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FARMING JUSTICE

Rights-based approaches to collective agrobiodiversity conservation

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[Alfred Wainwright's books] are beautiful, thoughtful little books and exert a powerful hold on how other people see our landscape. They cast a spell over people like my teachers at school, whose entire perception of the Lake District was shaped by these books and a handful of other.

[...]

It struck me powerfully that there was scarcely a trace of any of the things we cared about in what Wainwright had written. [...] I wondered whether the people on that mountain saw the working side of that landscape, and whether it mattered. In my bones I felt it did matter. That seeing, understanding and respecting people in their own landscape is crucial to their culture and ways of life being valued and sustained. What you don't see, you don't care about.

— James Rebanks
The Shepherd's Life: A Tale of the Lake District
2015

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ABSTRACT

Justice concerns are at the core of struggles and conflicts brought about by the ineluctable trade-offs related to agrobiodiversity conservation. This work's point of departure lies in trying to understand how these concerns find support in bottom-up conservation initiatives in Western Europe; and how this relates to conservation outcomes. I argue that rights-based governance approaches (*i.e.* approaches involving themselves with social and environmental justice) to agrobiodiversity conservation are not only compatible with effective conservation and farming outcomes, but that they are a condition to their long-term success.

To study these rights-based approaches, this work adopts a critical theory perspective, albeit one that involves itself heavily with environmental concerns. In the context of agrobiodiversity conservation, an environmental critical theory requires thinking of conservation not only as the management of a socio-ecological system, which may or may not be effective, but as a broader socio-

political process, in which forces of cultural, economic and political domination are at play.

More in particular, I look at a series of bottom-up agrobiodiversity conservation cases in Western Europe and explore their justice-relevant governance arrangements. First, following recent work on environmental justice and drawing on Nancy Fraser's conception of justice as 'parity of participation', a three-dimensional justice framework is used to understand how different rights find support in the cases. Second, drawing on the literature on participatory governance and citizenship developed in the environmental and development studies, I ask under which conditions these rights-based governance arrangements have led to effective conservation outcomes. Third, I focus on one of the dimensions of justice, *i.e.* cultural recognition, by exploring its meaning and specificity in the context of the agrobiodiversity conservation. This leads to a deepening of the issue of recognition by looking explicitly at its epistemic dimension in the context of agrobiodiversity conservation, using insights from decolonial thought.

It appears that agrobiodiversity conservation is not simply an environmental or agricultural matter. In the different cases studied in this work it is an instrument for a broader struggle; a struggle for justice. In their efforts to conserve agrobiodiversity, farming organizations redefine the conditions under which their members participate in society. Governance arrangements for the conservation

of agrobiodiversity are used to redistribute or communalize available resources; to oppose institutional threats to farmer's culture, knowledge and livelihoods; to (re)build a common rural identity and citizenship; and to encourage self-determination and foster empowerment. Under the banner of peasant, local and/or organic agriculture, through the reintroduction of traditional varieties, the creation of new varieties using farm-based knowledge, and the redesign of innovation models, individual farmers are connected to collective movements demanding justice and a more efficient agricultural model. It is the combination of injustice and inefficiency of the current farming model that spurs the emergence of movements of resistance, such as those studied in this work. An effective agrobiodiversity conservation strategy hence will need to address both dimensions simultaneously. Movements adopting such an approach are key for the reinvention and the sustainable transformation of European agriculture and the conservation of agricultural biodiversity.

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The illustration on the cover of this work is by Will Etling (www.etling.com), who has generously allowed me to use it.

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INTRODUCTION

Producing food is unavoidably political. Organizing the food system requires answering questions such as “who produces food?”, “who controls the food supply?”, “how is food produced?” and “who benefits from the system?” These questions long remained at the heart of the political debates in post-war Western Europe, even though they were answered through one main institutional player. With scarcity and hunger still fresh in the minds of many European families, agriculture in the second half of the 20th century was used primarily to ensure food security and to meet demands for the reconstruction of war-torn economies by State-led initiatives, whether through direct regulation of the markets, subsidies or organisation of public research and training. The necessary technology, science and resources for support to agricultural production were managed and controlled by the State (and increasingly regulated through supranational EU policy), which determined what to produce and how to do so (Sumberg and Thompson 2012).

Things changed from the 1970s onwards. The dominant role of the State in agriculture and rural development in Europe was replaced by

the dominance of market players. Agricultural practice and science went from a technical discipline, controlled and organized by the State, to a market-only endeavor, tailored for powerful non-producing actors and characterized by the growing capacity of multinational firms to control agricultural production and agronomic research (Bonneuil and Thomas 2009). This shifting dominance led to a centralized agri-food system generating a series of well-documented issues such as environmental degradation (among many others see Burney *et al.* 2010; Tilman *et al.* 2002; Altieri 1998; Carson 1962), a disconnect between production and consumption of food (Ploeg 2008), increasing control and 'enclosure' of species and varieties (Bocci and Chable 2009), the disappearance of family farming (Albrecht 1998), and ill-suited and/or inequitable policy frameworks (Hennis 2005), among others.

Since the turn of the century, this dominance is actively opposed by emerging social movements (Sumberg *et al.* 2014; Rosset and Martinez-Torres 2013; Bonneuil and Thomas 2009). Consumer-led initiatives are the most visible forms of resistance. They are generally referred to as alternative food networks: food cooperatives, community-supported agriculture, associations for the maintenance of smallholder agriculture, food-buying groups, etc. Less visible but at least equally important is the emergence of producer-led initiatives of resistance. This research project focuses on one specific type of such producer-led initiatives: collective agricultural biodiversity conservation.

Working on agricultural biodiversity (or agrobiodiversity) is interesting in many regards, as it lies at the intersection of agricultural, environmental and rural development issues. Agrobiodiversity is defined as “the variety and variability of animals, plants and micro-organisms that are used directly or indirectly for food and agriculture, including crops, livestock, forestry and fisheries” (FAO 1999: 5). This variety can be at genetic, species or ecosystem level, and can be both planned (deliberately introduced and/or domesticated) and associated (the biota contributing to productivity) (Vandermeer and Perfecto 2013). This project mainly focuses on planned species diversity, both plant and animal, but adds associated knowledge and cultural diversity to the definition of agrobiodiversity.

Agrobiodiversity also represents the ‘working side of [our] landscapes’ (Rebanks 2015). It ensures a connection with the land that the increasing urbanization of our landscapes and modes of lives has jeopardized. Throughout history, under the influence of farmers, breeders, peasants and indigenous communities, it defined our food, fields and farm animals, formed our identities and shaped our imagination of rural society.

Justice and biodiversity conservation

But agrobiodiversity is not only an agricultural, environmental and rural issue. Agrobiodiversity is about who *controls* the source material

of our food. This work illustrates how agrobiodiversity conservation is used as a tool for political, cultural and economic resistance, organized by individuals and communities around the world. It may not be self-evident to think of biodiversity conservation as a form of bottom-up resistance, yet the diversification of agricultural biodiversity is a condition to break with an ill-suited agri-food system—a system in which plant and animal varieties, agricultural knowledge and practices, as well as commercialization and distribution are controlled by a small group of dominant actors. In other words, using traditional varieties and local landraces has become a political statement (Demeulenaere and Bonneuil 2011).

The conservation of agricultural biodiversity brings to the fore the political nature of agriculture. It crystallizes the power struggles at the core of our food system. In so doing, it inevitably deals with justice, which forms the conceptual toolkit of this thesis. Justice is about “the right thing to do” (Sandel 2009). It represents the set of principles which steer the governance of social arrangements, and therefore is often referred to as the “first virtue of social institutions” (Rawls 1971: 3). Justice concerns are at the core of struggles and conflicts brought about by the ineluctable trade-offs related to agrobiodiversity conservation, particularly those concerning the distribution of environmental goods and bads, the participation in decision-making and the recognition of local cultural norms and identities.

Focusing on rights and justice allows connecting with broader biodiversity conservation discourses, where these issues have gained importance since the 1980s. First, through the creation of so-called *Integrated conservation and development projects*, for instance, which tried to combine biodiversity conservation and development goals. Later, in 1992, with the adoption of the Convention on Biological Diversity (CBD): alongside the “conservation of biological diversity” and “the sustainable use of its components,” its 3rd objective became “the *fair and equitable* sharing of the benefits arising out of the utilization of genetic resources” (CBD 1992: 3; emphasis added). Likewise, in 2001, the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) was adopted, which aims for the “*fair and equitable* sharing of the benefits arising out of [the] use” of plant genetic resources for food and agriculture (ITPGRFA 2001: 2; emphasis added).

The early 2000s coincided with a significant conceptual shift away from protection-only perspective of nature protection to multi-dimensional human-centred approaches such as the ecosystem services narrative (Millennium Ecosystem Assessment 2005). And in 2010, eight of the biggest international conservation NGOs launched the *Conservation Initiative on Human Rights* (CIHR) which promotes the integration of human rights in conservation policy and practice. During the same year, the CBD adopted its Aichi Targets, a series of global biodiversity goals. Aichi Target 11 called for the conservation

of biodiversity through “effectively and *equitably* managed” protected areas (CBD 2010; my emphasis).

This shows that, over the years, the conservation community, long preoccupied primarily with the ecological effectiveness of conservation measures—*i.e.* whether they improve the state of species, habitats and/or ecosystems (Kareiva and Marvier 2012), thus gradually shifted towards more ‘people-friendly’ or rights-based approaches to conservation.

However, it has also become clear that this link is not necessarily caused by improved local livelihoods. In fact, most case studies report that integrated approaches to conservation lead to very little benefit to local people, even when leading to more effective conservation (among others see Twinamatsiko *et al.* 2014; Martin *et al.* 2013; Lund and Saito-Jensen 2013; Schroeder 2008; Brockington *et al.* 2006). The emerging understanding from this is that conservation effectiveness should be conceived as linked to social justice, rather than development. In other words, we need to shift from an ‘integrated conservation and development’ model, to one of ‘integrated conservation and justice’. Recent NGO-led programs, such as the IUCN Protected Area Governance Program and the IIED Social Assessment of Protected Areas (SAPA) initiative, increasingly try to measure social outcomes of conservation in their assessment activities, with a stated objective of addressing issues of equity and justice.

Studying rights-based approaches to collective agrobiodiversity conservation

Unlike the loss of ‘natural’ biodiversity¹, which has gained increasing attention over the last decades, there is little awareness about the loss of domesticated biodiversity. Exact figures are hard to come by²—and are sometimes contested (Wolff 2004), but it is generally assumed that the introduction of genetically uniform, high-yielding varieties through the advent of industrial agriculture has led to an important erosion of agrobiodiversity (Fowler and Mooney 1990). Modern agriculture relies upon only a handful of plant and animal species (Altieri 1999). Yet, while often opposed as two mutually undermining ‘global commons’, biodiversity and agriculture are two sides of the same coin (Thrupp 2000).

The ecological services provided by on and off-farm biodiversity—*e.g.* soil fertility, water use efficiency, pollination, pest and disease control, *etc.*—contribute to agricultural productivity (Pascual and Perrings 2007) and “are a basis of survival and livelihood for millions of people” (Thrupp 2000: 266). The loss of agricultural biodiversity and its associated knowledge also forms a

¹ One can reasonably doubt whether there exists something like ‘natural’ biodiversity, *i.e.* biodiversity that has not been influenced by human activity, hence the use of quotation marks throughout this work when referring to ‘not deliberately influenced or domesticated’ biodiversity. I am grateful to Paula Fernandez-Wulf for raising this issue.

² The FAO (2005) claims that some 75 percent of crop diversity has been lost since the 1900s, but little empirical evidence exists to support this.

threat to the agricultural heritage and rural culture referred to above (Koohafkan and Altieri 2011). Moreover, and more important in the context of this work, biodiversity, when intentionally introduced at multiple spatial and/or temporal scales, is a necessary condition for more diversified farming systems, can contribute to creating a more sustainable, socially just, and secure global food system. Relying on agrobiodiversity to provide for ecosystem services to the farming process allows to achieve a “more sustainable form of agriculture that relies primarily upon inputs generated and regenerated within the agroecosystem, rather than primarily on external, often nonrenewable, inputs” (Kremen *et al.* 2012). Finally, agrobiodiversity allows for what Colls *et al.* (2009) have called ecosystem-based adaptation, *i.e.* “integrating the use of biodiversity and ecosystem services into an overall strategy to help people adapt to the adverse impacts of climate change.”

Agrobiodiversity conservation, hence, is crucial for food security, for adaptation to climate change, for food sovereignty, as well as a source for creating alternatives to industrial farming. Because agrobiodiversity is so closely linked with issues of power and justice, this work’s point of departure lies in trying to understand how these issues find support in conservation initiatives. Recent reviews of empirical evidence suggest that rights-based approaches to the conservation of ‘natural’ biodiversity are linked to effective conservation (Oldekop *et al.* 2016). I argue that the same holds for domesticated biodiversity: greater autonomy, a fairer distribution of

costs and benefits, recognition of cultural practices, for instance, lead to greater diversity, as farmers have the right and capacity to influence, adapt, transform, exchange and re-create their own varieties and/or species, according to their needs, environments and modes of life. Inversely, this increased diversity in turn reinforces these rights (*e.g.* greater crop diversity allows for greater farming autonomy), hence leading to a virtuous circle.

Rights-based conservation, however, requires more than ensuring that farmers are compensated for the costs they endure for conservation; an increasingly common approach, which can be found, for instance, in the direct payments of the EU's Common Agricultural Policy. After all, one may well argue that halting the loss of agrobiodiversity is only a matter of offering the right financial incentives to farmers (Pascual and Perrings 2007), independently of how it benefits them or what conservation means to them. Utilitarian market-based mechanisms such as access and benefit-sharing, payment for ecosystem services and biodiversity offset programs have become popular instruments for policy-makers wishing to combine biodiversity conservation and social well-being objectives (Norwich Declaration 2013). Focussing on distributive issues alone, however, fails to address the complexity of justice claims voiced by social movements, and may generate other forms of injustice (see next chapter). Recent research shows that creating financial incentives and/or creating new niche markets for agrobiodiversity is unlikely to be enough (Pascual *et al.* 2014; Pascual and Perrings 2007; Narloch *et*

al. 2011): “the effectiveness of alternative mechanisms [for agrobiodiversity conservation] [...] depends on understanding [...] the role of the social, cultural and institutional environment” (Pascual and Perrings 2007: 266).

These social, cultural and institutional circumstances is what Sikor (2013) calls the *justice* mechanisms of political processes. Following Sikor, my work aims to shed light on these justice mechanisms, *i.e.* the “design features of governance interventions” (Sikor 2013: 14), and on their impact on conservation outcomes. In other words, my work is concerned with the effect of rights-based governance approaches (*i.e.* approaches involving themselves with social and environmental justice) to agrobiodiversity conservation, and their underlying practices and processes. While this is increasingly being studied in the context of ‘natural’ biodiversity (Martin *et al.* 2013), it gets much less attention in the agrobiodiversity conservation literature.

Addressing justice, however, is not just an empirical question; it is also an epistemological question. In other words, it does not only require understanding a broader set of social, cultural and institutional variables; there is a need for a more explicit justice framing against which these variables can be assessed. The normative elements of biodiversity conservation thus need to be (re)introduced into the debate (Kareiva and Marvier 2012; Miller *et al.* 2011; Robinson 2006) by drawing on the conceptual tools provided by

recent research on social and environmental justice. Kareiva and Marvier (2012: 963) argue that “the psychology and ethical reasoning that underlie people’s actions and views of nature are a key but too often neglected dimension of conservation”. The tendency to conflate descriptive claims about the success or failure of conservation (*i.e.* about its environmental effectiveness) and the normative claims in favor of conservation (Miller *et al.* 2011) has led to portraying conservation as some sort of normative-free science and practice. This in turn led many conservationists to turn a blind eye on issues of human well-being and justice, arriving at ill-conceived solutions, particularly for minority or oppressed groups living in areas where conservation takes place (Kareiva and Marvier 2012).

My work proposes to fill these theoretical and empirical lacunae by exploring the justice dimensions of agrobiodiversity conservation through the following general research question: *what is the relationship between rights-based governance arrangements and agrobiodiversity conservation in Western Europe?*

To address the general research question, I explore the following specific research questions:

1. Which conceptions and discourses of justice are at play in the conservation of agrobiodiversity in Western Europe?
2. Under which conditions have rights-based governance arrangements led to effective conservation of agrobiodiversity?

3. Among the different dimensions of justice at play in the conservation of agrobiodiversity, what is the meaning and specificity of (justice as) recognition?
4. What is the role of knowledge and alternative epistemologies for the conservation of agricultural biodiversity?

The first specific research question underlies the three others. One needs to know which conceptions and discourses are at play before exploring their effects or specific roles within efforts to conserve agrobiodiversity. To explore the different conceptions of justice, I adopt a critical theory perspective, albeit one that involves itself heavily with environmental concerns. Critical theory combines a socio-cultural critique of society with a specific scientific approach. In the context of agrobiodiversity conservation, an environmental critical theory requires thinking of conservation not only as the management of a socio-ecological system (Young *et al.* 2006), which may or may not be effective, but as a broader socio-political process, in which forces of cultural, economic and political domination are at play. Following recent developments in the environmental justice literature, I draw on Nancy Fraser's conception of justice as 'parity of participation' to shed light on and understand these forces. Addressing questions 2, 3 and 4 requires bringing additional conceptual tools to the table. Therefore, I draw on the literature on participatory governance and citizenship developed in the environmental and development studies, on environmental justice, and on decolonial thought, as introduced in the next chapter.

While environmental justice scholars have increasingly studied injustices in the Global South, this work takes it back to a Northern context, where it originated in debates around environmental pollution and was codified in the early 1990, as explored in the literature review. More in particular, drawing on interviews and participatory observation, I look at a series of bottom-up agrobiodiversity conservation initiatives in Western Europe and explore their justice aspects using Fraser's three-dimensional justice approach. Western Europe is particularly relevant to address the research problem, as the combined dominance of industrial agriculture and modern agronomic science has popularized a reductionist conception of agricultural biodiversity, which, I will argue, are intertwined with the production of social and environmental injustices.

Structure of the thesis

The thesis is an article-based thesis: it is formed by a collection of three research papers. The structure of this document therefore differs from a traditional monograph. In line with the doctoral regulation of the Académie Louvain³ and the provisions of the

³ Règlement doctoral de l'Université catholique de Louvain, 15 septembre 2014, available on https://www.uclouvain.be/cps/ucl/doc/espo/documents/Regl_doctoral_UCL_transitoire_consolide_20140915_et_annexes-1.pdf

Doctoral Commission of Political and Social Sciences⁴, it comprises two distinct parts. The first part is a report synthesizing the common thread running through the three papers. It is structured around 4 summary chapters following a common template: literature review, methodology, results, discussion and conclusion. The second part is a reprint of the three papers.

In the first paper, published in the *Journal of Agricultural and Environmental Ethics*, I look at agrobiodiversity conservation through Fraser's three-dimensional parity of participation. I argue that doing so allows rethinking the concept of participation, both methodologically and politically. By comparing two key cases, I show how justice-relevant dimensions help explain the success of participatory agrobiodiversity governance processes. This first paper brought out the salience of (justice as) recognition for agrobiodiversity conservation. Moreover, recognition is the least addressed justice dimension in the environmental justice literature. The second and third papers hence focus on this particular aspect.

The second paper, published in *Biological Conservation* and co-authored with Adrian Martin, Esteve Corbera, Neil Dawson, James Fraser, Ina Lehmann and Iokiñe Rodriguez, is a preliminary exploration into the conservation-recognition nexus. By drawing on

⁴ Vademecum du doctorant en sciences politiques et sociales, 1er juillet 2013, available on https://www.uclouvain.be/cps/ucl/doc/pols/documents/Vademecum_Doctorant_Sciences_politiques_et_sociales_8_juillet_2013.pdf

four major schools of thought, we seek to explore the plural ways in which issues of recognition have been understood, both in theory and in practice, and how they impact the conservation practice.

Finally, in the third paper, published in the *Journal of Rural Studies*, I further explore the importance of recognition, particularly when related to knowledge production. I argue that the knowledge plurality on which alternative forms of agriculture (and alternative agrobiodiversity conservation) are based can be understood as a struggle for recognition. Explaining this, however, requires going beyond recognition as understood by critical theorists such as Fraser, and using decolonial thought. The third paper hence draws on the work of Boaventura de Sousa Santos and his *epistemologies of the South* to understand the role of knowledge in a particular agrobiodiversity conservation case in France.

PART I – SYNTHESIS REPORT

REVIEW OF THE LITERATURE

[...] we can never speak about nature without, at the same time, speaking about ourselves (Capra 1975).

In this work, agrobiodiversity refers to the planned variety and variability of resources used for food and agriculture. These resources encompass genetic resources, edible plants and crops, livestock, as well as agroecosystem components, associated knowledge, farming practices and rural culture (Thrupp 2000). The state of agrobiodiversity is key to our farming systems: not only does it have the capacity to boost productivity, but it also ensures resilience in farming systems, generates and diversifies income, provides for food and livelihood security, as well as a series of ecosystem services on farms, such as regulation services, cultural and supporting services (*e.g.* pollination, fertility and nutrient enhancement, insect and disease management, etc.) (MEA 2005; Thrupp 2000).

The loss of agrobiodiversity is driven by a number of causes, and interacts with human well-being and ecosystem services at different levels. Some are shared with 'natural' biodiversity: climate change, land use change, invasive species, *etc.* Others, however, are specific to domesticated biodiversity. They can be direct drivers: micro-level farmers' decision (Pascual and Perrings 2007; 2012) such as the use of certain technologies, the choice of external inputs, the introduction or removal a specific species and the methods for harvesting (MEA 2005). They can also be indirect drivers of loss, and function at regional, national and global scale: *i.e.* macro-level changes such as market policies (Pascual and Perrings 2007; 2012), legal regimes, particularly intellectual property regimes, and other sociopolitical policies (Wolff 2004), demographic changes, and cultural and religious belief systems (MEA 2005).

With the adoption of the Convention on Biological Diversity (CBD) in 1992 (particularly its article 8(j) on the respect and preservation of local and traditional knowledges and practices), *in situ* conservation—*i.e.* conservation within the cultural-ecological environment of origin—of domesticated and cultivated species gained considerable traction, leading to the “emerging paradigm for on-farm conservation of agrobiodiversity” (Wood and Lenné 1995). As this issue had long been neglected in favour of *ex situ* approaches, this emerging paradigm sparked considerable interest for participatory approaches to agrobiodiversity conservation (Dawson *et al.* 2011; Dawson *et al.* 2008; Chable and Berthelot 2006) and for

seed exchange networks (McGuire and Sperling 2016; Pautasso *et al.* 2013; Thomas *et al.* 2011; Stromberg *et al.* 2010; Zimmerer 2006), but also for closely related issue such as social equity in alternative farming practices (Altieri 1999; 2002), farmers' autonomy and bottom-up governance (Stock *et al.* 2014; Lockie and Higgins 2007), and resistance movements fighting the 'scientization' of farming policy (Kincky 2012; Bonneuil and Thomas 2009).

This renewed focus on the role of farmers for the conservation of agrobiodiversity followed a broader trend in the study and practice of participation for environmental governance. Since the institutionalization of public participation for sustainable development by the Rio Declaration and the Aarhus Convention, the concept and practice of participation has undergone a triple shift (Rauschmayer *et al.* 2009; Rowe & Frewer 2004). The first one is a gradual shift from state-organised consultation and/or top-down inclusion of relevant stakeholders, towards the emergence of stand-alone bottom-up initiatives, mostly community-based, but sometimes taken over or supported by the State. With the aim to break with an ill-suited agro-food system, producers (and consumers) become agents of socio-ecological innovation processes through bottom-up initiatives (Stock *et al.* 2014).

In parallel, and partially as a consequence of the first shift, there has been a shift towards the use of post-normal science (*i.e.* opening up the evidence base beyond strictly scientific sources) to deal with

uncertainty and complexity. The emergence of alternative farming models has spurred the use of post-normal science, and knowledge-intensive—as opposed to input-intensive—agricultural practice (Altieri and Nicholls, 2012; De Schutter, 2010) increasingly become viable solutions. Finally, the focus has shifted from protection-only perspectives towards multi-dimensional human-centred approaches, such as the ecosystem services narrative (Rauschmayer et al. 2009). The latter is increasingly seen as being able to address market failures in the context of agrobiodiversity conservation (*e.g.* Narloch *et al.* 2011).

This work asks what the effect of this ‘democratization’ is for the conservation of agrobiodiversity. While participation in environmental governance is often invoked for a multitude of instrumental reasons (compliance, adherence to the norm, legitimacy, institutional fit, *etc.*), research has produced mixed results and failed to establish causal links between participation and higher environmental quality (among many others see Young *et al.* 2013; Carr *et al.* 2012; Newig and Fritsch 2009; Richards *et al.* 2004; Beierlee and Konisky 2001). In order to understand the impact of increased participation, and hence to improve it, the concept has to be rethought. By adopting an (environmental) critical theory approach, I argue that in order to better understand the relationship between participation and environmental outcome, one has to adopt a clear normative stance. In both research and practice, the failure to theorize the concept of participation leads to an insufficient understanding of

the role of popular agency and institutional structures conditioning (the outcome of) participatory governance.

In the environmental and development studies, the concept and use of participation has moved from a depoliticized technical or managerial approach, to participation as a political process (Carr *et al.*, 2012; Suiseeya and Caplow 2013), thereby developing what has been termed a “post-participation approach” (Reed 2008). In the development literature, the concept has increasingly been related to forms of ‘active’ citizenship: direct and empowered forms of participation are seen as the foundation of democratic practice. Participation becomes a right which allows for greater involvement in the public sphere and enhanced citizenship. This ‘participatory citizenship’ is invoked as a ‘rights-based’ approach to development, “necessary for making other rights real” (Gaventa 2004: 29).

In doing so, there has been a more explicit engagement with power and politics. Linking participation and citizenship has allowed bringing together two different views on participation: participatory development, with its focus on local knowledge and situated action; and participatory governance, with its focus on political representation, legitimacy and accountability (Hickey and Mohan 2004). Framing participation in terms of rights, and stressing the importance of local culture and context-based experiences offers interesting parallels with conceptual tools provided by social and environmental critical theory.

Critical theorists adopt an explicit normative standpoint, drawing upon claims emanating from social movements. While many variations co-exist, critical theories hold in common the aim of “[liberating] human beings from the circumstances that enslave them” (Horkheimer 1982: 244), or, in other words, of human emancipation. A first task of such theories therefore is to articulate the *raison d’être* of social struggles, *i.e.* the injustices produced by contemporary society; or as Fraser (1990: 65) puts it “render visible the ways in which societal inequality infects [the] public spheres and taints discursive interaction within them”. This means not only understanding the struggle itself, but providing an explanation to its emergence.

Following Nancy Fraser, the normative position of this work is justice as participation parity, discussed below. This approach is intrinsically deontological or rights-based. What is sought for is not an ethical formulation of the ‘good life’, but rather to delineate the moral principles making possible the development of human faculties (*i.e.* in this case, the right to participate in society on par with others) (Fraser 2001). In the context of agrobiodiversity conservation, this means that my normative position is not defined by an ethical appreciation of some form of conservation or other (*e.g. ex situ* vs. *in situ* conservation), but rather by the potential offered by governance arrangements to improve the participation of previously marginalized, subordinated or disenfranchised groups.

Justice as parity of participation

Nancy Fraser is an American critical theorist and feminist philosopher. Critical theory is a neo-Marxist school of thought originally developed by the Frankfurt School (Germany) in the 1930s. Due to the importance of recognition in her work, Fraser is said to represent, together with Axel Honneth, the third generation of the Frankfurt School, following the likes of Max Horkheimer (1st generation) and Jürgen Habermas (2nd generation). This contemporary generation of critical theorists finds its roots in the 'cultural turn' of normative claim-making in post-modern societies. Today's political struggles are not limited anymore to calls for economic redistribution, voiced for much of the 20th century by an exploited working class. They also encompass demands for 'difference-friendly' societies based on equal recognition of different identities, genders, races, and religions. In other words, group identity supplants class interest as the main political mobilizer (Fraser and Honneth 2003).

Fraser is best known for her theory of social justice—according to which the “most general meaning of justice is parity of participation” (Fraser 2005: 5). Her idea of parity of participation emerges from her work on democratic theory and deliberation; it first appears in a feminist critique of Habermas' idea of the 'public sphere' (Fraser 1990). While indispensable for critical social theory, the idea of the public sphere is not fully satisfactory to serve the needs of

contemporary critical theory. Among a series of other problems, Fraser questions the assumption “that social equality is not a necessary condition for political democracy”, that status differences can be bracketed and that one can deliberate “as if” (Fraser 1990: 62). Drawing on feminist research, she shows how informal and/or structural subordination can undermine the ideal of open access that is central to the concept of public sphere (even when all participants are formally included), hence marginalizing the contribution of subordinated groups. This subordination can materialize through both structural and symbolic ways—*i.e.* they can be the result of economic and/or cultural domination. From then on, the relation between economic and cultural dimensions of participatory democracy becomes a foundation stone of Fraser’s thinking on justice.

Indeed, Fraser’s main contribution to critical theory is her ambition to make sense of new identity-based imaginaries of the ‘post-socialist age’ without erasing the materialist paradigm of the ‘old’ socialist imaginary, which continues to be relevant today (Fraser 1995). In so doing, she rightfully rejects the monistic theories of justice—whether exclusively materialistic or entirely symbolic—for their lack of nuance. By pointing at the respective inadequacies of both positions, Fraser stresses that “justice today requires *both* redistribution *and* recognition” (Fraser 1995: 69; original emphasis). In her exchanges with Axel Honneth, for instance, she questions his approach in which recognition constitutes the overarching moral framework to

understand today's struggles for justice (Fraser and Honneth 2003). While important, recognition (or distribution, in the same sense) in itself is insufficient to explain the complexity of moral claims in post-modern societies. Injustices arise out of a combination of both exploitation (economic injustice) and subordination (cultural injustice), which are not to be subsumed to one-another (Fraser 1995; Fraser and Honneth 2003).

Economic injustices, on the one hand, are rooted in the political-economic structure of society and condition social interaction by denying the necessary resources to people to engage with others as peers. In other words, parity of participation is inhibited when certain actors do not possess the necessary material resources to participate in society (Fraser 2000): "subordinated social groups usually lack equal access to the material means of equal participation" (Fraser 1992: 120). Examples of maldistribution include exploitation ("having the fruits of one's labor appropriated for the benefit of others"); marginalization ("being confined to undesirable or poorly paid work or being denied access to income-generating labor altogether") and deprivation ("being denied an adequate material standard of living") (Fraser 1995: 71; Fraser and Honneth 2003: 13). Looking at today's European farming context, one can easily perceive the relevance of these examples: the fruit of farming labor is increasingly appropriated by non-producing actors and the export-driven European farming model pits farmers against each other on a global scale, making them dependent upon global market prices.

By dealing with the allocation of disposable resources to social actors, Fraser's economic dimension links up with egalitarian theorists and their work on distributive justice. Fraser, however, defends a deontological or rights-based approach of distribution. A just distribution of resources is not the consequence of a decision-making process but rather a condition to the participation of social actors within that process. In other words, as developed elsewhere (Coolsaet and Pitseys 2015), given that different conceptions of a fair distribution coexist within society, fair decision-making conditions tend to be better approached by defining the conditions of a fair decision-making process, *i.e.* whether all participants can participate on par with each other. Leaving it to participants of decision-making process to define for themselves what counts as a good outcome.

Cultural injustices, on the other hand, are rooted in the status order of society (Fraser and Honneth 2003). They include domination ("being subjected to patterns of interpretation and communication that are associated with another culture and are alien and/or hostile to one's own"); non-recognition ("being rendered invisible via the authoritative representational, communicative, and interpretative practices of one's culture"); and disrespect ("being routinely maligned or disparaged in stereotypic public cultural representations and/or in everyday life interactions") (Fraser 1995: 71). Here too it is easy to relate to contemporary European farming. Specialistic and technicist conceptions of conventional agriculture become dominant farming blueprints which marginalize other, alternative models. And imposed

and standardized ideas about 'effective' or 'efficient' farming can render invisible some deeply rooted cultural practices.

The 'status model' of recognition, as Fraser (2000) calls it, is built in opposition to more narrow, identity-based forms of recognition influenced by Hegelian inter-subjectivity. In the latter 'identity model', recognition is a necessary condition to achieve self-consciousness: individuals only exist when recognized by others as individuals. Misrecognition, in other words, can only be built dialectically through social relations of psychological harm. For example, it is not possible to have high self-esteem if you perceive that others treat you with contempt. One's psychological sense of worth is formed by how others act towards you; or put more fundamentally, one's freedom is achieved or denied through psychological encounters with others (Martin *et al.* 2016).

However, for Fraser, misrecognition is not only a barrier to self-realization or a matter of psychological harm, but is fundamentally unjust (Fraser 1995; Fraser and Honneth 2003). Moreover, viewing recognition through an identity model may displace economic inequality and reify simplified group-identities (Fraser 2000). By limiting it to distorted identities, one risks not only misunderstanding the structural processes underlying the process of misrecognition, but also simplifying group-identities to facilitate a process of self-affirmation and rendering invisible intra-group domination. What is needed then is not the recognition of group-based identities but

rather of “the status of individual group members as full partners in social interaction” (Ibid.: 113).

Misrecognition, Fraser claims, occurs through a hierarchization of cultural values, where some people are seen as “inferior, excluded, wholly other, or simply invisible” and therefore cannot participate in social interaction on an equal footing with others (Fraser 2000: 113). It thus takes the form of social subordination, which is sustained by a process of institutionalization, whether formally (through hard law, *e.g.* legal prohibition of same-sex marriages) or informally (through soft law, customs or social practices, *e.g.* the concept of ‘housewife’). Overcoming misrecognition hence requires institutional remedies which overcome parity-impeding social arrangements, the form of which is dependent upon the type of institutionalization.

In more recent work, Fraser gradually starts questioning her two-dimensional approach to justice based on distribution and recognition, which she finds to be too dependent upon a Keynesian-Westphalian frame (see Fraser 2005; 2009). In the age of globalization, the territorial unit of justice of the nation-State cannot be taken for granted anymore. The increasing role and power of transnational actors (also particularly relevant in the context of the environment), both private and public, leads her to rethink how and by whom struggles over distribution and recognition play out. In other words, political claim-making in a globalizing world is not only interested in the ‘what’ of justice—*i.e.* “first-order questions of substance” (Fraser

2005: 4)–but also in the ‘who’ and the ‘how’–*i.e.* “second-order, meta-level questions” (*ibid.*).

To recognition and redistribution, she thus adds political representation as a defining factor of justice (Fraser 2005; 2009; Olson 2008). It is the acknowledgment that, like economic exploitation and cultural subordination, political disenfranchisement can impede people from participating fully in society. This political dimension tells us “who is included, and who excluded, from the circle of those entitled to a just distribution and reciprocal recognition” (Fraser 2005: 6).

Misrepresentation occurs at three different levels. First, decision-making rules can keep some people from participating fully as peers. Concerned primarily with procedural aspects, inadequate decision-making rules may amount to “ordinary-political misrepresentation” (Fraser 2005: 8). Second, participation depends on the boundaries of participation, *i.e.* who is considered a moral subject of justice and who is not. When decision-making boundaries are set to exclude some people from participating, the injustice is called “misframing”, rendering invisible those deprived of making first-order claims (*ibid.*). Third, the political dimension also deals with “the politics of framing” (*ibid.*: 11), *i.e.* the process by which the boundaries are being set. In other words, not only must participants be allowed to participate through the setting of inclusive boundaries, they must also be empowered to help set those boundaries themselves (Fraser 2009).

Together, these aspects compose Fraser's three-dimensional theory of post-Westphalian democratic justice, according to which justice is the ideal of participation-parity. Fraser stresses that these dimensions are intertwined, condition one another, and are complementary:

the capacity to influence public debate and authoritative decision-making depends not only on formal decision rules but also on power relations rooted in the economic structure and the status order [...] But of course the converse is also true. Those who suffer from misrepresentation are vulnerable to injustices of status and class. Lacking political voice, they are unable to articulate and defend their interests with respect to distribution and recognition, which in turn exacerbates their misrepresentation [...] although they are conceptually distinct and mutually irreducible, the three sorts of obstacles to parity of participation are usually intertwined. It follows that efforts to overcome injustice cannot, except in rare cases, address themselves to one such dimension alone (Fraser 2005: 10).

Fraser herself barely applied her approach to environmental issues⁵. The relevance of such a multidimensional approach for the conservation of agrobiodiversity is nonetheless easy to grasp in today's farming context. On the one hand, farmers are struggling to survive in an increasingly globalized market, which, moreover, does not value biodiversity-based sustainable agriculture. As a

⁵ Fraser's 2001 paper *Recognition without Ethics* is the only exception: Fraser briefly touches upon environmental concerns to illustrate how her deontological account of justice based on Kantian morality differentiates from ethical evaluation inspired by Hegelian ethics.

consequence, one may argue that successful conservation requires distributive justice. However, as stated in the introduction, creating financial incentives and/or creating new niche markets for agrobiodiversity is unlikely to be enough (Pascual et al. 2014; Pascual and Perrings 2007; Narloch et al. 2011). Beyond the material reasons, more “innovative approaches [...] founded on local knowledge, institutions and processes” are needed (Roe and Elliott 2005). This means that, alongside economic exploitation, members of poor communities also suffer status inequality and political disenfranchisement, both of which play a key role in tackling biodiversity loss.

Environmental justice

Critical theory is characterized by its ambition to embed research in concrete historical struggles and social movements. Thus, reality is to be understood and analysed as the consequence of a historical process and as strongly connected and impacted by power-relations and domination. Social, political, cultural and economic forces shape the emergence of social structures over time.

But what does this mean for the study of the environment? And how does it help us understand the motives and drivers of social movements fighting for the improvement of the natural environment? An environmental critical theory must acknowledge “how fully nature is always social, the environment is already

economy, and ecologies also are activated communities of human and non-human life" (Luke 2003: 240). It requires questioning the so-called objectivity and neutrality of Nature, which can, after being truly understood by 'rigorous science', be controlled and engineered by modern technology.

The dynamism of environmental justice research in the last two decades has allowed outlining the contours of an environmental critical theory. In *Justice, Nature and the Politics of Difference*, David Harvey (1996b: 400-401) calls for environmental justice to "radicalize the ecological modernization discourse", as only "protecting the sanctity of mother Earth will not do". There is a need to confront the underlying process generating environmental degradation and related societal impacts. "Alternative modes of production, consumption and distribution as well as environmental modes of environmental transformation have to be explored if the discursive space of the environmental justice movement and the thesis of ecological modernisation are to be joined in a program of radical political action" (*ibid.*: 401).

Politically, the notion of environmental justice finds its origin in the confluence of a large set of political movements in the US, ranging from civil rights movements, public health movements, movements for social and economic justice, and others (Faber and McCarthy 2003). "The practice of the environmental justice movement has its origins in the inequalities of power and the way those inequalities

have distinctive environmental consequences for the marginalized and the impoverished, for those who may be freely denigrated as 'others', or as 'people out of place'" (Harvey 1996a: 95).

The term was popularized in the late 1970s and 1980s, through the struggles of low-income, disempowered communities and communities of color against unequal spatial distribution of environmental pollution, particularly toxic contamination and hazardous waste (Bryant and Mohai 1992; Bullard 1996). It gained nationwide attention in 1991, with the adoption of the 'seventeen principles of environmental justice' during the *First National People of Color Environmental Leadership Summit* in Washington DC.

From the 1990s onwards, the environmental justice concept also found an echo in international environmental law and politics (Anand 2004). In 1992, the creation of the United Nations Framework Convention on Climate Change (UNFCCC) generated debates on how to best distribute greenhouse gases, in both time (Brown Weiss 1992) and space (Agarwal and Narain 1991). Likewise, the CBD's objective to share the benefits arising out of the utilization of genetic resources in a fair and equitable way triggered discussion on what exactly constitutes fair and equitable distribution (De Jonge 2011).

Through a distributive focus, and in line with late-twentieth-century Anglo-American liberalism, early environmental justice movements were concerned primarily with "the manner in which benefits and burdens should be allocated when there is a scarcity of benefits

(relative to people's wants or needs) and a surfeit of burdens" (Wenz 1988). Up to this day, 'fair distribution of benefits and burdens' remains an important dimension for communities seeking environmental justice around the world (as illustrated, for instance, by the EJOLT project's 'Environmental Justice Atlas'⁶). Distributive approaches fit well with the increasing integration of environmental and development goals under the Sustainable Development discourse and with 'liberal environmentalism' (Bernstein 2002). This led to a conception of environmental justice that is primarily substantive and consequentialist. Addressing issues of environmental injustice has thus not only been framed mainly in terms of compensation, but also, with the advent of so-called people-centered philosophies of environmental protection, in monetary or material terms. This explains in part why governance interventions such as Payments for Ecosystem Services (PES) and Reducing Emissions from Deforestation and Forest Degradation (REDD) are so popular with policy makers.

However, this conception has evolved strongly under the influence of both scholars and environmental justice movements. Environmental justice has far moved beyond its original political, theoretical and geographical framing. It has become not only a "vocabulary for political opportunity, mobilization and action and a policy principle" (Agyeman and Evans 2006), but also an object of scientific enquiry. Politically, the concept is now being used by a much wider array of

⁶ For more information see <http://ejatlas.org/>

social movements seeking to link environmental and social concerns (Walker 2012). Geographically, despite having emerged as a political concept in the Global North, particularly in the US, environmental justice now appears in other parts of the world. Research on environmental justice now mainly focusses on the Global South (*e.g.* Sikor 2013a), and global environmental movement are gradually incorporating environmental justice demands (Schlosberg 2007).

Recent environmental justice research has borrowed a lot from justice theorists such as Fraser, but tried to combine different approaches and complement them with empirical research in the environmental justice movements. With the seminal work of David Schlosberg (2004; 2007), environmental justice has become much more of a multivalent concept. He is generally credited for having developed an “empirical approach” to environmental justice (Sikor 2013b: 7), defining the concept by drawing on the articulations of justice by the environmental justice movement itself. Quite paradoxically, however, his approach is mainly framed by a combination of contemporary justice theories, which are then “*applied* to the environmental justice movement” (Schlosberg 2007: 4; *my emphasis*). Nevertheless, Schlosberg’s merit is to have contrasted the justice theories with the empirical realities of the movement. In so doing, he not only shows that environmental justice is always multi-dimensional (see below), but also that the different dimensions are not mutually exclusive, that they are used simultaneously, and that, unlike for most Western

justice theories, they are not only applicable to individuals but also to groups and to other (non-human) living beings.

Like Fraser, Schlosberg's point of departure is a critique of the monistic understanding of justice. He shows how environmental injustice largely keeps being defined as distributive injustice: poor, indigenous communities and communities of color get fewer environmental goods and more environmental bads. While distributive approaches make sense, both theoretically and politically, they remain highly unsatisfactory in light of the complexity of contemporary justice theories, but also in light of wide range of justice claims voiced within the environmental justice movement.

Schlosberg draws on a series of justice scholars to develop a four-dimensional approach to environmental justice: "inequitable distribution, lack of recognition, limited participation, and a critical lack of capabilities, at both the individual and group level, all work to produce injustice" (Schlosberg 2007: 39). He starts by recalling the Rawlsian heritage in our ways to think about justice. In *Theory of Justice*, Rawls proposes a theory of justice according to which one has to be placed in an imaginary and impartial position (*i.e.* a veil of ignorance) in order to be able to define what a fair distribution looks like. As stated above, distributive issues are part and parcel of claims from the environmental justice movement. But Rawlsian justice has had such a powerful grip on political theory dedicated to justice, Schlosberg finds, that it has neglected other ways of thinking about

justice. Following Harvey (1996b), Schlosberg highlights the need (for both movements and scholars) to also look at the potential underlying reasons for maldistribution or unfair distribution (Schlosberg 2004).

Schlosberg turns to critical theorists like Nancy Fraser, Axel Honneth and Iris Marion Young to posit that these underlying reasons are rooted in the material, social, cultural and institutional conditions and contexts within which a political process takes place and gives shape to this distribution. Ignoring these conditions impedes us from looking at the context of the decision-making, the interactions between its participants, the power-dynamics, and the unequal socio-cultural starting points, which are crucial if we wish to understand how (environmental) justice is given shape. In discussing the theories of recognition, Schlosberg is looking for a middle-ground between Fraser's status model and Honneth's identity model, discussed previously. He argues that they may not be that different after all, in that they can be both structurally constructed, and at the same time individually experienced. While this certainly holds true as to the way in which recognition materializes in practice⁷, Schlosberg misses the opportunity to address Fraser's main concerns with the identity model; *i.e.* that it involves a risk of reification of identity and a displacement of distributive concerns.

⁷ Although recent critiques of recognition have stressed that the opposite may also be true, *i.e.* that misrecognition also has individual causes as well as structural effects (Álvarez and Coolsaet 2016).

Noteworthy is the emphasis put by Schlosberg, drawing on Honneth (1992), on recognition as a matter of physical integrity. For example, misrecognition can arise from physical harm caused by environmental degradation, such as pesticides. Governance initiatives aiming at reducing or eliminating environmental degradation thus allow for participants to dispose over their own bodies (*ibid.*), and hence be recognized, but is also beneficial from an environmental perspective.

Strangely, when discussing the underlying reasons of maldistribution, and when analysing them in the context of the environmental justice movements, Schlosberg only marginally takes into account the economic and material dimensions of environmental maldistribution, which are also a matter of distribution. Without falling into tautological reasoning, distributive aspects, albeit concerned with different goods, can be both a condition, and an element of environmental justice: by inhibiting participation, the unequal distribution of material and economic goods may lead to the unequal distribution of environmental goods and bads. This issue seems to point to a more important problem in the environmental justice literature, namely the amalgamation of deontological and consequentialist arguments. As Ikeme (2003: 197) notes, the “rationalisation of the environmental justice concept can be based on both deontological and consequentialist reasoning”. As responses to injustices will depend on the underlying mechanisms, it may be important to properly acknowledge this distinction, by, for instance,

talking about *ex ante* and *ex post* environmental justice (Baden and Coursey 2002, cited in Ikeme 2003).

As a third dimension of environmental justice, Schlosberg adds procedural justice. This is arguably the weakest part of his theoretical discussion. In focusing on 'procedures', he highlights only one dimension of how decision-making arrangements shape (in)justice, experienced by those who are already part of the political community (*i.e.* the 'how' of decision-making), without calling into question the boundaries of the community. Although referring to Fraser as "the most thorough discussion of the integration of procedural justice" (Schlosberg 2007: 28), he seems to be reducing Fraser's parity of participation to a condition of procedural justice, hence failing to do justice to the distinctiveness of what Fraser calls *political representation*. While it is true that, to achieve the latter, both economic distribution and cultural recognition are necessary, so is political representation. In other words, political representation (which includes 'ordinary-political' aspects of procedure) is a "conceptually distinct dimension of justice" (Fraser 2005: 7), and misrepresentation can arise independently of maldistribution and misrecognition. Nevertheless, in the following chapters looking at the participation on the environmental justice movements, Schlosberg does consider the issue of participation in much broader ways.

The reason behind the focus on procedures probably has historical roots. Environmental justice has long been presented as dealing with

distributive justice on the one hand and procedural or participatory justice on the other (*e.g.* Shrader-Frechette 2002; Foster 2002). What scholars called procedural justice, however, was rather limited in scope and often called for the inclusion of disenfranchised communities in existing decision-making processes. Little attention was given to issues such as: who sets the process boundaries? How is discursive power distributed within the process? And how do issues of distribution and recognition influence the contribution of participants? Moreover, focussing on procedures fails to offer a solution to those who struggle for nonparticipation or who reject participation within pre-existing state-led decision-making procedures.

Finally, Schlosberg includes Sen's and Nussbaum's capabilities approach in his framework (see Nussbaum 2007, Sen 1993, Sen 1999). Emerging during the 1990s, the capabilities approach was developed as a critique to the 'social contract tradition' of liberal justice theories. Capability theory argues that justice is comparative, rather than absolute, and sees individual well-being and freedom as its ultimate measure. Environmental justice scholars increasingly apply the capabilities approach to environmental justice problems, arguing it be particularly suited for a pluralistic conception of justice (Martin *et al.* 2015; Schlosberg 2012; Schlosberg and Carruthers 2010; Walker 2009).

However, adding the capabilities approach on top of the first three dimensions seems a bit odd given that the capabilities approach itself

already incorporates aspects of recognition, participation and distribution. This apparent paradox also appears in Schlosberg's writing, where he seems to be considering capabilities both as a fourth dimensions of environmental justice and as "fully incorporating recognition and distribution in a broad theory of justice, [going] further [than] either" (2007: 34).

Epistemologies of the South

Western critical theory, in particular its cultural dimensions, while absolutely crucial to understand the justices and injustices of today's farming reality, also has some limitations. As indicated earlier, recognition theory has allowed putting culture-based injustices in the limelight. But while this allowed complementing distributive approaches with issues related to identity, gender, race or religion, for instance, it rarely includes knowledge-based misrecognition. Science often remains the only form of knowledge to be seen as valid and exact (Santos, 2014). This is ironic, as critical theorists, when conducting their own research, have traditionally questioned the objectivity of sciences supposedly devoid of ethical value, and tried breaking with the distinction between theory and practice.

This conceptual limitation became evident through my encounters with peasant movements. The importance given to the epistemic dimension of their struggles has led me to complement the above conceptual basis with an additional theoretical influence, which

particularly comes to expression in the last paper: decolonial thought, in particular through Boaventura de Sousa Santos' *Epistemologies of the South*.

Fraser herself acknowledges that struggles for recognition are exacerbated in today's 'knowledge society' (Fraser 2001), but does not clearly address the issue of dominant conceptions of knowledge. If cultural subordination is largely influenced by the knowledge one possesses and/or uses, what is required is 'equality between different ways of *knowing* the world' (Martin *et al.* 2013: 123; my emphasis). Like cultural misrecognition, cognitive injustice is an 'institutionalized relation of social subordination' (Fraser 2000: 113). Unlike cultural misrecognition, however, it is not characterized only by the devaluation of group-specific identity or socio-cultural status, but by the marginalization of one's relation to the world in the name of rigor, rationality, effectiveness or efficiency. Decolonial theorists see cognitive injustice as the consequence of what they call the 'coloniality of knowledge': the hegemonic conception of modern, Western science (Santos *et al.* 2007; Castro-Gómez 2005; Quijano 2000; Shiva 1993). It implies that access to scientific knowledge is unequally distributed in society and thus serves the interests of dominant actors (Santos 2014).

Cognitive justice encompasses not only the right of different practices to co-exist (which is a necessary condition nevertheless), but entails an active engagement across their knowledge-systems (Visvanathan

2005; 2009). In practice, cognitive justice is given shape through an 'ecology of knowledges': an active dialogue between different forms of knowledges and practices, both scientific and non-scientific (Santos 2014). It involves rethinking the way in which knowledge emerges in modern science, where one side produces and the other passively consumes. It challenges the 'monocultures of the mind' (Shiva 1999) and calls out the external limits of modern science, *i.e.* dimensions rendered invisible by reductionist epistemologies (Santos 2014). The main argument in favor of an epistemology of the South, is that cultural recognition can only be transformative when going hand in hand with knowledge-based recognition (Santos *et al.* 2007)

Conservation of domesticated biodiversity, lying at the intersection of scientific-technical, political, cultural and environmental issues, offers a case in point to study the importance and the impacts of knowledge-based misrecognition. Status equality, it appears, may not be enough in a socio-economic sector (*i.e.* agriculture) characterized by the dominance of modern science. The modernization process of European agriculture, particularly in the second half of the XXe century, has led to a highly productivistic and specialistic agriculture. This modernization process left little leeway for alternative knowledges and world views on agriculture. Seeds, inputs, knowledges, norms and practices were standardized (Bonneuil *et al.*, 2006). As a consequence, post-war agriculture in Europe was characterized by a high level of muzeumization, which "rather than being a humanistic attempt to save knowledge, disembeds and

fossilizes it” (Visvanathan 2006: 166). Practices, varieties and knowledges seen as ‘obsolete’ were gradually rejected and replaced by ‘high-performance’ alternative which are suitable for mass production.

Studying and understanding the drivers and meanings of rights-based approaches to conservation hence requires looking at how initiatives of resistance have addressed not only matters related to economic distribution, cultural recognition and political representation, but also how they engage with new forms of knowledge; *i.e.* how, through governance interventions, they question the primacy of modern science and its impacts on the state of agricultural biodiversity.

METHODS AND APPROACH

[...] it should not be our only concern to ask whether a hypothesis is true, possible or realistic; we should, perhaps, also ask the other way around: 'what sort of earth' would it have to be in which this hypothesis (e.g., one describing a possible situation) would be realistic. Only history could verify such hypotheses—by realizing them (Gebhart 1978: 406).

Following the previous chapter, this work is guided by a critical theory approach, not only theoretically, but also methodologically. In order to understand the methodological choices detailed below, a few preliminary observations need to be taken into account.

Critical theory is characterized by its ambition to embed research in concrete historical struggles and social movements. Thus, reality is to be understood and analysed as the consequence of a historical process and as strongly connected and impacted by power-relations and domination. Social, political, cultural and economic forces shape

the emergence of social structures over time. By trying to understand the meaning of social action, critical theory can be said to be an interpretive social science (Morrow and Brown 1994). The focus lies in understanding the complexity of a social phenomenon, aimed at producing middle-range theories with limited generalizability, and for which the historical context plays a crucial role. Moreover, in serving an emancipatory objective, critical theory must help shaping the imagination on how to overcome those injustices and create alternative futures. The project of critical theory is thus to provide a descriptive and normative base to both understand and reduce present forms of domination.

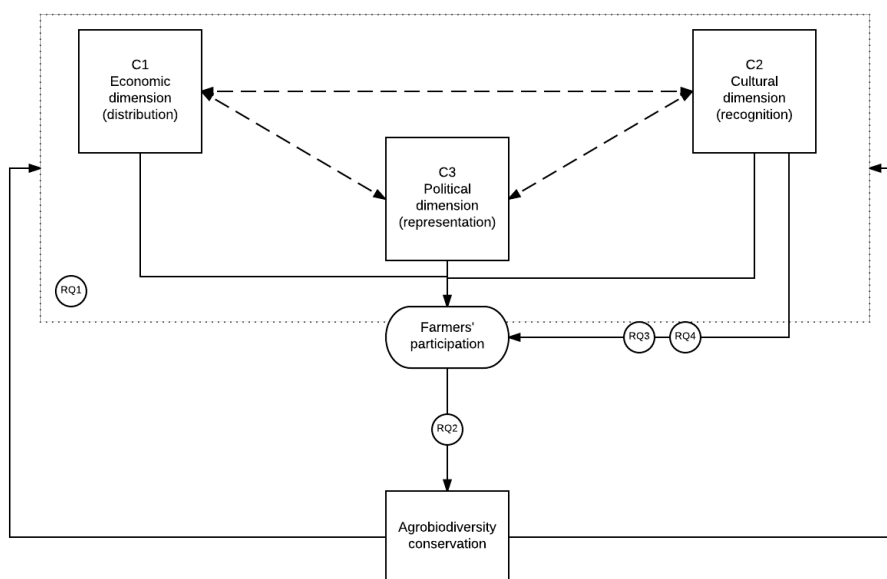
By opposing positivism, critical theorists question the objectivity of sciences, supposedly devoid of ethical value, and try breaking with the distinction between theory and practice. They reject the conventional academic division of labor (whether disciplinary or methodological), viewing it as social construct serving, masking or neglecting specific interests. When combined with an empirical approach, as is the case here, critical theory embraces of form of critical methodological pluralism. The term *critical* here points to the necessary awareness of the researcher of the impact of both the type of theoretical problems and the political and ideological context in which the research takes places for the choice of methods. In other words, all methodological techniques generally used by social science research are potentially useful for a critical theory approach, as long as the researcher is aware that the link between theory and method is

contextually and politically bound, and is not just a technical decision (Morrow and Brown 1994).

Research framework

Following the theory introduced in the previous chapter, the conservation of agrobiodiversity depends upon the ability of farmers to participate in society. And participation is conditioned by three broad dimensions: an economic (C1), a cultural (C2), and a political (C3) dimension (see figure 1).

Figure 1 - research framework



Each dimension is shortly introduced below, and their relevance and relation to the research problem explored:

1. **Economic dimension:** the economic dimension allowing/denying participants the resources they need to interact with others as peers. Whether derived from an analytical 'classist' view of society, as Fraser does, or from a more empirical 'socio-economic status' approach, the distributive dimension analyses access to the material resources for participation. The economic dimension is key to shed light on the participation of farmers in society, and hence on their ability to conserve agrobiodiversity. In Europe, farms are disappearing at an alarming rate, mostly for economic reasons, opportunities for prospective farmers to start their own activity are rare if land and property is not inherited, and price wars in the retail sector happen at the expense of the farmers' share of the profit, as exemplified by yet another 'milk crisis' in 2015. These issues keep farmers from participating on equal footing with one-another. In this context, and drawing from the different theoretical influences developed above, the economic dimension is operationalized as the distributive instruments facilitating participation of farmers, including measures fighting economic exploitation, marginalization and deprivation such as, for instance, fair(er) pricing, financial support, human resources, and access to land.
2. **Cultural dimension:** the socio-cultural dimension allowing/preventing people from participating, whether

through Fraser's socio-cultural hierarchization (*i.e.* status inequality prevents participation) or influenced by identity models (*i.e.* disrespect of a participants' or group's identity prevents participation). In a farming context, misrecognition is made possible through (1) outlawing certain practices (such as the use and exchange of non-registered seeds for example), and (2) through forms of cognitive injustice. Recognition hence should be achieved through measures promoting both status equality between different forms of *doing* farming and governance arrangements valorising and engaging with different ways of *knowing* farming. This dimension hence is operationalized as the processes fighting domination, non-recognition and disrespect, such as diminishing the environmental impact of farming activities, the (legal) recognition of alternative farming practices, the strengthening of farmers' identities, and the pluralization of knowledge systems.

3. **Political dimension:** Stage on which justice-relevant struggles play out. It tells us who is included, and who excluded. It sets the rules, procedures and boundaries for staging and resolving contests in both the economic and cultural dimensions. Relevant questions for this dimension include: who participates? Who decides who participates? How inclusive is the decision making? How is information exchanged? Etc.

The first step in studying the relationship between rights-based approaches and conservation is to understand how these different rights are given form in the cases. Thus, to answer the first research question (RQ1), I take stock of the different instruments the governance arrangements put in place to ensure those rights, in each of the different dimensions, which condition the participation of farmers. The dashed arrows linking the three dimensions hint at their interrelation. In observing the meaning and discourses of farmers, one can grasp how closely issues of recognition and distribution are intertwined. Letting farmers set their own prices and production amounts, an example voiced by some interviewees as part of the economic dimension for instance, is not only an economic incentive; it recognizes farmers for having the final say on their farms and set the value of their products, but also for having the capacity to cooperate instead of compete to gain access to a market. The political dimension is also influenced by the economic and cultural dimensions: a member is unlikely to be fairly represented in a decision-making process for instance, when he lacks an adequate material standard of living or is being rendered invisible through processes of cultural subordination.

The different instruments identified through RQ1 then serve as indicators to RQ2, which looks at the relation between these instruments conditioning farmers' participation, and the conservation

of agrobiodiversity in the cases⁸. Finally, RQ 3 and RQ4 look at the specific relationship between the cultural dimension of rights-based governance arrangements and the ability of farmers to participate. RQ3 takes a more explanatory approach to the issue of recognition, looking at different theoretical schools of thought on recognition and how they relate to conservation practice. RQ4, in line with the last part of the literature review, then deepens the issue of recognition by looking explicitly at its epistemic dimension.

Data collection & research design

The thesis went through different phases in order to address the different research questions, each phase having a different objective, combining different research designs and using a set of different methods, inspired by political sciences case-study methods such as Eckstein's comparative politics methods (Eckstein 1992), Mill's

⁸ This could probably also be framed within a so-called variable-oriented approach: *i.e.* the different instruments form the independent variables, and the improvement of the conservation of agrobiodiversity is the dependent variable. However, the focus on variable relations lies somewhat at odds with social and critical theory. The point here is not to model the social world in terms of causal relations between an aggregate set of variables, but rather to describe the structural relations between different forms of social organisation "by referring to the systemic and social relations that constitute it" (Morrow and Brown 1994: 209). In other words, the objective of this work is not to find the correlation coefficients of indicators of the different instruments used in the cases with indicators of the effectiveness of conservation, but rather implies an in-depth understanding of the contexts in which conservation initiatives take place, tracing the emergence of the initiatives within their broader environment (Porta 2008).

methods of agreement, and ‘empirical’ environmental justice analysis (Sikor *et al.* 2014).

Phase 1 – Exploration

The first phase was undertaken in an explanatory fashion, aimed at generating useful working hypothesis and gaining familiarity with the empirical context. In so doing, it particularly aimed at exploring and setting the stage for the first two research questions.

The exploration phase started with a set of thirteen cases, selected from an exhaustive list of alternative food networks in Western Europe, established as part of the Food4Sustainability research project⁹, according to the following criteria:

- **Collective action:** cases needed to be organized collectively and have a formal organizational structure. My interest lies in how communities organize to conserve agrobiodiversity, not individual farmers.
- **Producer-led:** only producer-led farming organizations were selected, hence excluding consumer-led initiatives.
- **Agrobiodiversity focus:** the organizations’ actions needed to include explicit agrobiodiversity ambitions and/or objectives.

⁹ Food4Sustainability. Collective action for sustainable food systems in a changing climate: assessing social experimentations and policy innovations. BRAIN - Belgian Research Action Through Interdisciplinary Network. See <http://sites.uclouvain.be/food4sustain>

- **Proximity:** only cases located in Belgium, France, the Netherlands or Germany were selected. This criterion flows from practical concerns: the cases lie within geographic, cultural and linguistic proximity.

Thus, the units of analysis (*i.e.* the cases) of this work concern Belgian, French, Dutch and German producer-led farming organisations which actively conserve agrobiodiversity. These cases range from small-scaled farmers' initiatives, to large cooperative structures involving over 1000 farmers.

Data collection was undertaken in different stages. To address the first two research questions, a first round of interviews was undertaken for each of the 13 aforementioned cases. Twenty semi-directed face-to-face interviews were taken with members of the different organisations (generally a staff-members and a producer), between 2014 and 2016. All interviews were done on site, in order to establish rapport with the community and its environment. Notes were taken during the interviews and an interview transcript was established for each case. Questions focused on the justice-relevant governance instruments such as resource availability, power relations, knowledge plurality and decision-making methods (research question 1), and their relation with conservation outcomes (research question 2). The interview guide can be found in annex 1. Questions were based on potentially useful justice-relevant indicators, drawn from the literature, and organized according to the

three dimensions above (see the list of indicators in annex 2). However, in order not to miss out on important aspects, the interviews were conducted on a semi-structured basis, leaving the door open for additional instruments.

This first round of interviews led to keeping only six cases. These six cases are the result of a *diverse* case selection: cases presenting a lot of variance along the three justice dimensions, or among their farming approaches, were selected. The cases are introduced below. This approach is most useful for the generation of hypothesis (Gerring 2016).

Phase 2 – Testing

The first phase allowed foreseeing a relation between rights-based governance arrangements and efforts for the conservation of agrobiodiversity. The second phase's objective was in testing this hypothesis, hence answering the second research question, and this was done through the first publication.

Here, two research designs were combined: a *crucial* and a *least-similar* design. Crucial cases are cases “that must closely fit a theory if one is to have confidence in the theory's validity” Eckstein (1975: 118), and least-similar cases are cases which present a lot of variance along their variables (*i.e.* the three justice dimensions), but most clearly share the same outcome (*i.e.* the improvement of

agrobiodiversity). Both are suited for hypothesis testing (Gerring 2016).

The combination of both strategies led to the selection of two of the cases (the French and German cases), which were compared using Mill's method of agreement. Although the two cases are very different, they share the same outcome: *i.e.* an improvement of their agrobiodiversity. Through a least-similar case comparison, justice-relevant conditions shared by the cases are identified, which help explain why, despite contrasting configurations, the cases have effective outcome. However, many different conditions may lead to the effectiveness of environmental governance processes; a situation of "plurality of causes" as Mill puts it (cited in Bennett 2004: 32). Making use of insights from the literature on effectiveness and environmental governance, introduced in the literature review, the case comparison is combined with process tracing, allowing controlling "whether the intervening variables between a hypothesized cause and observed effect move as predicted by the theories under investigation" (Bennet 2004: 22).

Phase 3 – Theory building

While I combined the three theoretical dimensions for the first two phases, in the last phase I was interested in further deepening only one of the dimensions: cultural recognition. This phase starts from the premise that the cultural dimension, unlike the other two theoretical dimensions (economic distribution and political representation),

enjoys little interest in research on biodiversity governance. Thus, this phase's objective was to arrive at a broader reflection and the development of a critical theory of recognition in the context of the governance of agrobiodiversity. It addressed the third and fourth research questions, published in the second and third paper respectively.

To analyse the meaning and specificity of recognition in conservation (RQ3), the second paper compares four different ways of thinking about recognition (Hegelian inter-subjectivity, critical theory, decolonial thought and capabilities) using the following analytical framework, inspired by Sikor *et al.* (2014), decomposing the different approaches into four components:

1. **Subjects of justice:** asks the question 'who is entitled to justice?' Recognition theorists have argued about the different ways in which moral subjects can be identified, according to geographic scale (national vs. global), temporality (present vs. future generations), social unit (individuals vs. communities), and nature (humans vs. non-humans).
2. **Harms** refer to the different dimensions of injustice. Depending on the traditions, the types of injustices can be psychological, economic, social, cultural, political, or a matter of constrained opportunities.
3. **Mechanisms** concerns the ways in which injustices occur. Is it a matter of personal inter-subjective relations? Or do injustices

have more structural roots, whether political or economic?

And can it be both?

4. **Responses:** compares the different solutions imagined within the different traditions. Different forms of misrecognition require different solutions. They include individual self-development, affirmative recognition of differences, deconstructing pre-existing cultural norms, opposing capitalism and modern science, etc.

Finally, to address the last research question (RQ4), the third paper was structured as a heuristic case study 'used to stimulate the imagination toward discerning important general problems and possible theoretical solutions' (Eckstein, 1992: 143), as the objective was to introduce a new theoretical position (cognitive justice) and concept (agroecology of knowledges). Heuristic case study is a theory-building approach seeking to generate new theories in an inductive manner (George and Bennett, 2005). The idea is to start with a single case to develop a preliminary theoretical construct. This process can then be repeated to further strengthen and develop this theory, leading to new hypotheses and be tested on other cases. Here too, a *crucial* case selection was used to identify a case "regarded as more instructive for theory building than others" as "the brief for heuristic case study is strong only to the extent that cases especially instructive for theory, and subject to rigorous inquiry, can be identified." (Eckstein, 1992: 146).

The “must-fit case” (Eckstein, 1992: 152) here is the French case of AgroBio Périgord (case 2). Its participatory breeding program was particularly influential in shaping the idea of the ‘agroecology of knowledges’ developed in the last paper. To analyse the role of knowledge in the activities of the association, a two-day ‘moderate’¹⁰ participatory observation mission was conducted in September 2015 during one of the organisation’s breeding workshop. The workshop was organized as a dialogue between different perspectives on varietal selection and on the collective management of agricultural biodiversity. Beyond ABP farmers, it included facilitators, partner scientists and South American peasant representatives from Chile, Colombia, Brazil and Mexico. Following the workshop, a second round of two informal interviews was conducted, with the association’s coordinator and with one of the founding farmers, on the role and meaning of knowledge in the association’s activities. An interview transcript was established and excerpts from the interviews were used in the last paper to support the argument. Findings from the participatory observation and the interviews have been combined with the information contained in internal and external publications of the organisation, particularly the annual reports on the experimentation platform as well as an in-house study on the

¹⁰ The degree of participation in participatory observation ranges from nonparticipation (no membership role) to complete participation (full membership). On the different degrees of participation in participatory observation see Musante and DeWalt (2010).

collective management of cultivated biodiversity in France (Combette *et al.* 2015)

Cases

Case 1 - Agricovert (Belgium)

Agricovert is a farming cooperative for community supported agriculture based in the Belgian province of Walloon Brabant. It gathers 30 producers, 450 consumers and a local team. It aims at restoring value to the craft of farming and fostering the creation of new sustainable small-scaled peasant farms. It also has an explicit social objective, recognized legally (*coopérative à finalité sociale*), and has an objective of rural job creation targeting disadvantaged communities in the region.

Case 2 - AgroBio Périgord (France)

AgroBio Périgord (ABP), an association for the development of organic farming in the French region of Aquitaine. The association runs a program called 'Aquitaine grows biodiversity' (*l'Aquitaine cultive la Biodiversité*). It aims to experiment with and reintroduce community-owned peasant varieties of a diverse set of crops such as corn, sunflower, soybean and grape vine. The association counts more than 300 (mostly maize) farmers.

Case 3 - Bäuerlichen Erzeugergemeinschaft Schwäbisch Hall (Germany)

The Schwäbisch Hall Producers' Community (*Bäuerlichen Erzeugergemeinschaft Schwäbisch Hall*, or BESH) is a pig-breeders association in Schwäbisch Hall, a small town in southwestern Germany. The community was created in the 1980s to save the Swabian-Hall swine, a local pig breed, from extinction. The community counts over 1400 farmers breeding the Swabian-Hall swine, owns a series of local butcher-shops and runs a slaughterhouse, jointly owned with local authorities and consumers.

Case 4 - Les Grosses Légumes (Belgium)

Les Grosses Légumes is a network of community supported agriculture. It was created by a group of local movements working on community-building and popular education, in the Belgian village of *Meix-devant-Virton*, in southern Belgium. The network owns a local green-grocer, has 15 member-producers and 370 member-consumers. Through its farming activities the network works to improve rural development and social justice in the area.

Case 5 - Terre-en-vue (Belgium)

Terre-en-vue is both a land-buying cooperative and an association for the promotion of sustainable farming. As a cooperative, *Terre-en-vue* allows for citizens and non-profit organizations to invest in farmland, thereby freeing it from land speculation, unsustainable

agriculture and private property. As an association it functions as a knowledge broker and helps prospective farmers build a network with other farmers and partnering associations, as well as developing a supportive community of consumers.

Case 6 - Vereniging voor Biologisch-Dynamische Landbouw en Voeding (Netherlands)

The *Vereniging voor Biologisch-Dynamische Landbouw en Voeding* (BD Vereniging) is an association of both professional farmers and citizens practicing or interested in biodynamic agriculture¹¹. Its main activity is the promotion of biodynamic farming practices through collective farm-talks, training, workshops and individual coaching. The association is active nation-wide and counts over 300 members.

¹¹ Built on the teachings of Rudolf Steiner's anthroposophy (1920s, Germany), biodynamic agriculture advocates a "spiritual-ethical-ecological approach to agriculture, food production and nutrition"

RESULTS

This section is structured in four parts, corresponding to the four research questions outlined in the introduction. Much of the content in this section can be found in the different papers (part 2), but, for the first research question, additional data was added from the cases that were not used in the papers.

Conceptions and discourses of justice in the conservation of agrobiodiversity in Europe

As noted earlier, while kept separate for analytical purposes, the following dimensions are interrelated and overlap. Instruments creating new financial incentives such as niche markets, for example, do not only pursue a distributive objective but also play an important cultural role by recognizing the cultural, geographic and environmental specificity of specific products. Some instruments listed in the tables below can thus easily be moved around the different dimensions.

It is important to note that not all dimensions are necessarily present in all the cases. Nor that the way in which these dimensions are addressed is similar throughout the cases. The point here is to provide for an overview of how different farming organizations in Europe use innovative governance arrangements to provide for additional rights to their members. As Schlosberg (2007: 98) puts it “the argument here is that the public discourse of environmental justice is broad and varied, with groups tapping into different understandings and approaches to the concept of environmental [justice] depending on issue, situation, and tactics.”

Economic dimension

The economic dimension of participation in the cases is given shape through a series of distributive instruments and economic incentives (table 1). They vary according to the type of organization, its objectives, its historical evolution, and its size. However, all interviewees expressed that beyond farming and/or environmental objectives, the organizations share a common goal: improving the economic conditions of participation for their members.

Several of the cases have established sophisticated community-based pricing systems. At *Agricovert* (case1), *BESH* (case 3) and *Les Grosses Légumes* (case 4), prices and production amounts are fixed communally in advance according the farmers needs and priorities, and to consumers’ demands. The *BESH* also guarantees buying of the agreed production amounts. This allows gaining independence from

the retail sector and having more security with regards to the volatility of the market and global competitors. Fixing production amount communally also allows avoiding over-production and internal competition between farmers.

Another form of commercial support often takes the form of facilitated access to consumers (*e.g.* through food-buying groups or community supported agriculture), or the organization of farmers' markets and (potentially self-hosted) selling-points. The activities of *Agricovert* (case 1), for example, include the exploitation of a greengrocer in which member-farmers can sell their products at communally agreed prices.

The most structural type of distributive instrument is arguably the communalization of land. In the cases it takes on two different forms. First, as illustrated by *AgroBio Périgord* (case 2), joining the association requires making available a plot of land for open-field and environment-specific testing of new crops, which, when promising, can be taken over by other members. The association also hosts a unique communally-owned test-field with the same purpose. Second, as can be observed in the case of *Terre-en-vue* (case 5), citizen-groups and non-profit organizations jointly acquire farmland, with the aim of making it available for agroecological and peasant farmers.

In most of the cases, member-farmers can enjoy technical assistance from professional staff hired by the associations. At the *BD Vereniging* (case 6), individual coaching and thematic training courses are

organized at the demand of individual farmers. *AgroBio Périgord* (case 2) employs a team of agricultural facilitators whom follow-up breeding processes and ensure institutional memory.

Some organisations provide some sort of labelling system for their farmers for the recognition of specific products or production techniques. The *BD Vereniging* (case 6), for instance, is close to *Demeter*, an international certification company, offering biodynamic farmers a commercial label for their products.

In some rarer cases, the organizations create internal redistribution schemes to limit potential financial inequalities between members or to cover costs associated with the community's quality standards. *Agricovert* (case 1), for example, differentiates the purchase price according to the farming techniques of its members (*e.g.* handpicked vegetables are bought at higher prices than mechanically picked ones). *BESH* breeders (case 3) get a 0.33 euro 'adaptation premium' per kg of carcass of pork on top of the purchase price, to allow for the adaptation of their breeding practices to the community's standards.

Table 1 - Examples of distributive instruments in the cases

Community-based pricing & production amounts
Guaranteed buying
Facilitated access to consumers
Communalization of land
Technical assistance
Labelling systems

Internal redistribution schemes

Marketing and communication support

Cultural dimension

Often, one of the first point raised during the interviews, is the fact that the organizations' production methods have banned the use of pesticides and chemical plant protection products. Interviewees stress how pesticides are one of the symbols of a farming system they reject and want to see changed. Some organizations also stress that they ask their members to go beyond the restrictions imposed by official organic labelling systems on the use of such products, in order to fully eliminate their use. In so doing, these measures restore the farmer's right to "dispose over his or her body" (Honneth 1992: 190) and hence to be recognized.

But the most common type of recognition instrument in the cases is the creation of collaborative learning spaces. These instruments aim at the co-existence and the engagement with different forms of knowledge and farming practices. All the cases have established procedures to reacquire and recreate agricultural knowledge, but they take on various forms. At the *BESH* (case 3), external actors such as academic researchers and environmental NGOs are included in the definition and improvement of the community's breeding guidelines and production standards. In France, *AgroBio Périgord* (case 2) organizes an ambitious participatory breeding program, focusing on

environment-specific *in situ* breeding, led by farmers but supported by external experts. At the *BD Vereniging* (case 6), farm-talks (*boerenbezoek*) are one of the key governance instruments. Originally conceived as a full-fledged ‘participatory guarantee system’—*i.e.* peer-based on-farm certification visits as an alternative to official certification schemes, the program shifted towards a collective learning process (called ‘inter-visions’). It is considered more effective than a verification program as it is more suited to accommodate the plurality of knowledges and practices than a fixed check-list of production norms to be achieved. Both are now considered to supplement official certification schemes.

Struggles for recognition can also involve legal recognition, as some of the activities of the organizations are strictly regulated by the State. One of the issues at *AgroBio Périgord* (case 2), for example, is the legal recognition of the use of uncatalogued peasant seeds and the re-use of on-farm seed sorting and reuse. Through co-creation of and participation in the nation-wide Peasant Seeds Network (*Réseau Semences Paysannes*), the organisation fights for the recognition of their activities as having experimental and environmental purposes, thereby bypassing some of the legal constraints to their seed-exchange activities.

Finally, most of the cases put in place cultural events aimed at strengthening farmers’ identity and promoting rural traditions. The BESH (case 3) set up the regional ‘Rock for Nature’ festival,

combining rock music and debates on the future of agriculture (*e.g.* in 2008 it hosted both Joe Cocker and Vandana Shiva). The motto of the festival is “*Gen Tec – Nein Danke!*” (Gen[etic] [bio]tec[hcnology] - no thanks!). Other examples include *AgroBio Périgord’s* (case 2) farm-visits for consumers and *Agricovert’s* (case 1) seasonal feasts where members can learn new recipes using traditional varieties.

Table 2 - Examples of recognition instruments in the cases

Use of environmentally-friendly inputs
Collaborative learning spaces
Participatory breeding programs
Farm-talks
(Struggle for) legal recognition
Cultural events

Political dimensions

The political dimension, while being a dimension of justice in its own right, is a bit different than the two former in that it represents “the stage on which struggles over distribution and recognition are played out” (Fraser 2005). Indeed, several of the governance arrangements discussed above already include an important aspect of representation. Community-based pricing systems only work if the whole community is represented. And the whole point of collaborative learning spaces is to enlarge the evidence base through broad(er) participation.

Several cases, however, take the issue of representation a step further by specifically thinking about how their decision-making rules impact their members' ability to participate. In general, interviewees seemed to be less concerned with their inclusion in traditional policy-making, though it may be because the political representation of farmers happens at higher levels (*e.g.* regional interest groups, chambers of commerce, farmer's unions, *etc.*), or because the issue is too obvious to mention. The focus lies more on self-determination and empowerment. Farmers are empowered to see themselves as agents of change, recognized by the community as key stakeholders of rural development. At *Agricovert* (case 1) and *Les Grosses Légumes* (case 4), for example, beyond the legal decision-making requirements and following a demand from the producers, the organisations are experiencing with collaborative governance methods based on sociocratic principles. Sociocracy is a decentralized decision-making method based on autonomous theme-based 'circles' with extensive feedback mechanism between them. Producers, consumers and staff-members each control one of the circles, which are responsible for defining their own functioning, needs and priorities. Each circle's leader represents the circle's interests in a broader general decision-making circle of the organisation, where decisions are taken by consent only.

With the exception of the *BD Vereniging* (case 6), all organizations function within a deliberately limited geographical space (*i.e.* regional or local). In Germany (case 3), for instance, joining the association is

only possible for breeders located in the traditional breeding area of the Swabian-Hall swine. Moreover, only the *BESH* can sell and market the meat: no other distributors are allowed in the supply chain. In France, where due to its novelty *AgroBio Périgord* (case 2) initially expanded nation-wide, the association is now refocusing on local farmers, as geographic proximity eases the working conditions.

However, the deliberately limited geographical boundaries do not preclude the inclusion of specific participants, beyond member-producers. As stressed earlier, at the *BESH* (case 3), environmental NGOs such as animal welfare groups are included in the community's breeding guidelines; an unusual move in the livestock breeding sector. At both the *BESH* (case 3) and *AgroBio Périgord* (case 2), academic researchers are invited to participate in the associations activities; and so are non-member farmers and breeders, including those from the Global South. Several cases, particularly those functioning within a community supported agriculture system (cases 1 and 4), deliberately include consumer groups in their decision-making process, or in post-production phases, to redefine the producer-consumer relationship. Moreover, in France (case 2), local cooks are encouraged to introduce local varieties on their menus, a cookbook is being written using local varieties, and partnership with local livestock farmers allows getting nutritionally richer local varieties on the market as animal feed. In Germany, the *BESH* (case 3) teamed up with surrounding communities and local authorities to

collectively run a local slaughterhouse and a network of butcher-shops, which exclusively supply BESH's meat.

In most of the cases there is an ambition to improve the members access to information about internal activities and/or on farming matters. Hence, organizations created a plethora of online and printed tools in order to ease the flow of information between the staff and the members, but also in between the members. While some take the form of online discussion forums reserved to producers (*Agricovert*), others are professionally edited members' magazines (*BESH*) or yearly technical report for follow-up and sharing of the results from breeding experiments (*AgroBio Périgord*). Finally, all organizations also offer their members the opportunity to follow personalized training courses upon demand, be it to improve farming techniques, or decision-making capabilities.

Table 3 - Examples of representation instruments in the cases

Alternative decision-making models
Improved access to information and training
Geographical boundaries
Inclusion of specific profiles

Under which conditions have rights-based governance arrangements led to effective conservation of agrobiodiversity?

Measuring the exact ecological impact of rights-based governance instruments would have required possessing long-term ecological data on the state of agrobiodiversity before and after the introduction of new governance arrangements. Moreover, one would also have needed to find a way to measure the usefulness of (re)introduced agrobiodiversity; *i.e.* asking when (re)introducing new or ancient species and varieties is considered an improvement.

While practical issues form a obvious barrier to such an approach, there is also an epistemological issue. Deciding on whether the state of the environment has improvement based on seemingly objective ecological data does not fit within a deontological account of justice underlying this research. As Fraser (2001) puts it, a deontological account “assumes that it is up to individuals and groups to define for themselves what counts as a good life and to devise for themselves an approach to pursuing it”. In other words, it is up to the farming organization themselves to argue whether their actions lead to an improvement of the state of agrobiodiversity. And it is up to them, not me, to ground the legitimacy of their actions within the right ‘frame’, whether defined by normative or instrumental considerations.

Moreover, as already stressed earlier, the objective here is not to identify a causal relationship between the introduction of one or more specific rights-based instruments and a measurement of improvement of agrobiodiversity, but rather to explore and understand, using existing literature on the link between participatory governance arrangements and environmental effectiveness, how some of the discussed instruments relate with successful outcomes. In other words, by using two crucial cases (the French and the German case), we assume there is an improvement of agrobiodiversity, based on the organizations own information. *BESH's* main achievement is re-building the local landrace population from what was once considered an extinct breed. Although the swine is still considered to be in danger, the community counts over 1400 farmers breeding the Swabian-Hall. In the same vein, and while initially experimenting with only a few peasant varieties, *AgroBio Perigord* successfully re-introduced over a 100 local crop varieties, which are being grown by 300 farmers.

What are looking at then, is under which governance conditions this improvement has taken place. By fighting exploitation, marginalization and deprivation, the above examples of distributive instruments allow improving parity of participation for farmers, while at the same time contributing to their efforts to conserve agrobiodiversity. While obviously only part of the story, it has been shown that measures such as the availability of financial and/or structural resources (Brody 2008; Fung & Wright 2003); the

availability of representative sites, allowing for on-farm testing and the development of environment-specific breeding techniques (Sperling 2001; Pautasso *et al.* 2013); the presence of facilitators and trainers (Richards *et al.* 2004); and the availability of immaterial support by a leading organization or agency (Beierlee and Konisky 2000) are beneficial to the success of environmental governance of the two cases.

In the same vein, it's easy to see how misrecognition may limit efforts for the conservation of agrobiodiversity. The way in which new knowledge is acquired, produced and/or used is a key determinant of success of an environmental governance program (Dawson *et al.* 2008; Stone 2007; Corburn 2003). "What counts as legitimate knowledge, and how it is generated, influences its practical effectiveness" (Turnhout *et al.* 2012). Moreover, alternative, more sustainable forms of agriculture inspired by the inclusion of ecological principles with farming practices, are all based on a broader diversity of crops and livestock. Recognizing and valuing these forms of agriculture, as the two cases do, hence is a positive evolution towards the conservation of agrobiodiversity.

However, the main form of misrecognition at play is the consequence of the institutionalization, in law or in practice, of hierarchy between different farming practices. The homogenization of farming practices through much of the second-half of the XXe century has led to the subordination of alternative forms of agriculture to conventional

high-input and/or industrial solutions. As Altieri and Nicholls (2012) note, no matter how much evidence of the effectiveness of alternative practices (such as agroecology¹²) is produced, it is still considered a *marginal* form of agriculture, and thus replaced by conventional solutions via political decision-making. Measures aiming to improve legal recognition, and the valorization of their knowledge and identity, hence cover a dual reality of participation and effectiveness. On the one hand, the *de jure* or *de facto* subordination of alternative forms of agriculture to conventional approaches marginalizes alternative farmers, inhibiting their capacity to use alternatives practices based on a broader diversity of crops and livestock. On the other, the misrecognition of certain worldviews and knowledge systems may lead to an over-simplification of potential solutions and, hence, an ineffective outcome.

The political dimension of the cases' governance arrangements are a way to empower the different interest groups within the organisation to define their own decision-making rules but also to avoid strictly

¹² Emerging in the 1930s, the meaning of agroecology has evolved over time, and has been defined as a scientific discipline, a social movement and an agricultural practice (Wezel *et al.* 2009). Agroecology “provides the basic ecological principles for how to study, design and manage agroecosystems that are both productive and natural resource conserving, and that are also culturally sensitive, socially just and economically viable” (Altieri 2002: 7). In the 1990s, the concept expanded to include social movements fighting for the transformation of the whole food system (Wezel *et al.* 2009) and has been popularized by global farming movements such as *La Via Campesina*.

exclusive boundaries of participation (*e.g.* producers or consumers-only decision-making). However, in order to improve the level of closure, the cases do try to limit the boundaries on a geographical scale. Borrowing from network analysis and social capital theory, closure represents the level of cohesiveness, which strengthens the social relationship between participants and allows for the development of a shared identity and common narrative. For Sandström (2011), well-connected governance structures are likely to facilitate internal communication and deliberation, which have been identified as defining conditions to the success of a participatory process (Beierlee and Konisky 2000). Conservation approaches including deliberation mechanisms have been found to relate to improved outcomes, as they limit conflict or ease the resolution (Redpath *et al.* 2013).

Moreover, the explicit framing of the political community in the cases, empowers participants to see themselves as agents of change, recognized by the community as key stakeholders of rural development, increasingly aware of “the rights to have rights” (Gaventa & Barrett 2010) and part of a greater goal of redefining farming practices. It connects individual farmers with a larger collective movements demanding recognition for their cultural and political distinctiveness. This particular point, stressed by the interviewees as one of the main reasons for farmers to join the organizations, strengthens local perceptions of justice; which has

been linked to greater conservation effectiveness (Gross-Camp *et al.* 2012).

Justice as recognition and the conservation of biodiversity

Of the three dimensions of justice explored above, recognition is arguably the most complex one. This complexity makes its application difficult within conservation practice, and under-addressed within the environmental justice literature. The last phase of this work, addressing research questions 3 and 4, hence takes a closer look at how conservation may incorporate concerns of justice as recognition.

Despite its complexity, recognition appears to be crucial to understand the effects of rights-based approaches to conservation. First, because of the nature of the interventions, conservation practice is often characterized by high diversity of peoples, with many different cultural backgrounds, identities and interests. In such settings, without taking into account this complexity, conservation can lead to the misrepresentation and misrecognition of indigenous or local people and cultures, some of which are potentially already marginalized. In other words, ill-conceived conservation can lead to injustice.

Inversely, moreover, injustices can lead to ineffective conservation. As indicated earlier, conservation is driven by both science and norms. Hence, ideas on what will constitute effective or efficient conservation interventions are likely to differ from one culture to the other, and thus likely be contested. For instance, during much of XXe century, the Western idea of nature as untouched wilderness has often led to conservation measures prescribing the eviction of local people (Brockington and Igoe 2006).

Also, conservation, when driven by science, often relies heavily on positivistic natural sciences. Viewing nature only through a supposedly objective lens of biological and ecological science may not only lead to misrecognition, by seeing other worldviews as harmful or inefficient, but also to ill-conceived interventions. Indeed, local knowledge systems often provide in-depth understanding of ecological processes and local human-nature interactions. The inclusion of local knowledge systems enlarges and diversifies the evidence-base to conservation, and builds trust and legitimacy between conservationists and local stakeholders.

Understanding the different forms of misrecognition requires engaging with the plurality of traditions of thinking about recognition, which were introduced in the literature review. Although there is some overlap between these approaches, they nonetheless have different views on the root causes of misrecognition and the harms it can create. Table 4 compares the different tradition

using the analytical framework outlined in the methodological section.

For Hegelian scholars, recognition takes place through inter-subjective relations. It flows from this that they only see human individuals having moral standing as subjects of justice, and that harms created by misrecognition are necessarily experienced individually, *e.g.* through loss of self-esteem. Critical theorists, who see recognition occurring through more institutional and structural ways, consider both human individuals and groups to be subjects of recognition. While not rejecting the psychological consequences of misrecognition, they claim this idea is incomplete (and sometimes possibly counter-productive) and social, political and material harms should be added. Decolonial thinkers share some of the ideas of the two previous schools of thought (*e.g.* psychological harm, structural root causes), but identify ‘coloniality’—a process of subjugation that persists through European cultural hegemony—as the main driver behind misrecognition. Due to its links to indigenous peoples’ movements and their cosmogonies, decolonial thought allows for a much broader view of possible subjects, including not only past and future human generations, but also non-human living species and intangible beings such as spirits and mother nature. Finally, capabilities thinking is a bit different than the first approaches. Stemming from liberal individualism, it sees misrecognition as mainly an individual phenomenon (although some environmental justice work has tried expanding it to communities, *e.g.* Walker 2009).

The harm it creates, according to capabilities thinkers, is a lack of opportunity. It occurs through 'the appalling miniaturisation of people', a consequence of value universalism that reduces people's values to a simple, collective label.

Table 4 - Summary of different schools of thinking about recognition

	Hegelianism	Critical theory	Decolonialism	Capabilities
Subjects	Individual humans embedded in social relations.	Individual humans and social groups.	Humans (ancestors, present, future), non-humans, spirits, mother nature.	Individual humans; <i>potentially</i> human and non-human communities.
Harms	Psychological, e.g. loss of self-esteem.	Psychological, social, political and material.	Psychological, material and cultural.	Constrained opportunities; loss of freedom/dignity.
Mechanisms	Non-recognition caused by cultural relations of power.	Status inequalities caused by cultural <u>and</u> economic forces.	Colonisation by Eurocentric, modernist knowledge production.	Value universalism, lack of participation.
Responses	Affirmative recognition for multi-culturalism	Affirmative recognition of difference <u>and</u> economic and political redistribution.	Prioritise indigenous knowledge; political and economic change	Liberal pluralism & multiculturalism; deliberative public debate.

As a consequence of their differences, the schools of thought also prescribe different solutions to deal with misrecognition. For Hegelian scholars, recognition requires self-development and affirmative multiculturalism as methods to seek mutual recognition; for critical theorists it requires institutional and structural reforms to bring about status equality; for decolonialists, a key priority is to vindicate 'other' non-modern conceptions of life that have been denied by enfoldment into western knowledge systems; for capabilities thinkers, the conditions for human freedom will require liberal deliberative democracy.

These different traditions can be illustrated through real world conservation struggles, such as the example of AgroBio Périgord.

Recognition, cognitive justice and agrobiodiversity conservation

The conservation activities undertaken by the farmers at *AgroBio Périgord* can be seen as a combined struggle for the recognition of farmers *and* for more economic equality; an illustration of Fraser's multi-dimensional justice theory. Justice claims take on a combined character, denouncing the harm created by the socio-cultural subordination of small-scale farmers and their economic exploitation by the dominant agri-food system.

The mechanisms behind this double injustice clearly have deep institutional roots. Farmers live in increasingly economically precarious situations, particularly when not following a productivist farming model, while at the same time facing threats to their knowledge and livelihoods created by cultural, legal and scientific marginalisation. The last research question, addressed in the third paper, further builds on the historical and structural reasons behind this.

Conservation and agricultural science can become a basis for the marginalization of local and traditional forms of knowledge. This is particularly relevant in the context of agrobiodiversity conservation in Europe, as the agricultural sector today is characterized by the dominance of modern agronomic science. In trying to break with the industrial farming model, alternative farming models, such as agroecology, increasingly introduce post-normal forms of science in their activities (Altieri and Nicholls 2012; De Schutter 2010). While this has obvious instrumental reasons—*i.e.* replacing exogenous inputs by better grasping the complexity of agricultural production—the third paper of this thesis highlights another, perhaps less obvious underlying objective: the pursuit of recognition.

However, recognition as status equality may not be enough in the agricultural context, where modern science often remains the only form of knowledge to be seen as valid and exact. What is needed, beyond the right of different practices to co-exist, is an active

engagement across their knowledge-systems. Or, as decolonial theorists put it, there's a need for cognitive justice (Visvanathan 2005; Santos 2007).

In a farming context, recognition hence is a double struggle against: (1) the alleged universality of industrial agriculture, which is sustained through cultural and legal domination; and (2) the marginalization of peasant farming in the name of rigor, rationality, effectiveness or efficiency, through the hegemonic conception of modern science.

Beyond just recognition, cognitive justice also serves an objective of 're-peasantization' (van der Ploeg 2008): a constant struggle for autonomy based on a combination of the "endogenous potential of agriculture" (Guzmán and Martínez-Alier 2006: 472) and the resistance against the neoliberalization of the agri-food system (Stock *et al.* 2014).

According to Santos (2014), cognitive justice is given shape through an 'ecology of knowledges': an active dialogue between different forms of knowledges and practices, both scientific and nonscientific (Santos, 2014). Freely paraphrasing Santos then, the practice of cognitive justice is the context of agroecological farming may be called an 'agroecology of knowledges'. The necessity for this, is put by one of the interviewees as follows: "Owning local seeds is not enough [...] One also needs to re-acquire lost knowledge for breeding and for their adaptation to the environment. [...] Enclosing

agricultural knowledge [also] forms a danger for future generations. Addressing the need of future generations inevitably leads to a form of *decentralized knowledge production*."

The paper defines an agroecology of knowledges as *the counter-hegemonic engagement with modern agronomic science, through the recovery and co-production of situational, environment-specific knowledges, and the reskilling of farmers. It aims not only at improving agricultural science, but also at rebuilding collective identities and reclaiming autonomy*.

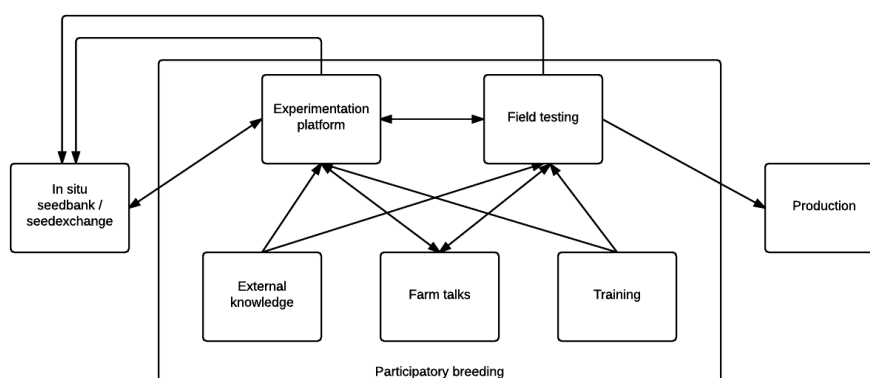
The two main dimensions of this definition—the recovery and co-production of situational, environment-specific knowledges, and the reskilling of farmers; and rebuilding collective identities and reclaiming autonomy—are illustrated with the participatory breeding program at *AgroBio Périgord*.

The recovery and co-production of situational, environment-specific knowledge, and the reskilling of farmers

Since the early 2000, AgroBio Périgord runs a participatory breeding program. The key issue for the program is replacing the dominant linear model of varietal selection and innovation (from *ex situ* collection, to external breeders, to farmers) with a decentralized farmer-centered approach (figure 2). Starting with a demand from one of the member-farmers, new crops are bred, using the organization's experimentation platform or the farmer's testing parcel. When promising, the seed is multiplied and returned to the seed-exchange network for conservation and future use.

The process is organized as a dialogue between different knowledges, brought by different actors: member-farmers, visiting farmers (from both the Global North and South), facilitators, researchers, professional breeders, *etc.* The arrows in figure 2 represent the flow of information, knowledge and resources (*e.g.* seeds) exchanged between the different steps of the participatory breeding process. Double arrows signify that this exchange is repeated until found satisfactory: *e.g.* between the *in situ* seedbank/network and the experimentation platform, various exchanges will be necessary to find a suitable variety, according to a farmer's needs, experience, environmental conditions (soil, climate) and preferred outputs. By letting farmers steer the whole process, and by multiplying the exchanges of knowledge and the involved actors, the program explicitly addresses the power dimensions in which agricultural knowledge is generally produced.

Figure 2 – Decentralized farmer-centered breeding process at AgroBio Perigord (figure by the author)



What is sought for with an agroecology of knowledges is not only the improvement of local agricultural knowledge, but a genuine transformative process brought about by participatory governance arrangements and democratic practice (Pimbert, 2011).

Rebuilding collective identities and reclaiming autonomy

This transformative process is reconnecting individual farmers with a larger collective rural movement, empowering participants as agents of change. The aim is breaking the cultural, legal and economic dominance from both the state and non-producing market players.

Rural sociologist Jan Douwe van der Ploeg (2008) called this a process of 're-peasantisation': a 'struggle for autonomy that takes place in a context characterized by dependency relations, marginalization and deprivation. It aims at and materializes as the creation and development of a self-controlled and self-managed resource base [...]'.

But the process goes beyond material autonomy. A political community is (re)created under the banner of peasant, local and/or organic agriculture, the reintroduction of traditional varieties, the creation of new varieties using farm-based knowledge, and participatory farming practices. This 'affirmation of identity' becomes an additional resource for demanding recognition (Santos et al., 2007: xxvii).

DISCUSSION AND CONCLUSION

The different papers in this work show how agrobiodiversity conservation is intimately related to environmental justice. Applying a justice lens to the study of agrobiodiversity governance allows grasping the underlying political, social, cultural and economic factors driving conservation efforts. Agrobiodiversity conservation, it appears, is not simply an environmental or agricultural matter. In the different cases studied in this work it is an instrument for a broader struggle; a struggle for justice. In their efforts to conserve agrobiodiversity, farming organizations redefine the conditions under which their members participate in society. Beyond the sole production of commodities, farmers are made direct stakeholders of a much larger rural development process.

Distributive aspects are an important aspect of that process. Farmers, even in Europe, often live in precarious situations: access to land is increasingly difficult, dominant players in retail sector push prices to the bottom, and with the popularity of alternative food networks it is expected of farmers not only to grow food, but also to sell, promote

and distribute it. Economic production and decent wages are still an important motivating factor for the farmers to join farmers' organization. As is made apparent in the cases, governance arrangements for the conservation of agrobiodiversity are used to redistribute or communalize available material, economic, structural and human resources.

A first practical observation can be drawn from this. Supporting farmers and their efforts to conserve agrobiodiversity requires structural support. As one interviewee put it: "fundraising activities represent about 40% of the work time of the organization, placing a significant burden on our employees. Long-term public funding is crucial if we are to develop new types of agriculture in Europe. [...] The current agricultural system would have never developed on such a large scale without the support of public funding" (interview ABP 2013; author's translation).

Yet, following recent environmental justice research, this work shows that the distributive dimension is not enough; other aspects of justice play equally important roles. Farming and conservation can, directly or indirectly, become a basis for the misrepresentation and misrecognition of indigenous, local or rural people and their knowledge, some of which is potentially already marginalized. Conserving agrobiodiversity is a way for these people to oppose the institutional threats to their knowledge and livelihoods.

Through different forms of participatory governance arrangements, the studied farming organisations try to (re)build a common rural identity and citizenship. “[I]t is political organization and debate [via farmers associations], and autonomy in agricultural production that links settlers to their rural identity as citizens” (Wittman's 2009: 127). Under the banner of peasant, local and/or organic agriculture, through the reintroduction of traditional varieties, the creation of new varieties using farm-based knowledge, and the redesign of innovation models, individual farmers are connected to collective movements demanding recognition for their cultural distinctiveness.

This leads to a second practical observation. As noted in the second paper, there is a need to change the unequal power relations—generated not only by unequal material distribution but by different forms of misrecognition and move towards relationships of more equal influence. For example, changing the legal and cultural institutions to allow small farmers’ choice to engage in locally-valued land use practices, such as to plant the seeds they want, or changing the formal tenure of indigenous territories to enable local control over land use and political autonomy.

Alongside the economic and cultural dimensions, farming organizations also try to rethink the ways in which members are represented in decision-making. This political dimension generally takes the form of measures encouraging self-determination and fostering empowerment. The different cases depart from the common

approaches of participation in which farmers are given agency and/or voice within existing structures, and involve a genuine engagement with power and politics to bring about a socio-ecological transition.

These different dimensions point to the necessity of understanding the loss of agrobiodiversity as more than a technical problem to manage and/or overcome. It is not just about the “variety and variability of animals, plants and micro-organisms;” it is about economic distribution, cultural recognition and political representation. This is not only important in itself, as it improves well-being and the living conditions of farmers. It is also important for purely instrumental reasons, as the improvement of participation-parity among farmers directly influences their efforts for more effective conservation.

Beyond their relevance in terms of justice, the different claims are often voiced in terms of environmental and farming effectiveness. It is only through politics of recognition, for instance, that alternative farming movements will be able to sustain themselves, and this is necessary to develop other ways of looking at agrobiodiversity (and farming in general). This work provides several examples of laws, policies and social institutions which reinforce the dominance of unsustainable farming and conservation practices and limit the emergence of alternatives.

While influenced by environmental justice research, my work also differs from it on some important points. By going back to Fraser’s

original work (rather than the different secondary interpretations), the focus of my work is on parity of participation. This means not only that I look at the impact of agrobiodiversity governance arrangements of farmers' organizations for the participation of their members in society as a whole, but also that I do so through a deontological approach. Doing this avoids having to judge how a pool of available resources, for instance, is to be distributed between different competing visions of farming and/or agrobiodiversity conservation. In so doing, I avoid having to make an ethical judgement about what is 'good' or 'bad' conservation and/or farming. Rather, Fraser's deontological approach judges the righteousness of a situation by its capacity to improve the participation of previously marginalized, subordinated and disenfranchised farmers and their communities. The case of the *BESH* in Germany (case 3) for example, is not right or just because it is a bottom-up *in situ* conservation initiative steered by farmers, but because by regaining control over the whole value-chain—from farm, to slaughterhouse, to butcher-shop, to fork—the governance instruments of the organization directly improve the participation of its members in society. I have argued in this work that it is this improved participation that empowers producers and consumers to jointly reshape breeding activities throughout the region, based on sustainable traditional breeding techniques. It has allowed to shift the regional agri-food system from an industrial farm-level only approach to a broad transformative rural development process.

However, this begs the question of who should allocate or provide for these resources in the first place. Most of the cases in this work illustrate that finding a sustainable solution cannot be reduced to letting the market deal with the allocation of private goods on the one hand, and the government with public goods on the other (Vanni 2013). Market-only approaches have often caused the problem in the first place. In the case of *Swabish-Hall* (case 3), industrial breeding techniques led to an uni-dimensional focus on the growing of body mass, which led to situations in which pigs couldn't be bred without the input of antibiotics (to keep them alive) and tranquilizers (to reduce their stress). Stuck in the productivist treadmill, farming practices aimed primarily at untenable production increases, resulting in deplorable living conditions for the pigs and the massive import of cheap foreign (low-quality) pig feed. This also significantly lowered the quality of the meat, which was known to be tasteless and had a cooking loss of up to 40%. On the other hand, the German State, historically responsible for organizing breeding, didn't feel the need for change, as costs of meat were kept low.

A sustainable solution must also come from the farmers themselves. This, however, requires rethinking the whole value-chain by recognizing the role of the farmer and putting him/her centre-stage in defining the production process. Internal economic redistribution, socio-cultural recognition, valuation of farm-based knowledge, self-determination and participatory democracy are building stones of success in the different cases. This offers a third practical observation.

Echoing Schlosberg (2004: 521), my research points to the need to move “beyond a focus on the state alone for remedies, and brings justice theory squarely into the political space beyond the state.”

While this observation (and this work in general) calls for a greater autonomy of farmers and their organisations in setting conservation and farming practices, some cautions are in place. First, it should not be read as a call for market-only solutions, disconnected from the State. History tells us this is likely to reduce the effectiveness to only a few criteria (*i.e.* yield-related criteria), hence not taking into account the loss of biodiversity. But even if broader (social and environmental) criteria are taken into account, this work has shown that the material dimension of agrobiodiversity conservation is only ever part of the story. And second, it should not lead to an over-romanticization of the effect of cooperation between farmers, nor of the power of individual farmers (Stock et al. 2013). As shown throughout this work, their activities take place within powerful cultural and political forms of domination, which the market is unlikely to address on its own.

Another specificity of this work’s focus, compared to the environmental justice literature, is the importance it gives to the epistemic and epistemological roots of misrecognition. As noted in the third paper, contemporary political philosophy working on identity, gender, race, religion and/or culture, rarely includes knowledge-based misrecognition. And the same can be said for much

of the “new conservation debate” (Miller *et al.* 2011). Modern science often remains the only form of knowledge to be seen as valid and exact. This leads to misrecognition, but also to the reinforcement of a “classical reductionist, analytical worldview which divides systems into ever smaller elements, studied by ever more esoteric specialisms”, which is unable to cope with the uncertainty of “complex socio-ecological systems, value-based choices and the existence of a plurality of legitimate perspectives” (Dedeurwaerdere 2014: 134-135). Yet, in the context of agrobiodiversity conservation, where modern agronomic science is one of the causes for the erosion of agrobiodiversity, this issue is of paramount importance. This calls for a fourth, and last, practical observation, directed to the scientific community. New collaborative research partnerships will need to be developed, building on the principles of transdisciplinary science and methods (Dedeurwaerdere 2014), blurring the distinction between theory and *praxis*. This should allow for both the recognition of other, different ways of knowing farming and conservation, *and* for the development of more effective, sustainable agronomic science and agricultural practices.

Limitations and future research

As is often the cases, this work has raised more questions than it has answered. More critical research is needed exploring the links between (environmental) justice and agrobiodiversity conservation (and/or agricultural development). There is a particular need for

more research embedded in concrete farmers' movements, to observe connections between justice, governance and more effective conservation. While this work is a step in this direction, future research will need to more systematically, and using a larger evidence base, confront the dynamic field of environmental justice theory with the empirical realities of farmers conserving agrobiodiversity.

At the same time, more work is needed on achieving theoretical understanding of how just and equitable agrobiodiversity conservation can be conceptualized and analysed. On the one hand, this must involve drawing more generalized ideas that are informed by dialogue with the movements. On the other, it requires further exploiting emerging theories of social and environmental justice. For instance, much remains to be learned from non-Western approaches to justice, currently regrouped under the term 'decolonial studies'.

Quite paradoxically, despite the historic relation with racial issues, and despite the more recent geographic focus on the Global South, there's been surprisingly little engagement with decolonial thought in the environmental justice literature. Much has to do with the fact that critical theory itself has done little to shake off its Eurocentricity: "Frankfurt School critical theory, despite its seminal insights into the relationships between domination, modern society, and the opportunities for redemption through art as critique, is stunningly

silent on racist theory, anti-imperialist resistance, and oppositional practice in the empire.” (Said 1993: 278; cited in Allen 2016).

Yet, as illustrated by the 3rd paper of this thesis, decolonial thought can complement or improve existing (environmental) justice approaches, particularly of subjects such as epistemology, race, territory and culture. Future research can attend to this gap by reflecting on topics such as: can environmental justice be used to address the challenges raised by the project of modernity and coloniality? In its current state, by failing to include a decolonial analysis, doesn’t environmental justice risk undermining its emancipatory potential or even deepening some of the injustices it claims to address? Which new dimensions/transformations can decolonial thought bring to the debate to criticize/improve environmental justice?

Another limitation of this work is the apparent contrast between the theorization on the subjects and agents of justice, on the one hand, and the focus of this work, on the other. The unit of analysis of this work is farming organizations. While this offers an interesting perspective of farmers as a collective movement, it does not say much about how individual farmers experience the justices and injustices of agrobiodiversity conservation. In other words, addressing the misrecognition of farmers as a group, for instance, thereby improving their participation in society as a group, does not necessarily lead to the participation of individuals within that group. Further work is

needed to compare the observations in this thesis with individual experiences of the members of the farming organizations. This work is underway. During the last year of the PhD, an online survey was conducted with 55 member-farmers of the association, to understand how farmers themselves understand the relation between the conditions of participation and their efforts to conserve agrobiodiversity. Future research using data from this survey should help address this shortcoming.

The thesis also suffers from several conceptual limitations. First, as stressed in the introduction, the link between justice and agrobiodiversity conservation has received far less attention than the link between justice and 'natural' biodiversity. Therefore, this work has been drawing on insights from the latter to explore the former, as if they were the same. Little conceptual distinction is being made between 'natural' biodiversity conservation and agrobiodiversity conservation, even when combined in the same paper (paper 2). While it makes perfect sense for a critical theory approach to put in doubt, using Harvey's (1993) words, the 'nature of the environment', questions remain as to the suitability of the parallels being made in this work. An interesting topic for future research would be to compare the ideas, meanings and practices of conservation across this nature-culture divide.

Second, and related to the first, this work has acknowledged, but not developed, the relation with alternative food and farming narratives,

such as the food sovereignty and food justice movements. The last paper of this thesis in particular has stressed the links with concepts such as the *diálogo de saberes* (Martinez-Torres and Rosset 2014) or the *campesino-a-campesino* methodologies (Holt-Giménez 2006), and with more recent ideas such as knowledge sovereignty (International Commission on the Future of Food and Agriculture, 2009) and technological sovereignty (Altieri and Nicholls 2012). These concepts and narratives employ similar justice dimensions as those developed in the environmental justice literature, and used in this work. Stock *et al.* note, for example that the “basic idea behind these oppositional and 'resistant' approaches, therefore, is that neoliberal approaches to production lead to injustices, to the *uneven distribution* of benefits and to the *disempowerment* of the farmer/food producer at the hands of monopolizing corporations and the structures of capitalist accumulation” (2014: 414; emphasis added). Two issues can be drawn from this and addressed in further research: (1) how do concerns and conceptions of justice in these food/farming justice movements differ from those in the environmental justice movement?; and (2) are the concerns and conceptions of justice related to agrobiodiversity conservation, such as those explored in this work, specific to the practice of conservation, or should their origin be traced back to broader struggles against agricultural neoliberalisation?

Finally, some words on the external validity of this work. As stated earlier, this work was conducted with Belgian, French, Dutch and German producer-led farming organisations which actively conserve

agrobiodiversity. Most of these organisations, moreover, while relying on the commercial valuation of their final farming products, do not commodify their conservation activities (*e.g.* seed and semen is not being sold but freely exchanged). The results of this work should primarily be understood within this particular context.

Blindly transposing this work to different contexts would be inappropriate. But some observations hint at the usefulness of the results to analyse other situations. First, the fact that several cases explicitly look for inspiration in other parts of the world, particularly in Latin America. While the context in which farmers in the Global South and North conserve agrobiodiversity is undoubtedly very different, European farmers consider their struggles to be similar enough to their Southern counterparts to draw upon their experiences. Some of the results of this work thus are likely to be valuable for other contexts.

Second, one can observe, both in other regions of the Global North and in the Global South, that the industrial farming model—based on large farming enterprises, biotechnologies, profit-maximisation, and related legal and scientific regimes—tends to become the dominant system (Ploeg 2008). This is likely to create similar inefficiency and similar injustices as those observed in this work, in a Western-European context. Therefore, one can reasonably expect to see rights-based conservation initiatives to exist (or emerge) within other (potentially very different) socio-political contexts.

The upshot

As a conclusion to this work, a last remark about what to take away from this thesis. After 4 years of work, I argue that people-friendly approaches to conservation are not only compatible with effective agrobiodiversity conservation, but that they are a condition to its long-term success. It is the lack of rights of both producers and consumers, and hence the injustices they face, that have permitted the current agro-food system, with its known environmental shortcomings, to dominate all others. This system, while clearly being effective in terms of wealth generation (but not necessarily of distribution) and improved production, has failed to compose with the economic, cultural, epistemic and political plurality of experiences which have formed the historic pillars of agriculture practice, and hence, of agrobiodiversity conservation. This not only leads to injustices, but also, through them, of missed farming opportunities. Answering the underlying general research question of this work, I argue that it is this combination of injustice and inefficiency that spurs the emergence of movements of resistance, such as those studied in this work. An effective agrobiodiversity conservation strategy hence will need to address both dimensions simultaneously. Movements adopting such an approach are key for the reinvention and the sustainable transformation (both in the longevity and ecological sense of the word) of European agriculture and the conservation of agricultural biodiversity.

PART II – ARTICLES

ARTICLE I – TRANSFORMATIVE PARTICIPATION
IN AGROBIODIVERSITY GOVERNANCE: MAKING
THE CASE FOR AN ENVIRONMENTAL JUSTICE
APPROACH

Brendan Coolsaet

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Introduction

Most environmental governance processes today include some form of participation.¹³ Stakeholders are not confined anymore to a lobbying or implementation role but increasingly become agents of socio-ecological innovation in environmental governance (Biermann

¹³ In this article, participation is understood as the involvement of non-state actors in environmental governance processes, whether state-led or community-based.

et al. 2009). Participation in environmental governance is broadly advocated for by both researchers and practitioners, as it is generally assumed to lead to greater compliance and adherence to the norm (Schenk *et al.* 2007), to favor institutional fit (Galaz *et al.* 2008; Fung and Wright 2003), to improve legitimacy (Engelen, Keulartz and Leistra 2007), or to spur direct bottom-up action for the environment, all of which can potentially improve environmental outcomes. But while the case for increased participation is based on its potential for more environmental effectiveness, a decade of empirical research on participation in environmental governance has produced mixed results and failed to establish causal links between participation and higher environmental quality (among many others see Young *et al.* 2013; Carr *et al.* 2012; Newig and Fritsch 2009; Richards *et al.* 2004; Beierlee and Konisky 2001).

Two major shortcomings can be identified in the current approach to participation and effectiveness. The first shortcoming is a methodological one: the research question is too imprecise and/or too broad to produce useful results. Some participatory processes will yield higher environmental quality, while others will not. This can be explained by the fact that the inclusion of stakeholders in the decision-making process is only one of the many aspects affecting the effectiveness of environmental regimes (Young *et al.* 2008). It is necessary to ask additional questions about the conditions through which improved outcomes may occur. The second shortcoming is a political one: participation is viewed as a depoliticized technical tool.

In both research and practice, the failure to theorize the concept of participation leads to an insufficient understanding of the role of popular agency and institutional structures conditioning (the effectiveness of the outcome of) participatory governance.

Considering these two points, if we are to strengthen participation as a policy goal, an objective that seems to be firmly embedded in today's environmental policy-making, the question to address therefore is not *if* participation in environmental governance produces effective results, but *under which conditions* it does. Borrowing from contemporary thinking on transformative participation in the development literature (see, for instance, Hickey and Mohan 2004), I argue that these conditions can be found by adopting a coherent normative stance (Reed 2008), one that refocuses participation on issues of justice, empowerment and democracy. The working hypothesis of this paper is that, through its recent developments, environmental justice presents an excellent candidate for such a coherent normative stance. Through the comparison of two effective agrobiodiversity initiatives (*i.e.* of which the outcome improves agrobiodiversity), this paper analyzes the justice-relevant governance conditions underlying the success, using environmental justice as an analytical framework. The goal here is to approach participation from a rights-based perspective, exploring the possible relations between normative claims for the empowerment of participants and the environmental effectiveness of the outcome, understood in this paper as the improvement of agrobiodiversity.

Agrobiodiversity is interesting in this context, as it is not only an environmental issue, but a tool for political, cultural and economic autonomy. Indeed, the diversification of agrobiodiversity is a condition to break with a farming system in which plant and animal varieties, agricultural knowledge and practices, as well as commercialization and distribution are controlled by a small group of dominant actors. In other words, using traditional varieties and local landraces is seen as a political statement (Demeulenaere and Bonneuil 2011).

The first part of the paper introduces the theoretical background, finding common ground between discussions in the domains of participation and environmental justice. In an attempt to operationalize Nancy Fraser's three-dimensional parity of participation concept, one of the theoretical foundations of contemporary environmental justice, a framework for the analysis of justice-relevant governance conditions is presented in part two. Part three of the paper briefly describes the research methods and the studied cases and part four then analyses how justice-relevant conditions to participation may explain the environmental effectiveness of the cases. The last part concludes.

Linking participation, justice and effectiveness in environmental governance

Since the institutionalization of public participation for sustainable development by the Rio Declaration and the Aarhus Convention, a triple shift has been observed in dealing with participatory approaches in biodiversity and environmental governance (Rauschmayer *et al.* 2009; Rowe and Frewer 2004). The first one is a gradual shift from state-organised consultation and/or top-down inclusion of relevant stakeholders, towards the emergence of stand-alone bottom-up initiatives, mostly community-based, but sometimes taken over or supported by the state. In parallel, and partially as a consequence of the first shift, there has been a shift towards the use of post-normal science to deal with uncertainty and complexity. The use of post-normal science can be understood as the extension of the peer community producing evidence serving to inform the decision-making in circumstances where traditional science falls short or is deemed inadequate. Finally, in the biodiversity regime, the focus has shifted from a protection-only perspective towards a multi-dimensional human-centered approach, such as the idea of 'sustainable use' and the ecosystem services narrative (Rauschmayer *et al.* 2009; Engelen, Keulartz and Leistra 2007).

Together, these three shifts can be understood as a democratization of environmental governance. Not only is there an increasing opportunity for citizens to shape environmental solutions, the quality

and sustainability of their communities become centerpiece of environmental endeavors, and their knowledge is recognized as potentially useful. In other words, in light of this triple shift, it can be said that biodiversity governance is increasingly concerned with 'people' in their relation to natural environments, extending beyond ecological problems alone to fully encompass economic and social issues. If people are at the core of contemporary biodiversity policy then it must be more broadly linked to issues of justice, empowerment and democracy, or, in other words, to environmental justice (Walker 2012; Schlosberg 2007; Agyeman and Evans 2006). Environmental justice then can provide a framework to analyze participation in environmental governance (Newel 2007, p. 238 cited in Sikor 2013a).

Politically, the notion of environmental justice finds its origin in the late 1970s and 1980s, through the struggles of low-income and color communities against unequal spatial distribution of toxic contamination in the US. Through a distributive focus, and in line with late-twentieth-century Anglo-American liberalism, these movements were concerned primarily with "the manner in which benefits and burdens should be allocated when there is a scarcity of benefits (relative to people's wants or needs) and a surfeit of burdens" (Wenz 1988). Up to this day, fair distribution of benefits and burdens remains an important dimension for communities seeking

environmental justice around the world (as illustrated, for instance, by the EJOLT project's 'Environmental Justice Atlas'¹⁴).

However, with the evolution of normative claim-making in post-modern societies, environmental justice has evolved beyond a distributive focus alone, to encompass a more plural understanding. In a now authoritative attempt to merge the claims of the environmental justice movement and the different existing theoretical frameworks, David Schlosberg (2007) depicts a tri-dimensional view of environmental justice. Alongside the substantive approach of the distribution of environmental goods and bads, Schlosberg adds the dimension of recognition and representation to his framework. Among several other authors, Schlosberg explicitly draws upon Nancy Fraser's 'post-Westphalian theory of democratic justice', according to which the first meaning of justice is 'parity of participation' in social interaction. Participating in society can be impeded by a combination of economic exploitation, cultural subordination, and political inequality. Overcoming this "requires social arrangements that permit all (adult) members of society to interact with one another as peers" (Fraser 2001; 2009).

Rethinking participation through this three-dimensional environmental justice framework, with its focus on socio-material empowerment and democracy, allows shifting the focus from participation as a technical tool to participation as a justice-relevant

¹⁴ For more information see <http://ejatlas.org/>

political process (Carr *et al.*, 2012; Suiseeya and Caplow 2013), thereby developing what has been termed a “post-participation approach” (Reed 2008). It also allows borrowing from contemporary thinking on transformative participation in the development literature, in particular from the concept of ‘participatory citizenship’. A radicalized notion of citizenship, it is “invoked as ‘rights-based’ approach” to participation (Hickey and Mohan 2004).

Doing this also posits the “right to participate [as] a prior right, necessary for making other rights real” (Gaventa 2004, p. 29). This is important with regard to existing approaches to environmental justice. Traditionally conceived as the consequence of a decision-making process (*i.e. ex-post*), environmental justice here is used as an *ex-ante* framework: the justice-relevant governance arrangements described below are seen as enabling conditions to (parity of) participation, rather than a result of it (Young 1990).

Operationalizing parity of participation in a farming context

According to Fraser, parity of participation is conditioned by three interacting dimensions: an economic dimension, a cultural dimension and a political dimension. Each of these dimensions is discussed and discussed below in the context of food and agriculture.

The economic dimension is straightforward: participation does not just happen, it requires financial and human resources. These resources may not be equally accessible to participants, especially in times of exacerbating economic inequality (Piketty 2014), conditioning their ability for social interaction. In other words, parity of participation is inhibited when certain actors do not possess the necessary material resources to play their role in society (Fraser 2000; 1992). The level of access to resources thus conditions social interaction: “subordinated social groups usually lack equal access to the material means of equal participation” (Fraser 1992: 64). Fraser’s economic dimension links up with the concept of distributive justice: overcoming disparities in the access of participants to the resources for participation (money, people, land, ...) requires a (re)distribution of available resources. However, as stated above, the distribution of resources is not analyzed as a consequence of a decision-making process, but as a condition to the effectiveness of its outcome. Examples of economic injustices can include exploitation (“having the fruits of one’s labor appropriated for the benefit of others”); marginalization (“being confined to undesirable or poorly paid work or being denied access to income-generating labor altogether”) and deprivation (“being denied an adequate material standard of living”) (Fraser and Honneth 2003).

The economic dimension is important in an agricultural context. In Europe, farms are disappearing at an alarming rate, mostly for economic reasons, opportunities for prospective farmers to start their

own activity are rare if land and property is not inherited, and price wars in the retail sector happen at the expense of the farmers' share of the profit, as exemplified by yet another 'milk crisis' in 2015. These issues keep farmers from participating on equal footing with one-another. In this context, Fraser's economic redistribution is operationalized as the material conditions facilitating participation of farmers, including measures fighting economic exploitation, marginalization and deprivation such as, for instance, fair(er) pricing, financial support, human resources, and access to land.

Closely related to the economic dimension is the cultural dimension. According to Fraser, an equitable participation requires the recognition of social and cultural differences of the participants. Indeed, participation can be inhibited by the institutionalization, in law or in practice, of socio-cultural hierarchy. Representatives of the institutionalized cultural norm then have much more possibilities to participate in society. In an agricultural context, misrecognition is characterized by the subordination of alternative forms of agriculture to conventional high-input solutions, which represent the agricultural norm in Western societies. As Altieri and Nicholls (2012) note, no matter how much evidence of the effectiveness of agroecology is produced, it is still considered a *marginal* form of agriculture, and thus replaced by conventional solutions via political decision-making.

While this could be explained by the economic power the agro-industry has over democratic decision-making, looking at agriculture

through a justice-as-recognition lens sheds another light. The sustained importance of high-input agriculture, despite overwhelming evidence of disastrous social and environmental impact, may also be explained by the fact that the industry, the world vision it represents, and the knowledge it uses are recognized as the Western agricultural narrative. Misrecognition, hence, translates in policies and law which disadvantage alternative farmers from participating, such as seed policy outlawing the use of traditional and farmer varieties (Bocci and Chable 2009), unequal access to research opportunities (Vanloqueren and Baret 2009), certification systems favoring business-as-usual approaches, etc.

Moreover, the analysis of the role of cultural recognition must also take into account the different ontological and epistemological perspectives of the participants. In today's knowledge society, hierarchization of socio-cultural value is largely influenced by our knowledge systems. Not only can it be considered unjust, it also creates dependence on one dominant knowledge system (*e.g.* industrial farming). Ontological and epistemological recognition would allow for alternative practices to grow their cultural status and become viable solutions. However, equal status may not be enough in a socio-economic context characterized by strong vested interest. This is why recognition should also be approached through a form of cross-cultural cognitive justice. Cognitive justice encompasses not only the right of different knowledge forms to co-exist, but entails an active engagement across them (Visvanathan 2005).

Recognition in the farming world hence should be achieved through measures promoting both status equality between different forms of *doing* farming and a ‘critical plurality’ of knowledges (Schlosberg 1999), valorizing and engaging with different ways of *knowing* farming. In practice this equates to governance processes which fight for an “affirmative recognition of difference” (Fraser 2000) through the legal recognition of alternative farming practices, the strengthening of farmers’ identities, and the pluralization of knowledge systems.

Finally, the third dimension of participation is political, in the sense of membership and decision-making procedures. What Fraser calls ‘representation’ tells us “us who is included, and who excluded, from the circle of those entitled to a just distribution and reciprocal recognition” (Fraser 2005: 6). First, it deals with decision-making rules and its consequences for the ability of actors to participate: inadequate decision-making rules might *misrepresent* certain people. Second, participation depends on the way in which the boundaries of participation are established (*i.e.* ‘the politics of framing’; Fraser 2005: 11): who’s authorized to deliberate and negotiate in the decision-making? The ‘who’ of participation is based on a ‘subjected principle’ which requires “ll those who are subject to a given governance structure have moral standing as subjects of justice in relation to it” (Fraser 2009). Third, just representation is contingent upon the level of democratization of the decision-making process. Not only must participants be allowed to participate though the setting of inclusive

boundaries, they must also be empowered to help set those boundaries themselves (Fraser 2009).

Methodology and cases

While this sets the normative framework of participation, it does not itself say much about the practical benefits of such a rights-based approach. The next section hence analyses how justice-relevant conditions of participation in two different cases have contributed to the improvement of agrobiodiversity. To do so, this paper compares the cases using Mill's method of agreement. Although the two cases are very different –the first one is a pig-breeders association in southwestern Germany, while the second one is seed exchange network in southeastern France; they thus have different production systems, different farming practices, and produce different agricultural goods– they share the same outcome, *i.e.* an improvement of their agrobiodiversity. Through a least-similar case comparison, justice-relevant conditions shared by both cases are identified, which explain why, despite a contrasting configuration, these cases both have an effective outcome. However, as noted before, many different conditions may lead to the effectiveness of environmental governance processes; a situation of “plurality of causes” as Mill puts it (cited in Bennett 2004: 32). Making use of the literature on effectiveness and environmental governance, the case comparison is combined with process tracing, allowing controlling “whether the intervening variables between a hypothesized cause

and observed effect move as predicted by the theories under investigation” (Bennet 2004: 22).

It is important to stress that this does not equate to a strictly defined normative positioning on participation: I do not define what justice is, claim that there is or could be a specific form of just participation, nor that it will automatically yield instrumental benefits. As Sikor (2013a, p. 14) notes, governance conditions, referring to economic, cultural and political dimensions, “are not simply either just or unjust” (even though they can influence the “the emergence of justices and injustices in the practice of environmental management”). Instead, I assume that “the way rights are claimed in different contexts is a key determinant of a positive outcome” (Gaventa & Barrett 2010) and try to echo a process of ‘framemaking’ social movement undertake to legitimate collective action or participatory processes. Framemaking is a notion that acknowledges the inherent plural and reflexive nature of justice-relevant claim-making (Walker 2012) and generally involves both normative and instrumental aspects (Benford and Snow 2000). Here, I am using a normative rationale as an analytical framework to identify justice-relevant conditions which have contributed to environmental effectiveness. In doing so, I deliberately avoid the debate on whether normative and instrumental rationales to participation are indeed commensurable or not (Wesselink *et al.* 2011).

Data was collected through a combination of interviews and direct observation (for the case comparison), primary and secondary sources (for process tracing). Six in-depth open-ended interviews with key members of both associations and direct observation took place in December 2013, January 2014 and September 2015. Questions were organized around the three justice-relevant dimensions of the above research framework. In other words, questionnaires focused on how justice-relevant governance conditions to participation such as resource availability, power relations, knowledge plurality or decision-making methods impacted ecological conditions. Primary sources were mainly organizational documents such as annual reports, members' magazines and internal communications, and policy documents.

The first case is a pig-breeders association in Schwäbisch Hall, a small town, capital of the eponymous district, in the state of Baden-Württemberg, southwestern Germany. The location is home to the Swabian-Hall swine (*Schwäbisch-Hällische Landschwein*), a local pig breed stemming from a crossbreed between the Chinese Meishan pig, imported by King William I of Württemberg in 1821, and a German landrace. The locally adapted landrace gained enormous popularity in the 19th and first half of the 20th century, with a market-share of over 90% by 1959. Despite its popularity, the swine almost disappeared 25 years later, with the introduction of fast-growing dutch 'high-performance' breeds, suitable for mass production and

with low fat content. Livestock declined sharply, and by 1984 the Swabian-Hall swine was considered to be extinct.

The critical condition of the race led a small group of farmers to launch a conservation campaign to save the Swabian-Hall swine. In the 1980s, they created the Schwäbisch Hall Producers' Community (*Bäuerlichen Erzeugergemeinschaft Schwäbisch Hall*, or BESH) and a Breeders' Community (*Züchtervereinigung Schwäbisch Hällisches Schwein*), defending a "holistic approach to rural development"¹⁵. In such an approach, the environmental goal (*i.e.* rebuilding the genetic population of local pig-breeds) goes hand in hand with the socio-cultural, economic and political objectives (raising farmers' status, living conditions and representation by making them independent from conventional breeds and industrial circuits).

The second case is a seed exchange network hosted by AgroBio Perigord (ABP), an association for the development of organic farming in the French region of Aquitaine. In 2001, following contamination of their crops by GM seeds, and worried about the disappearance of local plant varieties, the association launched a program called 'Aquitaine grows biodiversity' (*l'Aquitaine cultive la Biodiversité*). It aims to experiment with and reintroduce community-owned peasant varieties of a diverse set of crops such as corn, sunflower, soybean and grape vine. In 2003, following increasingly restrictive seed policies, ABP co-founded the national Peasant Seed

¹⁵ Author's interview with a staff member of the BESH, 28 February 2014

Network (*Réseau Semences Paysanne*), which now counts over 60 members nation-wide.

Both cases are examples of environmental effectiveness in terms of agrobiodiversity. BESH's main achievement, of course, is re-building the local landrace population from what was once considered an extinct breed. Although the swine is still considered to be in danger, the community counts over 1400 farmers breeding the Swabian-Hall swine and the network was broadened with local cattle and poultry breeders. In the same vein, and while initially experimenting with only a few peasant varieties, AgroBio Perigord successfully re-introduced over a 100 local crop varieties, which are being grown by 300 farmers.

Findings. Linking justice-relevant conditions and effectiveness.

Economic distribution

The distribution of material means conditions the effectiveness of a decision-making process: participatory governance is unlikely to produce effective results when some participants are able to dominate others in terms of resources, be they human, financial or structural (Fung and Wright 2003), or when farmers are being exploited or economically marginalized. Despite its importance for empowering participants, the availability of these material resources

is often overlooked when studying stakeholder participation in environmental governance.

In Swabish Hall, a community-based pricing system is being used: both meat prices and production amounts are fixed communally in advance, and the association guarantees buying of the production amounts set communally in advance. But production costs of the Swabian-Hall swine are approximately 12% higher than for 'high performance' breeds (Leipprand et al. 2006). While this could have been a genuine economic burden for the breeders, or a disincentive for prospective breeders, farmers redistribute part of the network's profits as financial support: BESH breeders get a 0.33 euro supplement per kg of carcass on top of the market price, if the quality of the meat meets the community's quality standards. These measures guarantee a stable income and a fair share of the profits, while allowing for stability in the production process, which permits greater attention to environmental issues, to animal welfare and to the quality of the meat.

Moreover, the French case shows that the economic dimension goes beyond these rather obvious financial and human aspects. The distribution of other, more structural, types of resources, such as land, can also prove crucial for the effectiveness of the outcome of the processes. ABP set-up a 'regional experimentation platform' (*plateforme régionale d'expérimentation*), a unique communally-owned test-field on which crops and breeding techniques can be observed,

tested, and multiplied before being used in members' fields. Moreover, through the association, farmers make available a plot of land for open-field and environment-specific testing. Once tested, farmers multiply and return two-thirds of the initial amounts of seed to the community seed bank. This form of land redistribution is a core characteristic of the participatory governance project which directly contributes to the improvement of agrobiodiversity. In participatory plant breeding approaches, such as in the French case, the participation of land-owning farmers is a necessary condition to allow for the development of environment-specific breeding techniques (Sperling 2001). Landownership provides for representative sites for on-farm testing, with the objective of attaining higher environmental quality (Pautasso *et al.* 2013) or for the reintroduction of threatened varieties. The regional experimentation platform of ABP, for instance, make possible the multiplication of varieties which would not be grown in open fields due to low yield potential, but possess other interesting characteristics (gustatory, nutritional, precocity, etc.). In other cases, the provision of land may also be a matter of scope: if certain landowners are excluded, the area of activities to which biodiversity measures apply may be incomplete, and therefore, in- or less effective (Brody 2008).

Finally, both associations employ permanent staff which supports the farmers in tasks as diverse as commercialization, product marketing, logistics support, internal communication, research subsidies, and recreation. Such immaterial support, by a leading organization or

agency, has also been found to relate to success (Beierlee and Konisky 2000).

Cultural recognition

Economic dimensions alone cannot fully explain why farmers participate in initiatives for environmental conservation (Popa 2015). The socio-cultural dimension too is key to understanding the improvement of agrobiodiversity from a justice-perspective. Both the cases include different measures aiming to improve the recognition of their members. This is also reflected in the interviews: when asked about the main motivations for farmers to join the associations, all interviewees mentioned improved recognition (of their identity and/or their knowledge) as a key incentive.

A first obvious necessary condition to participation is legal recognition. There is a need to create a legal space in which alternative farming practices, often based on an improved agrobiodiversity, can exist. Both cases faced a similar challenge following their establishment: the monopoly of the state for organizing breeding. While the BESH is now an official breeding organization, it took the association 13 years to obtain legal recognition for its breeding activities. The situation for ABP is more complicated, as the activities of the association have gradually been restricted over time. Moreover, since 2011, a new plant breeders' right was adopted by French parliament, strongly limiting the possibility for farmers to re-grow

their seeds. However, as the use of peasant seed varieties is currently unregulated under French law, they are considered ‘phytogenetic resources’, which can be grown for experimental purposes, a situation used by ABP to support the activities of its farmers.

Legal recognition, however, may not be enough in a context characterized by strong vested interests. The farmers’ role in shaping farming practices and systems and their specific identities may also require proper recognition. Recognition translates in the belief that the (re-)integration of diverse and decentralized knowledge systems (particularly farmer-driven knowledge) is a necessary pre-condition to depart from high-input breeding. Indeed, the dependence on external input can be explained by a process of deskilling of the rural workforce (Timmerman and Félix, 2015; Stone, 2007; van der Ploeg, 1993), and of centralization of knowledge.

Both cases show an increasing willingness to establish collaborative learning spaces across disciplines and borders. The BESH, for instance, teamed up with German universities to launch a joint project under the EU Horizon 2020 research program, studying connections between traditional feed (*e.g.* grass) and improved meat quality. It also invited local environmental NGOs to co-define internal breeding guidelines and production standards. In France, ABP has been organizing participatory research programs, focusing on environment-specific *in situ* breeding, led by farmers but supported by external experts. Moreover, there is an increasing

tendency to “learn from the South” (Stringer *et al.* 2008). In both our cases, experience with Brazilian and Mexican farmers’ associations, respectively, explicitly inspired their governance systems, and collaborative international networks have been established with farmers’ associations of the Global South.

The confrontation between different worldviews can lead to a form of collective or social learning process, which Kendrick (2003) called the “emerging dialectic of conceptual diversity”. This “negotiated knowledge”, based on the constant input of formal and non-formal knowledge, allows for the generation of a “common view regarding problems, solutions, and ecological status” (Sandström 2011). Not only does this allow for different knowledge systems to co-exist, it also has shown to improve the outcome of environmental governance projects in the past. Corburn’s (2003) example shows how the inclusion of local knowledge through community participation has pushed the US Environmental Protection Agency (EPA) to rethink the epistemological foundations for its assessment of the community’s air toxic exposures in New York. This has led to an important increase of the amount of data sources being used for the assessment, a solution which may be more environment-specific and thus provide a better outcome (Witcombe *et al.* 1996).

Measures aiming to improve legal recognition, and the valorization of their knowledge and identity, hence cover a dual reality of participation and effectiveness. On the one hand, the *de jure* or *de facto*

subordination of alternative forms of agriculture to conventional approaches marginalizes alternative farmers, inhibiting their capacity to use alternative practices based on a broader diversity of crops and livestock. On the other, the misrecognition of certain worldviews and knowledge systems may lead to an over-simplification of potential solutions and, hence, an ineffective outcome. In other words, “what counts as legitimate knowledge, and how it is generated, influences its practical effectiveness” (Turnhout *et al.* 2012).

Political representation

In both our cases, decision-making is strongly decentralized. Although bound by shared production standards, farmers retain full autonomy on their farms, not only in terms of practices, but also in the choice of varieties/landraces and in terms of production amounts. This relational autonomy finds its roots in a vision of the farm as “autonomous organism”, where external input must be restricted to a minimum (Demeulenaere & Bonneuil 2011) and replaced by the “endogenous potential of agriculture” (Guzmán & Martinez-Alier 2006) based on a rich agrobiodiversity. This also extends to the commercialization: at the BESH, farmers can sell their meat through the network or directly on their farms. In both the cases, beyond minimal amounts needed for multiplication, farmers are not imposed production amounts by their respective associations.

While decision-making is decentralized, the boundaries of participation are more tightly organized. Farmers in both France and

Germany function within a deliberately limited geographical space. In Germany, for instance, joining the association is only possible for breeders located in the traditional breeding area of the Swabian-Hall swine. Moreover, only the BESH can sell and market the meat: no other distributors are allowed in the supply chain. In France, where due to its novelty ABP initially expanded nation-wide, the association is now refocusing on local farmers, as “working with farmers all over the country makes follow-up very difficult”¹⁶. These geographical boundaries do not preclude close collaboration with other similar initiatives throughout the country, on the contrary. What this geographic proximity does, however, is improve the associations’ level of closure. Borrowing from network analysis and social capital theory, closure represents the level of cohesiveness, which strengthens the social relationship between participants and allows for the development of a shared identity and common narrative. For Sandström (2011), well-connected governance structures are likely to facilitate internal communication and deliberation, which have been identified as defining conditions to the success of a participatory process (Beierlee and Konisky 2000). Moreover, the explicit framing of the political community in our cases, empowers participants to see themselves as agents of change, recognized by the community as key stakeholders of rural development, increasingly aware of “the rights to have rights” (Gaventa & Barrett 2010) and part of a greater goal of redefining farming practices.

¹⁶ Author’s interview with a staff member of ABP, 11 December 2013

However, mere inclusion of a range of participants may not by itself lead to higher outcome quality. The presence of specific representative profiles within the group of participants may also influence the quality of the outcome (Sperling et al. 2001). As such, Brody (2008) found that the participation of specific participants (in his case, resource-based industry groups) had a strong positive effect on the quality of ecosystem planning in Florida. The same is true for our two cases, where specific participants have been included in the process in order to improve farming practices or to redefine supply and demand. In both cases, facilitators, agricultural engineers, environmental NGOs, seed bank managers, and academic researchers are participating in the associations' activities. While farmers keep their autonomy and define their own farming practices, the inclusion of external participant is based on the awareness that "the lack of skilled practitioners able to facilitate participatory processes is a major limiting factor to sustainable development" (Tippet *et al.* 2007). This facilitation can take the form of 'knowledge brokering' to allow for scientifically valid decision-making, thereby avoiding what has been called "negotiated nonsense" (Koppenjan and Klijn 2004). It helps prevent ineffective spatial or temporal trade-offs and avoid a race to the bottom created by the pluralization of epistemological perspectives discussed above.

The inclusion of end-user and transformers moreover allows to directly promote and encourage the use of non-conventional varieties. In France, local cooks are encouraged to introduce local

varieties on their menus, a cookbook is being written using local varieties, and partnership with local livestock farmers allows getting nutritionally richer local varieties on the market as animal feed. In Germany, the BESH teamed up with surrounding communities and local authorities to collectively run a local slaughterhouse and a network of butcher-shops, which exclusively supply BESH's meat. It allowed the broader community to gain control over the whole value-chain, from farm to fork, and redefine the conditions of market access. In doing so, it not only has created a direct relationship between producers and consumers, it has empowered both these groups to jointly reshape breeding activities throughout the region, based on sustainable traditional breeding techniques, and to shift the regional agri-food system from an industrial farm-level only approach to a broad transformative rural development process.

Conclusion

This paper has argued that, in order to promote participation in environmental decision-making, the concept has to be rethought. Not only methodologically, by focusing on the conditions through which improved outcomes occur, but also politically, by adopting a post-participation approach that repoliticizes the study and practice of participation. It is argued that environmental justice, being both a political theory and an empirical reality, can serve as an analytical framework, which, when put in relation with empirical data on participation and outcome-effectiveness in environmental

governance, can serve to identify the determinants of a positive outcome. This practical approach to environmental justice allows studying participation from a rights-based perspective, searching for common ground between the empowerment of participants and environmental effectiveness.

The empirical usefulness of this approach was illustrated through the comparison of two successful agrobiodiversity initiatives, in France and in Germany. Both cases use a participatory governance approach to conserve agrobiodiversity. While being very different, similar types of justice-relevant conditions to participation are observed in both initiatives, which may help explain their success. Providing economic and material support for participation, improving the socio-cultural recognition of farmers and their knowledge, and establishing very inclusive representation systems seem to directly affect the achievement of the stated objectives, *i.e.* conserving agrobiodiversity.

Combining these three dimensions reinvents the role and the position of farmers, and their relation with consumers, beyond the sole production of commodities. Producers (and consumers) are made direct stakeholder of a much larger rural development process, which denounce both the specialistic and technicist conceptions of conventional agriculture and its impact on agrobiodiversity. The governance processes in our cases depart from the common approaches of participation in which farmers are given agency and/or

voice within existing structures, and involve a genuine engagement with power and politics to bring about socio-ecological transition. The justice-relevant conditions for participation generate “institutional and structural transformation required to create this form of political space” (Hickey & Mohan 2004).

What our cases show is a shift from farming as a production-only activity to farming as a holistic rural development process focusing on justice and citizenship. Organized collectively, farmers communities redistribute available resources such as income and land, reclaim control over the production-chain, regain autonomy from externally produced inputs, recreate a shared identity, reacquire local and traditional knowledge, rebuild bargaining power and social capital, and empower autonomous farmers; all of which have allowed reintroducing and regrowing local land-races and traditional varieties which were once considered to be extinct.

ARTICLE II – JUSTICE AND CONSERVATION: THE NEED TO INCORPORATE RECOGNITION

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1. Introduction

Concerns about equity and justice¹⁷ have become prominent in debates about conservation. These concerns include questions about

¹⁷ We use ‘equity’ with reference to the Convention on Biological Diversity (CBD) because this is the term used in that process. For much of the rest of the paper we prefer to use ‘justice’ as it better incorporates our focus on ‘recognition’. Environmental ‘justice’ tends to refer to an enlarged set of concerns, including distribution and participation, but also incorporating

how we distribute costs, benefits, rights and responsibilities, questions about how we give voice to different cultures and beliefs, and questions about how we make trade-offs between current and future people, between individual rights and the greater good, and between humans and non-humans (Brechtin et al. 2002, Norton 2003, Shoreman-Ouimet and Kopnina 2015). Working to improve 'conservation justice' is considered ethically desirable, but also instrumental to improved conservation effectiveness because it reduces the likelihood of conflict (Martin et al. 2013, Pascual et al. 2014, Suiseeya 2014) or improves participation (Coolsaet 2015). But determining what constitutes 'conservation justice' is not easy. It is not enough to consult national or international laws to determine what is just because it is often perfectly legal to subject people to harms arising from pollution, deforestation, climate change, or indeed harms arising from the establishment of protected areas (Smith Mark J and Pangsapa 2008). Thus conservation has to look beyond the judiciary for its moral compass.

This paper contributes to understanding what this moral compass should look like: how should we frame our thinking about conservation justice? In doing so it particularly highlights the need to incorporate the dimension of *recognition*. Contemporary academic framings of environmental justice tend to use a tripartite typology of

calls for cultural recognition, a dimension of justice that passes largely unnoticed in equity discussions, and which we think should be brought into the foreground more clearly.

concerns: distribution, procedure and recognition (Schlosberg 2004, Sikor 2013a, Walker 2012). Distribution refers to differences between stakeholders in terms of who enjoys rights to material benefits and who bears costs and responsibilities. Procedure refers to how decisions are made, who participates and on what terms. Recognition is typically concerned with respecting identities and cultural difference (Fraser and Honneth 2003); it is about the extent to which different agents, ideas and cultures are respected and valued in interpersonal encounters and in public discourse and practice. We focus on recognition because we think it is highly relevant to conservation conflicts and because it is comparatively poorly understood and neglected.

It is not pragmatic to seek a single definition of justice-as-recognition because this would ignore important differences in understanding, including amongst political philosophers. Instead we find it a necessary first step to provide a roadmap to the plural ways in which recognition has been understood, both in theory and in practice, and to relate this to contemporary conservation conflicts. Our approach is therefore to describe different traditions of thinking and to illustrate these through case studies. We then proceed to a synthesis discussion in which we explore how elements of common spirit or intent can be drawn together in order to make key aspects of the concept of recognition legible to conservation practice. Prior to this, we briefly review recent attention to justice within conservation practice.

2. Conservation practice, justice and recognition

Biodiversity conservation is linked with recognition injustices for three main reasons. Firstly, protected areas (PAs) are spatially associated with cultural diversity (Gorenflo et al. 2012, Stepp et al. 2004) and with people whose knowledge and environmental governance institutions are vulnerable to being marginalised (Brosius and Hitchner 2010, Escobar A. 1998). Secondly, mainstream conservation management strategies are influenced by culturally specific (and often disputed) ideas about what works and about what counts as evidence of what works. For example conservation approaches have been driven by the assumed superiority of exclusionary models of protected areas in which people are separated from the rest of nature (Lele et al. 2010, West et al. 2006). Thirdly, these dominant blueprints about how conservation should be done become a basis for the misrepresentation and misrecognition of indigenous and local people. For example, the 'Yosemite model' of conservation, in which nature is conceived as wilderness, has led to the representation of local and indigenous lifestyles as harmful to nature conservation (Cronon 1996, Dowie 2009, Stevens 1997). Given the powerful assumption that conservation holds the moral high ground, these lifestyles are also therefore portrayed as morally inferior (Martin et al. 2013, Neumann 2004). But biodiversity conservation can also work constructively with local communities,

especially if it embraces the concept of recognition. Where innovative, non-exclusionary models are developed, indigenous people have sometimes embraced protected areas as a way to positively promote both their territories and traditions (Stevens 1997).

The language of equity and rights has been in global conservation discourse since at least the early 1970s (UNEP 1972). In the 1980s, ideas of inter- and intra-generational equity were foundational to popular narratives of sustainable development (WCED 1987) that fed into the first 'Earth Summit' in 1992. The Convention on Biological Diversity (CBD) was one of the outcomes of this summit and builds on three objectives: 'the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources' (Art. 1). The 2010 Nagoya Protocol develops the third objective of access and benefit sharing (ABS) whilst 'taking into account the important role of traditional knowledge' (Secretariat of the CBD 2010, preamble). The inclusion of equitable ABS is something that was pushed for by developing country stakeholders who feared a highly preservationist CBD and expected financial returns from the exploitation of their genetic resources and traditional knowledge (Broggiato et al. 2015). However, it is worth noting that both the process and implementation of the CBD and its Nagoya Protocol have led to controversies over recognition. One charge is that the CBD and Nagoya are culturally dominating, requiring prospective beneficiaries to assimilate imposed ideas of what is fair and equitable

as a condition of benefiting (De Jonge 2011, Suiseeya 2014, Whiteman 2009). For example, the San people are expected to conform to norms of fair procedure rooted in western principles of representative democracy in order to negotiate an ABS agreement related to the Hoodia plant (Vermeylen and Walker 2011).

With regard to its first two objectives, the CBD pays attention to cultural diversity and the identity of indigenous peoples in the much-quoted Articles 8j and 10c which respectively demand that Parties to the Convention protect indigenous and local communities' knowledge, practices and lifestyles relevant to the conservation and sustainable use of biodiversity. Nevertheless, Parties to the Convention have time and again adopted policies that conflict with traditional ethics of stewardship of nature, notably with regard to the so-called "marketisation" of nature. An outstanding example is Decision 30 on "Incentive Measures" taken at COP-11 of the CBD which strongly encourages Parties to include the economic valuation of nature in their national conservation programmes. Such approaches are regularly resisted by indigenous peoples' representatives but gain more and more traction with governments.

One of the overriding criticisms of existing global attempts to formalise aspects of conservation equity would seem to be the lack of recognition of other cultures and other ways of thinking about justice in relation to the environment. Without attention to the equal status of others' ways of seeing the world, attempts to define conservation

justice are likely to reproduce dominant (western) conceptions about what constitutes equitable distribution, procedure and recognition. Such a concern is not confined to state representatives at global forums. At Nagoya, conservation NGOs were seen to align with the interests of states, pressing to bypass discussion of foundational questions about how conservation justice is to be defined (Suiseeya 2014). In conservation planning and practice, recognition has not featured centrally either. Biodiversity conservation programs have largely been informed by scientific principles, and have thus targeted nationally representative ecosystems, taking account of species rarity and diversity, recreational value, and level of threat (Margules et al. 2002). Conservation has historically been characterised by territorial and natural resource management conflicts, where distinct values and interests collide. For example, the move toward people-centred conservation since the 1980s has rendered mixed results and made evident how difficult it can be to reconcile the ideas and aspirations of conservation practitioners with those of local people and other actors (Adams et al. 2004, Wells et al. 1992). As of today, conservation is still marked by a lack of willingness to engage fully with different and changing beliefs about nature, or to explore diverse, culturally-suited implementation approaches instead of relying on blueprints (Reyers et al. 2010).

3. Thinking about recognition in conservation justice

Whilst we are arguing for more concerted consideration for recognition within conservation practice, we also acknowledge that its application remains difficult, not least because of contested meanings and approaches. The main contribution of this paper is therefore to shed light on these differences and to reveal common, core concerns that can serve as a basis for progress. In doing so we draw on four contributory schools of thinking: Hegel's theory of recognition, critical theory, decolonial theory and the capabilities approach (all defined below). There is considerable theoretical overlap between the first three of these, but we separate them analytically because they are distinct in terms of the scholars using them, their geographical focus, and the kind of responses they call for. We employ a simple conceptual framework that decomposes these approaches to defining recognition into four components: subjects, harms, mechanisms and responses.

Subjects of justice refers to the stakeholders or users who are entitled to moral consideration: those who hold rights and deserve recognition (Sikor et al. 2014). One debate is about the spatial and temporal scope of responsibility and the extent to which we can bear moral responsibility for those in distant states, or for those not yet born. Moral concern for future generations is almost a defining feature of environmental justice (Dobson 2003) and despite some scholars' difficulties of

asserting responsibility across national boundaries (Nagel 2005, Rawls 1971), recognition theorists now tend to argue that we are global citizens with global responsibilities (Fraser 2009, Honneth 2014, Young 2010). A second debate pits individualism against communitarianism. Liberal traditions of justice tend to prioritise the individual as the subject of justice, whilst communitarians argue that communities can also be harmed and therefore deserve recognition (Sandel 1998, Schlosberg and Carruthers 2010). Such communitarian ethics also feature strongly in African and Latin American indigenous philosophies (Biko 1998, López 2013). A third debate concerns expanding the reach of moral responsibility to embrace non-humans (Nussbaum 2007, Schlosberg 2013, Singer 1995). Finally, moral responsibility towards the spiritual world is central to many Latin American indigenous peoples' notions of environmental justice (e.g. de Castro 2012).

Harms are the kinds of injustices suffered by moral subjects and can vary according to the dimension of environmental justice. Distributive injustice is more likely to result in objective material harm such as impoverishment whilst misrecognition tends to be linked with harms to subjective wellbeing such as reduced self-esteem. However, we will see that there is an important debate about whether the harms from misrecognition are purely subjective and psychological,

or whether they are inextricably bound up with material harms.

Mechanisms refer here to the institutional and structural explanations for injustices. How can we explain how similar injustices appear repeatedly, in different places and times? Very broadly speaking, causal explanations fall into ideational and material camps: Either one argues that the roots of oppression are found in the realm of ideas and culture, or that they are found in the economic structures of society (Atkinson 1991, Parsons 2007). But there are also middle positions, in which cultural and economic forces are viewed as operating in tandem (Coulthard 2007).

Responses. Finally, it is inevitable that traditions that identify different harms and mechanisms will also propose different solution frameworks. For some, responses can start with individual efforts at self-development, such as recognizing one's connectedness to the rest of nature (e.g. Naess and Rothenberg 1990). For others, a more political project is required, such as extending participatory democracy (Dryzek 2000, Sen 2009), redefining national constitutions to allow plural notions of citizenship (Walsh 2007), or giving voice to

alternatives to capitalism such as degrowth and *Buen Vivir*¹⁸ (Escobar 2015).

Table 1 summarises these four components of environmental justice for four traditions of thinking about recognition: Hegelianism, critical theory, decolonialism and capabilities. We now proceed to discuss each of these in turn.

Table 1. Summary of different schools of thinking about recognition

	Hegelianism	Critical theory	Decolonialism	Capabilities
Subjects	Individual humans embedded in social relations.	Individual humans and social groups.	Humans (ancestors, present, future), non-humans, spirits, mother nature.	Individual humans; <i>potentially</i> human and non-human communities.
Harms	Psychological, e.g. loss of self-esteem.	Psychological, social, political and material.	Psychological, material and cultural.	Constrained opportunities; loss of freedom/dignity.

¹⁸ The literal translation of *Buen Vivir* in Quechua and Aymara languages is “To Live in Plenitude”. It refers to a contemporary non-capitalist ideology that has recently blossomed in South America with roots in indigenous and non-western conceptions of human welfare and of nature. *Buen Vivir* is a holistic concept rooted in principles and values such as harmony, equilibrium and complementarity, which from an indigenous perspective must guide the relationship of human beings with each other, with nature (or Mother Earth) and the cosmos.

Mechanisms	Non-recognition caused by cultural relations of power.	Status inequalities caused by cultural <u>and</u> economic forces.	Colonisation by Eurocentric, modernist knowledge production.	Value universalism, lack of participation.
Responses	Affirmative recognition for multi-culturalism	Affirmative recognition of difference <u>and</u> economic and political redistribution.	Prioritise indigenous knowledge; political and economic change	Liberal pluralism & multiculturalism; deliberative public debate.

3.1 Hegelianism and recognition

The German philosopher Georg Hegel (1770-1831) is considered the founder of the continental European ethics of recognition. Hegel conceived the struggle against injustice – indeed the whole history of humanity’s struggle for freedom – in terms of an essential need to be recognised and respected by others. For Hegel, such recognition is deemed essential because it is the basis of individual freedom. Failure to respect important constituents of a person’s cultural identity, such as their beliefs about nature, is a denial of their freedom of thought and freedom to live according to their chosen belief system. Such freedoms are protected today in the 1948 Universal Declaration of Human Rights and in the 2007 UN Declaration on the Rights of Indigenous Peoples. For example, the latter requires parties to recognize “the right of all peoples to be different, to consider themselves different, and to be respected as such”.

One of the most important insights from Hegel is that human freedom cannot be achieved unilaterally but only through social relationships of a psychological nature. Such relationships can be described as 'inter-subjective' interactions inevitably occur between persons who are more and less powerful. For Hegel, recognition injustice was a form of enslavement that occurred through unequal encounters in which the more powerful actor fails to recognize the value of the other. The critical point here is that a person can only really value their own life if they see that others value such a life. For example, it is not possible to have high self-esteem if you perceive that others treat you with contempt. One's psychological sense of worth is formed by how others act towards you; or put more fundamentally, one's freedom is achieved or denied through psychological encounters with others. This is very relevant to biodiversity conservation because a person might only be able to enjoy cultural freedom if their ways of knowing and living with nature are respected by others.

The denial of recognition leads to fundamental **harms** of a psychological nature. Fanon (1967) saw such psychological harm as fundamental to the lasting injustices of colonialism in Africa. Others consider such psychological harms to contribute to the health problems faced by some indigenous peoples today (Ohenjo et al. 2006). If we accept such a characterisation of harm and injustice, some difficult questions are posed for a more just conservation. How, for example should conservation proceed in states, such as Rwanda, that

continue with assimilationist policies towards indigenous and local peoples (Dawson and Martin 2015, Ohenjo et al. 2006)?

For Hegel the **mechanism** of subjugation was psychological and the required **response** was to move relations towards more reciprocal recognition. In contemporary terms, this is a call for multiculturalism, which involves affirmative attempts to revalue previously denigrated cultures. As becomes clear below, we are sceptical that such a change in social encounters is sufficient in the absence of an accompanying transformation of underlying economic and political powers. But by the same measure, we should conclude that economic reforms (such as access and benefit sharing or payments for ecosystem services) are equally unlikely to achieve justice without accompanying attention to intersubjective relationships. For Fanon (1967) for example, the end of direct colonial economic and political rule was not sufficient to emancipate Africans from the internalised sense of inferiority that had been forced upon them.

3.2 Critical theory and recognition

Critical theory is a neo-Marxist school of thought characterised by its emancipatory ambitions and by its alignment with prevailing social movements (Fraser 1985, Horkheimer 1982). In the past, such movements have been dominated by calls for economic redistribution to resolve class-based injustices. But in the late 20th century there emerged new social movements linked to cultural identity struggles (Habermas 1981), including indigenous peoples movements and

elements of environmentalism. Whilst old social movements struggled for more just division of resources, new ones engage in 'indivisible conflicts' arising over goods for which distribution makes little sense, such as 'dignity' and 'respect' (Honneth 2004). Fraser develops a theoretical framing that attends to both old and new struggles, framing injustice in terms of inter-twined cultural and economic forces. She proposes that a critical theory of recognition needs to reveal 'the ways in which economic disadvantage and cultural disrespect are currently entwined with and support one another' (Fraser 1997).

A critical theory approach to recognition does not obviously differ in terms of the **subjects** of justice it identifies, but differs fundamentally from a Hegelian account of recognition in terms of the nature of harms, the mechanisms by which these are produced, and putative solution frameworks. For Fraser, misrecognition is about social **mechanisms** which produce status differences that **harm** the opportunities of some social groups. Societies develop hierarchies of cultural values that degrade the status of some groups of people, thereby culturally subordinating them and denying equality of social interaction. Such status injustices are reproduced through formal institutions, such as property laws that discriminate against indigenous forms of tenure, or against women, but also through informal institutions including cultural norms and prejudices.

Fraser reconciles this observation about cultural status with more traditional Marxist economic analysis, identifying twin **mechanisms** that produce injustices. Injustices arise out of a combination of economic exploitation *and* cultural subordination, neither of which can be analytically subsumed under the other (Fraser 1995, Fraser and Honneth 2003). Gender inequality for example has connected roots in both economic arrangements (e.g. rules of resource access) and culture (Robeyns 2003, Young 2010). **Responses** to these status-based harms need to be multi-dimensional. As with Hegelian thinking, there is a need for affirmative efforts to tackle cultural misrecognition (Fraser 2000). But to achieve parity of participation there is also a need to transform institutions that define distribution and political representation (Fraser 2009).

Fraser's struggle of choice is feminism and she has not herself addressed issues of environmental justice. Nevertheless, her combined focus on recognition and distribution appears fruitful for a critical theory of conservation justice. Firstly, economic inequalities are often considered to be drivers of biodiversity loss, both through mechanisms of impoverishment of some groups that undermine sustainable practices, and the corresponding enrichment of others that fuels profligate consumption. Secondly, however, this is only ever part of the story (Roe and Elliott 2005) because material practices are entwined with status inequalities and political marginalisation. Our first case study, below, illustrates the ways in which failures of recognition serve to undermine traditional knowledge and cultures

whilst also highlighting how such cultural subjugation operates in tandem with forms of political and economic inequality.

Case Study 1: Seeding recognition in France

AgroBio Perigord (ABP) is an association for the development of organic farming in Dordogne, a department in southwestern France. Among other things, ABP is known for its activities of *in situ* conservation of local and regional plant landraces threatened by genetic erosion (called ‘conservation varieties’ or ‘peasant varieties’). It is a key member of the nation-wide Peasant Seed Network (*‘Réseau Semences Paysanne’*), and hosts a community seedbank (*‘Maison de la Semence’*) for both professional farmers and home gardeners.

In 2000, the founding members of ABP started gathering and reusing local plant landraces as an act of resistance to the use of so-called ‘elite’ varieties (commercial pure lines or F1 hybrids). Under the banner of ‘peasant farming’ (*‘agriculture paysanne’*), a term previously restricted to subsistence agriculture in the global South (Ploeg 2009), the underlying struggle aims at the cultural recognition of small-scale, farmer-driven agriculture, through the reintroduction of local landraces. But local landraces are useless without the associated local agroecological knowledge and practice, which had been largely lost since the emergence of industrial agriculture in Western Europe in the second half of the twentieth century. Therefore, in 2001, ABP launched a participatory plant-breeding program to select and multiply environment-specific breeds and foster the conservation of

local plant landraces through their utilization. In order to reacquire know-how and breeding techniques, each farmer breeds a certain amount of local landraces on a testing parcel, and commits to multiply and return two-thirds of the initial amount of seed to the community seedbank. Through peer-based 'farm-talks', participatory plant breeding takes the form of the social learning platform in which farmer-driven knowledge not only gains 'scientific' recognition, but is also enriched through the active participation of other local farmers and partner scientists. On top of cultural and scientific recognition, the association also claims legal recognition. As the use of peasant varieties is currently unregulated under French law, they are considered 'phytogenetic resources', which can only be exchanged for experimental purposes. The domination of corporate seed remains protected by a system of Plant Variety Rights that leaves alternative seed users legally invisible.

Historically, the creation of ABP was triggered by the reaction of local farmers to having been sold 'organic' maize seed that had been contaminated with genetically modified genes. But the re-emergence of peasant agriculture is also part of a broader opposition to the way in which the agricultural economy is organized. Agricultural policy serves the interest of a market-only logic, and the sector is characterized by multinational companies' increasing control over agronomic research (Bonneuil and Thomas 2009).

The conservation activities undertaken by ABP should therefore be seen as a combination of struggles for the recognition of farmers and for more economic equality. Justice claims take on a combined character, denouncing both the socio-cultural subordination of small-scale farmers and their economic exploitation by the dominant agri-food system (Coolsaet 2015). In 2011, ABP co-signed the declaration of the European Forum on agricultural biodiversity “Let’s Liberate Diversity”, adopted in Szeged, Hungary. It demanded of “the European Union and all of its Member States recognition that European farmers are also contributing to the conservation of plant genetic resources” and that policies “take into account the right to food sovereignty [...] the right to preserve local cultural heritage,” and the right of farmers to freely define their farming practices.

3.3. Decolonial thought and recognition

Decolonial thinking has roots in both Hegelianism and critical theory, emphasising forms of inter-subjective, social, cultural and political subordination that deny freedom and opportunity to some groups. However, it is also distinct for its focus on the global South and for identifying **mechanisms** of subordination in Eurocentric scientific and political worldviews. Proponents of this school of thought are largely from Latin America (Escobar Arturo 2007, Leff 2001, Mignolo 2008, Quijano 2000), but also from India (Visvanathan 1997), Portugal (Santos et al. 2007, Santos 2010) and New Zealand (Smith Linda Tuhiwai 1999) among others.

According to this body of theory colonialism ended when the global South gained political independence. However, 'coloniality' is a process of subjugation that persists through the expansion of a European cultural worldview. This dominating European culture is institutionalised through education, the media, state-sanctioned languages and behavioural norms. Thus, coloniality is a **mechanism** of recognition injustice that creates structural oppression over marginalized sectors of society whose alternative worldviews become devalued and stigmatised. Decoloniality scholarship is inspired by indigenous peoples' movements and their struggles against modernity (Mignolo 2008). It therefore has links to indigenous cosmogonies, leading to conceptions of justice **subjects** that emphasize community over individuals (López 2013) and includes moral responsibilities towards mother nature and intangible beings such as spirits.

Decoloniality argues that forced assimilation to modernity leads to profound psychological **harms** to indigenous peoples, eroding vital conditions for their wellbeing such as cultural identity, freedom of belief, and self-respect. But coloniality also leads to more tangible impacts on status and participation by disregarding local notions of authority and territory, frequently resulting in displacement or enforced change to livelihoods. Decolonial theories describe **mechanisms** of harm that resemble those of Fraser's critical theory. Accordingly, psychological and physical harm is perpetuated through through political and economic power which operating in

connection with knowledge-based discursive power produce harms to identities and subjective being. Thus, **responses** to coloniality necessarily involve decolonizing power, knowledge and being. This involves moving away from a unitary model of citizenship and civilization to one that respects different local economies, politics, cultures, epistemologies and forms of knowledge.

Conservation practice is primarily linked to the coloniality of knowledge, because it forms part of a dominant form of knowledge production (western science), institutionalised within bodies such as the CBD, which has marginalized local forms of knowledge (Visvanathan 1997, Santos 2010). Thus, responding to conservation injustices must include democratizing science itself by creating opportunities for intercultural dialogues as part of the knowledge production process (Walsh 2007). Case study two explores how this means prioritizing the indigenous world view and its concerns 'and then coming to know and understand theory and research' from that perspective (Smith 1999).

Case Study 2: Pluricultural politics, Intercultural dialogues and Cognitive Justice in Canaima National Park, Venezuela

Canaima National Park is located in southeastern Venezuela, near the border with Brazil and Guyana, and inside the ancestral territory of the Pemon Indigenous Peoples. Since the park was established, the Pemon have been in conflict with environmental authorities and have made claims for territorial rights and self-determination. Tensions

arose due to conflicting land use demands and because the park was established on ancestral territory without consultation or local consent. With an estimated population of 20,000, many Pemon still maintain their traditional system of scattered nuclear family settlements. Their lifestyle is based largely on traditional activities: agriculture, fishing, hunting and gathering, although there is more and more work in tourism and, for the younger generation, public posts.

The Park's designation has helped protect the Pemon's territory, but they still view it as a threat to their existence. This is a result of a style of environmental management and development planning which has failed to recognise the area's cultural value for the Pemon, their environmental knowledge or their notions of authority and territory (Rodriguez 2014). One area of conflict is the traditional practices of slash and burn agriculture and savannah burning that are considered a threat to watershed and soil conservation by park managers. There are also conflicting views about how to manage the influx of tourists into the Park and how to distribute the corresponding benefits, and conflicts over projects of strategic interest for the Venezuelan Government, such as the building of a high-voltage power line to export electricity to Brazil (1997-2000), and the installation of a satellite sub-base (2007).

Misrecognition has been at the core of all conflicts, which the Pemon have dealt with by resorting to a variety of strategies, including silent

resistance (in the case of fire use practices) and more overt ones. In the case of tourism and large scale development this has included direct violence, law suits and political and social mobilization, which in the particular case of the power-line conflict, unfolded into a national indigenous movement demanding constitutional changes to the nation state to incorporate legal rights to cultural difference. This was achieved in 1999 with a new national constitution in which Venezuela became a pluri-cultural state.

Since the mid-1990s, and to cope with conflicts and rapid cultural change, the Pemon have been developing their own “Life Plan”, the ideological, spiritual and philosophical foundation to visualize and define a desired future, based on reconstructing their history and cultural identity. An imperative to move forward in constructing a Pemon Life Plan has been developing capacities and participatory methodologies for community analysis and planning. For this purpose, they have been supported by a series of collaborations with external actors who have incorporated the “Life Plan” agenda within their research projects, thereby generating opportunities for intercultural dialogue and the articulation of traditional and scientific knowledge in Protected Area (PA) management, particularly related to fire management. More specifically, this has involved help with participatory historical reconstructions, territorial self-demarcation processes, and community reflection about socio-ecological changes and a desired future. These activities have been decisive for the Pemon, revealing fire management knowledge that challenges

conventional explanations of landscape change. This local knowledge, combined with results from studies of Pemon fire regimes, fire behavior ecology and paleo-ecological research, now inform a counter narrative of landscape change that is influencing a shift in environmental discourse and policy making towards an intercultural fire management approach (Rodríguez et al. 2013).

3.4 Capabilities and recognition

The capabilities approach argues that what is relevant for justice is whether *individual* persons as **subjects** of justice have the *freedom* to realise the objectives they have in life (Nussbaum 2007, Sen 1993, Sen 1999). In other words, the ‘good’ to which justice aspires is defined in terms of a person’s opportunities or ‘capabilities’ rather than their actual achievements (Sen 1999). Such capabilities are clearly dependent on a range of conditions, including economic distribution and cultural recognition. The capabilities approach has therefore provided environmental justice scholars with another way of framing links between distribution and recognition (an alternative to Fraser’s critical theory) (Martin et al. 2015, Schlosberg 2013).

Whilst Sen and Nussbaum do not explicitly use the terminology of ‘recognition’, the capabilities approach offers a comprehensive view of the conditions needed for a good life that incorporates aspects of recognition, participation and distribution (Robeyns 2003, Schlosberg 2007, Schlosberg and Carruthers 2010). Nussbaum, for example, includes the requirement for people to have “the social bases of self-

respect and nonhumiliation [...] [which] entails provisions of nondiscrimination on the basis of race, sex, sexual orientation, ethnicity, caste, religion, national origin" (Nussbaum 2007, 77).

Whilst capabilities thinking stems from liberal individualism, environmental justice scholars have started to explore its potential to accommodate communitarian approaches to the **subjects** of social justice, for example through the idea of 'community capabilities' (Schlosberg and Carruthers 2010). The approach might also enable the inclusion of non-human capabilities (Nussbaum 2007, Schlosberg 2007). Nonhuman animals can evidently flourish or not flourish based on their capabilities, and this might serve as a basis for human duties towards them (Armstrong 2012, Cripps 2010).

The nature of **harms** considered by capabilities thinkers is somewhat contested. A person who has fewer capabilities to accomplish what they reasonably value would be regarded as less well-off than others (Sen 2009, 231). In that sense, injustice is the denial of choice. However, there is less agreement about whether there are universal thresholds for certain capabilities that can serve as benchmarks for justice. It seems clear that some things are universally essential for a dignified life – sufficient food for example – and that failure to strive to provide these essentials will always be unjust. But going beyond examples like food and water becomes contentious (Gough 2004). Sen assumes a 'thin universalism': that beyond basic needs people will pursue different and context-specific ends (Sen 1993). In contrast,

Nussbaum assumes a 'thicker universalism': there is a comprehensive set of capabilities that are essential for "a life that is worthy of the dignity of the human being" (Nussbaum 2007, 70).

Even though there is this element of universalism, one of the important insights from capabilities thinking is the idea that what constitutes a meaningful life for an individual will not be predominantly universal, but mediated by various social and cultural values. Identity is viewed as complex, multiple and dynamic, such that attempts to reduce people's values to a simple, collective label are seen as 'the appalling miniaturisation of people' (Sen 2007). Whilst the capabilities approach does not directly describe **mechanisms** of injustice (it is not a theory as such), it is implied that injustice arises from forms of governance and democracy that lead to such miniaturisation. In terms of **responses**, justice requires that individual humans (and perhaps communities and non-humans) be granted the political conditions that enable them to live the lives that *they* choose as meaningful. This is an everyday confrontation for the conservation sector because maintaining biodiversity and ecological processes is intimately entwined with, and can often conflict with, valued ways of life (Holland 2007, 2014, Polishchuk and Rauschmayer 2012, Sikor et al. 2014). Our third case study illustrates the ways in which policies to promote biodiversity conservation often form part of wider land management and development strategies, such as farming intensification, rural modernisation and

formalisation of rights, which are ultimately assimilationist and conflict with alternative ways of knowing and living with nature.

Case Study 3: The Twa people and misrecognition in Rwanda

In Rwanda, a small and densely populated country, only a few isolated areas of natural forest remain. Strict conservation through PAs has occurred with some benefits for all interest groups, but with some negative impacts felt locally. In particular, the indigenous Twa people inhabited Rwanda's forests into the late 20th century and strict forest protection stripped them of culturally valued resources and livelihood choices, forcing incorporation into mainstream society and occupations (Beswick 2011). Subsequently many Twa find themselves landless, relying on extremely low paid agricultural labouring (Dawson and Martin 2015). The costs of conservation interventions can be seen to have denied many Twa adequate nutrition as well as the ability to live according to their culturally valued practices. The harms that have been imposed are produced concurrently by injustices of distribution and recognition: denial of land resources goes hand in hand with denial of the practices they deem meaningful.

Iris Marion Young (2010) describes how discrimination tends to have both institutional roots in the formal apparatus of states, as well as more diffuse cultural roots. This is clearly the case for Rwanda's Twa people. Post-genocide, Rwanda has been governed with very limited tolerance of parallel institutions to suit alternative cultural

preferences. Ethnic reconciliation has been enshrined in law to redefine all as Rwandans (Purdeková 2008) and to forbid use of ethnic labels (Waldorf 2011). The Twa are no longer to be called the Twa, but the 'historically marginalised people of Rwanda'. Institutional failures of recognition are matched by widespread cultural discrimination that contributes to the low status suffered by the Twa.

Whilst manufactured blindness to ethnic or cultural groups may constitute a recognition injustice, so too might the collapsing (miniaturisation) of individuals into simplified group identities. Identities rarely remain unaltered and boundaries between interacting groups are not fixed, but complex and dynamic (Bierschenk 1988). Although groups with different cultural values can be identified in Rwanda based on their origin and history, distinctions between the three broad ethnic labels (Hutu, Tutsi and Twa) as farmers, pastoralists or forest-dwellers are often crude simplifications (Pottier 2002) and also overlook considerable intra-group variation. For example some Twa may highlight cultural links to forests, while others have lived whole lives next to forests but pursued completely unrelated livelihoods. In line with Sen's liberal pluralism, this necessitates a multifaceted approach to understanding and responding to recognition injustices. In the case of the Twa, responses to address issues of recognition may need not only to be attentive to cultural differences and restorative in nature but also to attend to the varied and changing aspirations expressed.

Attention to recognition poses a challenge to how conservation can seek to offset costs with benefits. In Rwanda, a small proportion of tourism revenues are provided, in kind, to local inhabitants, in addition to some employment and income generating opportunities. However these benefits don't always reach those whose choices have been most curtailed and are at any rate not always commensurable with what has been lost. Benefits are geographically concentrated in areas with greatest infrastructure and accrue almost exclusively to the wealthiest, whether as jobs, livestock or establishment of farming cooperatives (Dawson and Martin 2015). A Twa community living adjacent to one forest they had previously inhabited were granted 'traditional' costumes to perform dances for tourists and earn an income. In the absence of alternatives such opportunities are well received, but some Twa say they would prefer interventions that address their inequality of status, to provide an opportunity to reduce the everyday ethnic discrimination that they suffer. For example they would value training that enabled them to work and to manage their own money and cooperatives.

4. Discussion and Conclusion

Hvalkof (2000) catalogues a history of atrocities against peoples of the upper Amazon. He finishes with a warning that if conservationists arrive in this landscape determined to impose their particular ways of valuing and governing nature, then they are really not much better than the oil and rubber barons who have come before. Such a caution

applies as much to global institutions as it does to field level operations. As Escobar (1999) argues, forums such as the CBD can be vital spaces for opening up intercultural dialogue or they can be dominated by western knowledge and agendas. Our empirical cases illustrate that such tensions between the potential costs and benefits of conservation are very much alive. PAs may help to protect much that is dear to the Pemon people in Venezuela and the Twa in Rwanda, but perversely, conservation has also become a threat to their existence as indigenous peoples. The case of ABP in France, however, suggests that the science of (agro)biodiversity conservation can also be part of a dialogue between different ways of doing and knowing conservation, which, when community-driven, can help to oppose the institutional threats to their knowledge and livelihoods.

There are some important differences between the theories of recognition that we have outlined here and summarised in Table 1. For Hegelian scholars recognition requires self-development and affirmative multiculturalism as methods to seek mutual recognition; for critical theorists it requires institutional and structural reforms to bring about status equality; for decolonialists, a key priority is to vindicate 'other' non-modern conceptions of life that have been denied by enfoldment into western knowledge systems; for capabilities thinkers, the conditions for human freedom will require liberal deliberative democracy. There are also similarities, however. When focused on the conservation sector, all of these theoretical and political lenses suggest the need to strive for more equitable spaces of

engagement. The responsibility to do this stems from the responsibility to prevent harm and to strive to ensure people have the capabilities to live in dignity. This responsibility extends to governments, NGOs and the wider public who support and benefit from conservation. As Young (2010) suggests, responsibility is not evenly distributed but falls more to those in a *position* of power to effect change, and those who have the *privilege* of benefiting from conservation whilst not being exposed to the corresponding costs.

Whilst we are not in a position to provide detailed guidelines as to how to enact these responsibilities, we think that the ideas discussed in this paper provide robust theoretical support for some actions. First and foremost, there is a need to move beyond a distributive model of thinking about the social benefits and costs of conservation. A distributive analytical approach is important and can provide real insights into failures of recognition. For example, quantitative studies of the distribution of costs of toxic pollutants in the US revealed underlying causes in status inequalities linked to race and class (Warren 1999) and studies of the displacement of people for conservation emphasise the historical burden suffered by indigenous peoples (Dowie 2009). But the theories of recognition reviewed here also reveal the limitations of a distributive model and, in doing so, identify categories of concern that require additional coverage.

Secondly, building on this point, the social impacts of conservation are in large part relational, whether this is taken in a Hegelian sense

that inequitable relationships constitute the harm itself, or more in line with feminist, critical and decolonial scholars, that this is part of a broader structuring of social relations that produces low status for some groups. We therefore need to explore and develop analytical and practical ways to pursue relational aspects of environmental justice.

Thirdly, as we develop practices that attend to these relational concerns, we can be guided by the concerns over the status of peasant cultures and knowledge worldwide, which are central to both the threats and opportunities that biodiversity conservation brings in our case studies. Whilst the CBD is committed to recognising different knowledge, it is clear that ways of working across alternative ways of perceiving and valuing nature are still not widely effective. As a first step, improving recognition is about acknowledging that conservation can produce these kinds of harms as well as providing opportunities for their alleviation. A second step involves changing power relations and moving towards relationships of more equal influence. For example, changing the legal and economic institutions to allow small farmers' choice to engage in locally-valued land use practices, such as to plant the seeds they want, or changing the formal tenure of indigenous territories to enable local control over land use and political autonomy.

This brings us to the fourth and final requirement, namely that equitable influence over decision-making will rarely be served by use

of pre-defined blueprints for biodiversity conservation, whether it be models for protected areas or market-based instruments. Such blueprints, such as the 'ecosystem services' model, are themselves institutionalisations of particular (western) ways of knowing and valuing nature and can act as barriers that prevent consideration of alternative knowledge and values. By contrast, practices such as the intercultural dialogue between external actors and the Pemon may help to open up the space for more genuine integration of conservation and development. We realise that such practices represent real challenges for field level conservation, in terms of resource constraints, methods and training, and in some cases political constraints. But if we are serious about the commitment for conservation to be equitable, engaging with issues of recognition is a necessary step to take.

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ARTICLE III – TOWARDS AN AGROECOLOGY OF KNOWLEDGES

Brendan Coolsaet

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He who has two hectares, three goats and two sheep is not a farmer

— Xavier Beulin, president of the French National Federation of
Agricultural Holders' Unions (FNSEA), in *Le Monde*, 7 April
2014.

1. Introduction

Agroecology is said to be a knowledge-intensive—as opposed to input-intensive—agricultural practice (Altieri and Nicholls, 2012; De Schutter, 2010). Agroecological methods are built around a plurality of knowledge systems. At farm-level, this translates into the re-skilling of farmers, who not only combine modern science and local knowledge, but (re)generate new, situated knowledge. At group

level, knowledge plurality emerges through specific governance arrangements which allow for collective learning processes and co-creation of knowledge. Examples such as Participatory Breeding (PB), Participatory Varietal Selection (PVS), or Participatory Guarantee Systems (PGS) rely on negotiated, environment-specific knowledge, and peer-based quality checks. They develop a new agriculture fuelled by reflexive input of both formal and non-formal agricultural, ecological and social knowledge.

While the practical goal of this knowledge-intensity is rather straightforward – i.e. replacing exogenous inputs with better understanding of agriculture as a sustainable ecosystem, including socio-economic variables (Gliessmann, 2007) – this paper highlights another, perhaps less obvious underlying objective: the pursuit of recognition and cognitive justice.

The re-emergence of peasant farming in Europe (van der Ploeg, 2008) can be understood as a double struggle for recognition. The first one is a struggle against the institutionalized subordination of alternative practices, such as agroecology, to industrial agriculture. Remedying this requires a form of status recognition in which different farming practices can co-exist.

Status equality, however, may be insufficient to challenge industrial agriculture, a sector characterized by the dominance of modern science. The second struggle for recognition, hence, is one for cognitive justice. Cognitive justice is a notion originating in

decolonial thought. It encompasses not only the right of different practices to co-exist, but entails an active engagement across their knowledge-systems (Visvanathan, 2005; Santos, 2007). This paper argues that the pursuit of cognitive justice, through its inherently counter-hegemonic nature, serves an objective of ‘re-peasantization’ (van der Ploeg, 2008): a constant struggle for autonomy based on a combination of the ‘endogenous potential of agriculture’ (Guzmán and Martínez-Alier, 2006: 472) and the resistance against the neoliberalization of the agri-food system (Stock *et al.* 2014).

The paper begins by introducing the reader to the concepts of (justice as) recognition and cognitive justice, drawing on critical theory and decolonial thought. It then considers the relevance of these concepts for the European context, showing how European peasants are culturally and cognitively misrecognized. Through an example of a collective agrobiodiversity governance initiative in France, the paper proposes a new concept, termed the agroecology of knowledges,¹⁹ to further theorize and understand the role of knowledge in the recognition of peasant farmers and communities. The importance of this approach for a more sustainable agriculture is discussed in light of existing theoretical and empirical approaches in the concluding section.

¹⁹ This term freely paraphrases Boaventura de Sousa Santos’ concept of “ecology of knowledges”, discussed further below.

2. Recognition and cognitive justice

While not necessarily wrapped in an explicit justice discourse, the reliance on knowledge plurality in peasant farming can be understood as a struggle for recognition. For Nancy Fraser, misrecognition occurs through a hierarchization of cultural values, in law or in practice (Fraser and Honneth, 2003). This hierarchization makes some people and/or communities 'inferior, excluded, wholly other, or simply invisible' (Fraser, 2000: 113), keeping them from participating in social interaction on equal footing with others. It thus takes the form of an institutionalized social subordination, which can only be challenged through 'affirmative recognition of difference' (*ibid.*: 116).

Institutionalized misrecognition goes hand in hand with two other forms of injustice: economic maldistribution and political misrepresentation (Fraser, 1995; 2005). Injustices hence arise out of a combination of economic exploitation, cultural subordination, and political inequality (Fraser and Honneth, 2003; Olson, 2008). These three factors combined prevent the existence of 'participation-parity', i.e. 'social arrangements that permit all to participate as peers in social life' (Fraser, 2005; 2009: 60).

Recognition, hence, would provide a space for cultural diversity to gain societal acceptance. However, while contemporary political claim-making increasingly focuses on the misrecognition of identity, gender, race, religion and/or culture (Fraser and Honneth, 2003), they

rarely include knowledge-based misrecognition. Science often remains the only form of knowledge to be seen as valid and exact (Santos, 2014). Moreover, status equality may not be enough in a socio-economic sector (*i.e.* agriculture) characterized by the dominance of modern science. Beyond the existence of alternative discourses and practices, there is a need for 'an alternative thinking of alternatives' (Santos, 2014: 42).

Fraser herself acknowledges that struggles for recognition are exacerbated in today's 'knowledge society' (Fraser, 2001), but does not clearly address the issue of dominant conceptions of knowledge. If cultural subordination is largely influenced by the knowledge one possesses and/or uses, what is required is 'equality between different ways of knowing the world' (Martin *et al.*, 2013: 123; my emphasis). Like cultural misrecognition, cognitive injustice is an 'institutionalized relation of social subordination' (Fraser, 2000: 113). Unlike cultural misrecognition, however, it is not characterized only by the devaluation of group-specific identity or socio-cultural status, but by the marginalization of one's relation to the world in the name of rigor, rationality, effectiveness or efficiency. Decolonial theorists see cognitive injustice as the consequence of what Santos *et al.* (2007) call the 'coloniality of knowledge': the hegemonic conception of modern science. It implies that access to scientific knowledge is unequally distributed in society and thus serves the interests of dominant actors (Santos, 2014).

Cognitive justice encompasses not only the right of different practices to co-exist (which is a necessary condition nevertheless), but entails an active engagement across their knowledge-systems (Visvanathan, 2005; 2009). In practice, cognitive justice is given shape through an ‘ecology of knowledges’: an active dialogue between different forms of knowledges and practices, both scientific and nonscientific (Santos, 2014). It involves rethinking the way in which knowledge emerges in modern science, where one side produces and the other passively consumes. It challenges the ‘monocultures of the mind’ (Shiva, 1999) and calls out the external limits of modern science, i.e. dimensions rendered invisible by reductionist epistemologies (Santos, 2007; 2014).

Following Santos (2014), an ecology of knowledges emerges out of a combination of two factors, both of which are present in the context of European agriculture: the presence of significant political resistance to capitalism, and the confrontation between radically different world views, ‘so much that they cannot be brought together under the umbrella of a single totalizing alternative’ (*ibid.*: 192).

3. Cognitive justice and European agriculture

Peasant farmers in Europe face a double form of misrecognition. First, today’s agriculture is characterized by the subordination of the alternative practices they use to industrial high-input farming. The ‘alternative’ and ‘industrial’ models are simplified ideal types, and many agricultural practices are likely to lie somewhere in between or

combine elements from both models. Yet one can observe that characteristics of the industrial model – high external-input, biotechnology, labor specialization and output maximization – continue to gain prominence at the expense of emerging alternative practices, such as agroecology.

Emerging in the 1930s, the meaning of agroecology has evolved over time, and has been defined as a scientific discipline, a social movement and an agricultural practice (Wezel et al. 2009). Agroecology “provides the basic ecological principles for how to study, design and manage agroecosystems that are both productive and natural resource conserving, and that are also culturally sensitive, socially just and economically viable” (Altieri 2002: 7). In the 1990s, the concept expanded to include social movements fighting for the transformation of the whole food system (Wezel *et al.* 2009) and has been popularized by global farming movements such as La Via Campesina.

Proponents of agroecology note that, despite a growing evidence-base on its effectiveness, it is still considered a marginal form of agriculture, and thus replaced by conventional solutions (Altieri and Nicholls 2012). This may be explained by the perceived yield potential of industrial farming (Tilman *et al.*, 2002), by lock-in mechanisms (Vanloqueren and Baret, 2009; Stassart and Jamar 2008) or by path dependency (*ibid.*). Looking at agriculture through a justice-as-recognition lens offers another complementary explanation.

The sustained importance of high-input agriculture may also be explained by the fact that the industry, the world vision it represents, and the knowledge it uses have gradually been imposed as the dominant Western agricultural narrative (Thompson and Scoones, 2009). Contemporary European agriculture is the result of historical constructions of cultural discourse, ideas and ideology formed by dominant actors (Potter and Tilzey, 2005).

This misrecognition is made possible by a series of laws and policies leaving little leeway for the emergence of alternatives. Examples include:

- seed laws that exclude everything but commercial seed protected by intellectual property rights (Bocci and Chable, 2009), precluding dissemination and re-use of seed varieties developed through farmer selection;
- the framing of 'bio-economy' policy frameworks neglecting farmers' contributions in terms of social innovation and the production of public goods (Schmidt *et al.*, 2012);
- direct payments and green subsidies under the Common Agricultural Policy, based on production amounts and farm size, thereby promoting large farms or non-producing actors (Hennis, 2005);
- weak or inadequate regulatory oversight for open-air GMO field testing, which results in the contamination of organic and/or non-GM crops (Clapp, 2008; Roff, 2007),

compromising farmers' autonomy with regard to the presence of unwanted GM traits in their seed and planting stock; and

- research policy generating unbalanced funding opportunities between agricultural models (Vanloqueren and Baret, 2009). Over the last 20 years, the share of biotechnologies in the agricultural research budgets of the European Framework Programs has increased almost fourfold, amounting to 75% of the total budget in 2013. The share for research on alternative practices agriculture has been much lower (e.g. organic agriculture: 7% of the total budget in 2013) and stagnant (Baret *et al.*, 2015).

The alleged universality of industrial agriculture thus rests on a form of cultural and legal domination that denies the emergence of collective identities and the adoption of different practices. Not only does it create injustice by misrecognizing peasant farmers, it also creates dependence upon an industrial farming model by weakening the emergence of alternatives.

Second, peasant farmers and communities are also cognitively misrecognized. Over the course of the twentieth century, farmer and community-driven agricultural knowledge has been sacrificed in the name of progress and modernity (Sumberg *et al.*, 2012). Through a highly centralized knowledge system, it appears that science-based industrial agriculture has gradually made impossible the

confrontation and interaction with alternative knowledges and worldviews (Morgan and Murdoch, 2000; Kaltoft, 1999).

The division of agricultural labor and the increasing power of non-producing actors have stopped the decentralization of farmer-driven knowledge, through a double process of altering the ways in which knowledge was traditionally preserved and shared, and of radical de-skilling of farmers (Timmerman and Félix, 2015; van der Ploeg, 1993). Industrialized agriculture has generalized a top-down approach to the production and sharing of scientific knowledge (i.e. from the scientist to the farmer) (Scoones and Thompson, 1994), thereby excluding other approaches based on participation, reciprocity and inter-generational sharing.

It has also popularized a reductionist conception of agricultural biodiversity, where plant and animal genetics can be fixed in time, where environmental conditions can be homogenized and controlled by external inputs, and where the best way to conserve and improve agricultural biodiversity is through *ex situ* conditions. The use of traditional knowledge and techniques is not excluded *per se*. But it leads to problems with their appropriation under property rights (Correa, 2001) or to ‘muzeumization’²⁰ (Visvanathan, 2006), thereby

²⁰ For Visvanathan (2006: 166) ‘the museumization of knowledge, rather than being a humanistic attempt to save knowledge, disembeds and fossilizes it’. The concept of the museum, ‘as the annex of the laboratory’, is based on a linear understanding of scientific progress, departing from what is seen as obsolete or primitive knowledge.

depriving farmers from their cognitive or natural resources and/or devaluing their knowledges and practices.

The environmental impact of industrial agriculture is a well-documented issue (Burney et al., 2010; Tilman et al., 2002; Altieri, 1998; Carson, 1962). But beyond climate, soil quality, groundwater and biodiversity, what is threatened by industrial agriculture is the whole body of knowledge associated to their preservation. Creating and sustaining local and situational farming knowledge can only be the product of a long history of observation and reflexive management of ecological complexities and interactions. Unlike in the Global South, where many traditional and local agricultural practices and knowledges have survived increasing industrialization (Altieri 2002), much of that knowledge has disappeared in Europe. One of the challenges of peasant movements in Europe hence is the regeneration of situational knowledge, and the creation of supportive governance processes.

4. Research framework

The paper introduces a new theoretical position (cognitive justice) and concept (agroecology of knowledges) to the study of knowledge plurality in European peasant farming. Decolonial thought and cognitive justice are largely under-addressed when studying (European) farming systems. The paper therefore is structured as a heuristic case study 'used to stimulate the imagination toward

discerning important general problems and possible theoretical solutions' (Eckstein, 1992: 143). Heuristic case study is a theory-building approach seeking to generate new theories in an inductive manner (George and Bennett, 2005). New theories can then lead to new hypotheses and be tested on other cases.

For research to serve a heuristic function, certain kinds of cases may be regarded as more instructive than others (Eckstein, 1992). The case presented below was identified as the most useful case for theory-building, among a larger set of 8 alternative, producer-led farming initiatives in Western Europe (in Belgium, France, Germany and the Netherlands) which were studied as part of a another, larger study on justice and agrobiodiversity conservation.

In the following section I analyze how AgroBio Perigord (ABP), an association for the development of organic farming in France, built an agroecology of knowledges via the creation of a pioneering participatory breeding program. Among other things, ABP hosts a community seed network in Périgeux, a small city in southwestern France. ABP is known nation-wide for its in situ conservation of local and regional plant landraces threatened by genetic erosion. It is a key member of the national French Peasant Seed Network ('Réseau Semences Paysanne').

To analyze the role of knowledge in the activities of the association, four semi-directed face-to-face interviews were conducted with the association's coordinator and with one of the founding farmers (in

2013 and 2015). These interviews were conducted on site, which allowed establishing rapport with the community and its environment. A two-day participatory observation mission was conducted in September 2015 during one of the association's breeding workshop. The workshop was organized as a dialogue between different perspectives on varietal selection and on the collective management of agricultural biodiversity. Beyond ABP farmers, it included facilitators, partner scientists and South American peasant representatives from Chile, Colombia, Brazil and Mexico. Findings from the interviews and the participatory observation have been combined with the information contained in the internal and external publications of the association.

5. Building an agroecology of knowledges in France

An agroecology of knowledges is *the counter-hegemonic engagement with modern agronomic science, through the recovery and co-production of situational, environment-specific knowledges, and the reskilling of farmers. It aims not only at improving agricultural science, but also at rebuilding collective identities and reclaiming autonomy.* In essence, an agroecology of knowledges is a struggle for recognition through which cognitive justice is achieved in peasant farming.

Grasping the emergence of an agroecology of knowledges requires looking at the context in which it was able to develop. The activities

of ABP were triggered in the early 2000s by growing dissatisfaction with the functioning of the seed industry:

We started in 2000, following a message from the local sanitary authorities of an ‘accidental’ GMO contamination of organic seed lots. It created distrust towards our seed suppliers, and I better understood the need for more seed diversity and autonomy for the farmers for the preservation of organic agriculture. Up to [the year] 2000, I was growing organic hybrid corn bought from conventional commercial seed producers (ABP participating farmer, interview 2013; author’s translation).

A small group of farmers decided to start gathering and experimenting with traditional and/or local plant landraces. It led to the creation of a decentralized in situ seed network for both professional farmers and home gardeners. While the network is called ‘Seed House’ (‘Maison de la Semence’), its functioning is different from ex situ seedbanks:

[The] ‘Seed Houses’ really are a concept [...]. Everyone multiplies, creates, sustains a number of species or varieties. Everyone stores his own seeds or plants. The seed stock becomes collective through the exchange system (ABP participating farmer, cited in Bio d’Aquitaine 2011: 17; author’s translation).

The first trials were disappointing, especially in terms of yields. The lack of knowledge and know-how appeared to be a crucial factor for an effective utilization of these landraces:

Owning local seeds is not enough [...] One also needs to re-acquire lost knowledge for breeding and for their adaptation to the environment. [...] Enclosing agricultural knowledge [also] forms a danger for future generations. Addressing the need of future generation inevitably leads to a form of decentralized knowledge production. (participating farmer, interview 2013; author's translation)

To understand this double phenomenon, one has to look at the characteristics of French agriculture and its evolution during the second-half of the 20th century. Following the Second World War, and until the late 1970s, agronomic science in France was largely steered by the State, which launched an ambitious 'modernization' program. Science and technology were used to develop a highly productivistic and specialistic agriculture to meet demands for the reconstruction of the war-torn economy and to ensure food security.

This modernization process left little room for alternative knowledges and world views on agriculture. Seeds, inputs, knowledges, norms and practices were standardized (Bonneuil et al., 2006). As a consequence, post-war agriculture in France was characterized by a high level of muzeumization: 'obsolete' traditional varieties and local landraces were gradually stored in ex situ

seedbanks and replaced by ‘high-performance’ breeds which are suitable for mass production:

The use of high-input hybrid varieties over two generations of farmers has had a double consequence: the disappearance of local landraces but also of their associated knowledge [...] (ABP participating farmer, interview 2013; author’s translation).

From the 1980s onwards, with the advent of the neoliberal project, the vacuum left by the decline of public sector support for agriculture was filled by market players. Agricultural practice and science in France went from a technical discipline, controlled and organized by the State, to a market-only endeavor, tailored for powerful non-producing actors and characterized by the growing capacity of multinational firms to control agricultural production and agronomic research (Bonneuil & Thomas 2009). A contemporary example of this is the introduction in 2001 in France of a generalized royalty scheme for bread wheat farmers. The scheme, called ‘mandatory voluntary contributions’ (*‘Contribution Volontaire Obligatoire’*) is to be paid by all bread wheat farmers, regardless of the seed they use. Part of this royalty is reimbursed to small-scaled farmers who buy commercial seed the next year. The scheme hence strongly discourages the conservation of locally adapted peasant varieties and favors a corporate seed market.

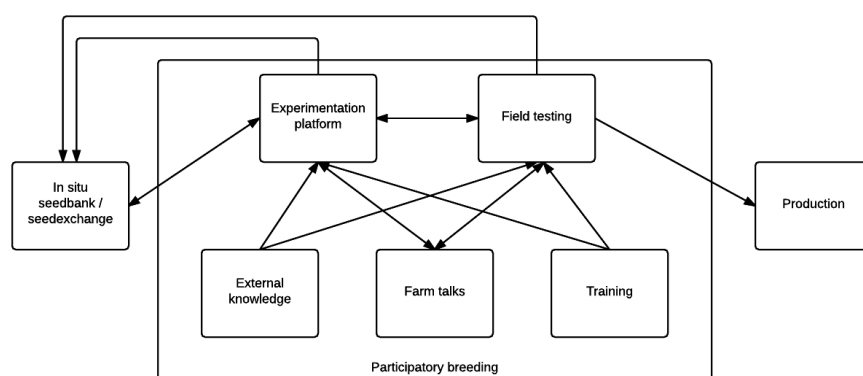
Since the turn of the century, this dominance has been actively opposed by emerging social movements, both in France (Bonneuil

and Thomas, 2009), such as ABP, and elsewhere (Sumberg et al., 2014; Rosset and Martinez-Torres, 2013).

5.1. The recovery and co-production of situational, environment-specific knowledge, and the reskilling of farmers

ABP runs an ambitious participatory plant breeding program to foster the conservation of local plant landraces—which the association calls ‘peasant varieties’—and reacquire their associated knowledge. It ambitions to replace the dominant linear model of varietal selection and innovation (from *ex situ* collection, to external breeders, to farmers) with a decentralized farmer-centered approach (figure 1).

Figure 3 – Decentralized farmer-centered breeding process at AgroBio Perigord



Developing a new crop at ABP starts with an explicit demand from one of the members. Based on the expressed needs, the farmer’s environmental conditions (soil, climate) and preferred outputs, candidate-crops are identified in the organization’s network. These

crops then are tested either on the organization's experimentation platform or on a testing-parcel made available by the farmer. In order to reacquire know-how and breeding techniques, participating farmers commit to multiply and return two-thirds of the initial amount of seed to the network. This return not only allows keeping of a 'safety-copy', it also ensures a necessary turn-over to prevent genetic degradation. The rest of the seed is resown, multiplied and selected by the farmer during the following seasons, thereby gradually creating a new locally-adapted variety (Combette *et al.*, 2015; ABP staff, interview 2013).

During the whole breeding process, a constant dialogue between different knowledge systems is organized. Farmers initiate the breeding process, based on their own experience, knowledge, context and needs. The process is organized by a joint experimentation agreement and a specific breeding protocol. These protocols combine past experiences and continuous updates by ABP's team of agricultural facilitators, who provide training and assist farmers when introducing local landraces and developing new varieties. Through peer-based 'farm-talks', farmers then visit their respective farms and discuss their breeding protocols, techniques and outputs. The participatory breeding program hence takes the form of a social learning platform in which farmer-driven knowledge is discussed, improved and shared through the active participation of other local farmers. A yearly technical report allows for follow-up and sharing of the results from new varieties, protocols and production outputs.

The importance given to local and participatory knowledges and techniques, however, does not equate to the rejection of valuable external input, whether originating from the scientific community or from other parts of the world.

Since 2007, ABP works with partner scientists, in particular researchers from the French National Institute for Agricultural Research (INRA), to improve and experiment with specific issues and crops. The association values and exploits the scientific input, but does so in dialogue with its own knowledges, within its own co-production model and without hierarchies between the different forms of knowledge:

We can co-exist with the current system and enrich each other. Our knowledges are based on another approach to living organisms: they are different and complementary, but not inferior. (Chable and Berthelot, 2006: 129-130; author's translation)

Finally, external knowledge also comprises 'learning from the South'. From an empirical point of view, ABP organizes co-production gatherings between Southern farmers and their own members. The organization is particularly interested in the input of Latin-American farmers, especially Brazilian, who are much more advanced in both experimental farmer-led breeding protocols, as well as the necessary supportive governance processes (e.g. Canci et al. 2013). From a more theoretical point of view, learning from the South also means rejecting the hierarchization of knowledges, 'because there isn't one

knowledge to be imposed on others' (Martinez-Torres and Rosset, 2014: 980).

5.2. Rebuilding collective identities and reclaiming autonomy

ABP's fight for new ways of knowing, doing and validating science also aims for social and political change. Reusing traditional seeds and producing knowledge should thus also be understood as an attempt of ABP farmers to break loose from the dominance of ill-suited policies and laws, on the one hand, and of non-producing commercial actors on the other:

It is the lack of knowledge that creates dependence towards private breeders and their hybrid varieties [...]. The division of agricultural labor kills the decentralization of knowledge. (ABP participating farmer, interview 2013; author's translation).

It could be described as a process of re-peasantisation, described by van der Ploeg (2008) as a 'struggle for autonomy that takes place in a context characterized by dependency relations, marginalization and deprivation. It aims at and materializes as the creation and development of a self-controlled and self-managed resource base [...]'. This desire for self-determination is echoed in the association's discourse. Reintroducing local landraces and creating new varieties is seen as an act of resistance to the use of so-called 'elite' varieties (commercial pure lines or F1 hybrids):

In Europe, these elite varieties are the only ones permitted to be commercialized, due to the mandatory variety registration. Accordingly, peasant varieties are marginalized and, since the 1960, their seeds are banned from the market and it is prohibited to exchange them (Bio d'Aquitaine 2011: 14; author's translation)

ABP considers these elite varieties, protected by intellectual property rights and owned by private seed companies, as a barrier to the autonomization of farmers:

The purpose of my conversion to organic agriculture was to break with all agricultural suppliers, hence stopping the chemistry, but also no longer dependent on seed companies. The same goes for fertilization, I only work with my manure, I don't buy organic fertilizers. (participating farmer, cited in Bio d'Aquitaine 2011: 39; author's translation)

But the process goes beyond material autonomy. What is aimed through the redefinition and re-appropriation of agronomic science is a larger rural development project in which the peasants' agricultural vision is to be redefined:

In the case of [ABP], the program's success shows above all that farmers were able to defend and develop a vision and conception of plant and seed that is consistent with an agricultural project and more broadly with a social project. (participating researcher, cited in Bio d'Aquitaine 2011: 29; author's translation)

A political community is (re)created under the banner of peasant, local and/or organic agriculture, the reintroduction of traditional varieties, the creation of new varieties using farm-based knowledge, and participatory farming practices. By rebuilding this collective identity (Demeulenaere and Bonneuil, 2011), ABP reconnects individual farmers with a larger collective rural movement, empowering participants as agents of change (Coolsaet, 2015). The 'affirmation of identity' thus becomes an additional resource for demanding recognition (Santos et al., 2007: xxvii).

6. Discussion and conclusion

The current scientific paradigm and the way in which it is used in agriculture has created a gap between those of 'know' agriculture and those who do agriculture. Making agriculture more sustainable requires closer interaction between scientists and farmers (Tilman et al., 2002), an observation convincingly put forward by the farmer-first literature since the mid-80's (Scoones and Thompson, 1994).

Yet, despite extensive case-study research on participatory approaches in the Global South, there's been surprisingly little engagement with decolonial thought, let alone when studying European agriculture. This paper tried to attend to this gap. The emergence of environment-specific and inclusive solutions within the industrial model seems to have been insufficient to meet the aspirations of some of Europe's peasant communities. This paper has

argued that this can be explained by the misrecognition of peasants and their ways of knowing agriculture.

Remedying this requires a process of cultural recognition, understood as both status equality and cognitive justice. On the one hand, through a proactive recognition of the plurality of agricultural systems, status equality allows for alternative forms of agriculture to become equally valid solutions. On the other, cognitive justice offers not only equal terms, but a critical engagement with modern agronomic science. The latter can take the form of an agroecology of knowledges: a farmer-centered counter-hegemonic dialogue between different agricultural knowledge systems. It provides farmers' with tools to rebuild collective identities and reclaim political and material autonomy.

The agroecology of knowledges differs from existing knowledge-based innovation approaches in terms of scope, drivers and intended outcomes. It triggers a farmer-centered process that goes beyond classic models of innovation such as the demand-pull (innovation is triggered by a market demand) or supply-push models (innovation is triggered by scientific insight) (see Ceccarelli and Grando, 2006). Both models assume centralized knowledge-production, with more or less farmer input or involvement. By focusing on co-production, reskilling and autonomy, an agroecology of knowledges explicitly addresses the power dimensions underlying agricultural knowledge production.

While encompassing an instrumental goal of improving agricultural science, it also challenges the ‘scientization of public debate’ (Kinchy 2012) and the ‘technologisation’ of varietal creation (Chable and Berthelot, 2006), where agricultural and broader rural policy is defined on the basis of a reductionist plant or animal science, disconnected from social and ethical contexts. What is sought for with an agroecology of knowledges is a genuine transformative process brought about by participatory governance arrangements and democratic practice (Pimbert, 2011).

In so doing, the agroecology of knowledges concept further highlights the knowledge dimensions of the main alternative narratives to industrial agriculture: the agroecological and participatory movements (see Thompson and Scoones, 2009). In particular, it draws upon several elements in the food sovereignty literature. For instance, it links up closely with what Martinez-Torres and Rosset (2014: 4) have called a ‘diálogo de saberes’ : an active dialogue between different ways of knowing agriculture, which through a ‘dialectic of conceptual diversity’ (Kendrick, 2003) generates ‘new collective understandings, meanings and knowledges’ (Rosset and Martinez-Torres, 2013: 4). Its procedural aspects also bear significant resemblance with the South-American campesino-a-campesino methodologies (Holt-Giménez, 2006).

Finally, it echoes a recent focus on such ideas as knowledge sovereignty (International Commission on the Future of Food and

Agriculture, 2009) and technological sovereignty (Altieri and Nicholls, 2012). Both dimensions are two of the many unequal power relations the food sovereignty movement is seeking to address (Patel, 2009). But they are prerequisites for the re-invention of a European agri-food system which has long favored a band-aid approach of green subsidies and technology transfers.

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ANNEX I – INTERVIEW GUIDE

A. The interview is about the participation and decision-making practices in collective action for biodiversity/participatory biodiversity governance and the identification of the impact of specific features of the institutional environment and the decision-making context on the potential for conservation outcomes. A particular attention should be given to existing social relationships within the institutional environment, the conditions of participation, the decision-making rules of the governance process as well as to possible outcomes.

B. For each case, 2 interviews will be conducted with the following profiles:

1. **Initiator or leading member:** a person who present at the initial stages of the farmer's association (conceptual design, first steps) or an influential member.
2. **A participant:** any person who participates in the association (most probably, but to limited to farmers), and who is not a staff member

Pre-interview checklist

1. What is the interviewee's role (and/or his organization's role) in the association?
2. Is the initiative formal-led (top-down) or community-led (bottom-up)?

3. How large is the geographical coverage of the initiative (one site, few sites, multi-locational?)
4. Does the association function within a broader network of association?
5. Are the association's activities governed by a clear/well-established legal framework?
6. Do activities of the association represent a 'marginalized' form of agriculture (i.e. does it claim to offer an alternative to industrial agriculture)?

Note: the following questions should serve as guidelines on the broad questions related to the research framework. The interviewer should have enough flexibility to allow for new variables/indicators to be identified.

Questionnaire

1. Can you introduce us to the history of the association? How did it start? Was there a specific trigger point?
2. How would you define the objectives of the associations?
3. What are the main drivers for participants to join?

RESOURCES DISTRIBUTION

4. Which financial resources does the association dispose of? Where do they originate from? (members/public authorities/private companies/...)
5. Which human resources (offices, land, ...) does the association dispose of? Who provides them? (members/public authorities/private companies/...)
6. Are resources provided to stakeholders for their participation? If so, what type of resources?
7. Which other resources (offices, land, ...) does the association dispose of? Who provides them? (members/public authorities/private companies/...)
8. Approximately how many individual participants are active in the association?

SOCIO-CULTURAL RECOGNITION

9. How has support by public authorities, if any, helped the initiative?
10. Does the association take specific measures for the participation of disadvantaged/under-represented groups?
11. Which sources of information are used to inform decision-making?
(Examples: Members experience; Local associations / NGOs; Public authorities; Media; Scientific/Academic knowledge; ...)
12. Is the knowledge of farmers being put to use in the activities of the association?

13. Is training being organized within the community/among participants? How?
14. Does the association take measures to improve access to relevant information for participants?

PARTICIPATION & DECISION-MAKING

15. Which stakeholders are involved in decision-making?
(farmers, permanent staff, public authorities, scientists and experts, private sector and business, NGOs, end-users and transformers, other?)
16. Which stakeholders are involved in coordinating day-to-day activities?
(farmers, permanent staff, public authorities, scientists and experts, private sector and business, NGOs, end-users and transformers, other?)
17. What are the conditions to become a member/participant? What does it imply to be a member/participant?
18. Has a specific procedure been established to reach decisions?
Which one?
(Voting? Consensus? Consent?)
19. Do participants deliberate before making a decision?
20. Are activities framed by an agenda/roadmap?
21. In general, are the activities of the association monitored in any way? If so, how and by whom?
22. Have measures been established to correct for deviation of the rules and agreements in the initiative? If so, how are they enforced? Are they effective?

OUTCOMES

- 23.** Do you think the association has improved (agro)biodiversity? If so, how?
- 24.** Has the association been legally recognized (as contributing to biodiversity) by the relevant authorities?
- 25.** Have participants changed farming practices with regard to agrobiodiversity?
- 26.** Has participation led to increased knowledge and/or skills with regard to agrobiodiversity among the members?
- 27.** Has problem-framing changed under increased participation as to include biodiversity issues?
- 28.** Do participants feel more empowered to deal with biodiversity issues?

ANNEX II – INDICATORS

Economic dimension

Financial resources

(Overarching question: what financial resources do participants and the association dispose of?)

	Indicator	What to measure?
C11	Public funding	Does the association dispose of public funding?
C12	Private funding	Does the association dispose of private funding?
C13	Participation budget	Do participants dispose of funding specifically allocated to allow for their participation?
C14	Financial inequality	Is there an apparent inequality in the distribution of financial resources for participation between participants?

Human resources

(Overarching question: what human resources do participants and the association dispose of?)

C15	Size (decision-making)	How big is the decision-making unit?
C16	Vertical Connectedness	Is the association embedded in vertical networks?
C17	Horizontal Connectedness	Are the participants embedded in horizontal networks?
C18	Human resources inequality	Is there an apparent inequality in the distribution of human resources/social capital between participants?

Other resources

(Overarching question: what other resources (eg. land) do participants and the association dispose of?)

Cultural dimension

Socio-cultural recognition

(Overarching question: How do socio-cultural values impact/influence/play a role in the way in which people participate?)

	Criteria	What to measure?
C21	Legal/Political recognition	How much political support has there been for the association?
C22	Activities' representativeness?	Do activities of the association represent a 'marginalized' form of agriculture?
C23	Participants' Representativeness	Are participants geographically and demographically representative of the community?
C24	Affirmative action	Is the association taking measures to favor the participation of disadvantaged/underrepresented

		groups?
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Knowledge management

(Overarching questions: how is knowledge being managed/used in the context of participation?)

	Criteria	What to measure?
C25	Knowledge plurality	Pluralization of knowledge to help inform decision/discussions
C26	Farmer's knowledge	Is farmer's knowledge being used to inform decision/discussions?
C27	Training/ Facilitation	Is training provided for the community/participants?
C27	Access to information	Scientific, technical, legal or any other relevant information is made accessible to participants by the association

Political dimension

Decision-making procedure

(Overarching question: How are decision being taken?)

	Indicator	What do we measure?
C31	Inclusiveness (decisions)	How inclusive is the decision-making process? (<i>e.g.</i> who can vote?)
C32	Decision-making method	How are decisions taken?

C33	Deliberation	Does the decision-making process include a for 'a space of exchange' (dialogue/deliberation) which allows for consensus building ?
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Institutional characteristics

(Overarching question: Which institutional characteristics are governing participation in the association?)

	Indicator	What do we measure?
C34	Agenda	Is there a detailed agenda/roadmap for the activities/evolution of the association?
C35	Monitoring	Are the activities of the association/participants being monitored?
C36	Common rules	Have participants agreed on common rules of engagement?

Participation

	Indicator	What do we measure?
C37	Inclusiveness (boundaries)	How inclusive/exclusive are the boundaries of participation? (<i>i.e.</i> who can join?)
C38	Inclusiveness (boundary-setting)	How inclusive is the method for setting the boundaries? (<i>i.e.</i> who decides about who can join?)