what can we do about it? www.quenotedenlaespalda.org	Core member and media activist	Mexico	NI	TR-CO	MD
70	FLACSO-Ecuador	Coordinating a research project on agricultural certifications systems (organic and Fair Trade) and public policies in Ecuador. Engaging with producers' organizations and policy makers in Ecuador during the research process. https://www.flacso.edu.ec/portal/	Researcher	Ecuador	RE	TR-CO	MD
95	FAO	The Hunger Free Latin America and the Caribbean Initiative is a commitment by the region to eradicate hunger within the term of a generation (2025). It was launched in 2005, the secretariat is provided by FAO and get funds from Spain, Brazil and Mexico. It works in public policies, budget allocations, legal frameworks, strategic thinking, capacity building and communication and awareness. http://www.ialcsh.org/es	Staff at Secretariat Regional Hunger-Free Latin America Initiative	International (Italy)	RE	TR-CO	MD
54	International Forestry Students' Association	PhD researcher on Forest and Food Security at the Bogor Agricultural University http://ifsa_lcipb.lk.ipb.ac.id/	Director	Indonesia	NI	TR-CO	MD

6. Questionnaire

(1) Name of your organization/enterprise/group

(2) Contact

(3) Sector where you carry out the food-related activities

a) Private sector
b) Public Sector
c) Private Public Partnership
d) NGO/Civil Society Sector (legal entity)
e) Self-regulated Collective action (informal arrangement)

(4) Age and gender

Age
a) 18-30
b) 31-40
c) 41-50
d) 50-60
e) 61-70

Gender
f) Male
g) Female

(5) How long have you been active in hunger eradication/food security/alternative food actions?

a) Never
b) 1 year
c) 2-3 years
d) 3-5 years
e) 5-10 years
f) +10 years

(6) At present, are you involved somehow in any food-related activity ? Please, describe it briefly (what, where, when, objectives, results to date, people/institutions involved) Open question

(7) How would you describe the food-related activity you are involved in? (choosing one option is preferable but two options may also be selected and ranked)

A **SMALL-NICHE**	activity that	a.- improves the existing food system
		b.- struggles against the existing food system
		c.- builds a different food system
A **MAINSTREAM**	activity that	d.- improves the existing food system
		e.- struggles against the existing food system
		f.- builds a different food system
A **CONVENTIONAL**	activity that	g.- improves the existing food system
		h.- struggles against the existing food system
		i.- builds a different food system
An **ALTERNATIVE**	activity that	j.- improves the existing food system
		k.- struggles against the existing food system
		l.- builds a different food system

A **REVOLUTIONARY**	activity that	m.- improves the existing food system
		n.- struggles against the existing food system
		o.- builds a different food system

(8) Have you done any of the following during the past months?

a.- Producing food yourself
b.- Choose locally produced food products
c.- Eat organic/ecological foodstuff
d.- Recycling food in different ways so as to minimise food waste at home
e.- Sending e-mails about food-related issues to my friends
f.- Being part of a group/organization whose purpose is to increase the public awareness on the food system/hunger problem
g.- Sensitizing close relatives or colleagues in order that they change their food habits
h.- Financially supporting an organization that works for a more secure food system or anti-hunger actions

(9) Rank every statement according to your preferences

	Strongly Disagree	*Disagree*	*Neutral*	*Agree*	*Strongly Agree*
a.- Food is a common good that shall be governed by citizens and being beneficial for all members of society					
b.- Every citizen should be entitled to get a minimum amount of food (or its money equivalent) to eat every day					
c.- The legal minimum wage should be always equal to the price of the Food Basket in every country					
d.- The financial speculation of food products should be banned by law					
e.- Free food programmes should be part of Universal Food Coverage to those that cannot afford it					
f.- Living organisms, such as seeds, animal breeds or genes shall not be patented by individuals or corporations					

Choose the statement you prefer (only one shall be selected, but explanations can be provided).

(10)	a.- Food is a basic human need every human being shall enjoy every day, regardless his/her purchasing power	
	b.- Freedom from hunger is a human right as important as the right not to be tortured	

(11)	a.- The price of food in the market reflects well its value for human beings	
	b.- Food shall be cheap so as to enable more people to get access to it	

(12)	a.- Food is a common good that should be enjoyed by all humans and governed in a common way	
	b.- Food is a human right that shall be guaranteed by the state to all	

(13)	a.- Food is a life-sustaining commodity that cannot be treated as other commodities	
	b.- Food is an important part of my cultural identity	

(14)	a.- Food, as a scarce resource, has to be distributed according to market rules	

	b.- The State has the obligation to guarantee the right to food to every citizen	

(15)	a.- You can eat as long as you have money to purchase the food or means to produce it	
	b.- Food is a natural resource that it is better exploited by the state	

(16)	a.- Food has to be beautiful and cheap	
	b.- Food has to be nutritious and expensive	

(17)	a.- Food is a natural resource that is better exploited by the private sector	
	b.- Food is a natural resource that is better exploited by citizens	

(18)	a.- Food is a commodity whose access is exclusively determined by the purchasing power of any given customer	
	b.- Free food for all is good	

(19)	a.- The best use of any food commodity is where it can get the best price, either fuel, feeding livestock or exporting market	
	b.- A bread loaf should be guaranteed to every citizen every day	

(20) From the following list, please pick the three sentences you agree the most with and rank them (First, Second, Third)

a.- Food can be at the same time a private good and an essential resource for our survival and identity	
b.- Current market rules with less State intervention will enable us to reach a food secure world	
c.- Food is like any other commodity	
d.- The current food system is capable of producing food in a sustainable way	
e.- The state has an important role in producing, distributing and guaranteeing food for all the citizens	
f.- Patents are essential to foster innovation in agricultural production	
g.- If food is distributed according to the market rules, we will never achieve food security for all	
h.- Food and nutrition security is a global public good	
i.- Biofuel cultivation does not affect hunger	

(21). Provide any comment you may consider about this questionnaire, your feelings or suggestions. Open question

7. CODING FORM Multi-dimensional Reformers

A.- INDEPENDENT VARIABLES

Qw0 Number of interviewee (food-related professional) N=95

Qw1 Country

Qw1a	1.- Hunger-stricken country	14.7%
Qw2a	2.- Non-hunger stricken country	85.3%

Qw2 Age slot

Qw2a	1.- Below 30	28.4%
Qw2b	2.- 31-50	52.6%
Qw2c	3.- Above 50	19%

Qw3 Gender

Qw3a	1. Male	51.6%
Qw3b	2. Female	48.4%

Qw4 Food-related experience

Qw4a	1.- Never	0%
Qw4b	2.- Less 3 years	35.8%
Qw4c	3.- Between 3 and 10	39%
Qw4d	4.- More than 10	25.2%

Qw5 Self-described sector for food-related activities (detail)

Qw5a	1.- Private sector	6.3%
Qw5b	2.- Public sector	33.7%
Qw5c	3.- Public-Private Partnership	11.6%
Qw5d	4.- NGO/Civil Society Sector (legal entity)	30.5%
Qw5e	5.- Self-regulated Collective action (informal arrangement)	17.9%

Qw6 Self-described sector for food-related activities (main groups)

Qw6a	1.- For-profit Sector	17.9%
Qw6b	2.- Public Sector	33.7%
Qw6c	3.- Third Sector (not-for-profit)	48.4%

Qw7 Personal involvement in actions for food transition

Qw7a	Producing food yourself	57.9%
Qw7b	Choose locally produced food products	89.4%
Qw7c	Eat organic/ecological foodstuff	88.4%
Qw7d	Recycling food in different ways so as to minimise food waste at home	73.7%
Qw7e	Sending e-mails about food-related issues to my friends	59%
Qw7f	Being part of a group whose purpose is to increase the public awareness on the food system/hunger	81%
Qw7g	Sensitizing close relatives or colleagues in order that they change their food habits	64.2%
Qw7h	Financially supporting an organization that works for a more secure food system/anti-hunger actions	43.2%
Qw7i	Committed Production (Qw7a)	57.9%
Qw7j	Committed Consumption (at least two out of three in Qw7b, Qw7c, Qw7d)	91.6%
Qw7k	Committed Food Activism (social network, active membership, awareness raising, funding) (at least two out of four in Qw7e, Qw7f, Qw7g, Qw7h	77.9%

B.- SELF-PLACEMENT IN THE TRANSITION LANDSCAPE

Qw8 Self-placement in the transition landscape

qw8a	A SMALL-NICHE activity that improves the existing food system	22.11%
qw8b	A SMALL-NICHE activity that struggles against the existing food system	
qw8c	A SMALL-NICHE activity that builds a different food system	
qw8d	A MAINSTREAM activity that improves the existing food system	25.27%
qw8e	A MAINSTREAM activity that struggles against the existing food system	
qw8f	A MAINSTREAM activity that builds a different food system	
qw8g	A CONVENTIONAL activity that improves the existing food system	10.53%

qw8h	A CONVENTIONAL activity that struggles against the existing food system	
qw8i	A CONVENTIONAL activity that builds a different food system	
qw8j	An ALTERNATIVE activity that improves the existing food system	
qw8k	An ALTERNATIVE activity that struggles against the existing food system	23.16%
qw8l	An ALTERNATIVE activity that builds a different food system	
qw8m	A REVOLUTIONARY activity that improves the existing food system	
qw8n	A REVOLUTIONARY activity that struggles against the existing food system	18.95%
qw8o	A REVOLUTIONARY activity that builds a different food system	

Qw9 Working at Dominant Socio-technical Regime or in Innovative Niches

Qw9a	Dominant Socio-technical regime (Conventional + Mainstream)	35.8%
Qw9b	Innovative niches (small-niche + alternative + revolutionary)	64.2%

Qw10 Gradual Reformers or Transformers (Builders or Strugglers)

Qw10a	Gradual Reformers (those who want to improve the existing food system)	26.3%
Qw10b	Transformers (those who want to build a new or struggle against the existing food system)	73.7%

Qw11 Alter-hegemonic (Builders) or Counter-hegemonic (Strugglers)

Qw11a	Alter-hegemonic (building a different food system)	40%
Qw11b	Counter-hegemonic (struggling against the existing food system)	33.7%

C.- PREFERRED FOOD POLICY BELIEFS within MULTI-DIMENSIONAL STATEMENTS or COMMONS-ORIENTED

Ranking multi-dimensional statements (1 strongly disagree, 2, disagree, 3 no position, 4 agree, 5 strongly agree)

Qw12a Food is a common good that shall be governed by citizens and being beneficial for all members of society

Qw12b Every citizen should be entitled to get a minimum amount of food (or its money equivalent) to eat every day

Qw12c The legal minimum wage should be always equal to the price of the Food Basket in every country

Qw12d The financial speculation of food products should be banned by law

Qw12e Free food programmes should be part of Universal Food Coverage to those that cannot afford it

Qw12f Living organisms, such as seeds, animal breeds or genes shall not be patented by individuals or corporations

Qw13 Preferred Food Policy Beliefs (Strongly and Agree, 4-5)

Qw13a	Food is a common good that shall be governed by citizens and being beneficial for all members of society	85.3%
Qw13b	Every citizen should be entitled to get a minimum amount of food (or its money equivalent) to eat every day	94.7%
Qw13c	The legal minimum wage should be always equal to the price of the Food Basket in every country	57.9%
Qw13d	The financial speculation of food products should be banned by law	76.8%
Qw13e	Free food programmes should be part of Universal Food Coverage to those that cannot afford it	76.8%
Qw13f	Living organisms, such as seeds, animal breeds or genes shall not be patented by individuals or corporations	81%

Qw14 Opposed Food Policy Beliefs (Strongly and Disagree, 1-2)

Qw14a	Food is a common good that shall be governed by citizens and being beneficial for all members of society	4.2%
Qw14b	Every citizen should be entitled to get a minimum amount of food (or its money equivalent) to eat every day	4.2%
Qw14c	The legal minimum wage should be always equal to the price of the Food Basket in every country	23.2%
Qw14d	The financial speculation of food products should be banned by law	5.3%
Qw14e	Free food programmes should be part of Universal Food Coverage to those that cannot afford it	7.4%
Qw14f	Living organisms, such as seeds, animal breeds or genes shall not be patented by individuals or corporations	9.5%

D.- SELECTED FOOD POLICY BELIEFS (MARKET-ORIENTED vs COMMONS-ORIENTED)

Qw15 Rank the three Food Policy Beliefs you agree the most (1,2,3)

Qw15a Food can be at the same time a private good and an essential resource for our survival and identity
Qw15b Current market rules with less State intervention will enable us to reach a food secure world
Qw15c Food is like any other commodity
Qw15d The current food system is capable of producing food in a sustainable way
Qw15e The state has an important role in producing, distributing and guaranteeing food for all the citizens
Qw15f Patents are essential to foster innovation in agricultural production
Qw15g If food is distributed according to the market rules, we will never achieve food security for all
Qw15h Food and nutrition security is a global public good
Qw15i Biofuel cultivation does not affect hunger

Qw15 Rank the three Food Policy Beliefs you agree the most (1) the most, (2), the second, (3) the third, (4) Non-selected

Qw15aa Food can be at the same time a private good and an essential resource for our survival and identity
Qw15ba Current market rules with less State intervention will enable us to reach a food secure world
Qw15ca Food is like any other commodity
Qw15da The current food system is capable of producing food in a sustainable way
Qw15ea The state has an important role in producing, distributing and guaranteeing food for all the citizens
Qw15fa Patents are essential to foster innovation in agricultural production
Qw15ga If food is distributed according to the market rules, we will never achieve food security for all
Qw15ha Food and nutrition security is a global public good
Qw15ia Biofuel cultivation does not affect hunger

Qw16 Selected Food Policy Beliefs (1,2,3)

		Selected Policy Belief (1-3)	Not selected Policy Belief
Qw16a	Food can be at the same time a private good and an essential resource for our survival and identity	50.5%	49.5%
Qw16b	Current market rules with less State intervention will enable us to reach a food secure world	6.3%	93.7%
Qw16c	Food is like any other commodity	0%	100
Qw16d	The current food system is capable of producing food in a sustainable way	26.3%	73.7%

Qw16e	The state has an important role in producing, distributing and guaranteeing food for all the citizens	68.4%	31.6%
Qw16f	Patents are essential to foster innovation in agricultural production	6.3%	93.&
Qw16g	If food is distributed according to the market rules, we will never achieve food security for all	59%	41%
Qw16h	Food and nutrition security is a global public good	82.1%	17.9%
Qw16i	Biofuel cultivation does not affect hunger	1%	99%

Qw17 Not selected Food Policy Beliefs

Qw17a Food can be at the same time a private good and an essential resource for our survival and identity
Qw17b Current market rules with less State intervention will enable us to reach a food secure world
Qw17c Food is like any other commodity
Qw17d The current food system is capable of producing food in a sustainable way
Qw17e The state has an important role in producing, distributing and guaranteeing food for all the citizens
Qw17f Patents are essential to foster innovation in agricultural production
Qw17g If food is distributed according to the market rules, we will never achieve food security for all
Qw17h Food and nutrition security is a global public good
Qw17i Biofuel cultivation does not affect hunger

Qw18 Market-oriented VS commons-oriented: Strongly neoliberal, Conventional or Commons-based

Qw18a Strongly neoliberal (one is selected) (N=7)

Qw16b Current market rules with less State intervention will enable us to reach a food secure world (N=6)
Qw16c Food is like any other commodity (N=1)
Qw16i Biofuel cultivation does not affect hunger (N=1)

Qw18b Conventional (at least two out of three are selected and none strongly neoliberal) (N=17)

Qw16a Food can be at the same time a private good and an essential resource for our survival and identity (N=51)
Qw16d The current food system is capable of producing food in a sustainable way (N=25)
Qw16f Patents are essential to foster innovation in agricultural production (N=6)

Qw18c Commons-based (at least two out of three are selected and none strongly neoliberal) (N=74)

Qw16e The state has an important role in producing, distributing and guaranteeing food for all the citizens (N=67)
Qw16g If food is distributed according to the market rules, we will never achieve food security for all (N=61)
Qw16h Food and nutrition security is a global public good (N=82)

Qw18d Market-oriented (at least two out of three are selected in strongly neoliberal and conventional) (N=21)

Qw16b Current market rules with less State intervention will enable us to reach a food secure world (N=6)
Qw16c Food is like any other commodity (N=1)
Qw16i Biofuel cultivation does not affect hunger (N=1)
Qw16a Food can be at the same time a private good and an essential resource for our survival and identity (N=51)
Qw16d The current food system is capable of producing food in a sustainable way (N=25)
Qw16f Patents are essential to foster innovation in agricultural production (N=6)

Qw18e Mildly commons-based (at least two out of three are selected) (N=74)

Qw16e The state has an important role in producing, distributing and guaranteeing food for all the citizens (N=67)
Qw16g If food is distributed according to the market rules, we will never achieve food security for all (N=61)
Qw16h Food and nutrition security is a global public good (N=82)

Qw18f Strongly Commons-based (or against market-oriented) (all three are selected in this cluster) N=34
Qw16e The state has an important role in producing, distributing and guaranteeing food for all the citizens (N=67)
Qw16g If food is distributed according to the market rules, we will never achieve food security for all (N=61)
Qw16h Food and nutrition security is a global public good (N=82)

Qw18a	Strongly neoliberal (one is selected)	N=7	7.4%
Qw18b	Conventional (at least two out of three are selected and none strongly neoliberal)	N=17	17.9%
Qw18c	Commons-based (two or three are selected)	N=74	77.9%
Qw18d	Market-oriented (two or three are selected in strongly neoliberal and conventional)	N=21	22.1%
Qw18e	Commons-based (two are selected)	N=74	77.9%
Qw18f	Strongly Commons-based (or against market-oriented) (all three are selected in this cluster)	N=34	35.8%

E.- PREFERRED FOOD POLICY BELIEFS (MARKET-ORIENTED vs COMMONS-ORIENTED)

High priority (1-2): 1 Low or no priority (3-0): 0
Qw19 Food can be at the same time a private good and an essential resource for our survival and identity
Qw19a High priority (1,2)
Qw19b Low Priority (3,0)

		High Priority (1-2)	**Low / no priority (3-0)**
Qw19	Food can be at the same time a private good and an essential resource for our survival and identity	27.4%	72.6%
Qw20	Current market rules with less State intervention will enable us to reach a food secure world	5.3%	94.7%
Qw21	Food is like any other commodity	0%	100%
Qw22	The current food system is capable of producing food in a sustainable way	14.7%	85.3%
Qw23	The state has an important role in producing, distributing and guaranteeing food for all the citizens	25.8%	64.2%

Qw24	Patents are essential to foster innovation in agricultural production	1%	99%
Qw25	If food is distributed according to the market rules, we will never achieve food security for all	47.4%	52.6%
Qw26	Food and nutrition security is a global public good	69.5%	30.5%
Qw27	Biofuel cultivation does not affect hunger	0%	100

F.- VALUATION OF FOOD DIMENSIONS

Qw28a	1. Food is a basic human need every human being shall enjoy every day, regardless his/her purchasing power	56.8%
Qw28b	2. Freedom from hunger is a human right as important as the right not to be tortured	43.2%
Qw29a	1. The price of food in the market reflects well its value for human beings	58.9%
Qw29b	2. Food shall be cheap so as to enable more people to get access to it	41.1%
Qw30a	1. Food is a common good that should be enjoyed by all humans and governed in a common way	62.1%
Qw30b	2. Food is a human right that shall be guaranteed by the state to all	37.9%
Qw31a	1. Food is a life-sustaining commodity that cannot be treated as other commodities	65.3%
Qw31b	2. Food is an important part of my cultural identity	34.7%
Qw32a	1. Food, as a scarce resource, has to be distributed according to market rules	11.6%
Qw32b	2. The State has the obligation to guarantee the right to food to every citizen	88.4%
Qw33a	1. You can eat as long as you have money to purchase the food or means to produce it	51.6%
Qw33b	2. Food is a natural resource that it is better exploited by the State	48.4%
Qw34a	1. Food has to be beautiful and cheap	53.7%
Qw34b	2. Food has to be nutritious and expensive	46.3%
Qw35a	1. Food is a natural resource that it is better exploited by the private sector	12.6%
Qw35b	2. Food is a natural resource that it is better exploited by citizens	87.4%
Qw36a	1. Food is a commodity whose access is exclusively determined by the purchasing power of any given customer	28.4%
Qw36b	2. Free food for all is good	71.6%
Qw37a	1. The best use of any food commodity is where it can get the best price, either fuel, feeding livestock or exporting market	16.8%
Qw37b	2. A bread loaf (or a culturally-appropriated equivalent) should be guaranteed to every citizen every day	83.2%

Construction of Clusters for Analysis

Mono-dimensional Reformers 1 Qw01 (N=15)
Counter-hegemonic 2 Qw02 (N=7)
Alter-hegemonic 3 Qw03 (N=14)

Multi-dimensional Reformers 4 Qw04 (N=10)
Counter—hegemonic 5 Qw05 (N=25)
Alter-hegemonic 6 Qw06 (N=24)

Mono-dimensional Qw07
Multi-dimensional Qw08

Mono-dimensional Transformers Qw09 (N=36)
Multi-dimensional Transformers Qw10 (N=59)

Strongly Mono-dimensional qw42 (N=18)
Mildly mono-dimensional Qw100 (N=18)

Regime qw9a (N=34)
Niche qw9b (N=61)

Gradual Reformer qw10a (N=25)
Transformer qw10b (N=70)

Alter-hegemonic qw11a (N=38)
Counter-hegemonic qw11b (N=32)

Small Niche Qw10s (N=21)
Alternative Niche Qw11 (N=22)
Revolutionary Niche Qw12 (N=18)

Revolutionary Niches –Alter-hegemonic – Multi-dimensional Qw13 (N=9)
Alternative Niches – Gradual Reformers – Mono-dimensional Qw14 (N=5)
Small Niches – Counter-hegemonic – Multi-dimensional Qw15 (N=9)
Regime – Gradual Reformers – Mono-dimensional Qw16 (N=6)

Clusters based on Food Policy Beliefs
Cluster1 Largely multi-dimensional, mostly transformers Qw20 (N=59)
Cluster2 Slightly Multi-dimensional Qw21 (N=26)
Cluster 3 Markedly Mono-dimensional Qw22 (N=10)

8. Brief description of the sample (N=95) with specific food valuation and political stance

A. Mono-dimensional Reformers (N=15)

N	Name (organization/enterprise /group)	Country	Position / description of activities	Institution	Website
2	Citizens' Initiative "Despertemos Guatemala"	Guatemala	Member of the Steering Committee that launched the Initiative "I have something to give" (Tengo Algo que Dar) to mobilise young urban people to get acquainted to malnutrition problems in the rural areas.	Advocacy and activist collective initiative to raise awareness about the most pressing problems affecting the country and what citizenship and civil society can do to address them. Chronic malnutrition, affecting nearly 50% of under-five children, is a priority issue. The Initiative "I have something to give" (Tengo Algo que Dar) was launched in 2012 to mobilise young urban people to get acquainted to malnutrition problems in the rural areas.	http://despertemosguatemala.org/web/
5	Global Harvest Initiative	International (USA)	Executive Director	A corporate advocacy group that works on policy analysis, education and advocacy about the solutions to improve agricultural productivity and conserve natural resources and to improve food and nutrition security. The biggest transnational agri-food corporations are members.	www.globalharvestinitiative.org
18	Wageningen University	Netherlands	Researcher on EU governance of food security	Dutch university specialised in food and agricultural issues with a remarkable international outreach http://www.wageningenur.nl/en/wageningen-university.htm	
30	Gorta Self Help Africa	Ireland	Nutrition adviser working on agricultural/livelihoods, nutrition and small entrepreneurship in Africa.	Irish NGO with offices in USA and UK. Established after the Ethiopian famine, it works in 12 countries in Africa, addressing the root causes of hunger and famine and focusing on small holder farmers (men and women) and markets.	http://www.selfhelpafrica.org/ie/
33	Rust Belt Riders Composting	USA	Employee and co-owner of the cooperative	Service-fee organic waste removal initiative available to Cleveland residents (US). It is organised as a co-operative run and owned by the workers. We divert compostable organics from entering landfills by working with community gardens to cultivate high quality compost	www.rustbeltriderscomposting.com
36	Bioversity International	International (Italy)	Regional representative in Central America. Researcher on genetic resources, biodiversity, climate change and socio-cultural issues.	A global research-for-development organization, member of CGIAR and based in Rome, that delivers scientific evidence, management practices and policy options to use and safeguard agricultural and tree biodiversity to attain sustainable global food and nutrition security	http://www.bioversityinternational.org/
40	European Commission	International (Belgium)	Public servant (agronomist) dealing with Food Security issues in EU Delegations (DG RELEX)	The EC is the European Union's politically independent executive arm. It draws up proposals for new European legislation, and it implements the decisions of the European Parliament and the Council of the EU.	http://ec.europa.eu/index_en.htm
44	Vrije Universiteit Brussel	Belgium	Researcher in cross modal integration, between the sense of taste and hearing	Belgium University based in Brussels. Acoustic Sensing Lab. Project T.A.S.TE. focused on Testing Auditory Solutions Towards the Improvement of the Tasting Experience (since 2013).	http://aclab.flavors.me/
53	Universidad del Valle de Guatemala	Guatemala	Researcher on ethnobotany, agroforestry practices and traditional uses of medicinal of plants in afro-descendent communities in Panama and Guatemala	A private and non-religious university in Guatemala city.	http://www.uvg.edu.gt/
59	FANTA III Food and Nutrition Technical Assistance Project	USA	Food Security specialist providing technical assistance to various offices within the United States Agency for International Development (USAID) that implement food security-focused programming around the world, from humanitarian food assistance programs.	This a 5-year agreement between the US Agency for International Development (USAID) and FHI 360, a US-based international NGO. FANTA aims to improve the health and well-being of vulnerable groups through technical support in the areas of maternal and child health and nutrition in development and emergency contexts and food security.	http://www.fantaproject.org/

65	CIHEAM/IAMM - Montpellier SupAgro - UniCT	International (France)	PhD Candidate working in a multi-institutional project to identify metrics of Sustainable Diets and Food Systems between the CIHEAM/IAMM Montpellier, Bioversity International, University of Catania and Montpellier SupAgro.	The IAMM is one of four Mediterranean agronomic institutes of the International Centre for Advanced Mediterranean Agronomic Studies (CIHEAM), an intergovernmental organisation created in 1962 by the OECD and the Council of Europe and composed of 13 member states.	http://www.iamm.fr/
66	International Institute of Rural Reconstruction	International (Philippnes)	Program associate for food and nutrition security, dealing with poverty alleviation, wealth creation, disaster risk reduction and climate change adaptation and applied learning.	A training institute with an international scope created by Dr Y.C. James Yen, a Chinese entrepreneur and social activist, that launched a rural education programme in China that targeted more than 200 million peasants. Currently working in more than 15 countries, mostly in Asia and Africa.	http://iirr.org/
68	Katholieke Universiteit Leuven	Belgium	PhD research on multisensory gastronomic experiences	Joint collaboration between the Laboratory of Experimental Psychology at KULeuven and the Acoustic Sensing Lab of Vrije Universiteit Brussels	http://ppw.kuleuven.be/home/english/research/lep
84	Ministry of Foreign Affairs	Netherlands	Responsible for the Dutch policy on food and nutrition security, including its implementation, worth 300 million euro annually.	Governmental institution responsible for foreign affairs, international trade and Development Cooperation.	https://www.government.nl/ministries/ministry-of-foreign-affairs
93	FAO	International (Italy)	Facilitating policy dialogue and stakeholder involvement related to Food Security and Nutrition issues.	United Nations Organisation for food and agriculture	www.fao.org

B.- Mono-dimensional Counter-hegemonic Transformers (N=7)

N	Name (organization/enterprise /group)	Country	Position / description of activities	Institution	Website
24	Disco Soup Paris	France	Member of Disco Soupe-Paris, organising events in Paris.	Disco Soupe is an international network of youth movements organising events (more than 200 in 2014) in 90 cities of 10 countries. It was initiatied in March 2012 in France. They occupy public spaces, raise awareness on food waste and use wasted food to cook meals in convivial events with music.	www.discosoupe.com
26	Disco Soupe Lille	France	Member of Disco Soupe-Lille	Disco Soupe is an international network of youth movements organising events (more than 200 in 2014) in 90 cities of 10 countries. It was initiatied in March 2012 in France. They occupy public spaces, raise awareness on food waste and use wasted food to cook meals in convivial events with music.	www.discosoupe.com
72	Citizens Co-op	USA	Member of the voluntary Board of Directors of Citizens Co-op	Citizens Co-op is a community-owned market in downtown Gainesville (Florida) providing local, organic, affordable natural foods. They are also food activists against GMOs and industrial agriculture. They aim to contribute to a more localized food system providing the best food options available.	http://citizensco-op.com/
74	Universidad Central del Ecuador	Ecuador	Researcher in the project "Short Alternative Food Supply Chains in Quito, Ecuador"	The second biggest and oldest public university of Ecaudor. The High Institute of Research and Graduates harbours the doctoral research undertaken by the center.	http://www.uce.edu.ec/
83	Provincial Government of Galapagos Islands	Ecuador	Independent Consultant currently advising on food security issues to the local authorities of Galapagos Province.	The islands' population (20 thousand) is highly dependent on food from the mainland. Strengthening the local food system involves significant challenges for the current administration, because the legal protection as a National Park prevents many types of conventional agriculture and fishing techniques. Great opportunities for a sustainable transition towards fairer means of production and consumption	http://www.gobiernogalapagos.gob.ec/direccion-de-produccion-y-desarrollo-humano/

97	Food activist and journalist	Argentina	Food writer and journalist	Covering and denouncing the food system in Argentina for different magazines and newspapers. Book published in 2013 "Malcomidos". Now extending work to Latin America	https://www.facebook.com/MalcomidosOficial
99	Plant a fruit	Kenya	Member of the social enterprise that sells fruit trees for public projects and commonwealth initiatives.	A social enterprise whose goal is to provide a fruit tree to be planted in everybody's yard, to raise awareness, mitigate global warming and increase food security. We sell fruit seedlings and offer services that include edible landscaping, grafting, training/consultancy, on-farm extension services and implementing CSR projects.	www.plantafruit.org

C.- Mono-dimensional Alter-hegemonic Transformers (N=14)

N	Name (organization/enterprise /group)	Country	Position / description of activities	Institution	Website
1	Social Entrepreneur, Food Activist, Agricultural consultant	Australia	Social entrepreneur, lecturer, researcher, food and agriculture consultant (in fields as diverse as energy, biology, information technology and business management). Local activist, creative thinker. Food grower in Macarthur region on Sydney's urban fringe.	Entrepreneur in several companies and consultant enterprises in Australia. Active member of alternative food networks in Sydney. Rural Designer, advocate and teacher. Member of the MacArthur Future Food Forum	https://macarthurfuturefood.wordpress.com/about-2/ http://www.cllm.org.au/PDFs/Projects/ONG/The_Wollondilly_Education_Model.pdf
9	Ministry of Foreign Affairs	Netherlands	Responsible to follow up food-related UN institutions (such as FAO, WFP, IFAD) and food and nutrition security in the multilateral context	Governmental institution responsible for foreign affairs, international trade and Development Cooperation	https://www.government.nl/ministries/ministry-of-foreign-affairs
11	Social Entrepreneur, agricultural consultant	New Zealand	Social entrepreneur, Change Manager, lecturer, researcher, focussed on Leadership, Purpose, Results, Innovation, Resilience. Former lecturer on livestock & agriculture	Entrepreneur and consultant supporting agri-food industries with governance and business advice. Providing organisational rebuilding activities for companies in the technology, manufacturing, energy, environment, agricultural, health, and services sectors.	http://shauncoffey.org
19	Universite Catholique de Louvain	Belgium	PhD researcher on legal issues affecting biodiversity, genetic resources and open knowledge, commons. Research on seeds' property rights and collective actions to build alternative proprietary schemes.	Biodiversity Governance (BIOGOV) is a research unit of the Louvain Open Platform on Ecological and Social Transition (LPTransition) and the Interdisciplinary Institute of Legal Sciences (JUR-I) at the Université catholique de Louvain (UCL)	http://biogov.uclouvain.be/
39	Organic food Consumer	USA	High School Teacher and organic food producer in New Mexico	Organic home vineyard. He grows fruits, nuts and herbs and purchases regularly in local farmers' markets of New Mexico.	
43	Wageningen University	Netherlands	Researcher and lecturer on food and agriculture issues with a food-related blog. Specialist on food sovereignty movements, Committee of Food Security and global food governance	Dutch university specialised in food and agricultural issues with a remarkable international outreach	http://www.wageningenur.nl/en/wageningen-university.htm
46	World Food Programme	International (Italy)	Officer dealing with donor relationships, ensuring WFP has enough funds to conduct its food related activities world-wide	United Nations World Food Programme dealing with food-related humanitarian emergencies	www.wfp.org
47	Transfernation	USA	Founding member and director of this social enterprise aimed to reduce food waste, based in New York City	Nonprofit that aims to create a tech-based application to connect corporations and charitable institutions so food left over from corporate events may be repurposed for those in need. We recently launched Transfernation in Karachi, Pakistan with local restaurants and a volunteer-driven process of redistribution. We aspire to create a cultural revolution which changes the way people view their extra food	http://www.transfernation.org/

51	Food Forward Toronto	Canada	A consultant, chef and food activist bringing food and people together in Toronto. Member of the steering committee	Non-profit organization, born in 2010, made up of consumers, activists, businesses and organizations in Toronto, who are connecting to create good food and good food jobs. They value food democracy, food justice, food sovereignty, and economic opportunity. We act together to educate and advocate effectively for healthy food and communities that are inclusive, diverse, ethical, local, and resilient.	http://pushfoodforward.com/about
71	goMarketNC	USA	Founder of alternative food network and innovative hub	goMarket is a foodhub venture with a twofold goal: community development and health initiative. We support initiatives that advance the health and economic well-being of farmers, food producers and eaters in North Carolina. They support projects in alternative food networks, food hubs, farmers' markets, online shops of fair and organic food, peer-to-peer initiatives.	http://gomarketnc.com/
77	UMeFood - University of Maine	USA	Member of a graduate student group at the university of Maine	Group of graduate and undergraduate students interested on improving the local and university food systems through research, advocacy and education. Collaboration with community activist organizations, local restaurants and political leaders. We are currently working on institutionalizing a formal food systems mentor program for undergrads interested in food systems research.	https://www.facebook.com/pages/UMe-Food/198265123691115?ref=stream
85	Save the Children UK	UK	Policy and Advocacy Adviser in the Nutrition and Hunger Team	British international NGO whose goal is to dramatically reduce the number of children dying or being stunted due to malnutrition. Strategic priorities: Nutrition becomes a political priority for donors and high burden countries, prioritising nutrition with sufficient funding and appropriate policies. Businesses adopt new approaches to address undernutrition and build an evidence base which can be scaled up. At the country level will work to strengthen SUN civil society network through effective accountability and monitoring frameworks.	www.savethechildren.org.uk
86	Oxford University	UK	Senior Visiting Research Associate at Environmental Change Institute. Economist focused on exploring the mindset needed to address the 21st century's social and ecological challenges. Creator of the doughnut of planetary and social boundaries.	It was established in 1991 to organize and promote interdisciplinary research on the nature, causes and impact of environmental change and to contribute to the development of management strategies for coping with future environmental change. One of the research streams is related to food and food system changes.	www.kateraworth.com http://www.eci.ox.ac.uk/
92	Food Cardiff	UK	Member of the secretariat of the Food Cardiff Council, working to make Cardiff a Sustainable Food City.	Created in September 2012, it is made up of representatives from Cardiff's main public organisations, businesses and charities, and it gives advice and support to help local authorities and council members make informed decisions about food.	www.foodcardiff.com

D.- Multi-dimensional Reformers (N=10)

N	Name (organization/enterprise/group)	Country	Position / description of activities	Institution	Website
4	University of Alberta	Canada	Researcher at the Indigenous food security project in Canadian arctic, working at the organising Committee of IASC 2015 Conference.	The Faculty of Native Studies will be the organisers of the 15th Biannual International Conference of the International Association for the Study of the Commons (May 2015)	http://www.iasc2015.org/ http://nativestudies.ualberta.ca/
22	Katholieke Universiteit Leuven	Belgium	PhD researcher on food production with small holders in Mexico using conservation agriculture.	How we can sustain yields with lees external inputs and oil in Chiapas? Department of Earth and Environmental Sciences.	http://ees.kuleuven.be/

41	FEWS NET Famine Early Warning Systems Network	Guatemala	Regional Food Security Analyst. Agronomist with more than 30 years experience in food security and agriculture, having reached ministerial positions.	USAID-funded initiative, implemented by a US consultancy firm, to provide early warning and satellite-based evidence on agriculture, to produce food and nutrition security analyses at country and regional level to reduce chronic and acute malnutrition	http://www.fews.net/
42	Oxford University	UK	Senior researcher	The Oxford Martin Programme on the Future of Food is a University research network carrying out research into a wide range of issues across the food system	http://www.futureoffood.ox.ac.uk/
49	Hunger Solutions Minnesota	USA	Employee	A hunger relief organization, created in 2001 by merging Minnesota Food Bank Network and Minnesota Food Shelf Association, that works to end hunger in Minnesota while seeking long-term systemic solutions to end hunger in the future. We support food pantries and work on food and nutrition policy, advancing public policy and guiding grassroots advocacy on behalf of hungry Minnesotans and the diverse groups that serve them.	www.hungersolutions.org
50	University of Sussex	UK	Research on market-related interventions intended to increase access to diverse and nutrient dense foods in Ghana, Nigeria and Tanzania	Institute of Development Studies. Research project funded by DFID involving 10 researchers. The objective is to provide advice to policy makers on how/where they should intervene to improve the delivery of nutritious foods through markets and other channels. And to assess whether this is really relevant for addressing Undernutrition.	http://www.ids.ac.uk/
56	European Commission	International (Belgium)	Officer at DG Dev Nutrition Unit dealing with FNS global governance, SUN Initiative	The EC is the European Union's politically independent executive arm. It draws up proposals for new European legislation, and it implements the decisions of the European Parliament and the Council of the EU.	http://ec.europa.eu/index_en.htm
62	The cotswold chef	UK	Chef and social entrepreneur on food issues, leading an award winning public health charity reducing inequalities in UK & AUS	Technical training, awareness and education activities, the Wiggly Worm charity works with vulnerable, disadvantaged or seldom heard people. Our courses and events motivate people across private public and third sectors on food promotion, behaviour change, lifestyle choices, policy, social prescribing and food poverty.	www.thecotswoldchef.com http://www.thewigglyworm.org.uk/
79	Aware consumer, member of local food groups	USA	Food activist, researcher at university in physics	Participant in advocacy food groups in the city, a neighborhood's co-op with hundreds of members and read, listen and talk constantly about food sovereignty	
94	UK Agricultural Biodiversity Coalition	UK	Employee	An advocacy and communication network that works with the food sovereignty movement to strengthen the alternative modes of production based on agro-ecology, agro-biodiversity and ecological food provision regimes.	www.ukabc.org

E.- Multi-dimensional Counter-hegemonic Transformers (N=25)

N	**Name (organization/enterprise /group)**	**Country**	**Position / description of activities**	**Institution**	**Website**
3	Oxfam Intermon	Spain	Policy advisor in charge of advocacy in food, agriculture, climate change. Supervising the Economic Justice campaign.	International development and humanitarian NGO, based in Spain, but a member of the international network of national OXFAMs. Implementing field projects and high-impact research and advocacy campaigns focused on inequality, justice, human rights, food security, water and livelihoods.	http://www.oxfamintermon.org/
6	Shareable	USA	Journalist doing research and articles about ways to democratize the food system along with other areas of the economy.	Shareable is a nonprofit news, action and connection hub for the sharing transformation. We've told the stories of sharers to millions of people since 2009.	www.shareable.net
13	Souper Saturday	UK	Volunteer activist	We provide meals through a soup kitchen and a safe non-judgemental social environment for homeless and otherwise impoverished people in Edinburgh, Scotland	https://soupersaturdayblog.wordpress.com

14	Incredible Edible Bratislava	Slovakia	Advocate of the open movement, agro-ecology, sharing economy and participatory democracy. Based in Bratislava, Slovakia	Planting herbal gardens, vegetables and trees around town, in vacant lots and abandoned places to grow food for all. We've planted several orchards and there are more to come. Reproducing the Incredible Edible movement originated in Todmorden, UK.	https://www.facebook.com/IESVK
17	Radboud university	Netherlands	University researcher on motivations to act for Nature, agro-biodiversity and natural resource management	EU-funded project on motivational attitudes and collective actions for nature, including agro-biodiversity and agricultural schemes.	www.biomotivation.eu
21	Researcher, anti-poverty activist, journalist	Spain	Researcher, anti-poverty activist, journalist	Lecturing courses on food justice and food systems' visualization. I also blog and advocate on food related issues. Former OXFAM Policy coordinator and advocacy campaigner. Writing a blog on development, justice, media, poverty, hunger in El Pais journal	Http://gonzalofanjul.com
23	Slow Food Youth Network	International (Italy)	Member of the coordinating network secretariat. Organization of the first Disco Veggie by the Slow Food Youth Network Tokyo.	The SFYN unites groups of active young Slow Food members from all over the globe into one international network. The local groups independently create original and engaging events aimed at raising awareness about food issues and providing means to take action. Such as the Disco Veggies, people cook fresh but unwanted fruit and vegetables that would otherwise have been discarded. The meal was prepared and distributed for free at the sound of music provided by DJs, encouraging a dance celebration while the community worked to organize tasting activities and groceries giveaways.	http://www.slowfoodyouthnetwork.org/
25	Confitures Re-Belles	France	Social entrepreneur, co-founder	Two young social entrepreneurs launched this idea in Paris (Oct 2014). Jar and marmalade producers for short-circuit shops. A gourmet idea to fight against food waste	https://www.facebook.com/ConfituresReBelles
27	Commons Abundance Network	International (USA)	Commons activist mostly working in educational activities at the CAN	Web-based clearing house on Commons. The Commons Abundance Network (CAN) is an emerging co-learning, research, innovation and action network operating both offline and online as an incubator or laboratory for transformative action towards commons based abundance.	http://commonsabundance.net/home-page/about/objectives/
29	Re-Bon (Gleaning Network) Réseau de glanage nantais	France	Member	Re-Bon, french gleaning network that aims to reduce foodwaste by harvesting with volunteers fields that were not supposed to be harvested (over production, esthetic criteria, etc.), and redistribute this food to caritative organisations (foodbank mainly). Re-Bon is part of the European Gleaning network.	http://re-bon.wix.com/re-bon
32	University of Manitoba	Canada	PhD researcher on indigeneous peoples' access to foods in protected forests	Protected forests can challenge access to food in conjunction with agribusiness and weak implementation state legal frameworks and/or international human rights. Running a blog presenting research results.	http://farmsforestsfoods.blogspot.be/ http://umanitoba.ca/
48	Ecologistas en Acción	Spain	Employee	Ecologists in Action is a federation of over 300 environmental groups distributed all over Spain. It develops social ecology, which means that environmental problems stem from a model of production and consumption increasingly globalized, which also derives from other social problems. Awareness campaigns on GMOs, agro-ecology or legal actions against those who harm the environment, while also running innovative & alternative projects in several places.	http://www.ecologistasenaccion.org/rubrique9.html
54	International Forestry Students' Association	Indonesia	Director	PhD researcher on Forest and Food Security at the Bogor Agricultural University	http://ifsa_lcipb.lk.ipb.ac.id/
55	Fair, Green and Global alliance	Netherlands	Coordinator	The Fair Green and Global (FGG) alliance is an alliance of six Dutch civil society organisations. Both Ends, ActionAid, Clean Clothes Campaign, Friends of the Earth Netherlands, SOMO and Transnational Institute. The development, promotion and scaling up of inspiring examples of sustainable development in developing countries including those related to access to food and food security	www.fairgreenandglobal.org

64	Eastern Mediterranean Public Health Network	International (Jordan)	Executive director, health researcher	EMPHNET is a group of epidemiologists & public health workers who work to prevent and control diseases, to conduct multidisciplinary research, and to translate research into practice in the Eastern Mediterranean Region. They address nutritional issues related to hunger and obesity in partnerships with WHO, Columbia University, US Centre for Disease Control.	http://www.emphnet.net
67	Proyecto AliMente	Mexico	Core member and media activist	Promoting a social movement to think critically on food issues and the food chain. First campaign "que no te den la espalda" supports breastfeeding in Mexico. Soon to be part of Alianza por la Salud. Organising events on food related issues: where are we? how did we get here? what can we do about it?	www.quenotedenlaespalda.org
70	FLACSO-Ecuador	Ecuador	Researcher	Coordinating a research project on agricultural certifications systems (organic and Fair Trade) and public policies in Ecuador. Engaging with producers' organizations and policy makers in Ecuador during the research process.	https://www.flacso.edu.ec/portal/
75	Taranaki District Health Board	New Zealand	Doctor and food bank volunteer in marginal neighbourhoods of New Plymouth, cooperative member that exchanges food and seeds	Medical doctor (general practitioner) leading the Whanau Pakari Healthy Lifestyle Programme, promoting healthy lifestyles for children in low-income and maori neighbourhoods of New Plymouth, considered as food deserts. Obesity is triggered by ultra-processed easily available food and this doctor works to prevent those eating habits.	http://www.tdhb.org.nz/patients_visitors/documents/Whanau_Pakari_info_Families.pdf http://www.tdhb.org.nz/
76	UN Standing Committee on Nutrition	International (Italy)	Technical officer, UNSCN Secretariat.	Policy advocacy and knowledge-sharing. The mandate of the UNSCN is to promote cooperation among UN agencies and partner organizations in support of community, national, regional, and international efforts to end malnutrition	http://www.unscn.org/
78	Part-Time Carnivore	UK	Member	Small non-profit campaigning organisation based in Cardiff aimed to cut consumption of intensively produced meat. Around 40 institutions have been involved in the campaign	http://www.parttimecarnivore.org/
80	Providencia Municipality	Chile	Public Servant	At the municipality of Providencia, in Santiago, we are developing an urban agriculture plan/strategy. The main objective is to validate urban agriculture as a tool that improves quality of life and helps people become more aware of food systems, facilitating the transition to a more sustainable one.	http://www.providencia.cl/
81	Greenpeace International	International (Netherlands)	Senior Ecological Farming Campaigner	Campaigning on global food and agriculture issues. Objectives: transition to agroecology, by switching investments from pesticides, GM, monocultures, etc. to ecological farming and through mass mobilisation of people as consumer, eaters and citizens	http://www.greenpeace.org/international/en/
95	FAO	International (Italy)	Member of the Secretariat of the Regional Hunger-Free Latin America and Caribbean Initiative.	The Hunger Free Latin America and the Caribbean Initiative is a commitment by the region to eradicate hunger within the term of a generation (2025). It was launched in 2005, the secretariat is provided by FAO and get funds from Spain, Brazil and Mexico. It works in public policies, budget allocations, legal frameworks, strategic thinking, capacity building and communication and awareness.	http://www.ialcsh.org/es
96	Université Catholique de Louvain	Belgium	Senior Lecturer and researcher on agro-ecology at the Earth and Life Institute	Interdisciplinary research projects on food transition, agro-ecology, conventional agriculture and livestock and lecturing. Also some conferences on agroecology	http://www.uclouvain.be/eli
98	Falling Fruit	USA	Co-founder and active board member of Falling Fruit and Boulder Food Rescue	Nonprofit initiative based in Boulder, Colorado that encourages urban foraging throughout the world by crowdsourcing maps with availability of free fruits, vegetables and wasted food. Just in 2014, in Boulder 10,000 lbs food picked, over half donated, 20 events, 215+ volunteer participants. A sister institution "Community Fruit Rescue" inspires Boulder residents to harvest, share, and celebrate the bounty of our urban forest. Our hope is to encourage people to see food (even that growing on private property, especially if it is going to waste) as a commons. We can grow so much more food in cities by even just replacing our current landscaping, if only we decide food is a priority and a public good.	www.fallingfruit.org http://fruitrescue.org/

F.- Multi-dimensional Alter-hegemonic Transformers (N=24)

N	Name (organization/enterprise /group)	Country	Position / description of activities	Institution	Website
7	CommonSpark	USA	Commons activist and founder	CommonSpark's mission is to empower sharing communities to reclaim and create commons. Building CommonsScope, a website that will help us see & steward the Commons. They advocate for need for food and food seeds to be recognized and stewarded as a commons to friends and colleagues.	http://commonsparkcollective.org
8	Doors of perception	France	Visionary, designer, speaker, writer, social activists, motivational leader on sustainability, social innovation, strategy & bioregionalism	Cutting edge Doors of Perception conferences and xskool workshops have had a food-related focus since 2007	http://www.doorsofperception.com/talks/
12	Kaskadia	USA	Transition Communicator, Commons Activist	Catalysing the transition to global symbiosis. New Economy. Agroecology. Extremely active in social networks. Involved/networked with local-food, local-economy, resilience groups. Buying food from regional coop, local farmers market. Creating a permaculture Food Forest at home.	
16	Food Ethics Council	UK	Staff member	Our organisation brings people to the table to think deeply and find ways through complex ethical challenges in the food system. Independent think tank and charity working with business, governments and civil society towards a fairer future for food and farming	www.foodethicscouncil.org
20	Katholieke Universiteit Leuven	Belgium	Senior researcher	Research on two-food related projects: collective actions for sustainable food systems in Belgium (project food4Sustainablity funded by Belspo) and on food and nutrition security in the EU (Transmango, FP7 funded).	www.food4sustainability.be
28	Australian Food Sovereignty Alliance	Australia	Member of the steering committee	The Australian Food Sovereignty Alliance (AFSA) is working towards a fair, diverse and democratic food system for the benefit of all Australians. They produced the Peoples' Food Plan for Australia Articulate a vision for a Fair Food Future for Australia	http://www.australianfoodsovereigntyalliance.org
34	Commons Strategies Group	International (Germany)	Member. Commons activist, thinker, lecturer, often speak in public about commons-based food related initiatives.	The Commons Strategies Group (CSG) is an activist and research driven collaboration to foster the growth of the commons and commoning projects around the world. CSG is focused on seeding new conversations to better understand the commons, convening key players in commons debates, and identifying strategic opportunities for the future.	http://commonsstrategies.org/about/
35	Food Guerrilla	Netherlands	Food activist	Campaigning in Amsterdam and the Netherlands, inspiring people to eat more sustainable and helping small food initiatives to grow till their full potential	http://www.foodguerrilla.nl/
37	International Development Consultant	Spain	International Development Consultant	Writing PhD dissertation on Geographical Indicators under the Transatlantic Trade and Investment Partnership. Participated in several EU Projects related to food market access (Bananas, coffee, etc). Consultant for EU-funded projects in several countries	www.jesusbores.com
52	GoMarketing Digital Communications	Ireland	Digital Media Consultant	Social enterprise supporting two international NGOs raise awareness for initiatives related to food security	https://twitter.com/gomarketinghub
57	Katholieke Universiteit Leuven	Belgium	PhD researcher	Research on the role of the institutional context on social innovations in the agroecosystem. Field work in Flanders and Cuba	http://www.kuleuven.be/english

58	CommonsFest	Greece	Organiser	CommonsFest is an initiative (annual festival) born in Greece to promote freedom of knowledge (or free knowledge) and peer-to-peer collaboration for the creation and management of the commons. Through an exhibition, talks, screenings and workshops, the aim of the festival is to promote the achievements of this philosophy to the public and become a motive for further adoption.	http://commonsfest.info
60	Humanitarian & food assistance worker	Spain	Humanitarian & food assistance worker	Humanitarian and development professional with experience in humanitarian assistance in conflict-torn regions, country coordination and food security/food assistance projects, monitoring and evaluation	
61	University of Sussex	UK	Senior researcher	Institute of Development Studies. Carrying out a participatory research project on agroecology, in which farmers in various countries are actively involved in identifying constraints to and opportunities for scaling up agro-ecological food systems.	www.ids.ac.uk
63	Oslo and Akershus University College	Norway	Lecturer and member of the World Public Health Nutrition Association	Working on nutritional public policies globally, but mainly UK and Brazil, engage in nutrition advocacy, capacity building and research. Active in World Public Health Nutrition Association.	https://www.hioa.no/eng/ http://www.wphna.org/
69	Katholieke Universiteit Leuven	Belgium	PhD researcher	Involved in Transmango, a project with 13 partners from 12 EU countries that aims to obtain a comprehensive picture of the effects of the global drivers of change on European and global food demand and on raw material production (2014-2018).	www.transmango.eu
73	Africans in the Diaspora	USA	Staff working supervising small scale agricultural, food systems and nutrition proposals to get investments.	We mobilize diaspora Africans to invest in grassroots organizations and movements built by Africans. We support economic, education, and leadership initiatives that are nurturing self-reliant individuals and communities.	http://www.africansinthediaspora.org/
82	Stockholm Resilience Centre	Sweden	Senior Researcher, working also in the EAT initiative	Involved in research on food security in the Coral Triangle Initiative in Asia/Pacific. Also involved in various food related research initiatives, including the EAT initiative	http://www.stockholmresilience.org/
87	FLOK Society	Ecuador	Researcher at the core steering group	Research-based public policies towards commons-based open knowledge economy that includes a stream about open and sustainable agri-food systems	http://floksociety.org/
88	WWF	International (Belgium)	Staff member working on food security and the sustainable development goals	Implementing a project titled "Livewell for Life", funded by the EU, looking at health, nutrition, carbon and affordability. How low-carbon, healthy diets can help us achieve a reduction in greenhouse gas emissions from the EU food supply chain with over 250 stakeholders.	http://livewellforlife.eu/
89	És l'ou - Grup de Consum Ecològic i Local del Terraprim	Spain	Group member	Solidarity purchasing group (established as NGO) with 20 members from Girona, Catalonia, whose main goal is to buy local and organic food and cosmetics	https://www.facebook.com/eslouTerraprim/
90	Building Roots Toronto	Canada	Team member	An initiative linked to Food Forward Toronto, Building Roots hopes to achieve stronger access to healthy food for children and families in diverse and low income neighbourhoods in Toronto through the incorporation of community and commercial food infrastructure being built into new housing developments (community/commercial kitchens, community food hubs, urban agriculture, street food).	http://www.buildingrootsto.com/
91	Scaling Up Nutrition	International (USA)	CSO network coordinator in the SUN secretariat	Scaling Up Nutrition, or SUN, is a unique initiative founded on the principle that all people have a right to food and good nutrition. It unites governments, civil society, United Nations, donors, financial institutions and banks, businesses and researchers in a collective effort to improve nutrition. Although country-led for implementation, the global actions are steered by UN and financed by different donors.	http://scalingupnutrition.org/

100	Local Organic Food Co-ops Network	Canada	Co-operative member and staff	LOFC is an informal network of food and farming co-ops working towards a co-operative and sustainable food system by strengthening the food co-op movement in Ontario. The Network represents more than 70 groups organized co-operatively to address challenges in their community food systems. The primary objectives of the Network are to educate and train, connect, and build capacity of food and farm co-ops in our province	http://cultivatingfoodcoops.net

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CHAPTER 5:

THE GOVERNANCE FEATURES OF SOCIAL ENTERPRISE AND SOCIAL NETWORK ACTIVITIES OF COLLECTIVE FOOD BUYING GROUPS

CHAPTER 5: THE GOVERNANCE FEATURES OF SOCIAL ENTERPRISE AND SOCIAL NETWORK ACTIVITIES OF COLLECTIVE FOOD BUYING GROUPS

""Food is our common ground, a universal experience"
James Beard, US cook and writer

5.1.- SPECIFIC RESEARCH QUESTION AND HIGHLIGHTS

Contrarily to the previous chapter, in this case study the sample is formed by people exclusively working in innovative niches. The Food Buying Groups (FBGs) are widely considered as civic collective actions that do not conform to the regime as they seek to produce and consume food outside the conventional industrial food system circuit, in many cases based on moral grounds different from the dominant market narrative. The 104 people interviewed in this research are the coordinators of FBGs in five regions of Belgium (Flemish and French-speaking), considered as transformative agents in food system transitions. These FBGs are networked initiatives, either connected to other FBGs, to the food suppliers or to other transition groups, and therefore they conform a community of practice that share practices, knowledge and, often, value-based narratives. This case study aims to elucidate how individual agency in transition is molded by collective governing arrangements and social learning within niches and thus the research subject is the relational agency in networked collective actions, rather than individual agency (as in the previous chapter). Food Buying Groups invest time and resources in social learning aimed to broaden the critical debate on the current situation of, and alternatives to, the food system, plus the construction of common meanings about possible pathways. In that sense, collective food buying groups are embedded in networks that promote a social transformation agenda. The emphasis of this chapter will be on understanding the narrative of transformative agency in niches, and how this narrative is informed/molded by governing arrangements, networking and social learning. So, the research question that I seek to respond is the following: *"How the relational agency (motivations of individuals in a group) is influenced by dominant narratives, governance mechanisms, social learning and networking in innovative niches?"*

HIGHLIGHTS

- This research analyses two different streams within the FBGs, those that give higher priority to providing healthy and tasty food from sustainable agriculture to members of the group (termed here as "social enterprise"); and those who prioritise transforming the farming systems (termed as "social network"). As expected, and congruent to findings of the previous chapter, the great majority of FBG members are alter-hegemonic (79%) ("seeking to build a different food system"), with just a few counter-hegemonic respondents (12%) being mostly placed in the social enterprise stream.
- The social enterprise FBGs focus on the economy and logistics of local and sustainable food provision. Members of this stream are highly participative in functional group activities (volunteerism and technical support) although not so much in convivial events. Conversely, they seem to spend less time in networking and social learning with other FBGs, sharing instead resources and alliances with other transition initiatives not related to food. Although this stream does not hold much trust in public institutions, it is more likely to depend on technical or administrative support than the social networking. Regarding value-based

attitudes of transition, this stream combines alter- and counter-hegemonic attitudes towards the dominant food system.

- On the other side, the social networking FBGs are largerly alter-hegemonic in transition attitudes. They aim to build a new food system by acting locally, connecting with, and learning from, other FBGs and food-related initiatives to build decentralised social networks not governed or promoted by state or corporate initiatives. They foster more convivial events and member's meetings than the social enterprise FBGs, although the active participation of members in FBG actions is less active. Those convivial activities help building common frames of analysis and shared values and narratives of transition. This stream is detached from public institutions and they just request political legitimacy and not technical, financial, administrative or legal support.
- The social network stream seeks to construct transition pathways based on a) narratives and motivations that go beyond the traditional narratives of "local economies" and "healthy products"; and b) through decentralized connections with peer agrifood institutions, to whom they trust more than to national and regional authorities.
- Both streams prefer to change the legal and political food regime through the development of innovative niche activities, networking with peers for social learning instead of the more conventional lobbying and advocacy channels. And yet the value-based narratives of both narratives are slightly different and political attitudes of transition in food systems differ (although both are clearly transformational). In any case, a succesful transition pathway in the Belgium food system will certainly depend on a wise combination of both streams analysed here, taking into account their different priorities, political goals and organisational modes.
- Finally, most FBGs have members that align themselves with both streams in the same organisation. They remain together because they gather around commons social values and build social capital (through convivial activities, volunteering, networking with peers and knowledge and assets sharing) that responds to aspirations and value-based narratives of members.

5.2.- PEER-REVIEWED ARTICLE

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Analysis

The Governance Features of Social Enterprise and Social Network Activities of Collective Food Buying Groups

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ABSTRACT

Collective food buying groups, such as community supported agriculture or self-organised citizen groups for delivery of food baskets, have emerged throughout the world as an important niche innovation for promoting more sustainable agri-food systems. These initiatives seek to bring about societal change. They do so, however, not through protest or interest-based lobbying, but by organising a protected space for learning and experimentation with lifestyle changes for sustainable food consumption and production practices. In particular, they aim to promote social learning on a broad set of sustainability values, beyond a focus on "fresh and healthy food" only, which characterizes many of the individual consumer oriented local food chain initiatives. This paper analyses the governance features of such local food buying groups by comparing 104 groups in five cities in Belgium. We find that the social networking activities of these groups, as compared to the social enterprise activities, have led to establish specific governance mechanisms. Whereas the main focus of the social enterprise activities is the organisation of the food provisioning logistics, the focus of the social network activities is the sharing of resources with other sustainable food initiatives, dissemination of information and broader discussion on sustainability issues.

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1. Citizen-based Learning in Transitions Towards Sustainable Agri-food Systems

Together, the provision of agricultural inputs, and the production, packaging, processing, transport, and distribution of food, represent 19–29% of greenhouse gas emissions worldwide (Vermeulen et al., 2012); and they exert an important pressure on natural resources, water, nitrogen and phosphate, and arable land in particular. Reforming food systems towards greater sustainability is therefore essential for a transition towards a low-carbon and resource-efficient society (De Schutter, 2014). Increasingly broad segments of society demand such a switch, and appear to search for alternatives. As a result, the consensus on increased production as the key objective of agri-food policies, which emerged after the Second World War, has lost much of its appeal and is partly replaced by a variety of new approaches and value orientations. Economic efficiency and technological rationalisation remain important, but new concerns are emerging about nutritional quality, food safety, environmental impacts, resource efficiency and social equity. These concerns now appear as equally important organising principles around which product innovation and new consumption practices evolve (Mathijs et al., 2006; Spaargaren et al., 2012).

The involvement of citizens and consumers in sustainable local and regional food networks has emerged over the last decades as one of the tools for promoting civic learning on change in production and consumption practices. The contribution of local food networks to bringing about a shift to more sustainable agri-food systems is however a matter of intense debate. Indeed, trade-offs may be involved in such initiatives between the various sustainability features. For instance, a large-scale study by scientific experts, regional stakeholders and practitioners of local food networks within five metropolitan areas in Europe shows that, whereas short and regional food chains generally perform better than the conventional global long food chains as regards environmental sustainability, this is not necessarily true for all type of short and regional food chains: rather than rewarding producers with the most sustainable agronomic practices and thus providing benefits to the society as a whole, some short and regional food chains in fact respond to the preferences of individual consumers for "fresh and healthy" food linked to local food cultures (Foodmetres, 2014).

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Within the wealth of the citizen-led initiatives on transitions to more sustainable agri-food systems, collective food buying groups occupy a very specific space. Collective food buying groups are based on partnerships between consumer groups that build a direct partnership with one or a set of farmers for the delivery of food baskets on a regular basis. Early initiatives of Collective Food Buying groups already developed in Japan, Germany and Switzerland in the 1960s (Schlicht et al., 2012), with women taking the lead in Japan to found Teikeis, one of the first forms of family-farmer partnerships (David-Leroy and Girou, 2009; Schwartz, 2011). After the emergence of these early social innovations, consumer groups/producers partnerships for sustainable agri-food production have developed also in other countries. By January 2017, more than 700 community-supported agriculture schemes (so-called "CSAs") are registered on the directory of the US Department of Agriculture (USDA, 2017). In France, currently, over 1500 farm-consumer associations have been set up by consumers and citizens for the support to peasant agriculture in France (AMAP: Association pour le Maintien d'une Agriculture Paysanne) (Schlicht et al., 2012).

These collective food buying groups share some features with other, more individual consumer oriented, initiatives for reforming the food systems. Examples of such individual consumer oriented initiatives are the introduction of local food stalls in major supermarket chains or online ordering systems of food baskets with a network of deposit hubs. In a similar vein as the collective food buying groups, these initiatives aim at building a more direct consumer-producer logistic chains based on the local food economy. However, the collective food buying groups clearly aim to go beyond merely broadening the range of choices for the responsible individual consumer around the theme of "fresh and healthy foods" (cf. also, Forno et al., 2015). Indeed, these groups also invest time and resources in implementing social experimentation broader social and ecological sustainability values, such as solidarity with small-holder farmers, less production of packaging waste and the decrease of food miles for sustainable farm products.

In spite of this diverse landscape, and the scientific uncertainty with regards to the best available development path for ecologically and socially sustainable agri-food systems, the collective food buying groups provide a social innovation that has proven to be attractive to a growing number of consumers. However, although such small niche initiatives do not have the economic weight nor the power to bring about the needed transformation of the agri-food systems, they still play an important role through at least two channels. First, though they may not have the potential of bringing about system-wide transformation in and of themselves, such niche innovations can add pressure on mainstream regime players to change. The literature on transition management suggests that coalitions between niche innovations pushing for more radical lifestyle changes and large-scale regime players that are willing to make modest but real changes are needed to reach the necessary threshold for system transformation (Rotmans and Horsten, 2012; Loorbach et al., 2016). Second, these niche innovations promote a more active involvement of citizens in learning on potential options for agri-food transitions. Such an active involvement can contribute in turn to broadening the critical debate and the social construction of common meanings around the possible pathways for transition amongst diverse social groups.

To contribute to a better understanding of these features, this paper focuses on a sample of collective food buying groups in Belgium which is representative of the broad variety of organisational types of these groups (such as farm-consumer cooperatives, consumer associations, internet based social enterprises). Our hypothesis is that the successful promotion of civic learning on new modes of food provisioning and consumption in these groups relies on a combination of two main types of activities: first, the organisation of a set of economic service activities, based on both voluntary and paid labour, around direct food provisioning from small-holder farmers and, second, the decentralized networking with other sustainability transition initiatives – especially through the sharing of resources with other food buying groups and the dissemination of information on activities and broader discussion on sustainability issues with other food transition organisations. By testing this hypothesis for this specific niche innovation, our goal is to contribute to the scholarly literature on the role of the governance of niche initiatives in sustainability transitions.

The paper is structured as follows. The second section discusses the social movement features of the food buying groups and their role in civic learning on sustainability transitions. The third section elaborates on the two main challenges for these collective food buying groups, which is the organisation of the food provisioning logistics through citizen involvement in an economically sustainable manner and the governance of the decentralized social networks in support of the social movement features. The fourth and fifth sections present the analysis of the semi-structured questionnaire and discuss the results from the comparative analysis of a representative set of 104 collective food buying groups in Belgium. The sixth section provides an overall discussion and highlights some governance recommendations that result from the analysis.

2. The Contribution of Collective Food Buying Groups to Learning on Lifestyle Changes

While awareness about the global sustainability crisis is growing, there remains a considerable gap between that awareness and individual lifestyle choices (UNEP, 2011). There also remains a troubling disconnect between the emerging transition initiatives, which broaden the range of alternatives individuals may choose from, and the lifestyle choices of the majority of the population.

To identify the key areas where consumers' choice can have the highest impact on agri-food transitions, researchers conducted a life cycle analysis of the key ingredients of typical food portions in Finland (Virtanen et al., 2011). The results indicate that rewarding certain agronomic choices linked to sustainable agriculture production methods and reducing meat consumption have the highest impact. The choice of agricultural production method has a major impact on the reduction of greenhouse gases responsible for climate change. This holds even for imported products, as this impact outweighs by far the role of international transport. Choosing products that are grown with a low use of external inputs has therefore a key role to play in reducing the ecological footprint of food consumption, whether the foods are locally sourced or have travelled long distances. Similarly, the increase of the share of vegetables in the diet, as compared to meat, especially of vegetables that grow well in the local climate, can significantly reduce the ecological footprint of food consumption (see also D'Silva and Webster, 2010; Lymbery and Oakeshott, 2014).

Some scholars have analysed the role of collective food buying groups in the change in farmers' modes of production and in the dietary habits of consumers. For instance, field work on collective food buying groups has shown that these groups play a key role in supporting local producers to move from conventional high-input production systems to low-input and/or organic farming systems. Further, Bougherara et al. (2009) analyse responses of a sample of 264 French households about their participation to Community Supported Agriculture (CSA) projects and find out that environmental considerations play a major role in explaining CSA participation. As regards change in dietary habits, case studies show that participation in community gardens and school gardens has a clear positive effect on greater fruit and vegetable intake (Alaimo, 2008; Litt et al., 2011; Allen et al., 2016). Moreover, sourcing food locally increases the freshness of the food consumed and improves its nutritional content.

As can be seen from the studies collective food buying groups, the benefits expected from consumer-producer partnerships however are not purely environmental or nutritional. While the impacts vary strongly from one type of initiative to another, other societal benefits that play a role are increased transparency of decisions within the food chain,

viability of food culture, social cohesion, public health or reduction of packaging and food loss (Marsden and Smith, 2005). For instance, Bloemmen et al. (2015) analyse some self-harvested CSA projects in Belgium and find that most consumer participants were non-profit seeking, and favoured quality small-scale production. Moreover, consumers were attracted by community participation, conviviality and a sense of responsibility towards nature. Further, most comparative studies underline also the social benefits of the local food networks, such as the contribution to social cohesion in cities and the promotion of food traditions and culture (Schlicht et al., 2012; Foodmeters, 2014).

Even though the focus varies from one group to another, this pursuit of such a broader set of values requires a specific form of collective action, which is absent from the pure "fresh and healthy" local food initiatives. This implies additional constraints to the participants, such as yearly contracts with the farmer in some cases, or participation to meetings or organisational tasks in other cases. Further, in some groups, search for new sustainable product providers is facilitated by initiatives of group members, which collectively discuss on the appropriate choices with the other members, assess the ecological and social aspects of the various provisioning options and test the new products within the group. Considering the time invested and the economic inefficiencies related to the collective processes, the motivations reaching beyond "fresh and healthy" have to be sufficiently strong, not least since accessible and attractive cost-competitive alternatives for locally sourced food products emerge, such as the on-line ordering of food baskets or the local food stalls in supermarkets.

The local food buying groups therefore face a dual challenge: organising the logistics for provisioning of food from sustainable farming and investing time and energy in the broader civic learning on lifestyle changes for supporting more sustainable agri-food systems. As a consequence, the collective food buying groups may be seen as hybrids, combining two overlapping components. The first is the social enterprise component (in some case fully non-profit, in some cases limited profit, cf. Table 1 below), whose core activity consist in organising the food provisioning logistics. The second is the social network component, related to the dissemination and collective learning around the experimentation with concrete pathways for lifestyle changes. Although these components overlap, in some local food buying groups activities within one of these two components have been organised separately, such as for instance the participatory guarantee system created for organising the food logistics in Voedselteams vzw (an umbrella of collective food buying groups in the Dutch-speaking part of Belgium). In general however, we refer in this paper to the "components" as two clusters of activities related respectively to (i) the sustainable and local food logistics in the collective food buying group on the one hand and to (ii) the broader civil learning and experimentation in a network with other organisations on the other hand.

3. Combining Social Enterprise and Social Network Activities in Collective Food Buying Groups

The direct consumer-producer partnerships established through the collective food buying groups (CFBGs) organise a broad variety of activities. Some are of a not-for-profit nature (such as the voluntary contribution by the members to collection, distribution and sale), other activities instead lead to monetary gain (such as the activities of the producers and small transport enterprises). This combination of not-for-profit and for-profit activities can play a crucial role in ensuring the economic viability of the local and regional food networks (Dunning, 2013; Pinchot, 2014). By participating in local and regional food networks, farmers can receive shares of the final price paid by the consumer that are 70 to 80% higher than what the farmers would receive if they were selling through large retailers (King et al., 2011). Similarly, the consumers participating in the system may make significant savings, as shown by studies of organic produce distributed through local food buying groups (Cooley and Lass, 1998; Brumauld and Bolazzi, 2014).

By combining not-for profit and for-profit activities, and given the objective of contributing to broader societal benefits, the CFBGs share some important features with social enterprises (Borzaga and Defourny, 2001). Nevertheless, in spite of these important economic features, many scholars argue that it would be mistaken to consider these consumer-producer partnerships only through the lens of the social enterprise aspect (Connelly et al., 2011; Foodmeters, 2014). Indeed, as seen above, many alternative food networks see themselves as part of a broader social movement that strives to promote a transition towards low-input, low-carbon agri-food systems. They do so, however, not merely through protest or interest-based lobbying, but by networking with other initiatives that promote sustainable alternatives to the mainstream food production and consumption pathways. Further, as also highlighted through our survey results, they also link to non-food initiatives, through mutual recognition and joint projects, for instance related to social integration, fair trade and sustainable mobility.

In this section, we review some of the literature on these two activities of the CFBGs – the social enterprise activities and the social network activities – and we discuss the challenges they face.

3.1. Social Enterprise Based Transition Initiatives

Scholars of socio-ecological transition have shown a growing interest in the contributions of social enterprises to sustainable development (Seyfang and Smith, 2007; Johanisova et al., 2013). In this context, they consider social enterprises not simply as a tool to alleviate social problems generated by market imperfections, but also as an organisational model that can support social innovations for transition to more

Table 1
Type of social enterprises covered in the study of the CFBGs operating in Belgium. "Non-distribution constraint" refers to non-distribution of assets or income to individuals as owners or managers except for fair compensation for services rendered (Anheier, 2005, p. 40). "Limited distribution constraint" allows for the distribution of profits, but under strict conditions defined in the regulatory framework.

	Legal form	Cases analysed in this paper (details of acronyms in Table 2 below)	Paid work	Voluntary work
Total non-distribution constraint	Association	GAC/AMAP/GASAP Voedselteams	To the farmer (produced food)	Accounting Product search
Limited distribution constraint (under Belgian and French law)	Social interest solidarity enterprise (ESUS: France, Decree of 5 August 2015)	La Ruche qui dit Oui	To the farmer (produced food) To the software designers (8,35% of the sales) To the person making selling space available (8,35% of the sales)	Organisation of meetings Educational activities Training Network activities Support to other food buying groups Software (except for "La Ruche qui dit Oui")
	Social interest Cooperative enterprise (CVBA-so: Belgium, law of 13 April 1995)	CSA (Community Supported Agriculture)	To the farmer (produced food)	

sustainable consumption and production practices. More specifically, by accessing a series of non-market resources (such as unpaid labour, affordable small loans, lower-than-market rent for premises, various sharing arrangements for the use of resources), social enterprises can provide an effective survival strategy for transition initiatives, which would otherwise not be able to survive in increasingly competitive markets focused on satisfying the short term expectations of shareholders.

In a broad sense, social enterprises are organisations involved in market activities but with a primacy of the societal mission, which can be related to of social, cultural and/or environmental purposes (Chell, 2007). The primacy of the societal aim is generally reflected in constraints on the distribution of profits (from a total non-distribution constraint to certain limitations on the distribution of profit). These constraints are seen as a means of preventing pure profit-maximizing behaviours (Defourny and Nyssens, 2010). The total non-profit constraint is usually defined by a non-distribution constraint of profits to members, investors, managers or other types of stakeholders (Anheier, 2005, p. 40), while in the case of a limited distribution constraint, members receive limited compensation within a clearly legally specified framework (cf. the examples of several new legal forms for social enterprises in European countries (UK, Italy, Belgium, France, Portugal, Poland, Hungary, Spain or Greece) (Fici, 2015)). However, some social enterprises adopt traditional forms of commercial companies without any type of constraints looking for "double or triple bottom line" balancing social impact and the remuneration of shareholders. Amongst schools of thought of social enterprise, some of them, especially those rooted in the cooperative tradition, pay particular attention to democratic ownership structure. The latter is often implemented through a one-member-one-vote rule (rather than one-share-one-vote). In other cases, this constraint implies at least that the voting rights in the governing body with the ultimate decision-making power are not distributed according to capital shares alone (Defourny and Nyssens, 2010; Nyssens and Defourny, 2016).

CFBGs illustrate the emerging role of these various types of social enterprises in the transition to more sustainable consumption and productions patterns. Although they remain small niche innovations in many countries, they sometimes evolve into large and established organisations, as highlighted in the introduction. As shown in Table 1, CFBGs partnerships rely on a variety of organisational forms, which are social cooperatives, social interest enterprises or voluntary associations. Because their objectives are primarily social or ecological in nature, none of them have adopted a for-profit legal status (which would be the case for instance in purely economic cooperatives). While some are organised as legal non-profit associations, others have benefited from the specific legal status created under Belgian or French law for limited profit sharing organisations.

This role of social enterprises in socio-ecological transitions is supported by the insights of scholars of transition theory, who show the importance of experimental niche innovations operating in so-called protected environments, shielding them from an increasingly fierce and globalized market competition (Grin et al., 2010: chapter 5 of part I). Protected niches can provide the necessary space for a path breaking technology or a radical social innovation to evolve into a more mature form and eventually inspire other transition actors. For instance, in spite of a price-premium paid for the environmental benefits, the higher labour costs per unit of production in the sustainable farming systems remain a challenge in a highly competitive environment (MacRae et al., 2007). In addition, the environmental benefits from local and regional food chains are often offset by weak infrastructure, lower economies of scale, and relatively inefficient distribution channels. In such cases, improved coordination can improve the overall economic sustainability, for instance by improving the efficiency of links between local small-scale producers and consumers. According to the Foodmetres study cited above, the combined environmental sustainability and economic sustainability of CFBGs are highest if they operate in proximity to the consumers (to improve efficiency of transport) and if they support the profitability of the local farm (for instance by reducing distribution and packaging costs or by circumventing intermediaries).

3.2. The Role of Social Networking for Promoting Civic Learning

The strong focus on the role of experimental niches has been criticised within transition theory, however. Some socio-technological transition approaches based on change through small-scale niche innovations seem to pay scant attention to the need for support from the broader political context and for the regime to co-evolve with the innovative practices to overcome the lock-in in unsustainable development paths (Schot and Geels, 2008). Indeed, niches can only thrive and develop into alternatives to the mainstream if the political and legal regime opens up opportunities for societal change. Such changes in the political and legal regimes depend in particular on broader socio-cultural changes: in other terms, the "supply" of niche innovations can only further develop if it is matched with an articulated societal "demand" from individual citizens and consumers, which recognize the need for such deeper societal change (Grin et al., 2010, p. 331; Spaargaren et al., 2012).

New challenges emerge once we recognize that niche innovations in agri-food systems only shall be able to grow if supported by broader societal changes. One challenge is how to trigger intrinsic motivation amongst individuals for sustainability practices, rather than only resorting to mechanisms that reinforce extrinsically motivated behaviour (e.g., restrictive regulations, pricing policies, etc.) (Dedeurwaerdere et al., 2016). Indeed, social psychology has amply demonstrated that change that is motivated by the values individuals hold or grounded in their self-image, is far more persistent than change that is directed top-down (Ryan and Deci, 2000a, 2000b). Another important question is how to transform the everyday social practices of individual citizens and consumers (such as cooking, driving, etc.) which are co-constitutive of the socio-technological pathways in which the agri-food system evolve (Spaargaren et al., 2006). Further, how can consumers and citizens be given an active role in the construction of common meanings around the various social, ecological and economic dimensions of more sustainable agri-food systems, based on their knowledge of the specific contexts and socially legitimate pathways of transition (Popa et al., 2015; Seyfang and Smith, 2007)?

The need to promote both experimental niches that can provide collective goods, without being fully exposed to global market competition, and a broader process of social learning on possible lifestyle changes has led to an embedding of the collective food buying groups in social networks that promote a strong social transformation agenda. Indeed, the emergence of many of the collective food buying groups has been fostered by the broader social networks of which these initiatives are part to various degrees (Seyfang and Longhurst, 2013; Michel and Hudon, 2015). Notable amongst these are the Transition Towns movement in Northern Europe, the Città-slow movement in the South and the global organic farming movement (Kunze and Becker, 2015, p. 433; Forno et al., 2015).

Unlike the narrower category of community enterprises or local economies, these social networks that link collective food buying groups both to one another and to other transition initiatives are not necessarily local or oriented in priority to a specific community. Rather, they combine innovative forms of non-state collective action to deliver collective goods and services (such as logistic support to sustainable food chains) with explicit aspirations for fostering learning and experimentation for broader societal transformations (Kunze and Becker, 2015, p. 435). They can contribute to regime change in various ways. Indirectly, these decentralized networks can foster regime change through their capacity to inspire social innovations by mainstream actors (Seyfang and Smith, 2007, p. 595), or through their ability to act as "norm entrepreneurs" transforming social norms (Sunstein, 1996). Change can also result more directly from their activities, through building coalitions with regime actors that are willing to contribute to large-scale changes (Geels and Deuten, 2006). Therefore, even though these initiatives seek

to bring about social change, this is not necessarily through protest or interest-based lobbying: their strategy for social change is to facilitate and promote concrete life style changes through niche initiatives and to link these initiatives through decentralized social networking (for a similar approach to collective action in other areas, see Diani and McAdam, 2003). Here, we seek to provide empirical evidence of how they implement this strategy, based on an examination of the links between organisational and governance activities of the CFBGs and the motivations of the individuals involved.

4. Data Collection, Empirical Model and Methodology

4.1. Survey of Collective Food Buying Groups

We conducted field interviews between December 2014 and July 2015 across 104 collective food buying groups in selected regions throughout Belgium. The sample was built to have a broad diversity of regions, including 3 large urban regions, 2 small-size urban regions and 2 non-urban regions. Because we aimed to identify the operation of potential network effects, a number of food buying groups within a radius of 30 km were chosen in each region. Further, as illustrated in Table 2, a broad variety of organisational types that are representative of the main categories of local and sustainable producer-consumer partnerships was chosen. The questionnaire checked for the viability of the organisations: all the organisations surveyed have an economically stable partnership relation with the producer, and all show a stable or growing membership (the main reason for leaving the group is that people moved out to another place).

During the fields visit, a semi-structured questionnaire was administered, containing 3 open questions and 28 closed questions with pre-defined multiple-choice options. With the exception of 4 interviews with the "Ruches", and 4 interviews with the "GAC", which were conducted by phone, all the interviews were done face to face, each lasting between 45 min and 2 h.

4.2. Specification of the Hypothesis and Empirical Model

The key hypothesis of the paper is that the activities of the collective food buying groups combine two components, in varying proportions in each group, and that these distinct aims call for different modes of governance and kinds of support. Our sample includes both organisations that more actively promote the goals of changing the agri-food systems (the social network component, oriented towards social learning on more sustainable farming systems) and organisations that have a more functional orientation, geared towards the provision of services (through the non-profit service component, oriented towards enlisting consumers in more sustainable consumption patterns). In the sample of CFBGs that was surveyed, the social network component is represented by organisations that give higher priority to the transformation of the farming systems, while the social enterprise component is represented by organisations that give higher priority to providing tasty and healthy food from sustainable agriculture to the consumers. As shown in Table 3 these two orientations are more or less equally represented in our research sample.

A set of research questions emerge once we take into account the hybrid nature (social enterprise *and* social network) of the organisations surveyed. Indeed, key issues such as the mobilisation of resources for their functioning and the mechanisms to enlist and commit members have hardly been subject to a systematic empirical assessment. One notable exception is the study of hybrids between non-profits and social movements for peace and reconciliation in South Africa (Hasenfeld and Gidron, 2005, p. 105–107). In this case, researchers showed that members of hybrids typically gather around common social values, mobilise resources through accessing social networks and connecting with organisations that control important resources (including members, funds, legitimacy, and technical expertise), and build social capital by responding to the expressive and social identity needs of their members. The qualitative assessment of sustainable food chains in major EU city areas (Foodmeters, 2014) also highlighted the importance of these features, even though the "social capital" aspects appear to be less important in some of the studies (Berehm and Eisenhauer, 2008).

To assess the role of these variables in the explanation of the governance specificities of the social movement and the social enterprise components, two regression models were developed, based on the responses to the multiple choice options of the close-end part of the semi-structured questionnaire. The first regression model focuses on resource mobilisation and commitment, while the second model focuses on direct and indirect policy support.

More specifically, the first model tests if giving priority to "Transforming farming systems" as compared to the individual consumer oriented priority "Sustainable food distribution" in the overall mission of the food buying group is significantly correlated with (details on the exact definition of the variables is given in Annex 1):

Table 2
Overview of the survey sample, with a specification of the 6 different organisational types.

	Brussels	Antwerp	Liège	Leuven	Ottignies-Louvain-la-Neuve	Non-urban (Limburg)	Non-urban (Walloon Region)	Total
Number of interviews	14	15	17	21	12	6	14	104

	Key features	Number of interviews	Total number of organisations in Belgium
Voedselteams (Leuven, Antwerp (both urban), and Limburg (non-urban))	System of weekly orders, strong umbrella organisation that provide support for software and identification of new producers (membership fee of 15 euros/year)	35	175 (Oct. 2015)
GAC: Groupes d'achat commun (Brussels, Ottignies-Louvain-la-Neuve (both urban), Walloon Region (non-urban))	System of weekly orders, loose federation	42	148 (including AMAP, Oct. 2015)
GASAP: Groupes d'achat solidaires de l'agriculture paysanne (Brussels (urban))	System of solidarity contract with the farmer (usually 1 year contract), strong umbrella organisation, no membership fee	10	74 (June 2014)
CSA: Community-supported agriculture (Antwerp, Leuven (both urban))	System of solidarity contract with the farmer (usually 1 year contract), loose federation, members also contribute to harvesting	8	31 (Oct. 2015)
Ruches: La Ruche qui dit Oui (Brussels, Ottignies-Louvain-la-Neuve (both urban), Walloon Region (non-urban))	System of weekly orders, strong umbrella organisation structured as a social enterprise (Entreprise Solidaire d'Utilité Sociale), 8,35% of the price paid by the consumer goes to the umbrella organisation	7	53 (Oct. 2015)
AMAP: Association pour le maintien de l'agriculture paysanne (Ottignies-Louvain-la-Neuve (urban), Walloon Region (non-urban))	System of solidarity contract with the farmer (usually 1 year contract), loose federation, no membership fee	2	(Included above)
Total		104	481

Table 3
Hybrid nature of the collective food buying groups (table based on the answers on question 28, which offered to indicate what objective is the first priority of the collective Food Buying Group (CFBG), amongst the three options described in the first column).

	Voedsel-teams	CSA	GASAP	GACs	Ruches	Amap
Total number in sample: 104	35	8	10	42	7	2
First priority/3: supporting the farmers that supply the CFBG (q28a) (average: 41%)	31%	38%	60%	38%	71%	100%
First priority/3: providing tasty, healthy, sustainable and affordable food to the members of the CFBG (q28b) (average: 52%)	63%	50%	30%	55%	29%	0%
First priority/3: creating a participatory dynamics around food for the CFBG members (q28c) (average: 7%)	6%	12%	10%	7%	0%	0%

- Resource mobilisation
  - o the use of shared buildings for food deposit from food transition related associations (variable: Resources food transition assoc)
  - o the use of shared economic and knowledge resources from other environmental/social associations (variable: Resources other assoc),
  - o self-organisation for technical advice on the functional activities (variable: Members consulted for practical advice)
  - o social networking with other, nearby, food buying groups (variable: CFBG social networking)

- Commitment
  - o the organisation of convivial events (variable: Convivial events)
  - o the distribution of a newsletter (variable: Newsletter)
  - o social networking with transition towns, which have also a prominent social movement agenda for changing the agri-food system (variable: Netw transition towns)

- Control
  - o the members see the organisation as struggling against the existing food system (variable: Reform of the food system), as opposed to two other options presented in the questionnaire: building a different food system (that is: creating alternatives to the mainstream marketing channels) and improving the existing food system.

The second model tests if giving priority to "Supporting sustainable farming practices" (as compared to the more consumer oriented objective of "Supporting local food schemes") as the most important objective for building relationship to the farmers is significantly correlated with (details on the exact definition of the variables is given in Annex 1):

- Support needed for the emergence/development of the alternative food networks
  - o Political support for assigning higher priority to the CFBG in the food system (variable: Political legitimacy)
  - o Technical support in terms of software, logistical advice, etc. (variable: Technical support)
  - o Political support by organising a specific administrative service (variable: Administrative service)

- Resource mobilisation
  - o The use of shared economic and knowledge resources from food transition associations (variable: Resources food transition assoc),
  - o Distribution of the organisational tasks for the functional activities amongst the members (variable: Members mobilised for functional activities)
  - o Absence of social networking with other, nearby, CFBG's (variable: No CFBG social networking)

- Control
  - o My own CFBG builds a different food system (variable: Building different food system).

Control variables pertaining to the influence of the location of the initiative in one of the 7 regions, the organisational types and the role of the interviewee (as a core manager in the Food Buying Group) were included in the analysis.

4.3. Data Analysis Method

The outcome variables can reasonably be represented by binary response variables (closed questions 28 and 29 of the questionnaire). We therefore estimated the correlations with the outcome variables through a binary probit model. The statistical software package Stata 13.1 was used to perform the analysis. We used the svy ("survey") set command in stata, with the following parameters: pw = 481 ("pweight" = number of observations in the population, see Table 2); fpc = 104 ("finite population correction" = number of sampling units). The original survey data will be made available online and can be retrieved through a search for the paper title on the EU open access infrastructure for research data zenodo (www.zenodo.org).

5. Governing Social Networking in Collective Food Buying Groups

The following subsection first shortly presents the common features cutting across the collective food buying groups that emerge from the analysis of the semi-structured questionnaire. We then present the regression analyses on the specific governance features of each of the two components of the hybrid social enterprise/social network organisational form.

5.1. Common Features of the Collective Food Buying Groups

Collective food buying groups combine the technological ability of easy manageable internet portals for managing food buying groups, with a solidarity arrangement with sustainable farmers and an involvement of citizens in civic learning. As such these partnerships are expected to feature two characteristics. First, they are expected to give a central role to the farmer in the social network that is built around the collective food buying group. Second, they should provide a variety of tools that favour a certain degree of participation in decision making.

These two features are confirmed by the descriptive data of the survey. First, when inquiring into the most influential organisations for shaping beliefs of the CFBG, the farmer comes out systematically first for the vast majority of the CFBGs, far above other options such as local authorities, social organisations or other CFBGs (cf. Table 4). Second, the majority of the CFBGs convene a general assembly meeting on a frequent basis (64.7% of all the CFBG), rely on mailing lists (82.4% of all the CFBGs), or organise convivial events amongst the members (64.7%), to foster participation and involvement of the members.

Table 4
The most influential organisations for shaping beliefs on agri-food transition highlighted by the coordinators of the Food Buying Groups (CFBG) (Q34 of the survey).

	No influence (%)	Influence (%)	Don't know or n/a (%)	Total respondents
The first closest CFBG to yours	36	45	16	97
The second closest CFBG to yours	32	36	29	97
Your main supplier	7	92	1	100
Local groceries, cooperatives and local market	49	46	4	99
Supermarkets	84	13	0	97
Local authorities	76	22	1	99
National or regional governments	81	15	1	97
EU level governments	81	14	2	97
Social organisations: mutual insurance organisation, medical centre, municipal social services	72	13	12	97

5.2. Governance Features Related to the Social Enterprise Service Activities and the Social Network Activities

5.2.1. Presentation of the Results

Tables 5 and 6 show the results of the two regression models. Table 5 presents the correlations with key governance features of the food buying groups, related to resource mobilisation and commitment, while Table 6 presents the correlations with key governance features related to resource mobilisation and policy support.

5.2.2. Discussion of the Regression Results

We first discuss the variables that are at least significant at the 1% level in one of the four models. In the second section we then discuss the variables that are significant at the 5% level in one the four models.

5.2.2.1. Most Significant Variables at 1% Level in at Least One of the Regressions. The general outcome of the survey confirms the extent to which the social network component and the social enterprise service provision component of the alternative food networks rely on different governance systems. The most significant difference lies in the way resources are mobilised from other organisations. The use of buildings (meeting rooms, deposit space, etc.) from food transition related associations that are made available through sharing arrangements (variable "Resources food transition assoc") is positively correlated with the social network component. Along the same line, the absence of social networks with other Food Buying Groups (variable "No CFBG social networking") is negatively correlated with the social network component. These results are consistent with the theoretical models reviewed above which highlight the importance of inter-organisational networking within the social movement as a key element of autonomous resource mobilisation in favour of a radical transformation of the production system. On the other hand, the variable "Resources other associations" (which refers to the use of economic and knowledge resources from, or shared with, other environmental/social associations) is significantly correlated with the social enterprise component. No significant difference between the two components is observed in relation to the other organisations that are strongly involved in the sharing of resources in the local food networks, but which are unrelated to the social network component (such as sharing of resources with local authorities or local groceries).

A second set of features with highly significant correlations is related to the organisation of the social enterprise component. Both the variable related to the requesting of advice to the own members ("Members consulted for practical advice") and the variable related to the distribution of general organisational tasks (accounting, invitation for the meetings, organisation of the collection point, etc.) across the members (variable "Members mobilised for functional activities") are positively correlated with the social enterprise component. The latter reflects the light, functional governance system that characterizes the service provision component of the Food Buying Groups.

The two regression models also show significant differences concerning the need for policy support (as formulated by the organisations' coordinators) and enabling governance features that stimulate

Table 5
Results of the probit estimations on governance features related to resource mobilisation and commitment (technical specification of the variables and descriptive statistics in Annex 1).

		Dependent variables					
		M1: Transform farming systems as CFBG's priority objective (in general)			M2: Sustainable food distribution as CFBG's priority objective (in general)		
		Signif	Coef.	St. err.	Signif.	Coef.	St. err.
Independent variables							
Resource mobilisation	Resources food transition assoc	(+)***	1.8844	0.3994	(−)***	−1.6642	0.4155
	Resources other assoc	(−)***	−0.7214	0.2707	(+)**	0.5401	0.2670
	Members consulted for practical advice	(−)*	−0.5513	0.2782	(+)***	0.9238	0.2829
	CFBG social networking	(+)*	0,4780	0.2543	(−)	−0.4197	0.2563
Commitment	Convivial events	(+)**	0,5508	0.2716	(−)	−0.2864	0.2629
	Newsletter	(+)**	0.6362	0.3032	(−)*	−0.5095	0.2942
	Netw transition towns	(+)*	0.5139	0.2659	(−)**	−0.5743	0.2630
Control variable							
	My own CFBG struggles against the existing food system	(−)***	−1,6099	0.5457	(+)***	1.4549	0.4748
		Prob > F = 0.0000			Prob > F = 0.0001		

* Significant at 10% level.
** Significant at 5% level.
*** Significant at 1% level.

Table 6
Results of the probit estimations of governance features related to resource mobilisation and policy support (technical specification of the variables and descriptive statistics in Annex 1).

		Dependent variables					
		M3: Support sustainable farming practices as a priority objective (in the building of relations with the farmers)			M4: Supporting local food schemes as a priority objective (in building of relations with the farmers)		
		Signif.	Coef.	St. err.	Signif.	Coef.	St. err.
Independent variables							
Resource mobilisation	Resources food transition assoc	(+)**	0.6103	0.2580	(−)*	−0.4108	0.2612
	Members mobilised for functional activities	(−)***	−1.0580	0.3332	(+)**	0.6294	0.2882
	No CFBG social networking	(−)***	−0.9322	0.2704	(+)**	0.6249	0.2550
Policy support needed for the emergence/development	Political legitimacy	(+)***	0.9854	0.3616	(−)**	−0.7656	0.3648
	Technical support	(+)	0.3257	0.2759	(+)	0.3516	0.2510
	Administrative service	(−)**	−0.5975	0.2945	(+)**	0.6053	0.2697
Control variable							
	My own CFBG builds a different food system	(+)***	1.1392	0.3800	(−)	−0.3772	0.3045
		Prob > F = 0.0001			Prob > F = 0.0011		

* Significant at 10% level.
** Significant at 5% level.
*** Significant at 1% level.

members' commitment to the organisation. The variable "Political legitimacy" is positively correlated to the social network component. This variable indicates that respondents highlighted policy support in terms of assigning "higher priority to Food Buying Groups within the food system" as the most important kind of support, as compared to five other options that were proposed to the interviewee (which were respectively related to financial, administrative, technical, legal and information sharing/political lobbying support). Interestingly, this variable fits well with the general nature of the hybrid organisations, which strives to change the legal and political food-regime through the development of innovative niche activities, instead of the more conventional lobbying and advocacy channels.

Finally, the survey also "controlled" for the general orientation of the organisation in relation to the food system, by proposing three options: gradual improvement, internal reform or building a different system. In the overall sample, 79% of the respondents indicated that they consider that their Food Buying Group is "building a different system", in line with the overall strategy of the collective food buying groups of creating alternatives to the mainstream system. Only 12% of the overall sample indicated that they consider that their group struggles against the existing food system (13 respondents, 11 of these belonging to the social enterprise component). As might be expected, the social network component is correlated with the building of a different system, while the social enterprise component is correlated with the group of respondents striving for internal reform. The latter might be related to the fact that organisations with a more explicit social enterprise orientation are more directly concerned by removing obstacles created by the existing system, for the expansion of their service activities (for example by making sustainable farming products comparatively more competitive).

5.2.2.2. Most Significant Variables at the 5% Level in at Least One of the Regressions. Organising a specific administrative service with councillors/researchers/advisers by the government is highlighted as a highly needed form of governance support by the respondents of the social enterprise component. This is consistent with the need for general social infrastructures as highlighted in the literature.

In terms of commitment, the social network component is correlated with the organisation of activities with transition movements (which originated with the network of Transition Towns). This allows to contribute to building shared values amongst the members, in relation to the transition agenda of the Transition Network, which is highlighted as an important element of successfully building social networks in the literature. Along the same lines, the organisation of convivial events and the distribution of a newsletter is also correlated with the social network component.

Finally, the results on the variable "Resources food transition assoc" are consistent with the results discussed above for the variables that are significant at the 1% level.

5.2.3. Social Enterprise and Social Network Organisational Forms

Based on these in depth cases studies and the results of our regressions, we suggest three types of governance features that play a role in the operation of the collective food buying groups: various forms of direct/indirect policy support, resource mobilisation from non-market resources in support of their activities and the development of specific strategies to register and commit members.

Fig. 1 schematically represents the main specificities of the organisational forms of the two components that we have analysed. For the social network component, the mobilisation of resources is done through linkages with other niche innovations that promote learning on agri-food transitions and the political recognition of the important role of experimentation with more radical lifestyle changes. Indeed, social networks around sustainability transitions are more likely to emerge when the political system when the organisations have access to some elite allies that support their cause. At the same time, support from other social movements active in promoting the agri-food transition may be necessary to guarantee sufficient autonomy from an overly strong political interference, for example through enhancing their financial autonomy by sharing resources in kind with other organisations (in terms of sharing of staff, sharing of buildings, etc.).

In contrast, the social enterprise service component is more likely to depend on generic technical or administrative support for the development of the voluntary service activities related to the packaging, distribution and selling of the sustainable food products. Further, resources in support of these activities can be mobilised through forming alliances with organisations that are not necessarily focused on the transition in the agri-food sector, although they may also take concrete action for the building of more sustainable food systems (such as fair trade organisations putting food collecting space at the disposal of the CFBG, or social integration organisations that distribute the newsletters/contacts for the recruitment of new potential members).

The two components of the alternative food networks also show contrasting features in relation to the commitment of their members. Although face to face contacts are likely to be important in both components, members' meetings and information on the activities are more actively promoted in the social network component. This is in line with the social movements' literature, which highlights the importance

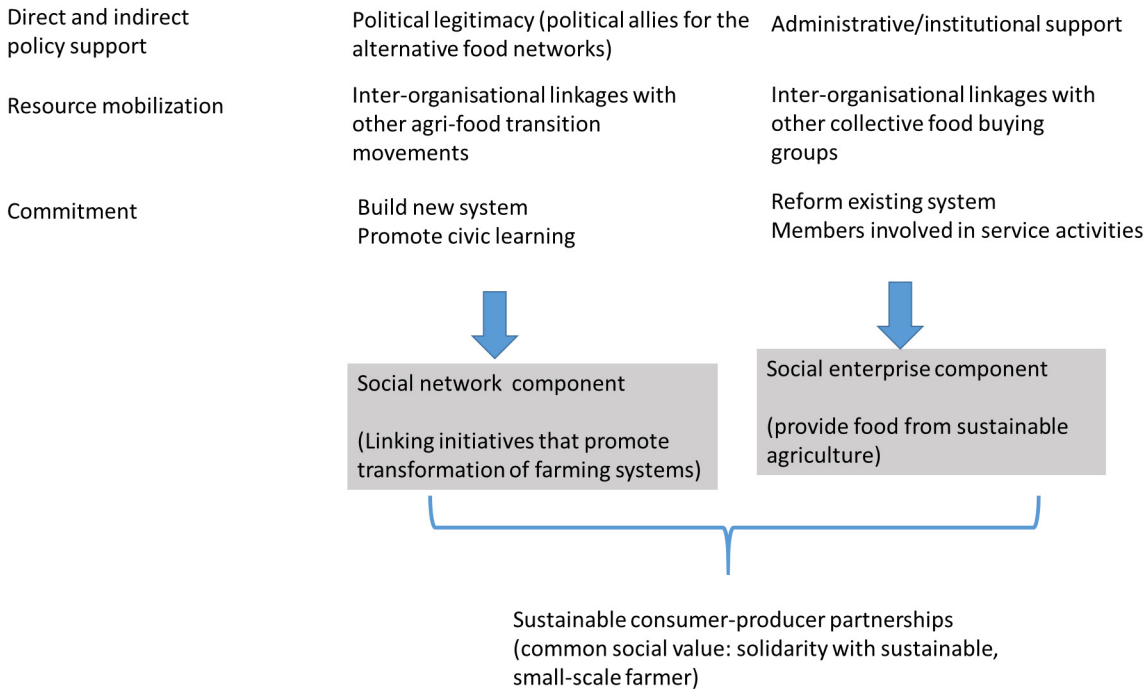

Fig. 1. Collective food buying groups as a hybrid social enterprise/social network organisational form.

of the building of common frames of analysis across the members (Benford and Snow, 2000; Polletta and Jasper, 2001). In the social enterprise component, membership contacts are important as well, but they are more related to the organisation of the voluntary services by the food buying group.

6. Consequences for the Role of Decentralized Social Networking in Agri-food Transitions

Two major challenges for the operation of collective food buying groups were discussed in this paper. First, these organisations are searching for mechanisms to increase the local and regional supply of sustainable farm products, by supporting farmers involved in low-input, agro-ecological or organic farming systems or by supporting the conversion of farmers to such systems. Secondly, these initiatives aim to promote broader social learning on possible lifestyle changes for transition to sustainable agri-food systems, in particular by linking to other initiatives involved in social learning around such lifestyle changes through information sharing, knowledge exchange and common activities.

As shown in this paper, organisational networks of collective food buying groups address this twin challenge by a hybridisation of a social enterprise component, focused on service provision for the organisation of the sustainable food short chains (such as through mobilising voluntary labour for collection and distribution), and a social network component, focused on the information sharing and joint activities. More specifically, each food buying group includes members from within each component, even if each organisation will put a stronger emphasis overall on one or the other dimension as shown through the survey.

Two general results can be established from the analysis. First, as highlighted in the introduction, an important element of the social network component is the construction of social and ecological sustainability transitions as a multi-dimensional concept, which goes far beyond the "local market" or "fresh and healthy" dimensions only. This is especially important, as this multi-dimensional interpretation of sustainability has to compete for instance with a growing discourse of economic nationalism/regionalism that focuses on local economic production, without however necessarily integrating the ecological and social dimensions. For instance, cheese from a local high input large-scale industrial provider can be promoted with a "regional" label, in spite of the fact that such local sourcing is not related to sustainable consumption and/or production methods.

The broader orientation of the collective food buying groups, beyond the discourse of economic nationalism/regionalism or satisfaction of individual consumer preferences, is confirmed by the survey results. In particular, the coordinators of the groups indicated that experimenting with sustainable lifestyle changes is one of the most important objectives of the organisation (question 31), and they rank support to sustainable farming practices higher than the promotion of short circuits (question 29). This is also reflected in the composition of the food baskets, which often complement the local supply in sustainable farming products with organic products from a regional wholesaler if these are not otherwise available. In addition, the question on the social networks of influence in the shaping of beliefs clearly shows the multi-dimensional nature of this process. Not only "local" or "healthy" food related organisations, such as the small-scale farmer and the local groceries, rank high in the organisations with major influence. Other organisations such as organisations promoting sustainable agriculture, fair trade or social organisations are mentioned as having a major influence (questions 34 and 51). Further, in a substantial number of the CFBGs that were interviewed, this social networking extends to explicit linkage to broader clusters of social and ecological initiatives, in particular with the transition movement (cf. correlation results in Table 5).

Second, the groups largely favour decentralized modes of coordination for organising the social network component. These decentralized networks play a role in the information sharing and cooperation around activities of alternative food networks, but also in the dissemination and exchange of information on organisational tools to set up and develop collective food buying groups. In relation to the social learning networks around lifestyle changes, centralized network connections with national or regional authorities rank very low, both for the questions on trust and influence (questions 27 and 34). In contrast, decentralized networks, such as networking with nearby collective food buying groups, local groceries and other food transition associations all rank very high in the declared relationships of trust and influence. In relation to the dissemination of the organisational tools, legal and organisational advice

from peers is preferred to expert advice or advice from public administrations (questions 17 and 37).

These insights on the collective learning on multi-dimensional approaches to sustainable agri-food systems, and the role of decentralized networking in fostering collective learning, hint to some governance recommendations for the operation of the collective food buying groups. The choice of organisational structure is not a sufficient condition for a fruitful combination of the social enterprise and the social network components. As shown by the questionnaire results, the choice of a social cooperative organisation of the type "community supported agriculture" (CSA) is no guarantee for a successful implementation of the social network component. Indeed, some organisations in the CSA sub-sample are stronger on the social networking than others. Conversely, the choice of a more commercially oriented social enterprise such as "La ruche qui dit Oui" does not preclude the possibility for successfully addressing the social network aspects. Rather than organisational form as such, therefore, the key feature for a successful hybridisation seems to be to ability to embed a certain organisational choice in the broader social network of organisations experimenting and learning on lifestyle changes for sustainable agri-food systems. Such embedding can be the results of information sharing or the organisation of joint activities with other sustainable food related organisations, such as local groceries and cooperatives, but can also lead to more integrated forms such as the participation in the activities of the transition groups.

Finally, the governance requirements of the hybrid social network/social enterprise components of the collective food buying groups also indicate some questions for further research. In particular, scholars of non-state collective action have shown the important role of network bridging organisations in collaborative social networks amongst private not-for-profit and public sector actors (Berkes, 2009; Dedeurwaerdere et al., 2015). Such network bridging organisations include regional platforms, umbrella organisations or knowledge hubs, amongst others. These organisations fulfil various roles that are key to the building of the cooperative action amongst the various social actors that drive the transition initiatives.

The results of the analysis in this paper points to two important categories of tasks for such network bridging organisations in the case of alternative food networks. First, as can be seen from the survey, various governance means are specifically needed for developing the social enterprise service activities component. Many local and regional food networks still suffer from inefficient distribution channels, lack of administrative support and poor infrastructure. Umbrella organisations, supported both by public authorities and members' fees, can step in to overcome some of these insufficiencies. For example, in one of the cases analysed in this paper, the Voedselteams vzw (cf. Table 2) is a strong umbrella organisation supporting the local groups in the search for suppliers located within their vicinity. This kind of support (helping to identify local producers) is strongly correlated in the survey with the trust expressed by the local CFBGs in the umbrella organisations (respectively questions 17 and 27 of the survey). In another prominent example, the case of the Seikatsu Club, the umbrella organisation coordinates the consumer demand for products other than fruits and vegetables and organises the transport of these products from the producers to the collective food buying groups in the most efficient manner (Seikatsuclub.coop/about/english.html).

A second category of tasks for umbrella organisations that can be related to the outcomes of this research is the support for decentralized network activities related to social learning amongst the food buying groups and with other sustainable food associations. In contrast to the more conventional supporting activities in terms of exchange of best practices, administrative support and legal advice, this collaborative aspect is often less straightforward. Indeed, as also shown elsewhere, successful social learning in networks of non-state collective actors depends on "process" dimensions such as non-coercive deliberation and inclusive participation (Innes and Booher, 2003). An interesting example of a network bridging organisation operating along these lines is the "Endogenous Regional Development" programme supported by the regional authorities in Austria (Petrovics et al., 2010). This programme is explicitly geared towards supporting social enterprises for regional sustainability transitions, but it also includes an important aspect of regional and supra-regional dialogue between the initiatives. Another example is the role of the "Grand Projet Rhône-Alpes" in the Val de Drôme in Southern France, where support for non-profit and for profit enterprises involved in ecological activities was combined with a collaborative networking of all the actors in a specific territory (Lamine et al., 2014; De Schutter et al., 2016). In the case study area that was the focus of this paper, potential network organisations that operate along these lines are the "Ceinture alimen-terre Liégeoise" (www.catl.be) and the forum "Gent en Garde" (https://gentengarde.stad.gent). However, further research is needed to document the effects of these organisations on the development of the local food networks and to better understand the various governance and complex process management needs of the collaborative tools established in such larger-scale social learning processes.

7. Conclusion

This paper analysed the contribution of hybrid organisational strategies in collective food buying groups, based on synergies between social enterprise and social network activities, with a view to fostering learning on transitions towards more sustainable agri-food systems. Transition initiatives are usually described in the literature as requiring the nurturing of protective innovation niches, where initiatives are not yet fully exposed to the market pressure so that they can evolve towards a mature stage. The social enterprise component of the collective food buying groups provides for such a protective niche, by mobilising a diverse set of resources ranging from voluntary contributions to various logistic tasks or the free availability of storage space. At the same time, however, considering the scientific uncertainty around the appropriate future transition pathways, transition is an open and experimental process that relies on the pro-active learning on a variety of options and ways of constructing the meaning of sustainable agri-food systems in a multi-dimensional framework. Therefore, the collective food buying groups also invest a substantial amount of time and effort in linking with other food transition organisations, through information exchange and joint activities.

To analyse such hybrid organisational strategies, the paper presented the results of a survey with a semi-structured questionnaire administered through face to face interviews to 104 collective food buying groups in Belgium. The main finding of the paper is the existence of different governance needs related to the two components. The *social enterprise* component is focused on the economic sustainability of the logistics for local and sustainable food provisioning, mainly through functional relationships with other organisations and the development of administrative support. In contrast, the *social network* component is focused on promoting learning on initiatives for the broader transformation of the agri-food systems. This second component is based on the building of decentralized social networks with "peer" initiatives developed by other local food buying groups, local groceries, public markets and cooperatives or even fair trade and local social organisations. In addition, the comparative analysis of the food buying groups clearly indicate that the hybridisation of these two components is not specific to any one type of consumer-producer organisational form, but has been found across the various organisational types that were analysed, ranging from community supported agriculture to a web-based facilitated collective food buying group organised as a limited profit social enterprise.

While the study needs to be further substantiated through additional comparative research on other initiatives in the agri-food systems, such as related to retail, whole sale or food processing, the analysis

provides strong evidence for the successful promotion of social learning on possible alternatives through hybrid social enterprise/social network organisational forms. Questions for further research are the kind of governance support that can be offered by the network bridging organisations that play an active role in promoting the collective food buying groups (such as umbrella organisations or knowledge hubs for a variety of citizen-led transition initiatives). The various roles of network bridging organisations might include support for network activities related to the social learning amongst social enterprise based transition initiatives, in addition to the more conventional supporting activities in terms of exchange of best practices, administrative support and legal advice. It is unlikely, however, that any one kind of tool or policy mechanism will suffice to ensure the stable provision of such support. Therefore, the overall goal of the analysis is to stimulate reflection on the appropriate combination of various mechanisms in supporting the transition of agri-food systems analysed in this paper.

Author Contributions

The text was written by Tom Dedeurwaerdere, Olivier De Schutter, Marek Hudon and Erik Mathijs. Tom Dedeurwaerdere conducted the statistical analysis. The other authors selected the cases, contributed to the design of the survey protocol through a series of common fieldwork design workshops and conducted the interviews. All authors endorsed the presentation and interpretation of the field work data and approved the final manuscript.

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Appendix A

Annex 1
Definition of the variables and descriptive statistics.

		Mean	Std. dev.	Min–max	Survey question
First probit estimation model (n = 104)					
Dependent variables					
Transform farming systems CFBG's priority objective (in general)	= 1 if the following option is ranked first priority for the CFBG's objectives: Support the farmers that supply the CFBG (local economy, small-scale farming, sustainable farming practices) = 0 if this option is ranked 2nd or 3rd (amongst 3 options)	0.41	0.49	0–1	28
Sustainable food distribution CFBG's priority objective (in general)	= 1 if the following option is ranked first priority for the CFBG's objectives: Provide tasty healthy, sustainable and affordable food to the members of the CFBG (good taste, no pesticides, affordable prices, neglected vegetables) = 0 if this option is ranked 2nd or 3rd (amongst 3 options)	0.52	0.52	0–1	28
Independent variables (alphabetic order)					
Convivial events Q26a_10	= 1 if "Meals and Convivial" events are indicated as one of the tools that the CFBG uses/provides, amongst a list of 18 proposed tools = 0 if it is not indicated	0.63	0.48	0–1	26
Members consulted for practical advice q37e_123	= 1 if the option "your organization organizes itself to seek for advices by requesting its own members" is indicated amongst one of the 3 most relevant ways to organise support to the development or improvement of the food buying group (out of a list of 5 options) = 0 if it is not selected	0.63	0.48	0–1	37
Netw transition towns qtrall	= 1 if transition towns are mentioned spontaneously in one of the "open answers" as an organisation that is trusted/influences beliefs and/or in which activities they participate = 0 otherwise	0.39	0.49	0–1	9, 19, 27, 34
Newsletter Q26a_2	= 1 if "Newsletter" is indicated as one of the tools that the CFBG uses/provides, amongst a list of 18 proposed tools = 0 if it is not indicated	0.22	0.42	0–1	26
Resources food transition assoc q15c6_1	= 1 if buildings (meeting rooms, deposit space, etc.) that are made available through a sharing arrangements are used from food transition related associations = 0 if this is not the case	0.06	0.03	0–1	15
Resources other assoc q15a8_b8_c~8	= 1 if one of the listed resources (software, list of suppliers, buildings, common delivery, volunteer time, meals/recipes) are used which are made available through a sharing arrangement with other associations (not food related associations: environmental/social) = 0 if this is not the case	0.49	0.50	0–1	15
CFBG social networking q34ab_2	= 1 if the first/second closest Food Buying Group is indicated as being most influential in shaping beliefs on your own Food Buying Group = 0 if it is not indicated as most influential	0.45	0.50	0–1	34
Control					
Reform of the food system q33_2	= 1 if you consider that your own Food Buying Group "struggles against the food system" = 0 if you consider that your own Food Buying Group "improves the existing food system" or "builds a different food system"	0.13	0.33	0–1	33
Second probit estimation model (n = 104)					
Dependent variables					
Support sustainable farming practices CFBG's priority objective (in the relation with the farmers)	= 1 if the following is ranked first priority, as CFBG's objective concerning support to the farmers: Support sustainable farming practices	0.41	0.49	0–1	29
Supporting the local circuits CFBG's priority objective (in the relation with the farmers)	= 1 if the following is ranked first priority, as CFBG's objective concerning support to the farmers: Supporting the local circuits = 0 if	0.40	0.49	0–1	29

(continued on next page)

Annex 1 (*continued*)

		Mean	Std. dev.	Min–max	Survey question
Independent variables (alphabetic order)					
Administrative service q37a_12	= 1 if the option "the government organizes a specific administrative service with councillors/researchers/advisers" is indicated amongst one of the 2 most relevant ways to organise support to the development or improvement of the food buying group (out of a list of 5 options) = 0 if it is not selected or selected as the 3rd most relevant only	0.28	0.46	0–1	37
Members mobilised for functional activities q22a_1	= 1 if the general organisation tasks (accounting, invitation for the meetings, organisation of the collection point, etc.) is distributed amongst the members (more than 5) = 0 if it is done by a single person or a small coordinating group (between 2 and 5)	0.18	0.39	0–1	22
No CFBG social networking q34b_1	= 1 if the first/second closest Food Buying Group is indicated as having no influence on shaping beliefs on your own Food Buying Group = 0 if it is indicated as influential/not applicable	0.31	0.46	0–1	34
Political legitimacy q36f_4	= 1 if political support (assigning higher priority to Food Buying Groups within the food system) is indicated as most importantly needed to develop or improve activities = 0 if it is indicated as not needed, mildly needed or needed	0.13	0.34	0–1	36
Resources food transition assoc q15a6_b6_c~6	= 1 if one of the listed resources (software, list of suppliers, buildings, common delivery, volunteer time, meals/recipes) are used which are made available through a sharing arrangement with food related associations = 0 if this is not the case	0.34	0.47	0–1	15
Technical support q36c_34	= 1 if technical support (software, logistic advises, information on new suppliers, stockroom, tools to improve the inclusiveness or the efficiency of the Food Buying Group) is indicated as needed or most importantly needed to develop or improve activities = 0 if it is indicated as not needed or only mildly needed	0.36	0.48	0–1	36
Control					
Building different food system q33_3	= 1 if you consider that your own Food Buying Group "builds a different food system" = 0 if you consider that your own Food Buying Group "improves the existing food system" or "struggles against the food system"	0.79	0.40	0–1	33

Annex 2
Correlation matrix amongst the independent variables.

Correlation matrices for the probit estimations on governance features related to resource mobilisation and commitment (first model)

	Resources food transition assoc	Resources other assoc	Reform of the food system	CFBG social networking	Members consulted for practical advice	Convivial events	Newsletter	Netw transition towns
Resources food transition assoc	1							
Resources other assoc	−0.0777	1						
Reform of the food system	0.0312	0.0945	1					
CFBG social networking	−0.0590	0.0754	0.0657	1				
Members consulted for practical advice	0.0934	0.1477	−0.0917	0.0109	1			
Convivial events	0.1021	0.0253	0.0453	−0.1134	-0.0904	1		
Newsletter	−0.0325	−0.0593	−0.0613	0.0282	−0.0993	−0.0287	1	
Netw transition towns	0.0587	0.2129	0.0000	0.0764	0.0352	0.1484	0.0073	1

Correlation matrices for the probit estimations on governance features related to resource mobilisation and policy support (second model)

	Resources food transition assoc	Members mobilised for functional activities	Building different food system	No CFBG social networking	Administrative service	Technical support	Political legitimacy
Resources food transition assoc	1						
Members mobilised for functional activities	0.1372	1					
Building different food system	0.0894	0.0413	1				
No CFBG social networking	−0.0780	−0.0456	−0.0447	1			
Administrative service	−0.1840	−0.1363	−0.0663	0.0354	1		
Technical support	−0.1467	0.0125	−0.1470	0.1138	0.1918	1	
Political legitimacy	−0.1020	−0.1136	0.0495	−0.0188	0.2463	−0.0577	1

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CHAPTER 6:

NO RIGHT TO FOOD AND NUTRITION IN THE SDGS: MISTAKE OR SUCCESS?

CHAPTER 6: NO RIGHT TO FOOD AND NUTRITION IN THE SDGS: MISTAKE OR SUCCESS?

"Between the strong and the weak, between the rich and the poor, between the lord and the slave, it is freedom which oppresses and the law which sets free"
Henri-Dominique Lacordaire (1802-1861)

6.1.- SPECIFIC RESEARCH QUESTION AND HIGHLIGHTS

In this chapter, I leave the specific case studies with direct interviews to understand the food narratives of individual agents in transition (chapters 4 and 5) to carry out an analysis on how the dominant narrative of food as a commodity informs international negotiations and shapes country positions in global food system governance. Departing from the absence of the human right terminology when referring to food in the final text of the Sustainable Development Goals (SDGs) agreement, in relation to other comparable humans rights also mentioned in the same paragraphs (such as water, health or education), we reconstruct the political stances of two of the most relevant stakeholders in the international negotiations, namely the US and EU. Contrarily to the international consensus reached during the past 50 years, food is not considered as a human right in the SDG route map, and this value-based consideration as not-a-right supported by several countries ended up having the human right wording removed from the final text.Thus, the research question that triggers this analysis is the following: *"How does the dominant narrative of food condition preferred food policy options in international negotiations?*"

HIGHLIGHTS

We attribute this result to the adamant US position against any legal or political reference of food as a human right as well as to the timid or dual EU position (promoting its applicability to third parties but being lax at domestic level). Both political stances are anyhow backed, publicly or quietly, by other countries that are sympathetic of the non-consideration of food as an enforceable right (i.e. Canada, Australia, Saudi Arabia) as well as by many international organisations and most transnational corporations and philantrophic foundations.

The firm US opposition to food as a right in negotiated international texts stems from the political narrative that food is just a mere commodity that shall exclusively be subject to market rules with minimal state control. Charitable schemes (such as food banks or the Supplemental Nutrition Assistance Program of the US Government) are accepted as long as they are based on free will to donate, non-accountability and funding availability. Moreover, the socio-economic rights are not equally considered to the political ones, and the US did not ratify the International Covenant of Social, Economic and Cultural Rights (ICESCR). Along those lines, the official US position describes food as a goal, aspiration or opportunity and not an enforceable individual right that can be claimed by right holders to duty bearers (states).

The EU case is rather different, since the regional and national policy and legal frameworks are greatly grounded in the respect for and enforceability of human rights, including the socio-economic rights. All the EU member states have ratified the ICESCR, and yet none has any specific mention to the right to food at Constitutional or national level, being this right also absent from the three most relevant European human rights charters and treaties. The EU regional institutions publicly defend and even finance this right to be implemented in other countries while they are barely doing nothing to render it operational at domestic level (within EU boundaries).

The explanation provided in this chapter is both the US and EU (and its member states) adhere to an ideological stance in which market-based distribution is far more efficient than a rights-based scheme for food. The privatization of food-producing inputs (soil, seeds, water, knowledge) and the absolute commodification of food conform the dominant discourse of both actors and hence in the international institutions they control (i.e., World Trade Organisation, International Monetary Fund, World Bank, World Economic Forum). Those institutions are adamant about the absolute validity of market mechanisms to distribute food as a commodity. Therefore, the duties and entitlements guaranteed by the right to food clearly collide with this position.

In conclusion, through the analysis of legal human rights frameworks, approved documents and official diplomatic positions, this chapter has exposed how the value-based consideration of food as a commodity obscures other non-economic dimensions of food (food as a human right and food as a vital resource for human survival), thus privileging the market mechanisms as the only ones valid to govern the food system. This narrative defends to minimise the public control (through state duties, justiciable claims and accountability) over those markets. In that sense, the socially constructed narrative of food shapes the type of policies and governing mechanisms that can be put in place at international level to achieve a Zero Hunger Goal, one of the 17 SDGs agreed upon in 2015. Policies that guaranteed access to food as a human right, with higher state and civic involvement, are thus discarded, placing at the forefront market-based policies that promote better access to food (through increasing purchasing power or reducing food prices).

6.2.- PEER-REVIEWED ARTICLE

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No right to food and nutrition in the SDGs: mistake or success?

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JLVP and CS highlight the implications and consequences of this absence as a fait accompli and explain the domestic and foreign positions of influential actors.

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ABSTRACT

Although the recently approved Sustainable Development Goals (SDGs) explicitly mention access to water, health and education as universally guaranteed human rights, access to affordable and sufficient food is not given such recognition. The SDGs road map assumes that market mechanisms will suffice to secure nutritious and safe food for all. We question how and why the right to food has disappeared from such an international agreement and we will provide insights on the likely causes of this and the options to make good on such a regrettable omission. Analysis of political stances of relevant western stakeholders, such as the United States (US) and the European Union (EU), is also included.

If we are to follow the guidance provided by the Sustainable Development Goals (SDGs) recently approved,[1] the fight against malnutrition and the achievement of the United Nations (UN)'s 'Zero Hunger Challenge'[2] will not be guided by the human right to adequate food (and nutrition).[3] Although the SDGs explicit access to water, health and education as universally guaranteed human rights, access to affordable and sufficient food is not given such recognition. The SDGs road map assumes that market mechanisms will suffice to secure nutritious and safe food for all. We question how and why the right to food has disappeared from such an international agreement and we will provide insights on the likely causes of this and the options to make good on such a regrettable omission.

Key questions

What is already known about this topic?

- The right to food, so closely linked to the fundamental right to life, is a formal human right, increasingly recognised in many countries, jurisprudence in the field is growing, and the links developed with other constituencies (food sovereignty and nutrition) reinforce its mandate and political priority.

What are the new findings?

- And yet, contrary to the international consensus reached during the past 50 years, food is not regarded as a human right in the Sustainable Development Goals (SDGs) document. This article denounces this omission which indeed has important political and legal implications.
- The full realisation of this human right is not favoured by the openly adamant US opposition as well as the dual EU attitude: promoting its applicability for the others in international negotiations and being lax at domestic level with no reference in legal frameworks.

Recommendations for policy

- In human rights-friendly countries, develop national legal frameworks that include the right to food; further conceptualise and implement Universal Food Coverage schemes similar to those guaranteeing universal access to health and education; human rights-friendly countries and public interest civil society organisations to keep a vigilant attitude so as to defend the agreed minimum standards of the right to food in international negotiations; and de-construct the dominant narrative of food as a commodity so as to replace it by a human rights narrative placing food squarely as a human right, a commons and a public good.

NO COMPASS FOUND IN THE SDGS TO ELIMINATE HUNGER

The latest UN General Assembly (September 2015) approved this non-binding road map to guide the world's development towards prosperity and well-being for the next 15 years. The SDGs were drafted in extenuating diplomatic negotiations. In order to reach a consensus document, concepts that were deemed unacceptable to some member states were either disposed of, polished with softening adjectives, reworded or simply avoided during the final negotiations in July 2015—even those that had previously attained a broad consensus in binding international agreements. The right to food serves as a striking example.

The ample consensus reached in the second half of the 20th century over universal access to healthcare[4] and education[5] as a means to address wealth inequalities did not cover the universal access to food. The 190

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plus countries that approved the SDGs document had a unique chance to do the same for the right to food, but chose, or were resigned, not to do so. As a consequence, food is not given the status of a human right[6] in the document, implying that the existing market mechanisms are good enough to address the food needs of every human being (see box 1). This is clearly a legal and diplomatic regression from previous international agreements such as the Universal Declaration of Human Rights[7] and the International Covenant on Economic, Social and Cultural Rights[8] with its very specific General Comment.[9] This is evidently intentional as the SDGs do reaffirm the human right to safe drinking water and sanitation.

Why has universal access to food, the right that has to be met before being able to enjoy other civil, political, social and economic rights,[10] not been awarded the same level of importance as education, health or water? The explanations, collected informally by the authors, are that several influential countries and institutions were adamantly opposed to the consideration of food as a human right. Yet many of those opponents did sign and ratify the International Covenant on Economic, Social and Cultural Rights, the binding agreement that indeed includes this right in its provisions. Moreover, a growing number of countries are explicitly protecting the right to food by either including it in their constitutions,[11] enacting food security laws[12] or pursuing rights-based food and nutrition security strategies and policies.[13] This proves the lack of coherence that often comes to the fore during international negotiations: human rights commitments are pitched against economic interests.

THE OPPONENTS TO THE RIGHT TO FOOD

Although it is difficult to find official government statements that categorically deny or oppose the rights-based approach to food (the US government's position being an exception), several countries, regional organisations and international institutions have consistently and openly not been sympathetic to the right to food provisions. Countries like Canada,[14] the US[15 16] and several EU members have never considered incorporating the right to food into their Constitutions or national legal frameworks. This position vis-a-vis the right to food is encouraged and complemented by the lack of support for this right (except for mere lip service) by international organisations such as the G-8, G-20, the World Economic Forum, the World Trade Organisation, the World Bank and the International Monetary Fund.[17 18] Moreover, most transnational corporations and philanthropic foundations do not feel bound by binding human rights principles either.[19] So, although the US may behave as an outlier in the emerging global consensus on economic and social rights, its hegemonic power in international institutions and fora results in a regular and predictable blocking of any attempt to insert social rights-based provisions in global discussions. Additionally, other countries, although not publicly voicing their opposition, quietly obstruct the realisation of the right to food in areas of their own jurisdiction.[20] With so many foes, it is understandable, but not acceptable, that no mention of the right to food is found in the SDGs document.

Box 1 The first paragraph of the Sustainable Development Goals vision states the following:

(Para 7) In these Goals and targets, we are setting out a supremely ambitious and transformational vision. We envisage a world **free of poverty, hunger**, disease and want, where all life can thrive. We envisage a world free of fear and violence. A world with **universal literacy**. A world with equitable and **universal access to quality education** at all levels, to **healthcare and social protection**, where physical, mental and social well-being are assured. A world where **we reaffirm** our commitments regarding the **human right to safe drinking water and sanitation** and where there is improved hygiene; and **where food is sufficient, safe, affordable and nutritious**. A world where human habitats are safe, resilient and sustainable and where there is **universal access to affordable, reliable and sustainable energy**. (emphasis added)

THE RECURRENT US POSITION: 'FOOD IS NOT A RIGHT'

The US has steadily opposed any internationally agreed document that considers food as a human right. It is the only nation that has neither ratified the Convention on the Rights of the Child nor the International Covenant on Economic, Social and Cultural Rights. Moreover, it was the only nation that refused to sign the final declaration of the 1996 World Food Summit and it stood alone in opposing the right to food being included in the 2002 World Food Summit declaration.[21] Actually, the US included an official reservation to the paragraph referring to the right to food[22] (see box 2), arguing that the

Box 2 What was the US Official Reservation to the 2002 World Food Security Declaration regarding the Right to Food?

The US believes that the issue of adequate food can only be viewed in the context of the right to a standard of living adequate for health and well-being, as set forth in the Universal Declaration of Human Rights, which includes the opportunity to secure food, clothing, housing, medical care and necessary social services. Further, the US believes the attainment of the right to an adequate standard of living is a goal or **aspiration to be realised progressively that does not give rise to any international obligation or any domestic legal entitlement**, and does not diminish the responsibilities of national governments towards their citizens. Additionally, the US understands **the right of access to food to mean the opportunity to secure food, and not guaranteed entitlement**. Concerning Operative Paragraph 10, we are committed to concrete action to meet the objectives of the World Food Summit, and are concerned that sterile debate over 'Voluntary Guidelines' would distract attention from the real work of reducing poverty and hunger. (emphasis added)

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right to food cannot give rise to any binding state duty or guaranteed citizen entitlement, both at domestic and international levels, to feed the hungry adequately. For the US government, food is just a commodity whose access is exclusively guaranteed by purchasing power or charitable schemes. Moreover, this stance *vis a vis* the right to food has to be understood as just one component of the government's long-standing broad resistance to economic, social and cultural rights in general.

The US has even refused to accept non-binding resolutions on the subject, although during President Obama's mandate this recurrent stance has been softened and the US joined a non-binding UN Declaration on the Right to Food in 2009[23] while issuing supplemental explanations. Yet in 2014, it blocked a draft resolution on the same right.[24] Official explanatory notes reaffirmed its traditional areas of disagreement, namely this right just being a 'desirable policy goal' not carrying any enforceable obligation.[25] This opposition, which has rendered this right non-justiciable in the Inter-American Court of Human Rights,[26] does not prevent the generously funded and needs-based food security programmes at home and abroad (ie, the Supplemental Nutrition Assistance Programme or Feed the Future), programmes that are voluntary, not universal, accountable or justiciable and determined by political priority fluctuations and budgetary constraints.[27]

THE EUROPEANS' DOUBLE STANDARDS: SUPPORTING ABROAD, RELUCTANT AT HOME

The EU authorities have repeatedly said that states should 'mainstream a human rights perspective in their national strategies for the realisation of the right to adequate food for all'.[28] After the Treaty of Lisbon,[29] a binding agreement of high legal and political relevance, all member states and the European Commission have the legal obligation to respect, protect and promote human rights within its territory and in EU-supported interventions in other countries. Of course, that should include all the internationally recognised human rights, such as the right to food. Moreover, the Commission has expressed its support to 'right to food-based political and legal frameworks' in developing countries, as well as establishing and strengthening redressal mechanisms.[30] Likewise, the European Parliament has taken a similar position regarding the relevance of the right to food to address food security challenges in developing countries.[31]

Yet no EU member state recognises explicitly the right to food in their Constitutions[32] or in specific laws; nor is any mention to the right to food made in the fundamental European Treaties: No right to food in the European Social Charter,[33] adopted in 1961 and revised in 1996 that actually extends the protection of social and economic rights to the Council of Europe members; or in the EU Charter of Fundamental Rights,[34] adopted in 2000 as legally binding; it is supposed to include rights from international instruments ratified by all European members (ie, International Covenant on Economic, Social and Cultural Rights); or in the European Convention on Human Rights,[35] originally signed in 1950 and having been enriched with seven protocols. It is worth noting that the right to private property was included in the first article of the first protocol in 1952. Ergo, private property is a right for Europeans, but food is not.

UNDERSTANDING THIS OPPOSITION

It is not uncommon to see countries that, at the domestic or international level, consistently water down strong references to the right to food. Examples include insisting on rather fuzzy definitions of specific violations, opposing the awarding of monetary and non-monetary remedies, or softening the language in international agreements, often carried out in last-minute diplomatic negotiations. As shown in this article, the US deliberately characterises the right to food as an 'opportunity' rather than as an entitlement which removes any obligation for their government. Meanwhile, the Europeans have a dual attitude in this regard: whereas in the international arena they publicly defend and even finance this right to be implemented in other countries (ie, the Global South), at the domestic level they are barely doing anything to render this right operational within the EU boundaries despite food insecurity being on the rise;[36] food is not yet a European right.

Several reasons may explain the US opposition and the EU's attitude. Some argue that this right is not included in the US Constitution and therefore does not resonate with the American culture.[37] Others state that its definition confuses human rights priorities.[38] Another explanation is that both adhere to an ideological stance in which market-based resources distribution is far more efficient than a rights-based scheme for such a vital resource. The privatisation of food-producing inputs (soil, seeds, water) and the absolute commodification of the final output (food) confirm the dominant discourse of both actors and hence in the international institutions they control (ie, World Trade Organization, International Monetary Fund, World Bank, World Economic Forum).[39] Those institutions are adamant about the absolute validity of market mechanisms to distribute food as a commodity. Therefore, the duties and entitlements guaranteed by the right to food clearly collide with this position.

CAN THIS POSITION BE REVERSED? EXPLORING THE OPTIONS

The absence of this right from the SDGs can be interpreted as both a success for US diplomacy and a crass mistake for the Global South and EU countries in their final bargaining to arrive at a consensus document. We are obviously faced with a fait accompli

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here, and it is pointless to propose a revision of the SDGs document.[40] Nevertheless, inaction is not an option either and the focus shall be in rendering effectively this right at the national level by developing legal frameworks. Therefore, food as a human right must attain the same status as education and health in European regional and national legislations—a commendable first step. Belgium is already drafting such a law and the Lombardia Region has issued an ad hoc law recently. These examples can pave the way for the deployment of Universal Food Coverage schemes in the increasingly food-insecure Europe. Then, once enshrined at home, the EU could advocate for the incorporation of rights-based provisions in international agreements dealing with food (ie, in the World Trade Organization, bilateral trade agreements, Codex Alimentarius). The US case proves to be harder and only reversible through a combined mix of local struggles and domestic rights-based campaigns (ie, on food justice, community supported agriculture, agricultural labourer's rights) on the one side and international leverage by international institutions, peer countries and media campaigns on the other.

The right to food has already progressed substantially in a few countries, with 10 right to food laws, 15 Parliamentary Fronts Against Hunger in Latin America and a growing jurisprudence using the right to food in more than 50 cases in 28 countries (just two in the EU and none in the US, however).[41] The right to food constituency is gaining momentum thanks to its alliance with the food sovereignty movement and the closer links being developed with the nutritional constituency,[42 43] as well as confronting the mounting corporatisation of nutrition and the food system.[44] Part of this constituency has set up the Global Network for the Right to Food and Nutrition[45] and network members did exert pressure during the preparatory phase of the SDGs, alas to no avail. However, they are organised to take things further, locally and globally, in the years to come. Finally, although solely coming up with legal frameworks to protect this right will not suffice—since several countries have good laws that are only weakly implemented—rendering effectively this right at the national level will indeed be a useful rallying point in the struggle for a food-secure world. Since food is a right and not a commodity and eating remains a vital need, food and nutrition security must be considered a right of all people rather than a development goal carrying no accountability.

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Contributors JLVP is researching the motivations and institutional settings that govern food system transitions in developed and developing countries. CS is an international public health nutrition activist and member of the Steering Council of the People's Health Movement. For many years, both authors have been directly involved in national and international negotiations to promote the right to food. JLVP undertook the legal screening for this paper. Both contributed to the writing of the manuscript and policy analysis. JLVP is the guarantor.

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No right to food and nutrition in the SDGs: mistake or success?

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CHAPTER 7:

TRANSITION TOWARDS A FOOD COMMONS REGIME: RE-COMMONING FOOD TO CROWD-FEED THE WORLD

CHAPTER 7: TRANSITION TOWARDS A FOOD COMMONS REGIME: RE-COMMONING FOOD TO CROWD-FEED THE WORLD

"There is nothing like a dream to create the future. Utopia today, flesh and bone tomorrow"
Victor Hugo, Les Miserables, 1862

7.1.- SPECIFIC RESEARCH QUESTION AND HIGHLIGHTS

Finally, in this chapter some concrete ideas on how to transit from our current food system, largely sustained on a commoditised vision of food, towards a food system that values food as a commons are presented, either with a general approach to the governance mechanisms or with specific policy and legal measures to steer and facilitate that transition. The specific research question this chapter seeks to respond is as follows: "How can the food commons narrative help designing a different transition pathway in the food system?" Firstly, this chapter provides an analysis of achivements and failures of the industrial food system in the second half of 20th century. It presents the commodification of food as the dominant force that has pervaded the vision, values, narratives, objectives, policies, institutions and legal tools put in place by states and international organisations to govern the current industrial food system, exerting also a notable leverage over non-industrial food systems (peasants', pastoralists, hunter-gatherers, fisherfolks, indigenous groups). Under capitalism, the value in use of food (a biological necessity) is highly dissociated from its value in exchange (price in the market), giving primacy to the latter over the former and having profit maximisation as an important ethos throughout the food chain. This chapter provides insights on the historical process of privatisation and commodification of natural resources, and situates this process within the current corporate food regime (as described by Philip McMichael, 2009).

Once the food regimes are discussed, I proposed here how the consideration of food as a commons may enrich transformative narratives (i.e. food sovereignty, agro-ecology, food justice) that challenge the corporate regime. The alternative narrative of food as a commons is supported by a) the multiple dimensions of food that are relevant to humans and cannot be valued in monetary terms, b) the essentialness of food to humans (individual and societies), c) the commoning practices that have instituting power to re-configure socially-constructed valuations and create governing mechanisms and rules, and d) the previous and current existence of different modes of governing and regarding food and food systems other than the commoditised narrative of the industrial food system.

HIGHLIGHTS

The food commons regime will entail a return move from a state-private sector duopoly in food production, transport and distribution to a tricentric governance system, where the third pillar would be the self-regulated, civic, collective actions for food that are emerging all over the world. The tricentric governance system is composed by new versions of old agents (the state, the private enterprises and the civic initiatives) governed by different rules:

Civic collective actions for food, often done at local level, aim to preserve and regenerate the food commons that are important for the community. They can be rural and urban, and triggered by

different motivations, although both reject the dominant narrative that food is only a commodity, reconstructing multiple meanings of food with the ongoing practices of commoning, sharing, volunteering, exchanging or trading in a moral economy.

An enabling state whose main goal shall be maximising the well-being of their citizens, being the custodian of common resources (to be governed as public goods) and regulating profit-capped markets. This different kind of state (called as partner or entrepreneurial, differing from the classical Leviathan of command and control) will be a creator of socially-responsible markets, a facilitator of civic collective actions and a supporter of open material and immaterial structures to encourage the civic and private actions to flourish.

A new breed private sector activities where profit maximisation at any cost is not the driving ethos of business making and that it is subject to public and civic control and accountability when using common resources. This private sector will have a task of satisfying human needs and social goals unmet by collective actions and governmental guarantees. Earning profit cannot mortgage common resources for present and future generations. Market mechanisms of resource allocation shall have a relevant role in the tricentric system, although not always the primacy of action or the narrative hegemony. By encouraging (politically and financially) the development of non-market modes of food provisioning and limiting the influence of the markets, we can re-build a more balanced tricentric food system.

In the transition process of re-commoning food, states have a vital role to play (e.g. taxing and incentive schemes, public subsidies, relatively relaxed regulations for collective actions). However, this role should gradually be shifted to civic collective actions and private sector provision to avoid the pitfalls of the old-style socialist command economies. Among the concrete policy options that are aligned to the food commons narrative, the following can be mentioned: to keep food out of trade agreements dealing with commodities (i.e. WTO) and establishing instead a transnational governing system for production, distribution and access to food based on the consideration of food as a human right, commons and public good. A scheme for universal food coverage guaranteeing a daily minimum amount of food for all citizens, either as a basic food entitlement or food security floor. Public bakeries that guarantee a bread loaf per person per day. Futures trading in agricultural commodities to be banned. Food producers to be employed as civil servants to partially cover local and national state needs. Or schools meals to be a universal entitlement, sourcing food from local and organic producers and being freshly cooked everyday.

In short, to achieve a food commons regime, we need to reconsider how food is regarded by our society, either as a commodity or as a commons, and to reconstruct a narrative of food based on moral values, multiple dimensions and historical constructs. Only by reconsidering our approach to food we can design different institutions, policies and legal frameowrks that will be conducive to a fairer and more sustainable global food system.

7.2.- PEER-REVIEWED ARTICLE

Chapter 9

Transition towards a food commons regime: re-commoning food to crowd-feed the world

Jose Luis Vivero Pol[1]

> There is nothing like a dream to create the future.
> *Utopia today, flesh and bone tomorrow.* (Víctor Hugo)

Introduction

Air, water and food, the three essentials our human body requires to function, vary in terms of their public–private status. Air is still considered a commons, although its commodification has already begun, with creative accounting for emissions trading schemes and quotas essentially operating as private entitlements to pollute (Bohm, Misoczky & Moog, 2012). Water is assumed as a public good, although widely being transferred to the private domain through absolute commodification of the good itself and the state transfer of consumer supply and waste-water treatment enterprises (Franco, Mehta & Veldwisch, 2013).[2] Food, however, is largely regarded as a pure private good, although wild foods could perfectly well be considered a commons but with genetic rights now an issue.

This has not always been so, and it remains less true than one might suppose, but it does represent the dominant reality in the world today. The value of food is no longer based on its many dimensions that bring us security and health, values that are related to our foundations in human society (food as culture)

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and the way food is produced (food as a sustainable natural resource) as well as to human rights considerations based on its essential nature as fuel for the human body (so, ultimately, the right to life). Instead, these multiple dimensions are combined with and superseded by its tradable features, thus conflating value and price (understanding the former in terms of the latter).

It is certainly true that the industrialisation and commodification of food has brought humanity many important positive outcomes, such as accessibility (by lowering prices), availability (by sufficient production to feed us all) and economic efficiency (in cultivation techniques); but it has also yielded many negative externalities and unfulfilled promises, such as pervasive hunger and mounting obesity, environmental degradation, oligopolistic control of farming inputs, diversity loss, knowledge patenting and neglect of the non-economic values of food. Here, these issues are analysed and a transition path to a new food system outlined. Essentially, what I propose is a radically different food narrative and a better balanced governance system.

An iniquitous, inefficient and unsustainable food system

The industrial technology-dominated food system achieved remarkable outputs during the second half of the twentieth century in the form of massively increased food production and food access for millions of urban and rural consumers. Global crop output was tripled, yields raised and food prices lowered with the move away from traditional habits and skills to more systematically organised production methods in tandem with the introduction and extension of a wide range of agrarian and technical developments (UNEP, 2009; Bindraban & Rabbinge, 2012). This represented a huge achievement, with massive

reductions in the numbers of poorly and undernourished people in the world (FAO, IFAD & WFP, 2015). Manifestly, the increase in food production outpaced population growth, benefiting most people in the world and the poor in particular. However, this commodification of the industrial food system did not come for free, and many undesirable externalities are now evident.

The most relevant systemic fault lines in the current food system – even, that is, within its own mono-dimensional framework – may be identified as inequality, inefficiency and unsustainability within the planetary boundaries.[3] Crucially, these cannot be reversed or corrected by simply applying lip service to a system – or food regime – based on sustainable intensification that focuses on technological challenges but obscures social and power imbalances (Godfray & Garnett, 2014).

Iniquitous: many eat poorly to enable others to eat badly and cheaply

In global terms, we have a troublesome relationship with food, since so many people in so many parts of the world have food-related health issues. In all but two countries in the world, for example, significant parts of the population suffer from three common forms of malnutrition: stunting, anaemia and obesity (IFPRI, 2014). In fact, an estimated 2.3 billion people globally, fully one-third of the world's population, are either overweight or undernourished (GAIN, 2013). Even as hunger continues to be the largest single contributor to maternal and child mortality worldwide, with more than 3 million children dying every year from hunger-related causes (Black et al., 2013), obesity causes some 2.8 million deaths annually (WHO, 2012), with well over a

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billion people expected to be classified as obese by 2030 (Kelly et al., 2008). Despite years of international anti-hunger efforts and rising levels of gross national income and per capita food availability in a world that already produces enough food to adequately feed all, the number of hungry people has only been declining at a very slow pace since 2000 (FAO, IFAD & WFP, 2015).[4]

Among the painfully ironic paradoxes of the globalised industrial food system are the facts that half of those who grow 70% of the world's food are hungry (ETC Group, 2013), yet food kills the wealthy. Moreover, an ever greater share of the food supply is being diverted to livestock feeding and biofuel production, and, most shockingly of all perhaps, a third of the total global food production ends up in the garbage every year, enough to feed 600 million hungry people (FAO, 2011). Agriculture is also highly demanding of water – using 96% of world non-marine supply (de Marsily, 2007) – but it makes poor use of it; the industrial system diminishes the nutritious properties of many foods, through cold-room storage, (over-) peeling and boiling, and transformation processes (Sablani, Opara & Al-Balushi, 2006). Consequently, the overemphasis on the production of empty and cheap calories that renders obesity a growing global pandemic is set alongside highly energy inefficient food production, as we need 10 kcal to produce 1 kcal of food (Pimental & Pimental, 2008). This is not to mention profound and growing issues related to a range of ecological issues, including soil degradation and biodiversity loss.

Inefficient: oil-based food systems are nothing without state subsidies

Agronomically speaking, the industrial food system is not performing much better than did the traditional, pre-industrial

one, insofar as productivity gains have been uneven across crops and regions (Evenson & Gollin, 2003) and global increases in output have been confined to a limited range of cereal crops (rice, maize and wheat), with smaller increases in crops such as potato and soybean (Godfray et al., 2010). Increased cereal production has supported the increase in chicken and pig production, but also led to less diverse, overly meat-based diets, with a concomitant increase in the ecological footprint. It also appears that yield improvements are already reaching a plateau in the most productive areas of the world (Ray et al., 2013). Thus, many scientists and agri-food corporations are calling for a 'Greener Revolution' or 'Green Revolution 2.0' (Pingali, 2012), led by genetic engineering and urban-based production, including alternative (e.g. hydroponics) production systems.

In fact, a closer examination reveals that the industrial food system is not more efficient in material or financial terms than the more sustainable food systems (traditional or modern organic, permaculture, etc.), as it is heavily subsidised and greatly favoured by tax exemptions (e.g. through national fertiliser subsidies.[5] the EU Common Agricultural Policy[6] and the US Farm Bill[7]). The great bulk of national agricultural subsidies in OECD countries are mostly geared towards supporting the intensive use of chemical inputs and energy and helping corporations lower the prices of processed foods. Yet, and contrary to popular wisdom, alternative, organic systems are more productive, both agronomically and economically; they are more energy efficient, have a lower year-to-year variability (Smolik, Dobbs & Rickerl, 1995) and depend less on government payments (Diebel, Williams & Llewelyn, 1995). Strikingly, small and medium-sized family farms tend to have higher agricultural

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crop yields per hectare than larger farms, mainly because they manage resources and use labour more intensively (FAO, 2014).

We need to go beyond price in the market, where the major driver for agri-businesses in the mono-dimensional approach to food-as-commodity is merely to maximise profit. We need to value the multiple dimensions of food for human beings. This is highlighted by the issue of inequality and social justice, with the 1.2 billion poorest people presently accounting for just 1% of world consumption, while the billion richest consume 72% (UN, 2013).

Unsustainable: eating our planet and beyond

Since the Industrial Revolution in the latter part of the eighteenth century, humans have been altering the Earth on an unprecedented scale and at an increasing rate, radically transforming the landscape, using (up) natural resources and generating waste (Hoekstra & Wiedmann, 2014). Our human society is living beyond its means, and the current environmental effects of human activity are just not sustainable. For example, the appropriation of natural resources is currently exceeding available biocapacity by 50% (Borucke et al., 2013). Many respected researchers are warning of an apocalypse triggered by climate disruption and resource scarcity within this century (Motesharrei, Rivas & Kalnay, 2014).

On this road to perdition, food production (largely, the industrial food system) has become a major driving force pushing the environment beyond its planetary boundaries. Agriculture, as the largest user of land (Ramankutty et al., 2008), is now the dominant force behind many environmental threats, including biodiversity loss and degradation of land and freshwater, while

it is responsible for 30–35% of global greenhouse gas emissions (Foley et al., 2011). Of the two – global water and total ecological – footprints analysed in the 2014 'Living Planet' report, food systems account for 92% (WWF, 2014) and a third, respectively.[8] Human society is quickly approaching two planetary thresholds associated with unsustainable food systems: land conversion to croplands and freshwater use (Rockstrom et al., 2009). This situation will only worsen as growing water and food needs due to population growth, climate change, consumption shift towards meat-based diets and biofuel development exacerbate the already critical challenges to planet boundaries. If we extrapolate current food consumption and production trends, humanity will need three Earths by 2050 to meet demand (Clay, 2011).

The commodification of food

The conversion of goods and activities into commodities has been a dominant force transforming all societies since at least the mid-nineteenth century (Polanyi, 1944; Sraffa, 1960), a process that has led to today's dominant industrial system that fully controls international food trade and is increasingly exerting a monopoly over agricultural inputs (seeds, agro-chemicals, machinery), while both feeding and failing the world's population, and in an unsustainable manner, as indicated (above). Essentially, food has evolved into a private, mono-dimensional commodity in a global market of mass consumption. The mechanisms of enclosure, or restriction and privatisation of common resources through legislation, excessive pricing and patents, have obviously played a major role in limiting access to food as a commons, while the social construct of food as a commodity denies its non-economic attributes in favour of its tradable

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features, namely durability, external beauty and the standardisation of naturally diverse food products, leading to a neglect of nutrition-related properties of food, alongside an emphasis on cheap calories.[9] These cheap calories not only come at great cost to the environment (the sustainability issue) and human health (the obesity issue), but have also lowered prices for producers and promoted cheap rural labour, forcing small-scale farmers to flee to urban areas (Roberts, 2013). Increasingly, the result is a mass transformation of the rurality into paradoxically barren, depopulated zones of production.

Under capitalism, the value in use (a biological necessity) is highly dissociated from its value in exchange (price in the market), giving primacy to the latter over the former (McMichael, 2009). Food as a pure commodity can be speculated in by investors, modified genetically and patented by corporations, or diverted from human consumption just to maximise profit, the latest twist on this being the substitutionism of food commodities (Araghi, 2003), whereby tropical products (sugar cane, palm oil, etc.) are replaced by agro-industrial (and pharmaceutical) by-products (for high fructose corn syrup, margarine, etc.). Ultimately, industrial food systems alienate food consumers from food producers in socially disembedded food relations, and in so doing, it is argued, they damage societal well-being (disconnecting us from nature and deeply undermining a holistic sense of life). Indeed, the development of food as a pure commodity radically opposes the other dimensions, rather important for our survival, self-identity and community life: food as a basic human need to keep its vital functions (Maslow, 1943), food as a pillar of every national culture (Montanori, 2006), food as a fundamental human right that should be guaranteed to every citizen (UN,

1966) and food as a part of a wider ecological context involving sustainable production. This reduction of the food dimensions to one of a commodity explains the roots of the failure of the global food system (Zerbe, 2009). Moreover, market rules not only put prices to goods, but, in doing so, markets corrupt their original nature (Sandel, 2012). The commodification of food crowds out non-market values and the idea of food as something worth caring about.[10]

It is becoming obvious to many that the reliance on massively distorted (imperfect) market forces, industry self-regulation and public–private partnerships to improve public health and nutrition does not result in substantial evidence to support any major claim for their effectiveness in preventing hunger and obesity, let alone in reducing environmental threats (Fuchs, Kalfagianni & Havinga, 2011; Hawkes & Buse, 2011). On the contrary, transnational corporations are major drivers of the latter two of these – in the case of obesity epidemics, for example, by maximising profit from increased consumption of ultra-processed food and drink (Monteiro et al., 2011). The conventional industrialised food system, dominated by mega-corporations, is basically operating to accumulate and under-price calorie-based food resources and maximise the profit of food enterprises instead of maximising the nutrition and health benefits of food to all (Rocha, 2007; Clapp & Fuchs, 2009).

The increase in consumption of unhealthy food and drinks is occurring fastest now in poorer ('developing') countries where the food systems are highly penetrated by foreign multinationals (Stuckler et al., 2012) and the state institutions are usually not capable of controlling corporate leverage; but even in advanced countries, the only mechanisms that have clearly been shown to

prevent the harm caused by unhealthy commodities are public regulation and market intervention (Moodie et al., 2013). This means more state, not less. Governed by self-interest, markets will not provide an adequate quantity of public goods, such as health, nutrition and hunger eradication, which have enormous benefits to human beings but are non-monetised, as the positive externalities cannot be captured by private actors.

With millions of people needlessly dying prematurely each year from hunger and obesity in a world of ample food supplies, nobody can dispute the need for change. There is a clear and urgent demand for unconventional and radical perspectives to be brought into the debate to look for possible solutions and a transition towards a fairer, healthier and sustainable food system. In addressing this need, the power of food to generate a substantial critique of the neoliberal corporate and industrialised production and service system and to harness multiple and different alternative collective actions should not be underestimated (McMichael, 2000). Food is a powerful weapon for social transformation.

The historical evolution of food governance: from commons to commodity

Historically, human societies have developed different institutional arrangements at local and regional levels to produce, manage and consume food, and the major features of these have often been an unstable balance between private provision, state guarantees and collective actions based on the commons of land, water and labour force.[11] Food has certainly not always been regarded as a pure commodity devoid of other important dimensions. For millennia, indeed, food was generally cultivated in common and regarded as a sacred item in a mythological

context;[12] many societies have considered, and still consider, food as a commons, as well as the land and water and its forests and fisheries; and the consideration different civilisations have assigned to food-producing commons is rather diverse and certainly evolving.

Historical developments and present evidence

While anthropological studies have been reporting on tribal societies with essentially communal hunter-gatherer and gardening arrangements for food since the nineteenth century, historical records indicate commons-based agrarian food-production systems ranging from the early Babylonian empire (Renger, 1995) and ancient India (Gopal, 1961) to medieval Europe (Linebaugh, 2008) and early modern Japan (Brown, 2011). This historical diversity is reflected in the current world's wealth of proprietary schemes for natural resources. Even now, the private arrangements that characterise agro-industrial agriculture are not universally prevalent in large areas of the world, where subsistence, traditional and agro-ecological types of agriculture are the norm. Actually, in simple population numbers, small, traditional farmers with mixed proprietary arrangements for natural resources are greatly in the majority, with, for example, just 27 million farmers working with tractors as compared to 250 million using animal traction and over a billion working just with their hands and hand-tools.

Across the world, commons-based land and food systems are often found in relatively 'wild', depopulated territories, such as in parts of the Asian interior (e.g. in Mongolia), the hills of Borneo and the Amazon rainforest. In sub-Saharan Africa, about 500 million people still rely on food from communal land

(Kugelman & Levenstein, 2013), and tribes regard themselves as custodians of the land for future generations rather than its owners, and the land-plots are usually inalienable and legally recognised (Ike, 1984). There are well-documented examples of functioning food-producing commons in Fiji (Kingi & Kompas, 2005) and Mexico's *Ejidos* (Jones & Ward, 1998), while in countries such as Taiwan, India, Nepal and Jamaica, land ownership by ethnic minorities is also granted as common land. At the other end of the world developmental scale, in the US there are lobster fisheries (Wilson, Yan & Wilson, 2007), in the Scandinavian countries anyone can forage wild mushrooms and berries under the consuetudinary Everyman's Rights (La Mela, 2014) and the Spanish irrigated *huertas* (vegetable gardens) are a well-known and robust institution (Ostrom, 1990), while there are thousands of surviving community-owned forests and pasturelands across Europe where livestock freely range, including the *Baldios* in Portugal, crofts in Scotland, *Obste* in Romania and *Montes Vecinales en Mano Comun* in Spain. In fact, and despite centuries of encroachments, misappropriations and legal privatisations, millions of hectares of common land have survived in Europe.[13]

Historical and modern studies have demonstrated that the traditional food-producing common-pool resources systems were, and still are, efficient in terms of resource management (Ostrom, 1990; De Moor, Shaw-Taylor & Warde, 2002).[14] Common lands were pivotal for small farming agriculture everywhere in Europe throughout history, as they were sources of organic manure, livestock feedstock and pastures, cereals (mostly wheat and rye in temporary fields), medicinal plants and wood. Peasants pooled their individual holdings into open fields that were jointly cultivated, and common pastures were used to

graze their animals. In Fiji, the proprietary regime in commons, organised under traditional practices, seems to improve farm productivity and efficiency as compared to modern farming enterprises (Kingi & Kompas, 2005). Many Latin American countries, such as Brazil, Honduras, Venezuela and Nicaragua, have formally recognised the communal rights of indigenous communities to their traditional territories (Robson & Lichtenstein, 2013), with common lands preserving habitats better than privately owned ones (Ortega-Huerta & Kral, 2007). Likewise, in Asia, over 10,000 villages in Vietnam are managing more than 2 million hectares of community forests with good results (Marschke at al., 2012), while common-pool resources, covering 25.6% of India's territory, are estimated to contribute 20–40% of household annual incomes nationwide (Chopra & Gulati, 2001). The agricultural and related utility of commons to human societies has enabled them to survive up to the present day, despite the waves of enclosure.

The enclosure of the commons

Enclosure (originally 'inclosure') is the act of transferring resources from the commons to purely private ownership (Linebaugh, 2008) or the decrease of accessibility of a particular resource due to privatisation, transferring common properties 'from the many to the few' (Benkler, 2006). The commons-based food-producing systems in Europe started to be dismantled soon after the end of the medieval age, when royal and feudal landowners began enclosing common lands. Through legal and political manoeuvres, wealthy landowners marked and hedged off sections of the commons for their own profits, impoverishing many villagers and ultimately destroying their communitarian

way of life in what Polanyi (1944) dubbed 'a revolution of the rich against the poor'.

The latter part of the eighteenth and early nineteenth centuries saw a second wave of enclosures. During this period, of course, enclosure was also globalised, as a feature of the colonising activities of the maritime empires of Western Europe claiming native lands in the Americas, Africa, southern Asia and Australasia. The processes undoing the communal regime continued through the late nineteenth and the twentieth centuries, relentlessly pursued by the state and wealthy private owners realising the value of land for the production of food and other goods (cotton, sugar, rubber, etc.). Internationally, it was first promoted by imperial trading companies supplying to mother countries and then continued in the post-colonial context; in North America, it took the form of the barbed-wire fencing of open range, while in the Soviet Union, land was 'consolidated' in the collectivisation drive of the 1930s; generally, it was propelled by the need for rural areas to supply the growing urban populations and later justified by the idea that communal property was an obstacle to economic growth and did not guarantee conservation of resources (Serrano-Alvarez, 2014). Finally, over the last thirty years, common lands have suffered a third, global wave of commodification and enclosure, 'land-grabbing' spurred by the dominant neoliberal doctrine and competition for non-renewable natural resources and supported now by the evolutionary theory of land rights (Barnes & Child, 2012).[15] Community-owned lands are presently under huge pressure from voracious states and profit-seeking investment funds, backed initially by the IMF and World Bank in the framing of structural adjustment programmes and lately by drivers such as growing populations, shifting diets (more

meat-based), water and soil constraints, climate vagrancies and long-term investments in natural resources with increasing demand (Cotula, 2012).

The third wave of privatisation of food-producing commons systems was theoretically and ideologically grounded on Demsetz's (1967) narrative that considers rising populations to drive property values and communal resources upward, leading to increased demand and disputes over natural resources, which can only be solved through government-led property formalisation. Using this theory, Alchian and Demsetz (1973) stated that the increase in the value of a communal resource will inevitably lead to the enclosure of the commons; and Hardin (1968) wrote his famous tragedy. However, with a varied set of successful case studies of common-pool resources, Ostrom (1990) was able to demonstrate the incorrect assumptions of this approach, both theoretical and practical.

The enclosure and commodification of goods owned by no one is expanded and deepened by capitalism's insatiable appetite through the modern mechanisms of copyrights, permits, restrictive legislation and taxes on specific activities (Lucchi, 2013). For example, plant genetic resources in the form of seeds used to be public goods until scientific and technological progress enabled us to synthesise DNA, modify living organisms and reconstruct genes in the laboratory; now, private enterprises are granted copyright licences for the genes and seeds they develop. Enclosure of the commons can be driven by protection rather than profit-seeking, such as the quotas that are set to address the problem of declining open-sea fish stocks due to overexploitation (Young, 2003) or the licences and seasonal permits that regulate fishing from the seashore and

collecting mushrooms in the forest in many areas and certain seasons. Such regulation can also lead to the development of new markets for the services common-pool resources provide, as in the case of polluting air emissions.

Re-commoning food and the food commons regime: theoretical underpinnings

In this scenario, a re-commoning of food would certainly open up the prospect of a transition towards a new food regime in which the several food dimensions are properly valued and primacy rests in its absolute need for human beings. But in order to move in this direction, the very foundations of how economics and social sciences perceive foods and foodstuff have to be reassessed; first, food excludability and rivalry would have to be contested. Although foods, as single items or classes, may be rivals, this need not be the case for the category of food as a whole in a condition of plenty, where there is, in fact, enough for all. Food, as a renewable resource, can be unlimited, provided its production matches global consumption. And food certainly ought not to be an excludable good to anyone. The commodification of natural resources essential for human beings can be reversed. Moving from possibility to prescription, a re-commoning of food is argued for here as an essential paradigm shift. It leads us towards a new regime, which could be called the food commons.

The evolution of different food regimes

A food regime is a rule-governed structure of food production and consumption on a world scale, with food regime theory – initially formulated by Friedmann (1987) and further expanded by Friedmann and McMichael (1989) and McMichael (2009)

– standing as a historical and sociological approach aimed at accounting for recent past and present global food systems. This theoretical framework critically analyses agricultural modernisation, underlining the pivotal role of food in the global political economy and describing the main features of stable food regimes and their fault lines, crises and transitions. The regimes approach also considers shifting balances of power among states and private corporations and NGOS, along with the rules and institutions that govern the food system and permit capital accumulation. This type of analysis depicts food as a source of power and domination, a power that lies in its material and symbolic functions linking nature, human survival, health, culture and livelihood. Among the variables that define food regimes, one may mention the role of food in capital accumulation, where and how food is produced and by whom, major patterns of food flows and control of food production.

Implicit in the historical narrative of de-commoning, three major food regimes have been identified, namely the UK-centred colonial-diasporic regime (1870–1930s), the US-centred mercantile-industrial regime (1950s–70s) and the global corporate regime (1980s–2000s), leaving definition of the situation nowadays open, as either the final stage of the corporate regime or a troublesome transition towards something new. The UK-centred colonial-diasporic regime, defined by food imports from settler and tropical colonies to provision emerging industrialisation in the UK and Europe, developed mono-cultures in tropical colonies and national agricultural systems in settler colonies. The US-centred mercantile-industrial regime, during the post-war reconstruction and Cold War, had export subsidies and US food aid as the

international mechanism to deter expansion of communism and extend industrialisation in the Global South, when agriculture became more specialised, industrialised (longer food chains) and commodified (detached from place of origin and non-commercial values), the term 'agribusiness' being coined at Harvard University in the mid-1950s. This regime was also characterised by the technology-driven Green Revolution, land reform schemes to fully privatise community-owned land-plots and the dismantling of Global South diverse agricultures for their transformation into mono-crop agro-exporting systems, the development of processed durable foods and the anathematising of food self-sufficiency.

Now the global corporate-environmental (neoliberal) regime defines a set of rules institutionalising corporate power in the world food system (Pechlaner & Otero, 2010), deepening the commodification of food by radically undermining its non-monetary dimensions (food as a human need, a human right and a cultural determinant) and developing its tradable features through the transnational financialisation of food expressed in its transformation (for fuel and animal feeds) and substitutionism (food providing foodstuffs) and the effects of international capital (e.g. supply/demand controls through futures markets). Other pertinent features of this regime include the supermarket revolution and the vertical expansion of retail corporations into production, corporate oligopolies that control the major share of food-producing inputs (seeds, agrochemicals, tractors, etc.) and privatisation of agricultural research and enclosure of food-related knowledge commons by intellectual proprietary rights (patents and lawsuits) – the latter a modernist narrative that sees small-scale farmers and peasants

as residuals in furthering commodification, homogenising and decontextualising the 'food from nowhere' and extending yet greater WTO-style agricultural liberalisation.

This regime, however, has been attenuated by strong, citizen-led, environmental and justice concerns that have advocated for state-regulated governance of corporative activities within the domains of animal welfare, fair trade, organic and healthy products, and land-grabbing and conversion of forestry into arable land and partially restrained absolute commodification of natural resources (e.g. endangered species as luxury goods, air as carbon trade schemes).[16] 'Sustainable Intensification' and 'Green Growth' are the new narratives developed by the duopolistic neoliberal state corporations to respond to those concerns (OECD, 2013).

From food sovereignty to a food commons regime

Transitions between regimes stem from internal strains, claims by marginalised groups, power imbalances, outrageous capital accumulation and contradictory relations resulting in crisis and transition towards a successor regime (Le Heron & Lewis, 2009). Currently, the corporate food regime (industrial food system) is coming under increasing scrutiny by aware citizens, combatant grassroots organisations, concerned governments and small-scale stakeholders in the food chain as the major fault lines of inequality, inefficiency and unsustainability become ever more evident. Within this apparently and at least potentially transitional framework, characterised by experimentation, tension and contestation (Burch & Lawrence, 2009), Wittman (2011) has recently posited food sovereignty as an alternative paradigm, the driver of change that is challenging the corporate food regime

with the aim of replacing it with a new one, provisionally named the food sovereignty regime.

Although one may be sympathetic to the sociological critique of the corporate regime, however, one cannot ignore the fact that the highly politicised, counter-hegemonic food sovereignty paradigm has only managed to draw a small number of countries to its side (Ecuador, Bolivia, Nicaragua and Mali). Originating from rural organisations and food producers (peasants, small-scale farmers, indigenous peoples, fishermen), this movement has not yet fine-tuned legitimate concerns for healthy and local food, return to nature and less polluting forms of food consumption by urban citizens and food consumers. Indeed, up to 2013, the leaders of the food sovereignty movement were rather oblivious to the range of recent academic and urban developments that were gaining momentum in beginning to shape urban and national policies in several countries (below). This is gradually changing now. The worldwide Via Campesina movement, from which the idea of food sovereignty originated, is now becoming appreciative of the strategic importance of urban-based alternative initiatives.[17] This is important, since the predominantly rural social movement of food producers from the Global South and the predominantly urban alternative food networks of food consumers and producers from the North do need to combine if some sort of grand coalition of the counter-hegemonic movement is to coalesce as the key development in the transition towards what could be more appropriately termed a food commons regime.

The food commons regime, as the name implies, would fundamentally rest on the idea of food as a commons, which means revalorising the different food dimensions that are relevant to

human beings (value in use) – food as a natural resource, human right and cultural determinant – and thus, of course, reducing the tradable dimension (value in exchange) that has rendered it a mere commodity. This regime would inform an essentially democratic food system based on sustainable agricultural practices (agro-ecology) and open-source knowledge (creative commons licences) through the assumption of relevant knowledge (recipes, agrarian practices, public research, etc.), material items (seeds, fish stocks, etc.) and abstract entities (transboundary food safety regulations, public nutrition, etc.) as a global commons.

The food commons regime will entail a return move from corporate–state control to a collective, polycentric and reflexive governance, a shift of power from a state–private sector duopoly in food production, transport and distribution to a tricentric governance system, where the third pillar would be the self-regulated, civic, collective actions for food that are emerging all over the world. Presently developing a narrative of valuing food as an essential, natural good, produced and consumed with others and thus a bonding tie in human cultures, these alternative food initiatives will be the organisational drivers of change. In short, a food commons regime will be governed in a polycentric manner by food citizens (Gomez-Benito & Lozano, 2014) that develop food democracies (De Schutter, 2014) which value the different dimensions of food (Vivero Pol, 2013).

Crowdsourcing the transition to food as a commons

At present, the globalised world appears to be at the crossroads of two food transition streams: the well-advanced nutritional transition from vegetable- to meat-dominated diets (Popkin,

2003) and the incipient food transition from oil-dependent industrial agriculture to more environmentally friendly and less resource-intense food systems. This nascent stream can evolve towards re-localised, organic food systems, spurred by non-monetised food dimensions and alternative food movements (Heinberg & Bomford, 2009) or to deepen the globalised, profit-driven path of the industrial food system supported by science and technology developments under the 'sustainable intensification' or 'green growth' paradigms (UN, 2012) (e.g. renewable energy-based hydroponics in city towers owned by retail corporations). The dominant path that emerges from these transitions will determine the new food paradigm.

The proposal here is for a transition towards a food commons regime based on an adequate valuation of all the dimensions of food. This transition path approaches food as a commons, contrary to the history of previous transitions, in which food was first privatised and then commodified. Although some authors have already suggested this (Ausin, 2010), none of the major analyses produced in the last decades on the fault lines of the global food system and the very existence of hunger has ever questioned the nature of food as a private good (World Bank, 2008; UK Government, 2011).[18] Following the mainstream rationality, although the most pressing issue is the lack of food access, this only becomes such an intractable problem due to the assumed private nature of food and its absolute excludability. While the present proposal may seem to be going against the tide of history, that might be regarded rather as a strength than a weakness; as Einstein noted, problems cannot be solved with the same mind-set that created them. And in fact, the consideration of food as a commons is already in play

and increasing, with (a) food-related elements being considered as global or national commons (or global public goods, as they are usually termed) in the context of civil struggles for re-commoning, and (b) an evolving governance of the food system being constructed from bottom-up grassroots urban and rural initiatives.[19] These do, in fact, all point in the same direction, towards a very possible future.

Material and non-material food-related elements already considered as commons

There is a need to reclaim a discourse and a rationale of the commons to be applied to food at global, regional/national and local levels. The good news is that policymakers and academics are already moving from the stringent economic definition of public/private goods to a more fluid idea of global public goods, or commons. Regarding terminology here, the former, 'public goods', is more usually assumed in the hegemonic discourse of major institutions, while the latter 'commons' tends more to be taken up by alternative activist advocates, with both variously appended by 'global' or 'national'.

The important thing is that these goods/commons, however named, are available worldwide, essential for all human beings, regarded as things that need not and should not be treated as excludable and rival, and whose production and distribution cannot be governed exclusively by one state. Such goods need to be governed in a common manner as they are beneficial for all (Kaul & Mendoza, 2003), even if not everybody is contributing to or paying for their provision. In addition to the material commons and related practices already considered, the following represents a (non-exhaustive) list and commentary of

aspects of food that are currently considered as global public goods or global commons.

Edible plants and animals produced by nature

Since nature's unenclosed territories (e.g. Antarctica, the deep ocean) are largely assumed as global commons, the natural resources in these are commons as well (including, therefore, fish stocks and marine mammals) (Christy & Scott, 1965; Bene, Phillips & Allison, 2011). Although there are complicating factors depending on national and international proprietary rights schemes, the basic assumption remains in place for fish stocks in coastal areas, as well as for wild foods produced in urban and rural areas.

Genetic resources for food and agriculture

Agro-biodiversity represents a continuum of wild-to-domesticated diversity that is crucial to people's livelihood and well-being and is therefore considered as a global commons (Halewood, Lopez-Noriega & Louafi, 2013). Some authors and many activists and producers demand genetic resources to be patent-free to enable innovation, free exchange and peer-to-peer breeding (Kloppenburg, 2010). Seed exchange schemes – to some extent a phenomenon growing in response to private development programmes and enclosure attempts – are considered networked-knowledge goods with non-exclusive access and use conditions, produced and consumed by communities.[20]

Traditional agricultural knowledge

A commons-based patent-free knowledge contributes to global food security by upscaling and networking grassroots

innovations for sustainable and low cost food production and distribution (Brush, 2005). There is widespread evidence of a growing appreciation of the value of this indigenous traditional knowledge to adapt to climate change (Altieri & Nicholls, 2013) and nurture alternative visions of development (Pretty, Toulmin & Williams, 2011)

Modern, science-based agricultural knowledge produced by public institutions

Universities, national agricultural research institutes and the Consultative Group for International Agricultural Research (CGIAR), UN and EU centres all produce public science, widely considered as a global commons (Gardner & Lesser, 2003). Although there is pressure on the public production of information by corporate interests, research into something as basic as food is not popularly challenged as a common good. Research funds should be directed towards sustainable practices and agro-ecology knowledge developed by those universities and research centres instead of further subsidising industrial agriculture.

Cuisine, recipes and national gastronomy

Food, cooking and eating habits are inherently part of our culture; gastronomy is regarded as a creative accomplishment of humankind, like music or architecture. Recipes are an excellent example of commons in action, and creativity and innovation are still dominant in this copyright-free domain of human activity (Barrere, Bonnard & Chossat, 2012). The culinary and convivial commons dimension of food has received little systematic attention from the food sovereignty movements (Edelman, 2014),

although it is being properly valued by alternative food networks (Sumner, Mair & Nelson, 2010).

Food safety

Epidemic disease knowledge and control mechanisms are widely considered as global public goods, as zoonotic pandemics are public bads with no borders (Richards, Nganje & Acharya, 2009). Issues in this domain are already governed through a tricentric system of private sector self-regulating efforts, governmental legal frameworks and international institutional innovations, such as the *Codex Alimentarius*.

Nutrition, including hunger and obesity imbalances

There is a growing consensus that health and good nutrition can be considered as global public goods with global food security recently joining that debate in international forums (Page, 2013). Although this political approach is still at an early stage of development, far from established as a general understanding and certainly without a negotiated global statement as yet, it is an idea that is taking hold, as witness FAO Director General Graziano da Silva in the closing remarks of the International Conference of Nutrition, November 2014.[21]

Food price stability

Extreme food price fluctuations in global and national markets, such as the world experienced in 2008 and 2011, are a public bad that benefits none but a few traders and brokers. The basic fact that those acting inside the global food market have no incentive to supply the good or avoid the bad is increasingly observed, and the need for concerted, state-based action to provide such

a global public good as food price stability is gaining traction (Timmer, 2011).

It goes without saying that all governments have a deep concern about food issues, which is why subsidised food production and consumption policies are the norm all over the world (see above, on subsidies to industrial agriculture) and food-related civil unrest is as much a subject of political concern nowadays as it ever has been (Holt-Gimenez & Patel, 2009). For all governments, food is a very particular good as it is an essential need and thus highly regulated and heavily subsidised. Indefensibly, the political discourse of the OECD and WTO calls for a dismantling of national trade barriers and subsidised agriculture in developing countries while developed nations maintain massively subsidised food systems at home. Yet this hypocritical approach merely reflects the incoherence between the dominant narrative of the neoliberal model (food as a pure commodity) and the *realpolitik* most governments pursue (food as a de facto impure public good). Since food is strategically governed, massively supported and strongly protected by public institutions, provided by collective actions in thousands of traditional and post-industrial collective arrangements (as listed above, with others like farmers' markets, various types of food cooperatives, producer–consumer associations, etc.) and yet largely distributed by market rules, why should we not consider it a commons or public good, as we do with education and health? Shifting the dominant discourse on food and food system governance from the private sphere to the commons arena would open up a whole new world of economic, political and societal innovations

The tricentric governance of the food system as the transition path

Local transitions towards the organisation of local, sustainable food production and consumption are taking place today across the world.[22] Directed on principles along the lines of Elinor Ostrom's (1990, 2009) polycentric governance, food is being produced, consumed and distributed by agreements and initiatives formed by state institutions, private producers and companies, together with self-organised groups under self-negotiated rules that tend to have a commoning function by enabling access and promoting food in all its dimensions through a multiplicity of open structures and peer-to-peer practices aimed at sharing and co-producing food-related knowledge and items.[23] The combined failure of state fundamentalism (in 1989) and so-called 'free market' ideology (in 2008), coupled with the emergence of these practices of the commons, has put this tricentric mode of governance back on the agenda. The further development of tricentric governance will comprise (combinations of) civic collective actions for food, the state and private enterprise.

(a) *Civic collective actions for food* (alternative food networks, AFNs) are generally **undertaken at local level to begin with and aim to** preserve and regenerate the commons that are important for the community (food as a common good). There have been two streams of civic collective actions for food running in parallel: the challenging innovations taking place in rural areas, led by small-scale, close-to-nature food producers, increasingly brought together under the food sovereignty umbrella, and the AFNs exploding in urban and peri-urban areas, led on the one

hand by concerned food consumers who want to reduce their food footprint, produce (some of) their own food, improve the quality of their diets and free themselves from corporate-retail control, and on the other by the urban poor and migrants in the developing world motivated by a combination of economic necessity and a desire to maintain their old food sovereignty and links to land. Over the last twenty years, these transition paths have been growing in parallel but disconnected ways, divided by geographical and social boundaries. But the maturity of their technical and political proposals and reconstruction of *rurban* connections[24] have paved the way for a convergence of interests, goals and struggles. Large-scale societal change requires broad, cross-sector coordination. It is to be expected that the food sovereignty movement and the AFNs will continue (and need) to grow together, beyond individual organisations, to knit a new (more finely meshed and wider) food web capable of confronting the industrial food system for the common good.

(b) *The state* has as its main goals the maximisation of the well-being of its citizens and will need to provide an enabling framework for the commons (food as a public good). The transition towards a food commons regime will need a different kind of state, with different duties and skills to steer that transition. The desirable functions are shaped by partnering and innovation rather than command-and-control via policies, subsidies, regulations and the use of force. This enabling state would be in line with Karl Polanyi's (1944) theory of its role as shaper and creator of markets and facilitator for civic collective actions to flourish. This state has been called partner state (Kostakis & Bauwens, 2014) and entrepreneurial state (Mazzucato, 2013).

The partner state has public authorities as playing a sustaining role (enabling and empowering) in the direct creation by civil society of common value for the common good. Unlike the Leviathan paradigm of top-down enforcement, this type of state sustains and promotes commons-based peer-to-peer production. Amongst the duties of the partner state, Silke Helfrich mentioned the prevention of enclosures, triggering of the production/construction of new commons, co-management of complex resource systems that are not limited to local boundaries or specific communities, oversight of rules and charts, care for the commons (as mediator or judge) and initiator or provider of incentives and enabling legal frameworks for commoners governing their commons.[25] The entrepreneurial state, meanwhile, fosters and funds social and technical innovations that benefit humanity as public ideas that shape markets (such as, in recent years, the Internet, Wi-Fi, GPS), funding the scaling up of sustainable consumption (like the Big Lottery Fund supporting innovative community food enterprises that are driving a sustainable food transition in the UK)[26] and developing open material and non-material resources (knowledge) for the common good of human societies. Public authorities will need to play a leading role in support of existing commons and the creation of new commons for their societal value.

(c) *The private sector* presents a wide array of entrepreneurial institutions, encompassing family farming with just a few employees (FAO, 2014), for-profit social enterprises engaged in commercial activities for the common good with limited dividend distribution (Defourny & Nyssens, 2006) and transnational, 'too-big-to-fail' corporations that exert near-monopolistic

hegemony on large segments of the global food supply chain (van der Ploeg, 2010). The latter are owned by unknown (or difficult to track) shareholders whose main goal is primarily geared to maximise their (short-term) dividends rather than equitably produce and distribute sufficient, healthy and culturally appropriate food to people everywhere.[27] During the second half of the twentieth century, the transnational food corporations were winning market share and dominance in the food chain, although space, customers and influence is being regained, spurred by consumer attitudes towards corporate foods and the sufficiently competitive (including attractive) entrepreneurial features of family farming (which still feeds 70% of the world's population) and other, more socially embedded forms of production, such as social enterprises and cooperatives.[28] The challenge for the private sector, therefore, is to adjust direction, to be driven by a different ethos while making profit – keeping, indeed, an entrepreneurial spirit, but also focusing much more on social aims and satisfying needs. Or, put the other way around, the private sector role within this tricentric governance will operate primarily to satisfy the food needs unmet by collective actions and state guarantees, and the market will be seen as a means towards an end (well-being, happiness, social good) with a primacy of labour and natural resources over capital. Thus, this food commons transition does not rule out markets as one of several mechanisms for food distribution, but it does reject market hegemony over our food supplies since other sources are available, a rejection that will follow from a popular programme for provisioning of and through the food commons (popular in the sense that it must be democratically based on a generalised public perception of its goodness and efficacy).

According to the typology developed by Harvey et al. (2001), food can be provided by four types of agencies, based on different principles: market (based on demand–supply market rules), state (based on citizen rights or entitlements), communal (based on reciprocal obligations and norms) and domestic (do-it-yourself or household provision based on family obligations). By encouraging (politically and financially) the development of non-market modes of food provisioning (state and/or communal) and (similarly, in parallel) limiting the influence of market provisioning, we can rebuild a more balanced tricentric food system (Boulanger, 2010). In plain words, governments will support private initiatives whose driving force is not shareholder value maximisation (e.g. family farming, food cooperatives, producer–consumer associations), while citizen/consumers will exert their consumer sovereignty by prioritising food with a meaning (local, organic, fair, healthy) beyond the purely financial (not just the cheapest). The private sector will also, or primarily (depending on the details of any particular tricentric mix), trade undersupplied, specialised and gourmet foodstuffs (food as a private good) and it may also rent commonly owned natural resources[29] to produce food for the market. Enterprises will further emerge around the commons that create added value to operate in the marketplace, but should probably also support the maintenance and expansion of the commons they rely on.

The transition period for this regime and paradigm shift should be expected to last for several decades, a period when we will witness a range of evolving hybrid management systems for food similar to those already working for universal health/education systems. The era of a homogenised, one-size-fits-all global food system will be replaced by a diversified network of

regional food-sheds designed to meet local needs and put culture and values back into our food system (The Food Commons, 2011). The big food corporations will not, of course, meekly allow their power to be diminished, and they will, inevitably, fight back by keeping on doing what has enabled them to reach such a dominant position today: legally (and illegally) lobbying governments to lower corporate tax rates and raise business subsidies, mitigate restrictive legal frameworks (related to GMO labelling, TV food advertising, local seed landraces, etc.) and generally using the various powers at their disposal to counter alternative food networks and food-producing systems. To emphasise, the confrontation will continue over decades, basically paralleling and in some ways reversing, in fact, the industrialisation and commodification path that led us to this point.

Appropriate combinations of self-regulated collective actions, governmental rules and incentives, and private sector entrepreneurship should yield good results for food producers, consumers, the environment and society in general. The tricentric governance schemes will be initiated at both local and regional scales, as they imply a different way of organising the territory: smaller bio-regions with stronger local authorities, community-based civic collective actions and nested markets to supply unmet needs, supported by a partner and also an entrepreneurial state with a better balance of command-and-control measures and reflexive governance tools. Regarding socioeconomic and environmental sustainability, the governance of food as a commons will rest on three premises: (a) the bonds and multidimensional value systems of the food-producing communities, (b) the tricentric governance mechanisms steered by partner states that regulate the food production, distribution and

consumption, and (c) the sustainability of the food-producing systems to maintain food footprints within ecological boundaries and to produce good food economically and efficiently.

Concrete proposals for re-commoning the future

In the developmental process of re-commoning food, the initial transition phase should witness greater levels of public sector involvement. States have a vital role to play, as throughout history (De Moor, 2008), by enabling legal and financial frameworks for collective actions to maximise the common interest (e.g. taxing and incentive schemes, public subsidies, relatively relaxed regulations for collective actions). The state must be seen as a funding and operational instrument to achieve society's well-being, including food security. However, the leading role of the state should gradually be shifted to self-initiated collective actions by producers and consumers, as the public provision of food should not surpass the net benefits yielded by the self-organised and socially negotiated food networks (Bollier, 2003). This will be crucial in order to avoid the pitfalls of the old-style socialist command economies. Therefore, there should be a devolutionary emphasis further enabling and promoting local organisation, agents and agencies (local governments, local entrepreneurs and local self-organised communities).

Second, if food is to be considered a commons, the legal, economic and political implications will go far beyond the territories of the hungry, as the food system governance will bring (further) extra-territorial obligations (Kent, 2008), as pertaining to the global nature of this common good. Until now, advocacy for anti-hunger measures has been based on demonstrating the economic and political impacts that hunger imposes on human

societies (Grantham-McGregor et al., 2007) or highlighting the links between food insecurity, social unrest and productivity losses (Messner & Cohen, 2008); alternative, non-economic arguments, such as moral obligation, public health considerations, social cohesion and human rights approaches have largely been neglected (Sidel, 1997; Pinstrup-Andersen, 2007). Considering food as a commons will provide the rationale underpinning these non-economic arguments.

Therefore, food will be kept out of trade agreements dealing with pure private goods (Rosset, 2006), and there will thus be a need to establish instead a transnational commons-based governing system for production, distribution and access to food, such as the agreements proposed for climate change (Griggs et al., 2013), future generations (Gardiner, 2014) and universal health coverage (Gostin & Friedman, 2013). This will pave the way for more binding legal frameworks to fight hunger (MacMillan & Vivero Pol, 2011) and guarantee the right to food for all, as well as reinforce cosmopolitan global policies (Held, 2009) and fraternal ethics (Gonthier, 2000). A scheme for universal food coverage[30] would materialise the new narrative, guaranteeing a daily minimum amount of food for all citizens (HLPE, 2012) and thereby protecting the only human right declared as fundamental in the International Covenant on Economic, Social and Cultural Rights (ICESCR): freedom from hunger. The food coverage will probably need to be implemented as a basic food entitlement (van Parijs, 2005) or a food security floor, similar to the social protection floor proposed by Deacon (2012). As an immediate mechanism, every state should guarantee the minimum wage as at least equal to the value of the food basket.

There will be legal and ethical grounds for banning futures trading in agricultural commodities, as speculation on food has a major impact on international and domestic prices and only benefits speculators. Considering food as a commons will prioritise the use of food for human consumption, and thus limit non-consumption uses. Additionally, it will serve to backstop the narrative to reverse the excessive patenting of life, helping to apply the principles of free software to the food and nutrition security domain. The patents-based agricultural sector appears to be retarding or even deterring the scaling up of agricultural and nutritional innovations (Boldrin & Levine, 2013), while the freedom to copy positively promotes creativity, as can be seen, for example, in the fashion industry and the computer world (Raustiala & Sprigman, 2012). Millions of people innovating with locally adapted patent-free technologies have a far greater capacity to find adaptive and appropriate solutions to the global food challenge than a few thousand scientists in expensive laboratories and research centres (Benkler, 2006).

Conclusion: crowd-feeding the world with meaningful food

This text posits that a fairer and more sustainable food system that takes food as a commons will revalorise its non-monetary dimensions (as an essential resource, human right, cultural item and tradable asset) as against the dominant industrial food system's mono-dimensional approach to food as a commodity. With the global and local food production and distribution systems no longer exclusively governed by market rules, institutional arrangements based on collective actions, appropriate legal collective entitlements, adequate funding and political

support will also be given due consideration by politicians and academics. Self-regulated collective actions for food will represent the third pillar of the governance of the evolving food system. The state–market duopoly in food provision will need to re-accommodate this mounting force of citizen actions to reclaim food as a commons. Food can and must be shared, given for free, guaranteed by the state, cultivated by many and also traded in the market. The world cannot be fed by profit-seeking corporations treating food as a commodity, as we know now. We all need to be involved in food governance; the world should be crowd-fed by billions of small producers that are also consumers.

Food will be better governed by collective actions than by the rules of supply and demand. Unlike the market, the food commons are about cooperation, sharing, stewardship, equity, self-production, sustainability, collectiveness, embeddedness and direct democracy from local to global. Crucially, they involve civic collective actions for food built upon civic engagement, food conviviality, reducing consumption of ultra-processed foods and increasing seasonal and local products. This invokes a radical paradigm shift from individual competitiveness as the engine of progress via endless growth towards collective cooperation as the driver of happiness and the common good. The inherent sociability of *Homo sapiens* (Fiske, 1991) will enable the *Homo cooperans* to substitute the *Homo economicus* when dealing with our natural essentials.[31]

The de-commodification of food will imply a delinking of commodities and well-being, accepting free food schemes as part of the welfare state and increasing the proportion of goods consumed and services utilised outside both the formal market and the public (state) sphere. The re-commoning of food will

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open up the transition towards a new food regime in which primacy rests on the absolute needs of human beings and the different dimensions of food are properly valued. This might be termed a food commons regime. It is a food regime for which the world is now eminently ready.

The institutional arrangements that govern local food systems and people's capacity for collective action are essential agencies of any reconfiguration of the global food system to render it more sustainable and fairer. Finding the adequate balance between the tricentric institutional setup envisaged in the programme for a food commons regime as sketched here will be one of the major challenges for humankind to address in the coming century. We need to develop a food system that, first, provides for sustainable nutrition for all and, second, provides meaning, and not just utility, to food production, trading and consumption (Anderson, 2004). To achieve such a food system, we need to reconsider how food is regarded by our society, not merely or fundamentally as a privatised commodity but as a common good.

Notes

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2 The denationalisation of water provision services has become highly contested in many cities, such as Paris, Budapest, Jakarta and Dar el Salaam; see http://www.remunicipalisation.org; http://www.world-psi.org/sites/default/files/documents/research/dh-remunicipalisation_presentation-ppt.pdf

3 Planetary boundaries: thresholds in Earth-system variables that, if traversed, could generate unacceptable change in the biophysical processes of the world's natural environments (Rockstrom et al., 2009).

4 Malnutrition leads to the squandering of 11% of GNP, but just 1% of total overseas development assistance goes to nutrition programmes (IFPRI, 2014).

5 See http://www.voanews.com/content/fertilizer-subsidy-costs-could-outweigh-benefits/1693403.html

6 See EU (2012); also http://ec.europa.eu/agriculture/statistics/factsheets/pdf/eu_en.pdf

7 See http://capreform.eu/the-us-farm-bill-lessons-for-cap-reform/

8 The latter is an estimate made by the author based on data from the Global Footprint Network, including footprints of croplands, grazing lands and fishing grounds. http://www.footprintnetwork.org

9 Cheap calories: low-cost sources of dietary energy such as refined grains, added sugars and fats, which, inexpensive and tasty, together with salt form the basis of ultra-processed industrial food; the more nutrient-dense lean meats, fish, fresh vegetables and fruit are generally more costly because they are not so highly subsidised (Drewnowski & Darmon, 2005).

10 E.g. recipes associated with some types of food, the conviviality of cropping, cooking or eating together, the local names of forgotten varieties and dishes or the traditional moral economy of food production and distribution, materialised in the ancient and now proscribed practices of gleaning or famine thefts.

11 Within these three categories, of course, a wide range of different rights and duties can be identified, related to access, withdrawal, management, exclusion and alienation, being the result of complex societal arrangements by different human groups (Schlager & Ostrom, 1992).

12 Many types of food are still endowed with sacred beliefs (quinoa was sacred for the Peruvian Incas, cows are sacred and

inedible for Hindus, etc.) and their production and distribution thus governed by non-market rules.

13 Mostly used for grazing, common lands still cover 9% of the surface of France (Vivier, 2002), for example, more than 10% in Switzerland, 4.2% in Spain (Lana-Berasain & Iriarte-Goni, 2015) and 4% in England and Wales. http://www.nationalarchives.gov.uk/help-with-your-research/research-guides/common-lands/; http://ec.europa.eu/eurostat/statistics-explained/index.php/Farm_structure_survey_%E2%80%93_common_land; http://webarchive.nationalarchives.gov.uk/20130822084033http://www.defra.gov.uk/wildlife-countryside/protected-areas/common-land/about.htm

14 The same can be said of community-managed forests, worldwide (Porter-Bolland et al., 2012).

15 There are currently 1,550 million hectares of cultivated land, a resource that is becoming increasingly scarce (Lambin et al., 2013).

16 Re carbon trading: NGOs such as Carbon Trade Watch, Carbon Market Watch and Redd Monitor are advocating against the EU Emissions Trading Scheme. See http://www.carbontradewatch.org, http://carbonmarketwatch.orgwww.redd-monitor.org

17 E.g. see the final Declaration of La Via Campesina during the World Social Forum (Tunisia, April 2013). At http://www.viacampesina.org/en/index.php/actions-and-events-mainmenu-26/world-social-forum-mainmenu-34/1405-to-reclaim-our-future-we-must-change-the-present-our-proposal-for-changing-the-system-and-not-the-climate

18 This is evident in the global food security policy documents 'MDG and WFS Plans of Action', the 'CFS Global Strategic Framework for Food Security and Nutrition 2012', the 'G-8 New Alliance for Food Security and Nutrition 2012', the 'G-20 L'Aquila Food Security Initiative', 'The G-20 Action Plan on Food Price Volatility And Agriculture 2012' and the 'World Economic Forum New Vision for Agriculture' (see Vivero Pol, 2013).

19 Although not yet acknowledging themselves as part of the same movement, grassroots collective-based initiatives related to, e.g., degrowth, food sovereignty, commoners, peer-to-peer, veggies, *buen*

vivir, happiness index, open knowledge, occupy and indignados are building a new way of producing, transforming and consuming food.

20 See, e.g., the Open Source Seed Initiative, recently launched at the University of Wisconsin-Madison. http://www.opensourceseedinitiative.org/about/

21 http://www.fao.org/about/meetings/icn2/friday-21-november/en/

22 E.g. food swaps in Australia, food growing and free harvest in Belgium, food gleaning in the UK, food policy councils in Canada (Toronto) and Brazil (Belo Horizonte), food trusts and community-supported agriculture in the US and local food-sheds in New York, and the Slow Food movement originating in Italy and now extended to 150 countries.

23 Peer-to-peer: the ability to freely associate with others around the creation of common value; alternatively, 'communal shareholding': the non-reciprocal exchange of an individual with a totality, being the totality of the commons (Fiske, 1991).

24 A term created by Bauer and Roux (1976) to describe the blurred boundaries between urban and rural spaces in ever-growing metropolitan areas where area-specific economic activities and social relations in urban and rural areas influence each other, the food system being a paradigmatic case.

25 See Silke Helfre's notes in the Partner State entry at the P2P Foundation. http://p2pfoundation.net/Partner_State

26 Making Local Food Work is a five-year £10 million programme funded by the Big Lottery Fund and delivered by the Plunkett Foundation that helps people to take control of their food supply by supporting a range of community food enterprises across England. At http://www.makinglocalfoodwork.co.uk

27 Shareholder value maximisation is detrimental for company performance in the medium and long term insofar as it subtracts money from profits to be distributed to short-sighted shareholders and stock buybacks instead of being used to reinvest in company assets, higher salaries, fair payments to suppliers, research and innovation or social responsibility (Chang, 2011).

28 The total turnover of the food-producing cooperative sector in 2012 was US$0.6 trillion, and growing every year despite the global financial crisis (International Co-operative Alliance, 2014). This information was collected from 523 cooperatives from 30 countries involved in the production, processing and marketing of agricultural goods for members. The agriculture and food cooperative sector is the second biggest in the world, after finance, and includes some huge enterprises, such as the Japanese National Federation of Agricultural Co-operatives (USD$56.8 billion turnover), the South Korean NH Nonghyup (US$50.7 million, with 2.4 million members and a financing system serving 37 million customers) and the Fonterra Cooperative Group in New Zealand (US$16.2 billion).

29 Owned by trusts (in the US), local communities (in Europe or Africa, see above) or the state.

30 An idea called for by Nobel prize-winner Amartya Sen. At http://www.governancenow.com/news/regular-story/amartya-sen-bats-universal-food-coverage

31 The *Homo economicus* concept, launched in the nineteenth century by the philosopher John Stuart Mill, sees humans as rational and narrowly self-interested actors whose main goal in the market is to maximise utility as consumers and economic profit as producers (Persky, 1995); in contrast, the *Homo cooperans* idea regards people as primarily motivated by cooperation, the common of their society, community or group, and to improve their environment (De Moor, 2013).

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CHAPTER 8:

CONCLUSIONS

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This research explored the power of narratives of food to mould the vision and priorities of transition pathways (where do we want to get and how do we get there), and to inform what policies are acceptable or preferred and which ones are discarded. Moreover, this research enquired on how the commodified regard of food was created, by whom and how it became dominant, downplaying ancient narratives of food as a multi-dimensional commons. By understanding the construction and translation of those food narratives into governing mechanisms, I sought to disentangle the relationship between the normative valuation of food, the preferred policy options, the personal attitudes within the transition pathways of the food system and the governance mechanisms that are either shaped by those narratives or help the convergence of narratives within the same group. This thesis aimed to understand

a) the construction of the narrative of food as a commodity or a commons in academia,
b) its use by individual agents working in the regime and niches (food-related professionals forming a virtual community of practice), and how the narrative influences the governing system
c) its use by relational agents in networked innovative niches (alternative food buying groups), and how the governing system facilitates the social learning and co-construction of shared narratives, and
d) its use by governments in international negotiations.

Furthermore, I have been able to contribute to a normative theory of food as a commons, a different valuation of food that may unlock policy options not yet explored due to normative lock-ins and political disdain. Actually, a set of unconventional policies and the skeleton of a tricentric governing system to steer an alternative transition pathway based on food as a commons have also been proposed in chapter 7 with some additional ideas presented in this section (below in 8.4.3.c).

Figure 1 below displays a schematic pathway that summarizes the rationale thread used in this research. This research gets aligned with the idea that the current way of producing and eating food, epitomised by the industrial food system model, has become one of the main drivers of accelerated Earth transformation (Rockstrom et al. 2016). Moreover, the global food system is subject of multiple crises that include obesity, undernutrition, GHG emissions, soil depletion, forest clearance and the like. Actually, the way we manage the food systems will greatly determine our fate in the 21st century. As the business-as-usual is no longer an option for the decades to come, there is a need to explore different transition pathways, out of the dominant regime trajectory that is already cracking down. However, there are multiple alternatives that currently offer aspirational and inspirational solutions to get out of this critical period, namely food sovereignty, transition towns, de-growth, food justice, food democracy, sustainable intensification, climate-smart agriculture and others. Within that group, the commons narrative also appears as a way to value and govern material and non-material resources that are important for humans, a way that is different from the traditional hegemonic powers for resource allocation: the State and the Market. This research investigates in the discipline of the commons, trying to understand how food was considered before and how is considered now, and applying the commons epistemology to food.

Figure 1: A scheme that summarizes the background elements discussed in this thesis

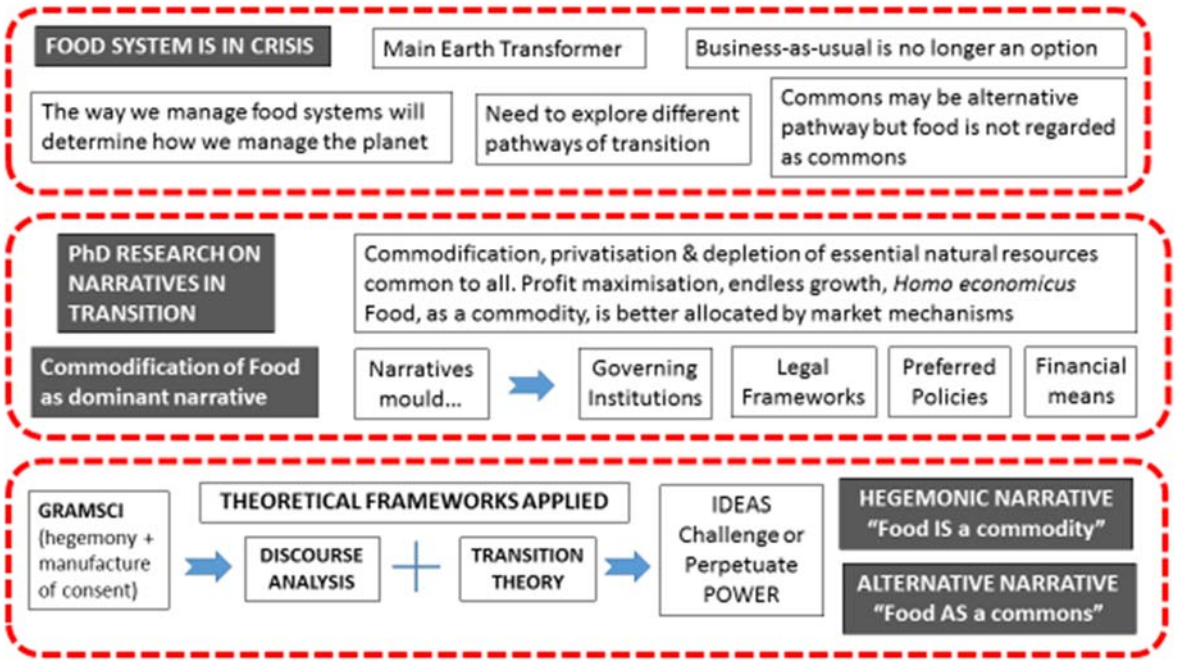

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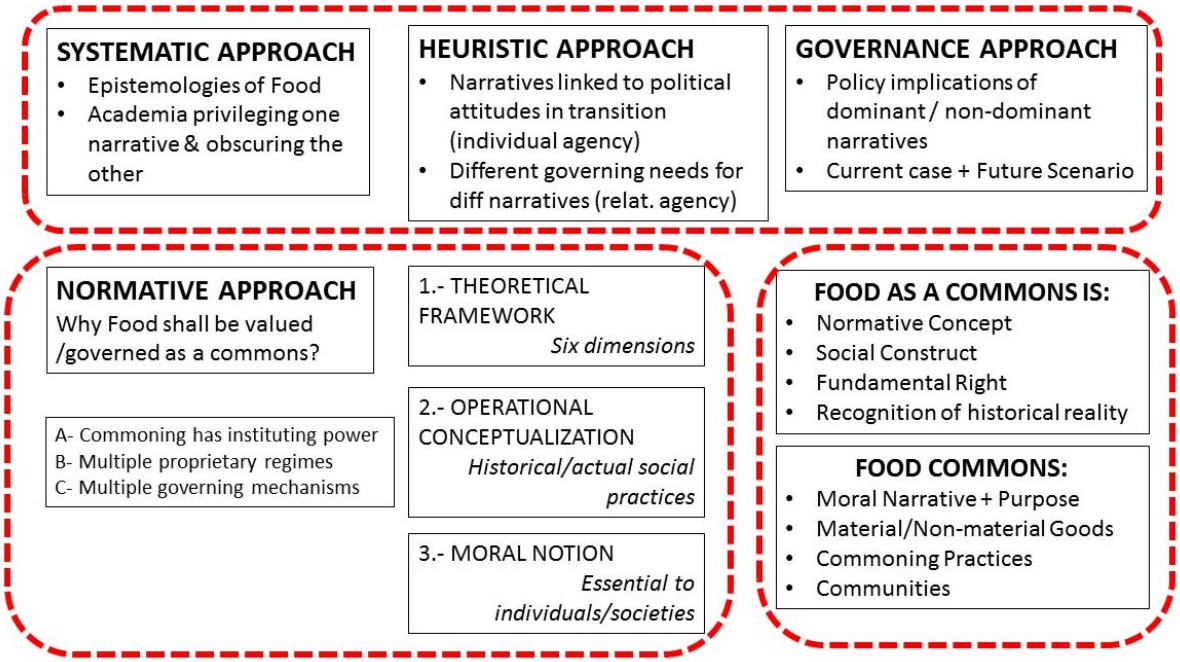
Figure 2: Three approaches to analyse food narratives and the theory of food as a commons



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Another pillar of this research was the importance of narratives to shape and inform socio-technical transitions. Narratives mould and justify specific governing institutions, legal framework, preferred policies and determine the priorities for financial support. Nevertheless, this research does not aim to analyse the narratives in abstract but the narratives made or supported by particular people. In that sense, the main subject of analysis was the narratives of food of agents in transition, and the two narratives explored were "food as a commodity", the dominant narrative in the industrial food system,

and “food as a commons”, an alternative narrative found in customary and contemporary food initiatives. In order to understand the importance of both narratives in steering a business-as-usual transition or a radically-different one, this research has used two theoretical frameworks and three approaches. The theories applied were the Discourse Theory to analyse narratives (genealogies, agents and political consequences) and the Transition Theory (with landscape, regimes, niches and agents of transition); and the three approaches were a systematic analysis to deepen into the genealogy of both narratives, a heuristic approach with two cases studies to understand the policy implications of individual and relational agents of transition, and a governance approach to investigate the policy implications at governmental level and a possible transition pathway based on the narrative of food as a commons.

Finally, with the results of those approaches, a normative theory of food as a commons was elaborated (see Figure 2 above for a scheme) and a set of policy recommendations stemming from that narrative was presented in the conclusions.

8.1.- THE GLOBAL FOOD SYSTEM NEEDS A PARADIGM SHIFT AND A CHANGE IN THE TRANSITION TRAJECTORY

Food, air and water are the three natural resources our human body requires to functioning, but only food is fully commoditized. The current dominant discourse in the industrial food system regards food as a commodity, privately produced, privately owned and privately consumed. Food as a commodity prevents millions to get access to such a basic resource, since the purchasing power determines its access. With the dominant no money-no food rationality, hunger still prevails in a world of abundance. Furthermore, the industrial production and distribution of food are major driving forces in pushing the environment beyond the planetary boundaries that assure a sustainability of renewable resources for future generations. Within that scenario, the idea that it is feasible to reach food security (a global commons in political terms) by means of market-driven allocations (food as a commodity in economic terms) appears to crumble.

The multiple faces of the damaging consequences of the industrial model of resource usage and wealth accumulation have been presented in several chapters of this thesis (E.g. see chapters 3, 4 and 7), putting an emphasis on how the driving ethos of profit maximization, endless wealth accumulation and enclosure of natural resources is impoverishing our livelihoods and depleting the renewable resources of the planet. The pathway followed by the industrial food system unfolds from diversity to uniformity (IPES-Food 2016). Nowadays, human activity in the terrestrial biosphere is the single greatest factor modifying the structure of landscapes across the globe, in a new geological era known as the Anthropocene. Within the wide array of human actions, the way humans eat, produce and harvest food is the biggest transformer of Earth, contributing significantly to degradation of natural habitats, arable land and losses of wild biodiversity while one third of everything we produce is either lost or wasted. For instance, 80% of all threatened terrestrial bird and mammal species are under pressure from agriculture (Tilman et al. 2017). Nonetheless, food systems also play a double role as Nature’s steward, especially when they are managed under agro-ecological principles. The role food systems play as Nature steward or destroyer will very much depend on the normative valuation human societies confer to food, either as a for-profit commodity or as multi-dimensional commons.

Moreover, this system is increasingly failing to fulfil its basic functions: producing food in a sustainable manner to feed people adequately and avoid hunger. In spite of producing food in excess, the current food system does not achieve those goals. The industrial food system, that achieved remarkable outputs increasing food production and food access for millions, has also yielded many negative externalities. In this research it has been tilted as iniquitous, inefficient and unsustainable (chapter 7). Iniquitous because many eat poorly to enable others to eat badly and cheaply. Inefficient because the oil-based food system would not even exist in its current shape without state subsidies. And unsustainable because the industrial model is eating our planet and beyond, with no sign is going to stop devouring the very essential resources that enable human beings to make a living.

There is growing evidence that conventional agricultural strategies fall short of eliminating global hunger (still 800 million hungry people), result in unbalanced diets that lack nutritional diversity and trigger an obesity pandemic (2.1 billion overweight or obese), enhance exposure of the most vulnerable groups to volatile food prices, and fail to recognise the long-term ecological consequences of intensified agricultural systems. The ironic paradoxes of the globalized industrial food system are that 70% of hungry people are themselves food producers; food kills people; food is increasingly not for humans (a great share is diverted to biofuel production and livestock feeding); and one third of global food production ends up in the garbage every year, enough to feed 600 million hungry people. The narrative of food as a commodity largely pursuits the production of cheap food in excess, by means of cheap natural resources and cheap labour (Patel and Moore 2017). The endless pursue of profit-maximization seems to reign in this scenario.

Multiple voices call for a paradigm shift in the way we govern the food system, although the narratives and the direction of the preferred transition pathways are subject of controversies and colliding constituencies. Precisely, this research has analysed the elements that conform two confronting narratives of food, one that is amply consolidated and pervasive in the industrial food system (food as a commodity) and one has been barely explored by academics and policy makers (food as a commons) and yet it is found in customary food systems operating in rural niches and contemporary food initiatives being developed in urban areas.

8.2.- THE POWER OF NARRATIVES IN GUIDING SOCIO-TECHNICAL TRANSITIONS

As the food system is in crisis, several pathways of transition are being explored to achieve a fairer and more sustainable system such as green growth, climate-smart agriculture, sustainable intensification, agro-ecology, transition towns, food justice, food sovereignty, de-growth, commons, right to food, or community-supported agriculture. Each constituency has its own narrative of transition, with underpinning values and prioritised objectives. Although the need for a drastic shift has become commonly accepted by many scholars and policy makers from different disciplines, the transition pathway to follow is still subject to dispute and multiple tensions are pushing for diverging alternatives to this crisis stage. The consensus on the need of a radical change does not extend to the final goal (the narrative: where do we want to go) or the transition path (the process: how are we going there). Moreover, some of those pathways are perfectly ease with the commodified valuation of food (E.g. food security, green growth, climate-smart agriculture or sustainable intensification) whereas other

narratives pose a deeper questioning of the commodified nature of food (E.g. commons, de-growth or food sovereignty).

In this situation, several scholars and academic panels defend the need to think outside the "socially-constructed hegemonic paradigms" that steer our societies and food systems. We shall think differently from what we are entitled, permitted or accepted to think, breaking narratives accepted-for-granted and seeking utopias that within 50 years may easily become the new accepted normal. We have to do so do because the paramount problems we have to face now cannot be solved with the same narratives that led us to this situation (capitalism, unsustainable exploitation of natural resources, individualism, absolute sovereign states). However, profit-driven globalization is compelling us to think within the so-called "permitted worldviews" and accepted narratives. Markedly alternative or radical views will be easily discarded by the dominant mainstream. In that sense, in this research I vindicate the need of utopian thinking in an age of crises. Utopias are extremely important for humans because they embody our deepest aspirations for a better world and they keep us moving and acting towards that goal. Any political idea, in its very inception, can be considered as a utopia. It is only later, when the idea has already gathered enough support, has already been explored, developed and communicated, that ceases being a utopia and becomes a possible policy. The great writer, Victor Hugo, narrated it nicely when he said "There is nothing like dream to create the future. Utopia today, flesh and blood tomorrow" (Les Miserables 1862).

Actually, the consideration of food as a commons can be understood as utopian in three ways (using the rationale presented by Stock et al. 2015): (1) as critique of the dominant narrative of food as a commodity that sustains the industrial food system; (2) as an alternative that experiments with possible better futures in customary and innovative niches; and (3) as a process that recognizes the complexities and local particularities inherent to transition pathways to change the dominant regime. But this utopia has a good advantage over the others: it has happened many times in many places in human history and it is actually surviving in non-hegemonic niches of resistance (E.g. indigenous groups, traditional fisherfolk, hunter-gathering tribes, Food Buying Groups, Community-supported Agriculture, etc).

Given the important role of valued-based narratives in policy-making and transition governance (as explained in detail in chapters 1 and 4), framing food as a commons or a commodity does actually matter, since different policy alternatives, legal regulations and aspirational goals will be triggered by different understandings of what food is and the ways of framing problems and solutions. In the global food system there is a competition between different agricultural models (IPES-Food 2016) and within that clash of narratives, people tend to frame complex debates regarding problems and solutions of the current food systems in dichotomist narratives (Vanderplanken et al. 2016). That explains why the dualistic typology analysed here, although reductionist, seems relevant to understand people's valuation of food.

This research aims to contribute to understand the competing narratives of food that are constructed, defended and accepted by different stakeholders in the complex dynamics of the global food system (Lang and Heasman 2015). Both narratives depart from different premises and have different relational features: the food commons is phenomenological and accepts multiple understandings of food, including that of food as a commodity. Conversely, the commoditized food is ontological and denies

other interpretations, among those food as a commons, public good and human right (as seen in chapters 3 and 6).

8.3.- THE CLASH OF FOOD NARRATIVES

The principal research question of this PhD was "*How do people value food?"* Accepting that the responses could be as varied as the number of interviews, the multiplicity of responses and nuanced interpretations of food have been framed in a dichotomist typology (commodity and commons) in order to facilitate the analysis using different approaches and an inter-disciplinary lens. That is why the principal research hypothesis explores that dualism in narratives and the policy implications. The research hypothesis was "*Valuing food as a commodity or as a commons conditions the accepted/non-accepted set of policies, governing mechanisms and legal frameworks that can be proposed and implemented, privileging one transition pathway over the others*". The hypothesis also assumed that both narratives of food were social constructs. The research showed that the commodified valuation of food developed by the economic epistemology is rather ontological whereas the commons valuation is phenomenological (situated in place and time).

8.3.1.- The ontological narrative of "Food is a Commodity"

In the 20th century, food became an industry and a market of mass consumption. The dominant paradigms that have sustained human development and economic growth during that century (productivism, consumerism, individualism, survival of the fittest, the tragedy of the commons and endless growth) were accompanied by the consideration of food as a commodity. Actually, this commodification was perfectly embedded in the food security paradigm that dominated food politics since the end of the WWII. However, the food sovereignty paradigm, and other narratives of contestation, puts this commodification into question, rejecting it in plain terms but not elaborating clearly a substitute.

Considering food as a commodity refers to unbranded or undifferentiated items from multiple producers, such as staple grain, beef meat, eggs or fresh vegetables that are largely valued by its price in the market. What makes food a commodity is the reduction of its multiple values and dimensions to that of market price, being profit maximization the only driving ethos that justifies the market-driven allocation of such an essential for human survival. Food as a pure commodity prevents millions to access such a basic resource, since the purchasing power determines access. Under capitalism, the value in use (a biological necessity) is highly dissociated from its value in exchange (price in the market), giving primacy to the latter over the former. Food as a pure commodity can be speculated in by investors, modified genetically and patented by corporations, or diverted from human consumption just to maximize profit.

This commodification of food is associated with capitalist modes of production. The academic approach to commodities and commons in the 20th century has been instrumental in the construction of this narrative (as analysed in chapter 3). This consideration has been presented by economists as an ontological feature (related to the nature of food stuff) and not as a phenomenological regard (a situated social construct that may evolve with societies). Moreover, the ontological definition of food as a commodity crowded out non-market values and the idea of food as something worth caring about.

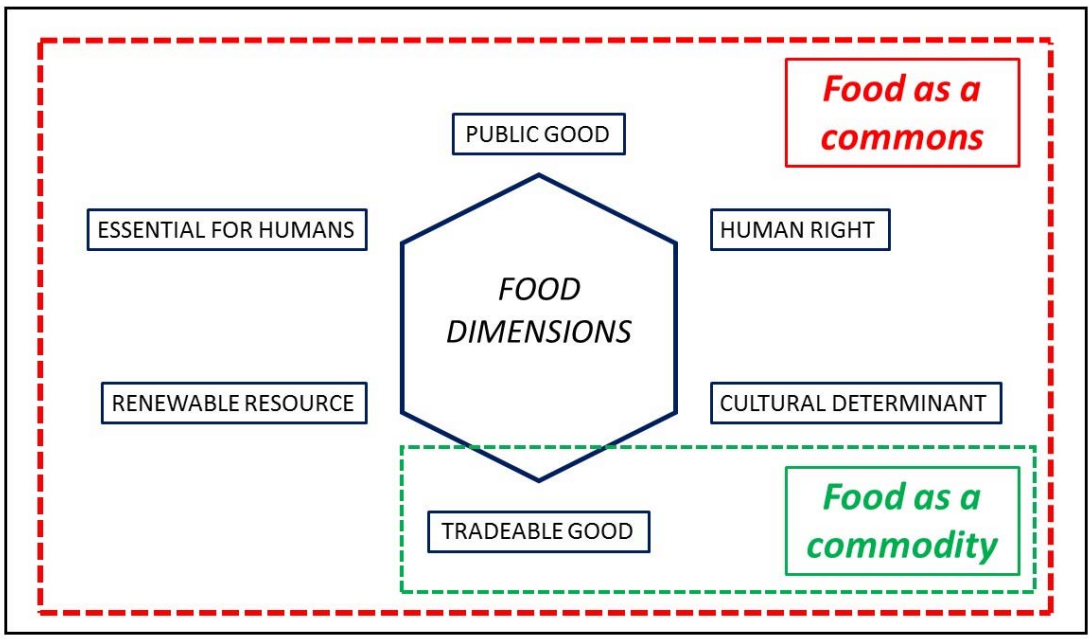
The description that best explains the hegemonic narrative of the industrial food system can be summarized in the following sentence (adapted from Bullock and Trombley 1999, 387-388 using Gramsci's ideas): "A diverse society, with multiple proprietary regimes, valuations of food and political arrangements to govern food, is influenced by the economists' approach to goods (nowadays the influencing school of thought that informs the discourse in the ruling class), so that their approach to food is imposed and accepted as the universally valid, dominant ideology that justifies the social, political, and economic governance of the global food system as natural, inevitable, perpetual and beneficial for everyone, rather than as an artificial social construct that benefit only the ruling class". The "food is a commodity" narrative, as shown in this research, is rather theoretical, reductionists and ideological, and prevents other food policies based on alternative value-based narratives to be explored.

However, this narrative is cracking down in multiple fronts and that is why numerous scholars consider it the underlying cause of the failure of the industrial food system. And yet, it remains largely uncontested to lead the different transition pathways outside the crisis, what seems to be rather contradictory. In that sense, the alternative narrative of food as a commons may be worth exploring. And that is what I did in this research.

8.3.2.- The phenomenological narrative of "Food as a Commons"

The food commons narrative means revalorizing the different food dimensions that are relevant to human beings (its value-in use) – food as a vital element for our survival, food as a natural resource, human rights, cultural determinant and public good– and thus underscoring although not neglecting the tradable dimension (its value-in exchange) that has rendered it a mere commodity (see Figure 3).

Figure 3: The six dimensions of food that contribute to its consideration as a commons



Source: the author

Food is first and foremost a basic human need, as our body demands food energy to keep its vital functions. Additionally, none can deny the importance of food as a foundational pillar of culture and civilizations. Then, in modern times, most human needs have been framed as legitimate rights to which citizens can aspire, and to which society at large has an obligation to respect and provide for. Along that rationale, food was also considered a human right recognized under international law, although this conceptualization is contested by some states (as studied in chapter 6). But there is more, food is evidently a natural resource, produced wildly according to natural cycles but also cultivated by humans that have mastered the natural cycles to domesticate food production under controlled factors. And food is also a tradeable good, exchanged, bartered, gifted and sold in markets for centuries. This latter dimension has evolved in the 20th century towards a social construct that regards food as a pure commodity.

This narrative gives relevance to the collective, cooperative, fair and sustainable aspects of food production and consumption, although it also recognizes the tradeable dimension of food. Food can also be traded as a commodity, but not only and not dominantly. The food commons narrative accepts a regulated commodification under specific circumstances, whereas the commoditized narrative however precludes other interpretations since food is, above all, a commodity (as analyzed in chapter 6). Unlike the market, the food commons are about equity, collectiveness, embeddedness, caring, stewardship, autonomy and direct democracy from local to global. This invokes a radical paradigm shift from individual competitiveness as the engine of progress via endless growth towards collective cooperation as the driver of the common good. We need to develop a food system that first, provides for sustainable nutrition for all and second, provides meaning and not just utility to food production, trading and consumption.

The food commons paradigm encompasses ancient and recent history, an emerging alternative praxis and a feasible aspirational vision for the future and therefore it can provide a common space for customary food systems and contemporary collective innovations for food to converge. The food commons are based on models of social organization, non-monetized allocation rules and sharing practices, principles of peer production based on commons (resources, knowledge and values), social economy and the importance of the commonwealth, happiness and well-being of our communities. In this narrative, customary indigenous food-producing systems with particular cosmovisions and traditional techniques may find a space of convergence with urban young professionals producing food in urban gardens and organizing themselves in food buying groups. The food commons narrative can be perceived as a disruptive narrative that challenges the power relations in the industrial food system and deepens food democracy

The food commons resembles perfectly one of those progressive new ideas that Albert O. Hirschman (1991) had in mind when analyzing paradigm shifts in recent history and his teachings could serve as a cautionary tale. Hence, one should expect considering food as a commons would be termed as a futile policy belief (the futility argument), since the visionary idea and its practical consequences of social transformation will be incapable of making a dent in the status quo. Or the mainstream scientists and practitioners would hold the cost of the proposed paradigm shift as unacceptable (the jeopardy argument) because it will endanger previous accomplishments (E.g. Universal Food Coverage to be unaffordable for national budgets or a waste of limited resources). Or, even worse, the perversity argument whereby any political action to guarantee a minimum amount of food to all every day would

have unintended consequences (E.g. people will become lazy and stop working once food is guaranteed by the state), finally resulting in the exact opposite of what was intended. Food as a commons can be discredited as a policy narrative just by solely call it "utopian" or a "fantasy", a sort of distraction from the serious business of making practical improvements in the dominant system. However, this research shows that considering food as a commons is not utopian, as history teaches us and present innovations confirms, and it can be one of the best achievements we bequeath to future generations.

In the next sections, the multi-methodological approach to understand the narratives of food is presented, starting with the systematic approach, followed by the heuristic approach, to end with the governance approach.

8.4.- COMBINING APPROACHES TO PRESENT A NORMATIVE THEORY OF FOOD AS A COMMONS

Prior to analysing the relevance of value-based narratives of food in political attitudes, preferred policy options or governing mechanisms, in this research have traced a genealogy of meanings and interpretations of the "commons" concept by analysing the different schools of thought that have addressed the commons. I have used an *ad-hoc* typology of epistemologies of food based on an extensive literature research plus a systematic analysis of published academic texts including the idea of food as commons or commodity.

8.4.1.- Outputs of the systematic approach to food narratives

Why has food never been treated as a commons, given its material and cultural importance to individuals and societies? Actually, food has been treated as a commons throughout the millennia where human beings were merely tribes of hunger-gatherers, as we can infer for research on actual hunting ethnic groups (see chapter 2 and section 4.2.1 in the peer-reviewed article of chapter 3). Later on, food was, and still is, valued and governed as a commons (according to the definition explained above in the section 8.3.2) in many places in the world, being also found in highly-commoditized regions such as Europe[47].

I have explained in the research (chapter 2) how the different schools of thought have defined the commons and where has food been placed in this typology (responding to the Specific Research Question 1). Moreover, this research highlights the dominance of the economic epistemology and vocabulary to shape the prevalent meaning of commons, obscuring other understandings produced by political, legal, historical or sociological scholars. When applied to food, the dominant narrative regards food as a commodity undervaluing other non-economic dimensions relevant to humans and justifying market mechanisms as the most appropriate allocation method.

[47] The food commons in Europe. Relevance, challenges and proposals to support them. Document presented at the first meeting of the European Commons Assembly, 15-17 November 2016, Brussels. https://blog.p2pfoundation.net/food-commons-europe/2017/02/01 (Accessed on August 20, 2017).

8.4.1.a.- Different epistemologies of food

Different realms of academic disciplines have addressed the commons and the commodity/commons nature of food by using different cognitive tools, accumulated knowledge, accepted methodologies, paradigms and personal values, all of them forming particular epistemologies that have been mingled with dominant ideologies and politics. In this research (chapter 2), four epistemic schools to interpret the commons were defined heuristically: three restricted to the academic domain but whose narratives extend far beyond the academia (economic, legal and political) and one encompassing the understanding of grassroots activists, practitioners of commons and some engaged scholars.

This approach to the schools of thought on commons and food enables us to reconstruct a genealogy of narratives of commons. The evolution of different understandings shows the consideration of food as a commodity is not an ontological property of food, conditioned by its intrinsic characteristics, but a phenomenological construct based on particular epistemologies that are place and time-restricted.

The different epistemologies have multiple meanings for the same term and different normative valuations for similar resources. These discrepancies among academic epistemologies, and between the academic and non-academic constituencies, become politically relevant, since how to define what a commons is and how food can be valued are subjects of political debates. The different meanings often result in incommensurable epistemologies and vocabularies, creating confusion and even rejection around the idea of food being considered as a commons**.** One source of discrepancy on understanding the commons stems from the fact that collective ethical notions on what is a commons, as defined by a community (social construct), are mingled with individual theoretical approaches by influential thinkers (those coming from the economic school) and binding political decisions made by elites.

For legal scholars, commons are usually place-restricted, determined by property entitlements. For economists, commons are determined by the inner properties of the resource. For activists and some political scholars, commons are created by the human-made praxis of collective governance and self-organised institutions. The latter ones posit that commons are neither types of resources with ontological properties, nor types of proprietary rights, but ways of acting collectively based on participation, self-regulation and self-negotiated principles and goals.

For activists and political scholars the concept of the commons is relational since it cannot be understood without the particular value-based relations between the community and the resource and within the community itself. Moreover, it can also be transformational. Although there are approaches to the commons that can be compatible with capitalist economies and absolute proprietary regimes, other approaches are colliding with these basic foundations of capitalism. From the very moment that we accept the community has an instituting power to create a commons, we accept the community is bestowed with legal and political powers to regulate the resources important to them and thus “commoning” becomes transformational and certainly counter-hegemonic, since the State aims to retain those instituting powers and the market its supremacy to allocate and govern scarce resources.

8.4.1.b.- Academia privileging one narrative and obscuring the others

The economic epistemic regard on food has become dominant in the global food system. Economic scholars in the 20th century reinforced the ontological consideration of food as a commodity and private good, thus preventing and not accepting other phenomenological understandings. Academia is a major contributor to constructing, polishing and disseminating the dominant narratives that then shape public policies, corporate ethos and moral economies. But Academia is also shaped by the dominant narratives of privatisation, enclosures and commodification supported by corporate and state agents.

In Chapter 3, I systematically researched how academia explored the value-based considerations of food as commodity and private good (hegemonic narratives) compared to the considerations of food as commons and public good (alternative narratives). Actually, though many scholars engaged with alternative food movements agree that food should not be considered as a commodity, just a few dare to value it as a commons. For the first 90 years of the XX century, scholars barely mentioned that food could be considered as a commons (or public good). The last two decades, however, have seen a rapidly rise in academic interest on issue, especially after the second global food crisis in 2008, exploring the moral, political and cultural implications of that narrative. Only 70 academic articles including that narrative have been found through a systematic review, compared to the nearly 50,000 articles that deal with food as a commodity. Academia has certainly take a side in constructing and defending the dominant narrative of food as a commodity with peaks coincident with both world wars and the 1973 global food crisis. The content analysis of these 70 papers has yielded interesting insights such as the long endurance of social contracts that regarded food as a commons. For more than 2000 centuries in human history food has been considered as a commons. Conversely, its consideration as a commodity barely spans one century.

Another interesting element is that the phenomenological approach to food largely prevails over the ontological approach to food except when food is linked to the “private good” dimension. This result confirms the results from the research on the schools of thought. This ontological absolute prevents food acting as a commodity in a situated place and time and as something else under different circumstances. The mono-dimensional valuation of food as a commodity blocks the multiplicity of other food meanings, especially those that cannot be valued in monetary terms. Moreover, this commodification of food has locked other narratives (indigenous narratives, food sovereignty, agroecology) that have a more phenomenological and diversified regard on food.

This valuation of food as a commodity that is better allocated through market mechanisms was then instrumentalized by the ruling elites (governments and corporations) through food policies and regulations that were consistent with this valuation. Citizens and consumers accept then as “normal” the social construct (commodification of food) privileged by the elites and thus the manufacturing of consent emerges from a bottom-up normalization. That explains why, for decades, food policies were designed to govern a mono-dimensional commodity whose access is exclusively determined by price and absolute proprietary rights. This narrative sidelined a number of key questions about the non-monetized values of food and its essentialness for human survival, and thus relevant food policy options were automatically discarded because they conflicted with the commodity nature of food. Policy options such as: food could not be provided for free to people that could not pay for it, food

producers could not become civil servants to produce food for state's needs, the right to food is constantly denied by the main advocates of food commodity markets, negative externalities of unsustainable food production are not incorporated in final prices thanks to huge public subsidies to food corporations, trade restrictions to food products were lifted for the benefit of the corporations that control the international food trade, and collective actions for food (including seeds, land, water, knowledge) are restricted, enclosed and even prohibited by stringent regulations that were designed to support the for-profit trade of food commodities, undermining alternative means of exchanging and accessing the food commons.

8.4.2.- Outputs of the heuristic approach to food narratives

The heuristic approach was unfolded in two case studies that enquired the use of those narratives by individual agents working in the regime and niches, and relational agents working in innovative niches; and how those narratives either influence the governing mechanisms or are shaped by social learning and governance arrangements.

8.4.2.a.- Narratives linked to political attitudes in transition (individual agency)

In this part of the research, I explored how the value-based narrative of food influences (or not) individual agency in transitional food pathways. Hence, the research hypothesis posited that valuing food as a commodity was the dominant narrative of individual actors working in the regime (who adopt gradual reforming stances), whereas the consideration of food as a commons was dominant in those agents working in transformational niches. Moreover, the valuation of food was thought to be correlated to specific food policy options in regime and niches. The results were mixed, although quite interesting. The individuals working in the regime have no statistically significant preference for the commoditized version of food, although those working in the niches preferred the food commons narrative. The links between food narratives and preferred policy options were significant in just a few cases, and the policy preferences fall in the expected cases. However, the food policy preferences for the majority of policy options could not be determined with significant correlations, what could be due to the sample size and diversity (already discussed in chapter 4). In that sense, further research with different constituencies has to be undertaken before we can conclude that valuing food as a commodity or commons is correlated to specific food policy options.

Results suggest the narrative of food as a commodity is positively correlated to the gradual reforming attitude, whereas valuing food as a commons is positively correlated to the counter-hegemonic transformers regardless the self-defined position in the transition landscape (regime or niches). Conversely, alter-hegemonic attitudes are not positively correlated to this alternative discourse and they may inadvertently or purportedly reinforce the ''neoliberal narrative'' since they do not question the neoliberal rules to allocate food as a commodity.

Although alter- and counter-hegemonic attitudes are both considered innovative and transformative, the way they challenge the system differs, and that may be partially explained by the different valuation of food they hold. Many alter-hegemonic professionals opt for building a different food system at the local level that satisfies their aspirational goals and the day-to-day access to healthy and fair food. This constituency may inadvertently reinforce the "neoliberal narrative" through de-

politicizing food politics and placing the transformative agency on the shoulders of conscientious consumers, innovative entrepreneurs and well-intended volunteers, and by emphasizing entrepreneurial solutions and local market linkages, thus obscuring the importance of state duties and citizen entitlements. By de-politicizing food politics, these initiatives conform with the discourse that re-labels citizens with right to food entitlements into consumers with food choices and responsibilities. On the contrary, the counter-hegemonic attitude seeks to uproot deep structures and build a new configuration based on different values. This group is thus quite political, denouncing flaws and inequalities and having a marked normative contestation. The results confirm this definition since the normative (and different) valuation of food as a commons is positively and significantly correlated with this group and not with the alter-hegemonic one.

Moreover, the hegemonic consideration of food as a commodity is challenged from within and outside. Multiples loci of resistance with counter-hegemonic attitudes are challenging the hegemonic narrative. These diverse people in rather diverse institutions have a convergent regard of food as a commons. The multiple valuation of food as a commons may enrich the diversity of transformative alternatives (E.g. food justice, food sovereignty, de-growth, transition towns or right to food), including those more transformative or more reformist.

This research shall be seen as a first case-study with direct interviews to understand how the narrative of food conditions food policy options. The results contribute to agency-sensitive analysis in food transitions by validating the hypothesis that the normative consideration of food shapes the priorities for action (political attitude) and, to a certain extent, specific food policies we support/accept (preferred policy beliefs). Since beliefs and values drive transition pathways, the consideration of food as a commons will certainly open up new policy options and regenerative claims in the future.

8.4.2.b.- Different governing needs for different narratives of food in transition (relational agency)

In this second study (chapter 5), the working hypothesis posited that narratives of food in transformative niches are not homogeneous, what triggers different governing arrangements and preferred policy options. The Food Buying Groups (FBG) are a type of alternative food network that seek to produce and consume food outside the conventional industrial food system circuit. They are self-organised collective actions that purchase food stuff directly from the producers. Although it may be assumed their values, motivations and food narratives are based on shared moral grounds different from the dominant commodity narrative, the driving motivations and political attitudes of transition in food systems are not homogenous, as chapter 5 has shown.

In opposition to the previous case study where three attitudes of transition were examined (gradual reformers, alter-hegemonic transformers and counter-hegemonic transformers), in this case study the great majority of FBG members were “seeking to build a different food system”, with just a few “struggling against the existing food system”, that was interpreted in this research as wanting to reform the existing food system, therefore having a reformist hint instead of a transformative stance. And most of the reformers in this case were found within those who prioritise “healthy and tasty food from sustainable agriculture”. On the other side, those who prioritise “transforming the food system” are mostly alter-hegemonic.

The Food Buying Groups invest time and resources in social learning aimed to broaden the construction of common meanings about possible pathways, but the way to learn differs. The "social enterprise" stream prefers to devote less time to convivial events within the group, although their members are willing to volunteer for practicalities in the FBG daily running. Moreover, they rather network with non-food related initiatives, what may expand the transition narrative but seems to weaken the cohesiveness and coherence of the food narrative. As they seem to be less political, they just request technical and administrative support from governmental authorities. None of those FBGs are concerned about financial support from state institutions, what presents a difference with other Non-Governmental Organizations working in the food system.

On the other side, the "social network" stream that prioritizes the transformation of the industrial food system by building a different one, shows a great degree of conviviality within the FBG members and a preference to network with other food-related initiatives. Both activities help building common frames of analysis and shared values and narratives of transition. In line with their alter-hegemonic attitude, this stream is detached from public institutions and they just request political legitimacy and not technical, financial, administrative or legal support. They just want the public administration to let them act as they like, without hampering the collective arrangements they are building. The social network stream seeks to construct transition pathways based on a) narratives and motivations that go beyond the traditional narratives of "local economies" and "healthy products"; and b) through decentralized connections with peer agrifood institutions, to whom they trust more than to national and regional authorities.

Finally, most FBGs have members that align themselves with both streams in the same organisation. They remain together because they manage to create an organisational culture that facilitates to recurrently discuss about values and the value-based narratives behind specific actions. This dialogue nurtures intense social relationships that are relevant to all members of the group (Milestad et al. 2010). The institutional governing arrangements within those FBGs facilitate a "better food with a meaning" (Anderson 2004), autonomy (Dedeurwaerdere et al. 2016), conviviality (Maye and Kirwan 2011), community (Firth et al. 2011) and social learning (Pahl-Wostl 2002). That type of governance will likely facilitate a somehow federated scaling up of the autonomous collective food actions that can bring together innovative niches into a network capable of challenging the industrial food regime with a different praxis and a shared although evolving narrative.

8.4.3.- Outputs of the governance approach to food narratives

In this section I sought to respond to the second general research question: *what would be the change in the food system if food were valued and governed as a commons?* The options to materialise this normative shift (from commodity to commons) into concrete proposals are multiple and yet to be explored at local, national and international level. In this research I have just explored one case of policy implications at international level (chapter 6). Then, using a food regime lens to analyse the evolution of the commodification process in historical terms, I have proposed an institutional arrangement that could facilitate an alternative transition pathway in the global food system (chapter 7).

8.4.3.a.- Policy implications of dominant/non-dominant narratives

Some of the most evident policy options triggered by the "food as a commodity" conceptualization are the many different uses other than direct human consumption, because the best use of any commodity is where it can get the best price. For instance, the unethical speculation with staple foods just to earn money without even selling or buying the real stuff; or the out-of-control race for scarce natural resources in GDP-poor but resource-rich countries by GDP-rich but resource-poor ones, with land-grabbing and water-grabbing as just two examples. Because food products are commodities, the only goal of the industrial food system is to sell more and make more profits, overshadowing the fundamental right to be free from hunger, the cultural implications of cropping and cooking or the public health benefits of a good nutrition. Finally, a food system anchored in the consideration of food as a commodity to be distributed according to the demand-offer market rules will never achieve food security for all, since the private sector is not interested in people who do not have the money to pay for their food commodities.

Conversely, if food is valued as a commons, the legal, economic and political implications would be paramount. Food would be kept out of trade agreements dealing with pure private goods (E.g. WTO) and there would thus be a need to establish a commons-based governing system for production, distribution and access to food, such as those agreements proposed for climate change and universal health coverage (Vivero-Pol 2014). In the same line, a Universal Food Coverage could also be a sound scheme to materialise this new narrative. This social scheme would guarantee a daily minimum amount of food to all, either in form of a bread loaf in public bakeries or as a universal income that equals, at least, the price of the national food basket. The food coverage could also be implemented as a Basic Food Entitlement or a Food Security Floor. The food bank networks would be based on the right to food and it would become part of the public safety net programme. These actions would be included in the Universal Food Coverage schemes that equal the settings guaranteeing universal access to health and education in Western countries. Moreover, there would be a legal and ethical ground to ban futures trading in agricultural commodities, as the speculation on food influences considerably the international and domestic prices and benefits none but the speculators. Considering food as a commons would prioritize the use of food for human consumption, limiting the non-consumption uses. Governments could promote collective actions for food by means of diverting incentives and subsidies from industrial agriculture to small farming, agro-ecology and local production. As well as legal frameworks that limit the privatization of commons and protect the inalienability of customary commons. Farmers could be employed as civil servants by national states or local municipalities to supply the food needs that public authorities have for schools, hospitals, the Army, Ministries, etc.

Additionally, the consideration of food as a commons could provide the background to reverse main threats to food and nutrition security such as: (a) the excessive commodification of food, with ultra-processed food products and sweetened drinks being highly taxed or banned under certain circumstances; (b) land grabbing and land evictions, as the proprietary right schemes would incorporate collective rights at national and international levels; (c) excessive patents of life, bio-piracy and patented GMOs, applying to agricultural and food innovations the same principles of open software or creative commons licenses. The farmers and researchers would have the freedom to sow, distribute, study, select, modify and improve the seeds and its genetic material for its own benefit; (d) the concentration of agricultural inputs, agrifood chains and food retailers in few transnationals,

because stronger public regulatory frames could be devised to protect people's food and nutrition security (that would be treated as a commons or public good).

8.4.3.b.- Real case: Food as a commodity (not a human right) drives the US and EU stances

This case study (chapter 6) showed the narrative of food as a commodity being dominant at governmental level (at least in the US and EU cases analysed) thus proposing market-based mechanisms to govern food production and distribution. The narrative of food as a commons, that would certainly opt for human-rights based mechanisms, is yet non-dominant in international negotiations. The mono-dimensional valuation of food obscures and denies other interpretations of a multi-dimensional food.

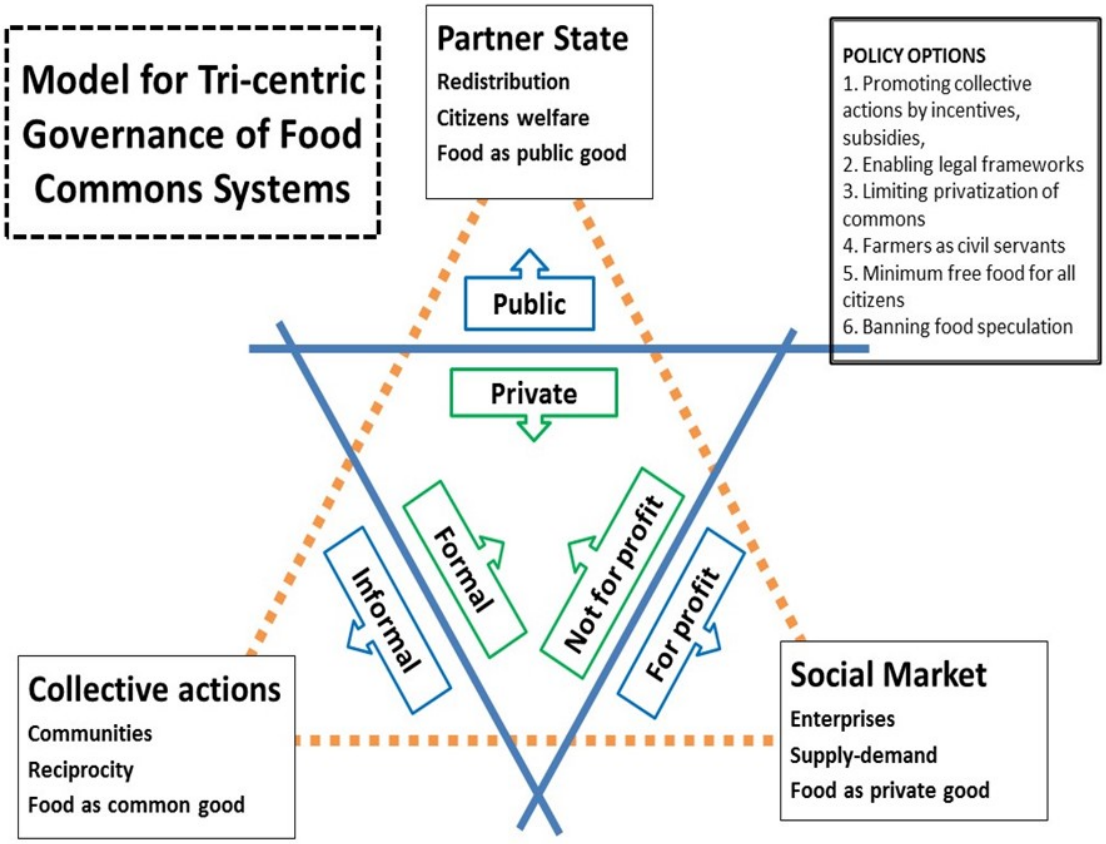
The narrative of food as a commodity is still pervasive within governments, international institutions and developmental banks. The absence of the rights-based approach in the final document of the Sustainable Development Goals, approved in September 2015, can illustrate the political implications of having this regard of food. And that is why this case was selected for this thesis. Although the SDGs explicit access to water, health and education as universally guaranteed human rights, access to affordable and sufficient food is not given such recognition. The SDGs road map assumes that market mechanisms will suffice to secure nutritious and safe food for all. The adamant US opposition domestically as well as internationally and the timid EU stance on the right to food in international negotiations combined with its negligible consideration at national level, have contributed to the banning of this fundamental right from the SDGs document. The US deliberately characterises the right to food as an "opportunity" rather than as an entitlement which removes any obligation for their government. Meanwhile, the Europeans publicly defend and even finance this right to be implemented in other countries, but barely doing anything to render this right operational within EU boundaries. Why is that? Both the US and EU adhere to an ideological stance in which market-based resources distribution is far more efficient than a rights-based scheme for such a vital resource. The privatization of food-producing inputs (E.g. soil, seeds, water) and the absolute commodification of the final output (food) conform the dominant discourse of both actors. Therefore, non-hegemonic considerations of food as a human right, a commons or a public good clearly collides with this position.

8.4.3.c.- Future scenario: the tricentric scheme to govern food as a commons and steer a different transition pathway

Deconstructing food as a commodity and reconstructing it as a commons would be better steered by a tricentric governance system compounded by market rules, public regulations and self-regulated collective actions arranged differently from the current situation (as explained in chapter 7). Food would be produced, consumed and distributed by agreements and initiatives formed by state institutions, private producers and companies, together with self-organized groups under self-negotiated rules. Those agreements would include Private-Public Partnerships (PPPs) as well as Public-Commons Partnerships (PCPs), a new institution that merits to be further explored (Piron and Cogolati 2016) with a good example in the city of Turin (Italy) and its *administrazione condivisa* (Bottiglieri et al. 2016). Those governing agreements tend to have a commoning function by enabling access and promoting food through a multiplicity of open structures and peer-to-peer practices aimed at sharing and co-producing food-related knowledge and edible products. The development of this tricentric

governance would comprise (combinations of) civic collective actions for food, an enabling state and socially-responsible private enterprises (see Figure 4 for an ideational scheme).

Figure 4: The ideational tri-centric governance model for transition in food systems



Source: the author

The civic collective actions for food are already happening, with people producing food by themselves or getting organized in food buying groups, community-supported agriculture or sharing meals clubs, and this trend is growing. This constituency can value food as a commons. The transition towards a food commons regime will need a different kind of state, with different duties and skills to steer that transition. The desirable functions are shaped by partnering and innovation rather than command-and-control via policies, subsidies, regulations and the use of coercion. That would be a "partner state" acting as an enabling supervisor and considering food as a public good. Amongst the duties of the partner state, we could mentioned the prevention of enclosures, triggering the production of new commons, co-management of complex resource systems that are not limited to local boundaries, oversight of rules and charts, care for the commons (as mediator or judge) and initiator or provider of incentives and enabling legal frameworks for commoners governing their commons. Moreover, there is a need to count on a different breed of private enterprises in order to satisfy the needs unmet by collective actions and state guarantees. This private sector shall be driven by a different ethos while making profit, more focused on social aims and satisfying needs than in profit-maximization at any cost. In that sense, the market would be seen as a means towards an end (wellbeing, happiness, social good) with a primacy of labor and natural resources over capital.

(a) Civic collective actions for food governing food as a commons

Civic food networks are generally undertaken at local level and aim to preserve and regenerate the commons that are important for the community. There have been two streams of civic collective actions for food running in parallel: (a) the challenging innovations taking place in rural areas, led by small-scale, close-to-nature food producers, increasingly brought together under the food sovereignty umbrella, and (b) the Alternative Food Networks (AFNs) exploding in urban and peri-urban areas, led on the one hand, by concerned food consumers who want to reduce their food footprint, produce (some of) their own food, improve the quality of their diets and free themselves from corporate-retail control, and on the other by the urban poor and migrants motivated by a combination of economic necessity and cultural attachments. Over the last 20 years, these two transition paths have been growing in parallel but disconnected ways, divided by geographical and social boundaries. But the maturity of their technical and political proposals and reconstruction of rururban connections have paved the way for a convergence of interests, goals and struggles. Large-scale societal change requires broad, cross-sector coordination. It is to be expected that the food sovereignty movement and the AFNs will continue (and need) to grow together, beyond individual organisations, to knit a new (more finely meshed and wider) food commons capable of confronting the industrial food system for the common good (Ferrando and Vivero-Pol, forthcoming).

(b) The Partner State governing food as a public good

The state has as its main goals the maximisation of the well-being of its citizens and will need to provide an enabling framework for the commons. The transition towards a food commons regime will need a different kind of state (national states and EU authorities), with different duties and skills to steer that transition. The desirable functions are shaped by partnering and innovation rather than command-and-control via policies, subsidies, regulations and the use of force. This enabling state would be in line with Karl Polanyi's (1944) theory of its role as shaper and creator of markets and facilitator for civic collective actions to flourish. This state has been called Partner State (Kostakis and Bauwens 2014) and Entrepreneurial State (Mazzucato 2013). The partner state has public authorities as playing a sustaining role (enabling and empowering) in the direct creation by civil society of common value for the common good. Unlike the Leviathan paradigm of top-down enforcement, this type of state sustains and promotes commons-based peer-to-peer production. Amongst the duties of the partner state, Silke Helfrich mentioned the prevention of enclosures, triggering of the production/construction of new commons, co-management of complex resource systems that are not limited to local boundaries or specific communities, oversight of rules and charts, care for the commons (as mediator or judge) and initiator or provider of incentives and enabling legal frameworks for commoners governing their commons. The entrepreneurial state, meanwhile, fosters and funds social and technical innovations that benefit humanity as public ideas that shape markets (such as, in recent years, the Internet, Wi-Fi, GPS), funding the scaling up of sustainable consumption (like the Big Lottery Fund supporting innovative community food enterprises that are driving a sustainable food transition in UK) and developing open material and non-material resources (knowledge) for the common good of human societies. Public authorities will need to play a leading role in support of existing commons and the creation of new commons for their societal value.

(c) The non-profit maximizer Private Sector

The private sector presents a wide array of entrepreneurial institutions, encompassing family farming with just a few employees (FAO 2014), for-profit social enterprises engaged in commercial activities for the common good with limited dividend distribution (Defourny and Nyssens 2006) and transnational, 'too-big-to-fail' corporations that exert near-monopolistic hegemony on large segments of the global food supply chain (van der Ploeg 2010). The latter are owned by unknown (or difficult to track) shareholders whose main goal is primarily geared to maximize their (short-term) dividends rather than equitably produce and distribute sufficient, healthy, and culturally appropriate food to the people everywhere. During the second half of the twentieth century, the transnational food corporations have been winning market share and dominance in the food chain, although space, customers and influence is being re-gained, spurred by consumer attitudes towards corporate foods and the sufficiently competitive (including attractive) entrepreneurial features of family farming (which still feeds 70% of the world's population) and other, more socially-embedded forms of production, such as social enterprises and co-operatives. The challenge for the private sector, therefore, is to adjust direction, to be driven by a different ethos while making profit – keeping, indeed, an entrepreneurial spirit, but focusing also much more on social aims and satisfying needs. Or, put the other way around, the private sector role within this tricentric governance will operate primarily to satisfy the food needs unmet by collective actions and state guarantees, and the market will be seen as a means towards an end (wellbeing, happiness, social good) with a primacy of labour and natural resources over capital. Thus, this food commons transition does not rule out markets as one of several mechanisms for food distribution, but does it reject market hegemony over our food supplies since other sources are available, a rejection that will follow from a popular programme for provisioning of and through the food commons (popular in the sense that it must be democratically based on a generalised public perception of its goodness and efficacy).

Local transitions towards the organisation of local, sustainable food production and consumption are taking place today across the globe (E.g. Ghent in Belgium[48], Torino in Italy[49], Toronto in Canada[50], Fresno in the US[51]). Directed on principles along the lines of Elinor Ostrom's (1990, 2009) polycentric governance, food is being produced, consumed and distributed by agreements and initiatives formed by state institutions, private producers and companies, together with self-organised groups under self-negotiated rules that tend to have a commoning function by enabling access and promoting food in all its dimensions through a multiplicity of open structures and peer-to-peer practices aimed at sharing and co-producing food-related knowledge and items. The combined failure of state fundamentalism (in 1989) and so-called 'free market' ideology (in 2008), coupled with the emergence of these practices of the commons, has put this tricentric mode of governance back on the agenda.

[48] https://stad.gent/smartcity-en/news-events/expert-michel-bauwens-researches-ghent-%E2%80%98commons-city-future%E2%80%99 (accessed on August 21, 2017)
[49] https://iucfood.wordpress.com/2017/08/06/making-sustainable-food-policies-a-reality-first-ipes-food-local-lab/ (accessed on August 21, 2017)
[50] http://tfpc.to/ (accessed on August 21, 2017)
[51] http://www.thefoodcommons.org/ (accessed on August 21, 2017)

The transition period for this regime and paradigm shift should be expected to last for several decades, a period where we will witness a range of evolving hybrid management systems for food similar to those already working for universal health/education systems. The era of a homogenized, one-size-fits-all global food system will be replaced by a diversified network of regional foodsheds designed to meet local needs and re-instate culture and values back into our food system (The Food Commons 2011). The Big Food corporations will not, of course, allow their power to be quietly diminished, and they will, inevitably, fight back by keep on doing what has enabled them to reach such a dominant position today: legally (and illegally) lobbying governments to lower corporate tax rates and raise business subsidies, mitigate restrictive legal frameworks (related to GMO labelling, TV food advertising, local seed landraces, etc.) and generally using the various powers at their disposal to counter alternative food networks and food producing systems. To emphasise, the confrontation continue over decades, basically paralleling and in some ways reversing, in fact, the industrialisation and commodification path that led us to this point.

(d) How the "Food Commons" could be supported in Europe?

The consideration of food as commons could unlock food policy options that have so far being dismissed just because they did not align with the dominant neoliberal narrative. Based on the outreach work I carried out with the European Commons Assembly[52] during 2016, two working papers were prepared with policy recommendations for the European Parliament and the European Commission on Territories of Commons (Vivero-Pol et al. 2016) and Food Commons in Europe (Vivero-Pol 2016). Based on them, if food is valued and governed as a commons in Europe, the following options could be considered, with normative, political, legal and financial measures.

Normative measures

1.- Mirroring the successful European Citizen Initiative on water as a commons and public good[53], a similar initiative could be launched to consider food as a human right, a public good and a commons in European policy and legal frameworks. This does not prevent to have traded food for profit, but policy priorities should be geared towards safeguarding farmer's livelihood and eater's rights to adequate and healthy food.

2.- Set aspirational and inspirational targets for food provisioning in 2030. For example, 60% could come from the private sector, 25% from self-production (collective actions) and 15% from state-provisioning (E.g. public buildings, destitute people, unemployed families) through Universal Food Coverage.

Political measures

3.- None of five Regulations that conform the legal/political corpus of the reformed CAP (December 2013)[54] have included any reference to the "right to food", "commons" and "common resources". So, in the next CAP reform, at least some specific references to the right to food provisions (adopted by

[52] https://europeancommonsassembly.eu/

[53] http://www.right2water.eu/

[54] Those are the following: the Rural Development Regulation 1305/2013, Horizontal issues such as funding and controls 1306/2013, Direct payments for farmers Regulation 1307/2013, Market measures Regulation 1308/2013, and To ensure a smooth transition Regulation 1310/2013.

all the EU members individually when they ratified the International Covenant of Economic, Social and Cultural Rights) could be included as well as a recognition of the importance of the food-producing commons in Europe, as particular institutional arrangements where collective management of natural resources in historical institutions provides utilities in form of food products, landscape stewardship and cultural heritage.

4.- School Meals shall be considered as a universal entitlement and a public health priority. This meals could form the transformative core of different EU food policies in the following form: School meals would be a universal right to all European students, either in public or private schools. Those meals in public schools should be cooked daily in the same school premises (as long as possible), using organic and seasonal products produced by local farmers (either private farmers or public servants) under agroecological systems and being free and the same to all students. A real universal entitlement that would prevent unhealthy eating habits at school, eliminate eating disparities due to class, gender and religion, and support local farming systems. Eating together healthy food would become a collective activity, governed by parents, school staff and state authorities, that would revalorise the food commons.

5.- Encourage Food Policy Councils (with open membership to citizens) through participatory democracies, financial seed capital and enabling laws. Those councils could be established at local level (villages and cities), or regional and national. Once a sufficient number is achieved in all EU members, an EU Food Policy Council could be established to monitor the reform yet-to-be Commons Food Policy.

6.- Food producers could be considered a profession relevant for the public interest and thus some farmers and fishermen could be directly employed by the State to provide food regularly to satisfy the State needs (E.g. for hospitals, schools, army, and ministries). A certain number of food producers could thus become public servants, as already happening at municipal level[55].

7.- Establishing public bakeries where every citizen can get access to a bread loaf every day (if needed or willing to). That would be a mix between a symbolic movement (one piece of bread does not guarantee adequate food for all) and a first political move towards a public reclaim of the commoditised food system.

8.- Another proposal is to take the international food trade outside the World Trade Organization, as food cannot be considered like other commodities, due to its multiple dimensions for human beings. Along those lines, a different international food treaty should be crafted, whereby countries abide by and respect some minimum standards in food production and trade. It should be a binding treaty, as proposed in MacMillan and Vivero-Pol (2011).

9.- Public-private partnerships (PPP) in the food sector are decision-making spaces for the private sector to influence policymakers in order to arrange a legal space which is conducive to profit-seeking. Since they are not meant to maximize the health and food security of the citizens but mainly to maximize profit-seeking, these PPPs should be restricted to operational arrangements but never to

[55] https://magazine.laruchequiditoui.fr/profession-agriculteur-municipal/ (Accessed on August 23. 2017)

dealing with policy making or legal frameworks (Hawkes and Buse 2011). Instead, there could be a promotion of Public-Commons Partnerships (Piron and Cogolati 2017).

Legal measures

10.- A Universal Food Coverage could be engineered to guarantee a minimum amount of food to every EU citizen, everywhere, every day, similar to universal health coverage and universal primary education, both available in different forms in all European countries. Why is what we see as acceptable for health and education so unthinkable for food?

11.- Patenting living organisms should be banned. We can patent computers, iPods, cars, and other human-made technologies but we cannot patent living organisms such as seeds, bacteria or genetic codes. That should be an ethical minimum standard and a fundamental part of our new moral economy of sustainability. Excessive patents of life shall be reversed, applying the same principles of free software to the food domain. It seems the patents-based agricultural sector is slowing or even deterring the scaling up of agricultural and nutritional innovations and the freedom to copy actually promotes creativity rather than deter it[56], as it can be seen in the fashion industry or the computer world. Millions of people innovating on locally-adapted patent-free technologies have far more capacity to find adaptive and appropriate solutions to the global food challenge than a few thousand scientists in the laboratories and research centres (Benkler 2006).

12.- Food speculation should be banned, because it does not contribute to improving the food system, neither food production, nor consumption, and it has many damaging collateral effects[57]. Food can be traded, insured, and exchanged, but not speculated on.

13.- Legal lock-in regulations that prevent collective actions for food, such as urban gardens, incredible edible, meal exchange systems, farmer's markets, seeds and food exchange mechanisms, should be reformed. A higher role for non-market and non-state self-regulated collective actions should be allowed and encouraged with more funds and a protective legal space for collective decisions at local level. For instance, allow exchange/trade of local seed varieties, increase governmental purchase of food from local and organic sources, or levy food safety regulations that only favour big food enterprises and not family farming or small scale producers.

14.- All agricultural research funded with public funds shall be automatically granted the IP right of open knowledge or public domain knowledge.

Financial measures

15.- Food-related subsidies at EU level could be re-considered in order to support those innovative civic actions for food that are mushrooming all over Europe: "Territories of Commons", community-supported agriculture, food buying groups, open agricultural knowledge, urban food commons, peer-

[56] The Economist (2014, 2015) http://www.economist.com/blogs/freeexchange/2014/08/innovation and http://www.economist.com/news/leaders/21660522-ideas-fuel-economy-todays-patent-systems-are-rotten-way-rewarding-them-time-fix (Accessed on August 23. 2017)

[57] A recent proposal on that regard was voted in Switzerland in 2016, being defeated by 60% of respondents rejecting the idea and 40% in favour. https://www.swissinfo.ch/eng/february-28-vote_food-speculation-vote-boils-down-to-solidarity-vs-jobs/41984482 (Accessed on August 23. 2017)

to-peer food production. This area of the European food system shall be given more legitimacy and visibility by local/national and EU authorities and be granted financial/legal support.

16.- Shifting from charitable food (Food Banks supported by humanitarian assistance funds from the Common Agricultural Policy) to food as right (Universal Food Coverage for all). The European Parliament could elaborate a communication to revisit the growing number of food banks in Europe and call for an EU food bank network that is universal, accountable, compulsory and not voluntary, random and targeted (Riches and Silvasti 2014).

8.5.- THE NORMATIVE THEORY OF "FOOD AS A COMMONS"

Based on the outputs of the three different approaches to understand the two socially-constructed food narratives analysed, and given the absence of a conceptual approach to food as a commons, I herewith present the theoretical underpinnings to justify the consideration, enactment and governance of food as a commons based on (a) the multiple dimensions of food, (b) the operational conceptualization of numerous food systems, at present and in historical times, where food is not valued as a commodity but a commons, and (c) the moral notion of its essentialness for human survival. Those elements render food as a vital good that shall be governed by all for all, placing "commoning", the moral grounds and the fundamental rights at the centre of this new model.

8.5.1.- The rationale to consider food as a commons

A.*- The *THEORETICAL FRAMEWORK of food as a commons is based on the multiple dimensions of food (explained in detail in chapter 4, see also Figure 3 in the conclusions). Those dimensions as essential fuel for human bodies, cultural determinant, human right, public good, natural resource (harvested in the wild and cultivated) and tradeable good cannot be adequately valued through market mechanisms only, reducing to a monetary valuation the multiple non-economic meanings of food. Therefore, food cannot only work as a commodity and hence it has to be governed and allocated by other means. The consideration of food as commons rests upon revalorizing the different food dimensions that are relevant to human beings, thereby reducing (but not denying) the importance of the tradable dimension that has rendered it a mere commodity. This multi-dimensionality endows this resource with the "commons" category.

Food as a commons is compounded by edible resources and governing communities, which can be local, national or international, and whose proprietary regimes may be private, public or collective, being the primary goal to secure that all members participate in the governance and the benefits of that resource. Every eater should have a saying in how the food resources are managed (an idea that has been termed as "food democracy"), and every eater should be guaranteed a fair and sufficient access to that resource, regardless of his/her purchasing power. The end-goal of a food commons system should not be profit maximization, but increased food access, building community and shortening the distance from field to table.

Regarding the valuation of the six food dimensions, the assumption of this research is as follows:

a) The recognition of these dimensions is universal, whatever age, gender and culture (although food as a human right is contested in some countries), but individuals differ in the weight and priority assigned to each dimension.
b) Food dimensions matter to humans as they shape our relationship to food and food-producing systems.
c) The valuation of food dimensions triggers human agency, being an important factor in separating a food consumer (the one who gets access to food by purchasing it) from a food citizen (the one who participates in the governance of the food system).
d) Societies value food dimensions differently in specific historical and geographical contexts. So food dimensions are situated.
e) Food dimensions connect multiple elements and drivers that interplay in the food systems, as well as other issues such as biodiversity, climate change, gender and poverty.

B.- **The *OPERATIONAL CONCEPTUALIZATION*** puts emphasis on the historical and actual social practices around food-producing systems (governance, institutions, customs) and establishes "commoning" as the instituting action of cultivating, processing, exchanging, selling, cooking and eating together, what renders food its commons category. The food commons, by being at the same time an old way of valuing food and a new narrative vis a vis the dominant commoditized discourse, can provide a locus of convergence that coalesce contemporary food movements (E.g. urban innovations) and customary food systems (E.g. indigenous practices) to challenge and render obsolete the narrative of the industrial food system that only values the economic dimension of food as a commodity. The food commons encompasses ancient and recent history, a thriving alternative present and an innovative, utopian and just vision for the future where everybody is guaranteed access to food.

This framing of food based on real praxis includes four components in the institutional set up: (a) the material and non-material resources, such as edible foodstuff, cooking recipes, traditional agricultural knowledge or genetic resources; (b) the communities who govern, own and share the resources (they can be local, national or global because we all eat); (c) the "commoning" practices they use to produce, transform and eat food collectively; and d) the moral narrative that sustains the main purpose of the food system: produce food sustainably to feed the people adequately. This moral differs from the profit maximization and cost reduction mantra that characterizes industrial food system. Moreover, different proprietary regimes and governing mechanisms are valid to manage and allocate food as a commons, but the major difference with the commodity narrative lays is the non-dominance of money-mediated access.

C.- There is also a *MORAL NOTION* in this theory. It posits that food is a commons because it is fundamental to people's lives and a cornerstone of human societies, regardless of how it is governed or who owns it. By being essential to people, the food commons carries a deeper and subversive moral claim on who owns Earth's food and food-producing resources, questioning John Locke's rationality to justify private property and appropriation of natural resources (see 2.3.2.c. in chapter 2 for a discussion on Lockean provisios). Moreover, this moral notion transforms the economic property of excludability from "can" to "ought to", justifying that food shall be valued as a commons because any given person ought not be excluded from its access, due to its absolute essentialness.

Summing up the theory, food shall be re-constructed as a commons based on its essentialness for human survival, the multiple dimensions food carries for individuals and societies, and the "commoning" practices that different peoples are maintaining (customary) or inventing (contemporary) to produce food for all, based on a rationale and ethos different from the for-profit capitalism.

The food commons narrative and praxis represent what Pleyers (2011) described as "the two parallel cultures of activism in their quest for social change". Thousands of contemporary and customary food commons are defending or creating bottom-up collective actions at the local scale, giving a prominent place to real experiences of commoning and narrative co-creation. Those actions have instituting power to create new policies, new rules and new social constructs. The second culture, the "way of reason", is based on technical expertise, knowledge and institutional regulation. That culture is still lagging behind, as we have seen in chapters 2, 3, 4, 6 and 7, but this research may be considered as another step in that way.

8.6.- LIMITS OF THIS RESEARCH

Finding a balance between the comprehensiveness that provides an inter-disciplinary approach and the solid academic soundness that is often found in mono-disciplinary and situated case-studies is far from been easy and it has certainly not been solved in this research. The quest for multiple approaches to apprehend the normative, historical, political and legal understandings of this new, but at the same time old, narrative of food has led this research to numerous caveats that have not been properly solved. Just to name a few.

1) A reductionist dualistic typology to value food was used (either commons or commodity), assigning individual respondents in chapter 4 to those pre-determined labels, thus preventing nuanced valuations to emerge. Additional typologies can be constructed with highly/mildly mono-dimensional or highly/mildly multi-dimensional preferences that can better inform the food commons theory, yielding different results.
2) Although initially planned to be included in this research, the historical analysis of food producing commons in different civilisations was finally dropped because it would merit a thesis of its own. However, the historical school of thought on commons (epitomised by the International Association of the Commons, chaired by Prof Tine de Moore, and its reference journal) will certainly be a useful tool to shed additional light on the historical relevance of the food commons experiences and associated narrative.
3) Re-valuing food as a commons needs to deal with problems of ownership. The proprietary rights of "food as a commons" in specific situated examples, national legal frameworks and international agreements has not been discussed here, and it would be rather needed. The immediate question that arises whenever the idea of food as a commons is presented is: who owns that food when produced by human agriculture? When food is produce by nature, the proprietary regimes are diverse and many of them still consider the final product as a commons. But the cultivated food requires a deeper understanding on what entitlements, proprietary regimes and allocation mechanisms should be put in practice to render effective the consideration of food as a commons.
4) Who decides what a commons is? and when is food considered as a commons? Based on my recent involvement with the Turin's Food Policy and the shared management of urban food gardens, this

puzzling question was debated during a recent workshop (June 2017). It clearly relates to the normative and practical implications of this research, and it merits a research project of its own. The activists and some political scholars would defend that commons are created by people acting in common and governing a resource in common ("the commoning"). For instance, in Coastal Ecuador, the production of charcoal from tropical forests became a new economic activity governed as a commons (with rules, institutions, sanctions and proprietary regimes) because the community deemed important that resource and created that new commons (Ruiz-Ballesteros and Gual, 2012). However, in our highly legalized world, where res nullius and res communis within sovereign territories are often governed by the sovereign states and their public policies, it may happen that defining a commons or authorise a re-commoning of a resource may require the State's approval. So, the commons can be created by governmental decisions and not just the people's instituting power (as defended by Dardot and Laval 2014).

Additional limits of this research are due to the trajectory chosen: off-the-beaten track of previous studies. No other case study or research has been found (despite the extensive bibliographical research carried out) where both narratives have been contrasted in theoretical grounds or explored via direct individual interviews. No research where Discourse Theory has been applied to explore the construction of the "food as a commodity" narrative or the highly under-studied "food as a commons" or "food as a public good". So, it was difficult to compare the preliminary results of this research with other analyses.

The specific elaboration of the proxy construct of "Valuing Food" in the food-related professionals case study (see Chapter 4 - Supplementary Materials 2.2) was based in heuristic methods (commons sense, pairwise comparison of economic – non-economic dimensions), since no similar analysis had been done before. Therefore, the consideration of food as a multi-dimensional or mono-dimensional good, the nuances between strongly mono-dimensional and mildly mono-dimensional, and the thresholds used in the proxy variable (four questions, more than 1 out of 4 economic questions preferred meaning mono-dimensional) are all subject to critique, because they could have been done differently. However, as a first exercise of its kind, the methodology used in this research could serve a comparative and inspirational basis for future exercises to understand the relevance of value-based considerations of food.

The two individual samples used in chapters 3 and 4 are heavily dominated by respondents working in the third sector and the public sector in regimes or niches (chapter 3), and members of self-regulated collective actions for food working in niches (chapter 4). There is a reduced representation of individuals working in the private agri-food sector, and none coming from the Big Agri-food corporations. In principle, in the current globalised and industrialized food system those actors play an important role in narrative making (through their daily practices, communication campaigns, lobbying and media connections). However, their voices have not been included in this research because they didn't reply to my questionnaire, and this void may affect the final results. It is highly recommended to carry out additional research to explore how professionals working in agri-food companies value food. Additionally, this research has not addressed the full-time food producers (farmers, peasants, fishermen, indigenous groups) and that constituency must also be heard in future research initiatives regarding food narratives.

In general, there are many other methodological and conceptual limits to this research that could be debated (small sample size, heterogeneity of respondents, lack of in-depth historical analysis of the food commodification pathway, no in-depth small case study, personal engagement), most of them having sound arguments. This path-breaking research has been navigating for unchartered waters when defining the alternative narrative to be studied (food as a commons), when constructing the methodology of analysis (pairwise questions to ask indirectly whether food is perceived more as a commodity or more as a commons), when choosing a community of practice connected through social media that represents the narratives in the landscape, or when exploring the different epistemic schools that have addressed the meanings of commons and food. The idea of food as a commons is rather old (historical) but it has rarely been elaborated in such a way, being the dominant narrative its consideration as a private good and a commodity, a recent narrative constructed by economists and hailed by the governmental and corporate elites. This research may contribute to the reconstruction of a different narrative of food that opens up new policy options to govern food differently, satisfy people's needs, steward Natural resources and gain profit in a socially-acceptable way.

8.7.- INNOVATIVE ELEMENTS OF THIS RESEARCH

In this scenario of multiple-crises affecting the world's food system, the quest for different guiding narratives for sustainable and socially-fair transition becomes a matter of utmost importance to inform other types of policies, legal frameworks and technical innovations for our own survival within planetary boundaries. In this PhD, I have sought to contribute to the inter-disciplinary analysis and theoretical development of an alternative narrative of transition whereby food is no longer considered, traded and valued as a pure commodity but valued, regulated and governed as a commons. None of the most relevant analyses produced in the last decades on the challenges of the global food system has ever questioned the nature of food as a private good and commodity. Likewise, none of the well-known theorists or historians that have analysed the commodification process or the development of capitalism and the industrial food system have proposed food to be valued as a commons, although many have criticized the commodification of food. Actually, La Via Campesina movement, being rather critical with the consideration of food as a commodity, has not yet proposed an alternative consideration as a commons or public good. Perhaps, the idea could be dubbed as "too radical" even for the radical movements.

Therefore, this is the innovative part of my research: the multi-methodological and inter-disciplinary approach to a different valuation of food that may provide justification for other types of policy options and governing mechanisms. In this research, I defended the need to co-construct and agree upon a new narrative of food, based on accepted moral grounds, and drawing from customary and contemporary epistemologies and praxis that, historically and currently, value food differently from a commodity. Based on the case studies and the desk review, I draft the foundations of a theoretical framework to value/govern food as a commons, a social construct that accounts for the multiple values of food. This is just a first approach to this "different" narrative of transition, and I hope it may trigger further interest and be used in additional case studies (as suggested below).

Re-commoning food defies the legal and political scaffoldings that sustain the hegemony of the market and state elites over eaters and food producers and informs sustainable forms of food production (agro-ecology), new collective practices of governance (food democracies), and alternative policies to

regain control over the food system (food sovereignty). Food as a commons is an agent of change with transformative power, no matter what economists say. The consideration of food as a commons provides the moral ground where customary niches of resistance and contemporary niches of innovation may work together to crowdsource a powerful and networked alternative to produce good food for all within the planetary limits. Valuing food as a commons will enable food producers to fulfil a role as environment stewards, eaters to unfold more democratic and participatory food systems, policy-makers to foster people's engagement in managing their own life-enabling systems and engaged food professionals to find a common narrative that sustains alter- and counter-hegemomic transformative actions. The consideration of food as a commons is:

- A normative concept from the philosophical point of view.
- A social construct, politically speaking.
- A fundamental right, legally speaking.
- The recognition of a historical reality that has been dominant in the greatest part of human beings' existence.

8.8.- POSSIBLE DIRECTIONS OF FUTURE RESEARCH

As this research has barely glimpsed into the diverse but almost unexplored world of the food commons narrative, there are many interesting ideas yet to be explored. I will mention here just a few, putting more emphasis below in some food-related elements that would deserve further research to determine its commons consideration.

1) Was food valued and governed as a multi-dimensional commons or a mono-dimensional commodity in different historical periods of different placed-based civilisations?
2) Mirroring the public and private settings in the universal health and education schemes found in Western countries, it could be interesting to explore current and possible institutional arrangements between initiatives that value food as a commons and the commercialization of those food products. Some research has been done in profit-capped cooperatives, but their valuation of food as a commons is yet to be seen.
3) As the commons/commodity debate in the academic milieu has been mostly supported by Western scholars (although many of them studying examples in the Global South), it could be enriching to have additional examples of food commons interpreted through what Boaventura de Sousa Santos called "Epistemologies of the South". For instance, using Kiwcha, Bantu, Native American, Inuit or Maya epistemic regards to understand the multiple dimensions of food to humans. Very likely, these approaches would yield additional dimensions not included in this research (for instance, food as a medicine). Non-European epistemologies such as the Japanese, Chinese or Indian approaches to food and customary initiatives still thriving in those countries will surely provide additional insights on the food as a commons narrative.

Another research stream that is worth pursuing relates to other material and non-material commons that are facing similar problems of enclosure, privatization and absolute commodification such as knowledge commons (IP rights, scientific knowledge produced by companies and privately-funded research produced by universities, traditional knowledge of indigenous communities and bio-piracy, knowledge included in genetic resources, cooking recipes, etc) and material food-producing commons (land, traditional seeds and land-races, water). Some authors already defend the whole food system should be considered as a commons, due to the essentiality of food to human survival and the

importance of those systems to the planetary health (Ferrando 2016; Rundgren 2016). Following this rationale, I collected different food-related elements that are already or could be considered as commons. They would require further analysis with a food commons perspective that could certainly enrich the food commons narrative. As a first step, some of them will be individually analysed in an edited volume on Food as a Commons due to appear in 2018 (Vivero-Pol et al., in preparation). Those elements are as follows:

Knowledge Commons

a.- Traditional agricultural knowledge: a commons-based patent-free knowledge that would contribute to global food security by upscaling and networking grassroots innovations for sustainable and low cost food production and distribution (Brush 2005).

b.- Modern science-based agricultural knowledge produced by public national and international institutions: Universities, national agricultural research institutes or international CGIAR, UN or EU centres, they all produce public science, widely considered as a global public good (Gardner and Lesser 2003). More research funds shall be invested in sustainable practices and agro-ecology knowledge developed by those universities and research centres instead of further subsidizing industrial agriculture.

c.- Cuisine, recipes and national gastronomy: Food, cooking and eating habits are inherently part of our culture, inasmuch as language and birthplace, and gastronomy is also regarded as a creative accomplishment of humankind, equalling literature, music or architecture. Recipes are a superb example of commons in action and creativity and innovation are still dominant in this copyright-free domain of human activity (Barrere et al. 2012; Harper and Faccioli 2009). It is worth mentioning this culinary and convivial commons dimension of food has received little systematic attention by the food sovereignty movements (Edelman 2014), although it is being properly valued by alternative food networks (Sumner et al. 2010; The Food Commons 2011).

d.- Food Safety considerations: Epidemic disease knowledge and control mechanisms are amply considered as global public goods, as zoonotic pandemics are a public bads with no borders (Richards et al. 2009; Unnevehr 2006). Those issues are already governed through a try-centric system of private sector self-regulating efforts, governmental legal frameworks and international institutional innovations such as the Codex Alimentarius.

e.- Food price stability: Extreme food price fluctuations in global and national markets, as the world has just experienced in 2008 and 2011, are a public bad that benefits none but a few traders and brokers. Those acting inside the global food market have no incentive to supply the good or avoid the bad, so there is a need of concerted action by the states to provide such public good (Timmer 2011).

f.- Nutrition, including hunger and obesity imbalances: There is a growing consensus that health and good nutrition should be considered as a Global Public Good (Chen et al. 1999), with global food security recently joining that debate in international fora (Page 2013).

Natural Commons

a.- Edible plants and animals produced by nature (fish stocks and wild fruits and animals): Nature is largely a global public good (E.g. Antarctica or the deep ocean) so the natural resources shall also be public goods, although it varies depending on the proprietary rights schemes applied in each country. Fish stocks in deep sea and coastal areas are both considered common goods (Bene et al. 2011; Christy and Scott 1965).

***b.- Genetic resources for food and agriculture*:** Agro-biodiversity is a whole continuum of wild to domesticated diversity that is important to people's livelihood and therefore they are considered as a global commons (Halewood et al. 2013). It should be mostly patent-free to promote and enable innovation. Seed exchange schemes are considered networked-knowledge goods with non-exclusive access and use conditions, produced and consumed by communities.

8.9.- EPILOGUE

At the end of 18th century, more people were slaves than were free and the British Empire depended completely on slavery to produce commercial foodstuff such as sugar, coffee, tea and rum, inasmuch as other previous empires were built on slavery work (i.e. the Greek, Roman or Spanish empires). Yet, between 1787 and 1807, a group of determined men managed to convince the members of British Parliament to abolish slave trading (Smith 2012), and in less than a century slavery practices were formally banned in most countries of the world, in what Alexis de Tocqueville considered "the most extraordinary accomplishment in the history of all peoples". This extraordinary process was a de-commodification of human beings, largely based on moral reasons. Since the triumph of the enlightening ideals of the French Revolution, the to-date accepted moral narratives were no longer untouchable and other values were rising to finally replace the "old order of things". And the acceptance of slavery as a "normal and natural" state started to be a thing of the past, non-modern, acceptable or "good" in the Aristotelian sense. As a social construct, slavery was reverted (the process took many decades though) and a different value-based conception of human beings ("we all are equal in rights and duties") was established as the new "normal" narrative. If that happened to humans against a historical construct that had lasted more than 10,000 years it can perfectly happen to food that, on the other side, was already considered as a commons for more than 200,000 years.

So, it is important to highlight that things are not commons or commodities *per se* but goods can be valued or work as commons or commodities depending on the circumstances. Even both understandings (commodified and un-commodified) shall not be mutually exclusive but they can co-exist in the same good (Radin 1996, 82), and every meaning will have primacy over the other under specific circumstances. So, this is the plurality of meanings of food that has to be recognized, being the commodity dimension only one of them. The dynamic interactions of those dimensions (economic and non-economic) render food something that is much more than a commodity. This is the normative construction of food as a commons based on historical, moral, heuristic and theoretical arguments that go far beyond the restrictive theoretical approach to food by the economic school.

In this research, I have approached food using different methodologies and epistemic tools, trying to understand the multiple meanings food has now for the dominant and non-dominant narratives found

in the global food system. I have done my best to sketch a genealogy of meanings of commons and food for Western scholars and elites in the 20th century by using a systematic approach to schools of thought on commons and the scholar literature valuing food as a commons or commodity; an heuristic approach to food-related professionals working in the food system, either producing, researching on, policing or advocating for food and nutrition, and to members of food buying groups in innovative niches; and finally a normative approach to food as a commons. Food has been valued and governed as a commons for centuries in different civilisations[58], and legal and political scholars demonstrate this consideration is still alive in many customary food systems. Moreover, this narrative is nowadays being reconstructed in innovative contemporary food initiatives that are mushrooming all over the world. The food commons are hence a reality, although the dominant narrative of the industrial food system and the academic mainstream do not recognise it yet. Scholars need to approach other narratives of food that go beyond the hegemonic and permitted ideas, unlocking unexplored food policy options to guarantee universal access to food for all humans, regardless their purchasing power

I am convinced that once the way we regard food is modified, the narrative that constructs the vision, goals and aspirations that lead our socio-technical transition will also change, and the policies, legal frameworks, incentives and governance arrangements will gradually be adjusted as well. Because policy options, legal frameworks and market mechanisms are nothing but tools human societies use to reach goals, either be peace, wellbeing, freedom, full employment or prosperity.

Being so convivial, relational and important for individuals and societies, food is a perfect agent of change with transformative power. Re-commoning food may help us re-creating sustainable forms of food production, new collective practices of governance, and alternative policies to regain control over the food system by the most relevant actors (eaters and producers) from the current dominant actors (agri-food corporations and governments).

I am deeply aware the re-commonification of food will be a long and winding road, to be fought in many loci of contestation, and requiring the collective action of thousands of food producers, scholars, activists, politicians and food professionals. The commoning of food will consist of a long-term incremental process to dismantle the absolute reliance on market logic. This process is led by transnational food movements in the international arena but that needs to be complemented and re-enforced by local food movements working in customary and contemporary alter- and counter-hegemonic niches in order to build a "globalization from below". A myriad of customary food system and contemporary civic food initiatives are resisting the commodification of food and re-constructing the forgotten narrative of food as a commons that was the norm in human societies for thousands of years. Indigenous narratives such as Sumak Kwasay or Ubuntu, grassroots initiatives such as the food sovereignty movement lead by la Via Campesina and civic food networks such as the Transition Movement or Slow Food are reclaiming a non-commodified re-valuation of food, a life enabler, cultural pillar and binding human right.

It took capitalism more than 60 years to manufacture the "commodified food" consent and alternatives cannot be dismissed simply because they do not fit in the short-termism of post-modern

[58] The very last day of this thesis, I read that a pollen analysis in a mountain pastureland in Northern England showed that area was deliberately managed as a commons for more than 3000 years to maintain good grazing (Davis and Dixon, 2012). Nowadays, it is still managed in that way.

societies. It may take a much longer time to debunk that narrative and re-construct food as a commons, but this work hopes to be a significant contribution by inspiring further academic, political and civic actions. On top of that, since capitalism was initially constructed in the agricultural arena in the XVIth century (Wallerstein, 2011) it makes sense the alternative to capitalism may also emerge in food-producing systems, based on different foundations from those that were crafted between XVIth and XVIIth by Francis Bacon, Rene Descartes, Thomas Hobbes, John Locke, Isaac Newton or Adam Smith (Wallerstein 2004; Capra and Mattei 2015).

In any case, I do not expect to see the fruits of this thesis in my lifetime, but the children of my daughter Jimena may, hopefully. In any case, I enjoyed writing it.

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Food is a life enabler with multiple meanings. From the industrial revolution to date, those meanings have been superseded by its commodity dimension. In this research, the commodification of food is presented as a social construction, informed by academic theory, which shapes specific food policies and blocks other policies grounded in different valuations of food. This thesis seeks to trace the genealogy of the meaning making and policy implications of two food narratives, as a commodity and commons. It focuses on "Agents in Transition", using discourse analysis and transition theory, plus three methodological approaches (systematic, heuristic and governance), including the combination of quantitative and qualitative tools.

The first part includes a systematic approach to schools of thought plus a research on academic literature on commons and food narratives. Notwithstanding the different interpretations, the economists' framing as private good and commodity has prevailed to date. This framing was rather ontological ("food is a commodity") thus preventing other phenomenological meanings to unfold and become politically relevant. The second part adopts a heuristic approach with two case studies on how the narratives influence individual and relational agency in food systems in transition (food-related professionals and food buying groups). Part three navigates the policy arena with a case study on how the absolute dominance of the tradeable dimension of food in the US and EU political stance obscures other non-economic dimensions such food as a human need or human right. This part also contains a prospective chapter where different governing arrangements are proposed, with specific policy measures suggested.

The normative theory of food as a commons rests upon its essentialness to humans, the multiple dimensions of food, and the diversity of governing arrangements that have been set up across the world, now and before, to produce and consume food outside market mechanisms. Based on the "instituting power of commoning", once the narrative is shifted, the governing mechanisms and legal frameworks will gradually be moulded to implement that vision. A regime based on food as a commons would construct an essentially democratic food system based on agro-ecology and emancipatory politics.

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