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Disasters
Indigenous knowledge and resilience

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KARTHALA BELGIQUE

INTRODUCTION: DISASTERS, INDIGENOUS KNOWLEDGE AND RESILIENCES

Olivier Servais, Lionel Simon

In anthropology disaster studies have emerged in the past thirty years. They constitute a field of research devoted exclusively to the study of the way various groups in the world consider cataclysms and disasters of natural or industrial origin (Hoffman, Oliver-Smith, 2002). Indeed, this field offers a convincing demonstration of the contribution of an ethnographic and comparative approach to understanding the radical changes experienced by many people in the world. Indeed, the difficulty of thinking about natural disasters is that, in addition, highly multidimensional, they are often not perceived as natural, at least not in the way the term is currently understood in western and westernized circles. They affect all aspects of human life having an impact on the environmental, social, economic, political, and biological systems. At the intersection of nature and culture (Descola, 2005), they illustrate, often dramatically, their interdependence. In addition, this anthropological field reflects the highly procedural and not only eventful aspects of disasters. It addresses the issue of symbolic and social resources used by indigenous peoples to consider the changes induced by the advent of a disaster. The framework law MRDR, mentioned in the context, refers in part to the local disaster management. It emphasizes individual and community responsibility in terms of preparation and management of these risks, but at no point mentions the issue of the cultural context in relation the construction of 'natural' phenomena. In this sense, the establishment of local prevention policies fundamentally lack an emic perspective making for efficacy. However, on these issues of natural hazards, the difficulty of enhancing the capacity of decision-making and governance of most indigenous peoples, especially those of the Cordilleras, are explained by several factors. Anthropology has long shown the strength of customary law in this mountainous region of the country especially in Kalinga (Barton, 1949), the Ifugao (Conklin, 1980) and Ibaloi (Wiber, 1991, 1993). Mountain peoples are still, perhaps more than other

populations, highly exposed to hazards and disasters (Anderson, 1987). How, in this context, can we develop intervention policies without considering the perspectives of the people and their traditions? Let us recall, for example, the many constraints to be taken into account such as: 1) the strength of kinship networks and compadrazgo 2) the existence of complex rights in practices of irrigation, a point that Lewis (1991) studied amongst the Ilocano, and 3) the existence of a strong local bureaucracy (sometimes corrupt) that involves working with institutions such as religious missions or NGOs, 4) rapid environmental degradation of lands often coveted by mining companies, for example, 5) the need to consider multiple intermediaries (cf. Russell, 1987), 6) finally, the existence of ancestral traditions leading on occasion and as a last resort, armed guerrilla actions or conflicts. Nevertheless, rare and recent studies on the issue offer critical information for proper adaptation of prevention policies to indigenous peoples. For example, amongst the Mangyan Alangans, the kuyay (elders) explain that it is by observing the behaviour of wild pigs that one can predict an impending tropical storm or a tsunami. In this case the Mangyan indicate that the pigs collect trash and make a shelter, placing them in a circle around themselves (Laugrand, Tremblay, Laugrand, 2013:132). Other indigenous peoples observe the behaviour of birds as reliable signs. Although indigenous knowledge is now well recognized by international organizations (see UNESCO for instance), there is little knowledge of indigenous interpretations of these phenomena and their forecasting techniques and attenuating tactics. It is now clear that the management of socio-natural hazards must incorporate an understanding of indigenous knowledge and representations of these phenomena and develop on this basis an adaptation to indigenous realities (Hermesse, 2016). It is in this global but operational perspective that the book is proposed.

Geographers have long been interested in the description of natural hazards and their human consequences. However, conceptual frameworks including and articulating disasters, vulnerability, mitigation, resilience, are relatively recent (eg. Adger, 1999, Barnett,

2001, Smit & Wandel, 2006). The concept of vulnerability spread in the early nineties (Cutter, 1996). The focus on resilience (e.g., Folke, 2006) dates from this present century. More recently, besides an increasing interest in the aftermath of disaster neo-colonialism misinterpretations are often pointed out. Simplistic assertions are due to the lack of cultural and linguistic knowledge (Gomez, Hart, 2013) or to lack of geographical contextualization. Bankoff and Hilhorst (2009) regarding the Philippines wrote that 'Less attention has been paid to the manner in which people structure their understandings of disaster episode into their personal and collective schemas and what consequences this has for their responses to disaster'. Nevertheless, analysing disasters from both angles of outsiders and insiders remain a challenge (Brun, 2009, Mercer *et al.*, 2009) that this Book aim to take up.

Historically, the interest in 'natural disasters' is not new and dates to ancient times (Guibodoni, 1998, Favier, Granet, Abisset, 2005). The enormous impact of these events has always led contemporary and researchers to be interested mainly in the perspective of the natural sciences or religious interpretation. However, over the last twenty years, it is estimated that the Disaster Studies are an emerging research field in history (Burnham, 1988), focused especially on the last decade by the current history of the environment. Indeed, the record of disasters that have occurred in the past and the realization of many 'lists of calamities' are far from being satisfactory as historical surveys and renewal of research was necessary. On the one hand, these initial investigations are not free from gross errors, omissions, and inaccuracies (Schenk, 2007) and researchers are working today on the submission of more finely critical historical data (Alexander 1996, Massard-Guilbaud, Platt, Schott 2002). On the other hand, the socio-economic and political consequences of these disasters are so important that historians seek recently to include these aspects in their research, trying to establish the number of victims and amount of damage, to identify recovery strategies, etc. (Favier, 2002, Gisler, Hürli-mann, Nienhaus, 2003), while interacting with the natural sciences to clarify the geological, climatic, and biological causes of these

disasters (Diaz, Markgraf, 1992). More recently, historical research has enriched this positivist approach with a more constructivist and cultural posture relative to disasters, considering issues such as the perception and interpretation of hazard, risk, and disaster themselves, and their effects on long-term (Walter, Fantini, Delvaux, 2006, Mauch, Pfister, 2009). The study has turned into an approach of events as socio-cultural construction, resulting from a complex historical evolution of nature and of the interactions between man and his environment. However, little to this day has been done concerning the concept of 'resilience of populations', a concept hitherto rarely mobilized in the historical discipline. Several researchers have nevertheless stressed the relevance and usefulness history (Enfield, 2012; Bankhoff, 2007¹). In this perspective, Greg Bankhoff (University of Hull, UK) is one of the few historians who have looked at the Philippine case, however, essentially mobilizing official and written sources.

The objective of the book is not just a simple superposition of disciplines, but an increased interaction seeking to understand local problems based on a threefold look.

Anticipating and making sense of potentially dangerous environment

This book² opens with a contribution by Frédéric Laugrand and Lionel Simon. Their article attempts to problematise anticipation and the multiple forms it takes in various historical and cultural contexts. Through a review of the literature and the presentation of case studies, they highlight both the transversality of this phenomenon – which crosses eras and geographical spaces – and the specific ways in which it takes shape. In a world subject to profound changes that leave many grey areas concerning the future of the planet, F. Laugrand and L. Simon advocate the usefulness of jointly questioning the foreseeing practices of modern sciences and those of populations that, for thousands of years, have used the logic of the senses to recognise the signs of future events, and to anticipate them. This first article thus assumes one of the most important issues of hazard management: seeing ahead. This entry through a transversal logic is illustrated by all the contributions, which endeavour to shed light on various aspects of disaster management.

Despite the sometimes-dramatic consequences of the disasters that people may experience, tangible risks have a form of existence as potentialities. Understanding the ways in which people interact with a possibly destructive environment is the task that Maria Bernadette Abrera has set. Her contribution is anchored around the Mayon in the province of Albay, one of the most active volcanoes in the world.

From a historical and diachronic perspective (16th-20th century), the author focuses on the understandings of the local populations, who live mainly from agriculture. The narrative corpus of these collectives shows the contrasting valences attributed to the Mayon, which are frequently found within communities established in the vicinity of active volcanoes. They are destructive when they awaken but, at the same time, they provide soil fertility, stimulate tourism and are thus lucrative assets. The overview of stories offered by the author shows that volcanoes have an extraordinary evocative power. Associated in various ways with non-human

entities – whether deities or spirits – they are frequently the subject of narratives that tell of the entanglement of different life forms. They provide the conditions of existence for families, but they also condition daily life and require knowledge that allows one to anticipate their temperament.

This text by B. Abrera also highlights forms of attachment to the place of life, particularly to the volcano. It underlines the relationships that the inhabitants are inclined to have with it, through these stories, but also through the ritual practices linked to it or through daily references to it, in oral discussions.

The proposed analysis documents the signs associated with the imminence of a danger, and thus highlights the familiarity of local knowledge and its capacity of the population to infer the risks of irruption. It also highlights the disjunctions (or even frictions) between the precautions recommended by the experts attached to geotectonic vigilance, on the one hand, and the aspirations of the concerned families, on the other hand. In so doing, this contribution invites the opening of a more effective dialogue between different risk assessment modalities. Local interpretations, including religious dimensions, contribute not only to making anticipation mechanisms effective, but also to giving meaning to hazards and to the resilience of the population.

Following on from the previous chapter, Antoine Laugrand seeks to understand local ways of integrating potentially destructive environments into the practices and discourses that give them meaning. Based on ethnographic research conducted in the mountains of Mindanao, the author traces the way in which calamities are managed, from diagnostic procedures to the care of afflictions and to the attempts to avoid future occurrences. The author describes in detail the ills that can afflict individuals, and places them within the interpretations that enable them to be thought of. In so doing, this text shows how this calamities' management is understood as a relational process that engages in obtaining favours from non-human beings who can encour-

age human projects or constrain them through disastrous living conditions. A. Laugrand places the notion of 'social disaster' at the centre of his approach, introducing the idea that for the Blaans he works with, no disaster can be said to be 'natural', as it results from inadequate social interactions between humans and non-humans.

By dealing with calamities – mainly diseases – his contribution shifts from the focus on the hazards of potentially destructive environments. Nevertheless, it helps to highlight the importance of problematising the local understandings that foment the management of problems. Environments, in all their dimensions, are integrated into a social landscape and practices that demonstrate a concern to open dialogue with them.

Experiencing disasters through their psychosocial aspects

To problematise the experience of populations confronted with destructive events, the texts of the second part highlight the logics that partly escape to naturalistic framing. They highlight the insidious ways in which the experience of groups is nourished, and which are more related to social and psychological dynamics than to natural factors.

Thus, Kerby Alvarez places rumour at the centre of his contribution. The rumour appears as a narrative genre that is characterised by its mode of propagation and by the absence of verification, whether it be at the level of the emitting sources or the contents. This discursive practice makes evident the difficult articulation between the respective points of view of modern science, local knowledge, and institutional mechanisms of risk management. In emergency contexts, rumours reveal local understandings of a destructive phenomenon, amplified by panic. Two contexts where this phenomenon was particularly notable are considered by the author: the one that occurred in 1934 and the one that took place in 2014, in the Province of Quezon. This historical depth allows the author to highlight transversal logics that are the subject of the article.

He adopts the point of view of environmental history to re-construct the sometimes-contradictory narratives that were generated by the alarmist discourses about the arrival of a typhoon (1934) and a tsunami (2014) in the locality of Candelaria. The misinformation that lies at the heart of this rumour phenomenon crucially conditioned the ways in which the destructive events were perceived and experienced. In this respect, the rumour is seen as a significant stress factor, contributing to the occurrence of massive anxiety and, in so doing, to a disordered management of risks (in case of effective risk).

By problematising this phenomenon, K. Alvarez highlights the importance of crisis communication in risk management. He highlights a particular mode of existence of catastrophic events, which refers to different types of discourse that circulate about them. This idea leads him to suggest a more transparent place for science in the assessment of risks and in the dissemination of information about them.

In their contribution, Anna Cristina Tuazon, Darynne Ariana Solidum, Queenie Rose Chico, Carlos P. Gundran, Hilton Y. Lam, Fernando B. Garcia and Jerome Cleofas problematise an aspect of disasters that is often overshadowed by their material and economic dimensions, as well as by an understanding of health that privileges physical injuries. They attempt to consider disasters as traumatic events and to highlight their psychosocial consequences.

Based on an analysis of the occurrence of targeted terms in Philippine official documents related to disaster risk reduction and management, the authors find that mental health is relatively low on the agenda in disaster policies. The management of psychosocial well-being suffers from a lack of visibility and, therefore, of human and financial resources to be effective. But more generally, their study highlights the need to consider local particularities in trauma management. A focus on family nuclei rather than on individuals and an understanding of the values and understandings of the populations must be at the centre of

the management of the consequences on psychological health, to achieve 'cultural congruence'. The authors show that external intervention faces several difficulties, particularly in terms of definitions and diagnosis. In this respect, the articulation between official meanings and the values of local populations is subject to significant pluralism.

After disasters: Resilience and adaptability

The papers in this third part show how, in different contexts, people integrate hazards into their lifestyles, or use them to bring about change.

In his chapter, Lito Nunag shows how risk is at the heart of families' lives on *Talim* Island. Through their devastating effects, but also through the coping mechanisms they generate, high winds and heavy rains are embedded in the social, economic, and cultural dimensions of the island. The malleability of subsistence activities makes it possible to convert destructive events – whether wind or hydro-meteorological in nature – into levers for expressing the resilience capacity of the communities. This requires proven skills in anticipation. The (re) knowledge of the warning signs of meteorological events was indeed noted as being at the centre of the being-into-the world, in *Talim* Island. The ability to discern between the sensitive qualities (olfactory, haptic, visual, sonic, even gustatory) of winds, rains and waves becomes the support of anticipations. The capacity for adaptation and resilience is thus nested in an advanced knowledge of the environment (fauna, flora, meteorological and atmospheric events), which allows to grasp significant variations.

Disasters are also a means of updating social landscapes and enabling the deployment of solidarity networks. It is at the heart of collective dynamics that risk management takes root. The ties of kinship and alliance, although sometimes dispersed in space, become the pivot that allows a sense of security, from which to

draw the resources of resilience. In this way, destructive events possess contrasting valences. Perceived as hazards, they are also apprehended from the point of view of the potential they offer, since they commit the social landscape to updating or even reinventing itself. They are also the source of technical and technological innovations that make it possible to mitigate risks. But around these events, the management of the damage they cause, other networks are set up, notably through external cooperation structures. These latter are at the heart of dynamics that disrupt local organisations, introducing the suspicion of favouritism or corruption.

The integration of knowledge and know-how in risk management has been the subject of an abundant literature, which is extended and exemplified in the text by Esla Cauderay, Florie Dejeant, Thierry Joffroy and Olivier Moles. Focusing on an exploration of the consequences of typhoon Haiyan, their contribution analyses the strategies for rebuilding material infrastructures in various indigenous communities of Panay Island. Haiyan hit the Philippines hard in 2013 and was the strongest tropical typhoon ever recorded. It caused thousands of deaths and extensive material damage.

Two projects are put into perspective in their text, to bring out the issues at stake in the practices of dealing with material damage. These practices are in tension between the valorisation of local techniques, technologies, and materials on the one hand, and the implementation of external processes on the other. E. Cauderay & al. note that emergency reconstruction leads to the development of architectural patterns which risk obscuring important areas of knowledge. Humanitarian aid, in this respect, is described by the contrast it tends to display. Its necessary action makes it possible to deal with the need to organise reconstruction quickly. But the latter runs the risk of leading to the loss of important technical and technological knowledge. The paradox is that by neglecting local skills in terms of adaptation and resilience, external aid tends to obscure some of the techniques and technologies that make it possible to reduce the vulnerability of populations.

For this reason, the authors argue that there is a need for approaches that are better integrated into post-disaster practices and more informed by local knowledge and know-how. Considering local skills and resources should lead to efficient reconstruction processes that are in line with the preservation of local resources, and that are technically and socio-culturally appropriate. It is thus the adaptability of responses to disasters that the authors highlight. The flexibility required is understood as much in the considering of local architectural patterns and models of residence, as in the identification of needs. By using concrete examples, the authors develop a reflection that contributes to the development of a 'disaster management framework'. This must be based on a fruitful articulation between the stakeholders (different levels of local, national, and international authorities, craftsmen, engineers, populations, etc.), but also on a desire to preserve the environment. The milieus are subject to multiple dynamics, linked to lifestyles and to the changes they are undergoing, due to erosion of resources and to demographic pressure. It is therefore a comprehensive diagnosis that responses to destructive events require. Finally, this contribution highlights the importance of participatory research to gain a detailed understanding of the mechanisms at work, in the provision of aid to populations affected by disasters.

In the last chapter of this book, Phil Ketut Ardhana and Ni Wayan Radita Novi Puspitasari deal with a fundamental phenomenon associated with the eruption of Mount Agung (Bali, Indonesia) in 1963. This particularly destructive event led to the relocation of many Balinese families. This process, which led some of them to the province of Lampung (Sumatra Island), contributed to the emergence of specific social configurations and to the reinforcement of the image of Indonesia as a 'multicultural' entity. In his contribution, the author proposes to analyse the consequences of these migrations to the island of Sumatra, by integrating them into the political landscape of the time. He aims to shed light on the multiple and interconnected mechanisms that accompanied these movements. These latter led to the sometimes-delicate co-

habitation between Hindus and Muslims, and to a distribution of cultivable land that could provoke perennial resentment.

In so doing, the author highlights that disasters are also to be analysed as contexts conducive to the circulation of knowledge and know-how, but also as being likely to encourage the emergence of contexts of religious, political, social, and cultural pluralism. The demographic upheavals that they cause give rise to pressures concerning occupation, ownership, and use of land. The author's historical perspective leads to broader reflections on the emergence of multicultural areas in Indonesia, on the sustainability of a management of living-together and on the mechanisms of relocation of populations affected by a disaster.

The texts compiled in this volume shed additional light on complex phenomena, which will undoubtedly increase in number in the years to come. Because they are embedded in multiple dimensions – affective, psychosocial, political, economic, cultural, architectural ... – catastrophic events pose the challenge of questioning the consequences and determining factors that contribute to their occurrence, but also to their experience. Through the multiple perspectives it offers, this book aims to contribute to a better problematisation of the notions of risk, resilience, and adaptation.

PART 1

ANTICIPATING AND MAKING SENSE OF POTENTIALLY DANGEROUS ENVIRONMENT

1. DIVINATORY PRACTICES, PREDICTIONS AND 'GLOCAL' KNOWLEDGE

Frédéric B. Laugrand, Lionel Simon

The West increasingly must cope with risks of its own making (Ulrich Beck, 2001)³. The entire world has entered an era of 'insecure modernity' characterized by erosion of traditional certainties (Bréda *et al.* 2013). A series of crises (institutional, financial, social, health-related, climatic) and a radical shift in public mood (Latour, 2015:16) are making us doubt the soundness of our resource management and the truthfulness of our indicators of well-being (Jackson, 2010). Knowing the future is thus central to our concerns. It has become key to our relationship with the world (Appadurai, 2012, 2013) and an impetus for action. In this age of human-driven climate change, the Anthropocene, we need caution and foresight more than ever to know what lies in store and prepare plausible scenarios for the future. These worries are a continuation of earlier forebodings and are not confined to one time or place, certainly not the past decade. Writer and futurologist Alvin Toffler, for example, introduced the notion of 'future shock' (Toffler, 1971). He understood how devastating the information age would be for all human activities. In his opinion, these effects transcend the individual and would lead to large-scale stress and disorientation. It seems likely that each age has focused attention on certain sources of anxiety and has accordingly framed the choices to be made and their impacts on the future.

Thus, all over the world, divination is making a comeback, without having ever really gone away. In the West, for example, business is booming for astrologists and other fortune tellers, as seen by the popularity of horoscopes. Such people appear in the entourage of politicians like Boris Yeltsin, Richard Nixon, Hassan II, Juan Carlos, and François Mitterrand – who closely followed Élisabeth Teissier's advice. Despite their power and devotion to reason, political leaders have resorted to psychics and astrologists. It is said that General De Gaulle received advice from

an astrologist, Maurice Vasset (see papers by Minois, Esquerre, 2013, Favret-Saada, 2014).

Communities hope to gain some control over their fate by attentively reading various signs. Since time immemorial, humans have developed many ways and means to make sense of events that suddenly occur in the lives of individuals and groups. Some types of practices are especially widespread within communities that are themselves spread over a wide area. One practice is dream interpretation. Examples abound in American ethnography, which describes it as a key means to understand what will or may happen. Another practice is frequent recourse to animals or plants. To this end, animals can act as an agent who goes back and forth between two worlds. This role is attested by the multiple and diverse uses to which they are put. Coming events (notably the weather) may be foreseen by practices that range from observing how animals behave to sacrificing them. Often, certain body parts are carefully examined (generally offal or bones).

Elsewhere and more disparately, inanimate objects are put to use, being most often diverted from their normal uses. The purpose here is to look into the future. The object is supposed to speak and reveal, just as some parts of a soothsayer's body may tell the future through their movements.

The diversity of the means stands in contrast to the uniformity of the end, which is the same across different geographic, historical, and cultural contexts (Loewe and Blacker, 1981). It is worth noting that the means are often cobbled together opportunistically. In many contexts, they seem limited only by the process of methodically identifying the problem and dealing with it consistently and appropriately.

The Inuit of northern Canada illustrate the variety of techniques that a single society may use to look into the future. Whether objects or dreams are being used, the technique is to observe the environment and all its human and animal inhabitants meticu-

lously, while keenly observing what one's body feels. The skin's sensations foretell whether the event will be joyous or sorrowful. Elisapi Ootoowa, from Mittimatalik (in Nunavut), provided some examples of premonitions from the body, as if the latter were closely linked to the land and world it inhabits. Speaking to female Inuit students, she said that the premonition may be positive (*niriujaaqtuq*) or negative (*qunujaaqtuq*). The second kind means that misfortune is imminent:

I know that someone is going to catch an animal when I hear ringing in my ears. For someone else, hearing a ringing in their ears might signify that they were about to receive good news. When one heard a crackling in the ear, this was said to be [a] sign that it would be windy. My parents didn't believe this, but that is what I have heard. If your eye was twitching, it was a sign that you would see someone that you didn't normally see. When someone's eye twitches because they are going to see someone, this is called *takusiut*. *Sajuktuq* means twitching. If your flesh was twitching, it was said to be a bad sign if you were a person who received premonitions in that way. That was called a *tuqusiut* and it meant that someone would be dying.
Therrien and Laugrand (2001:141)

The Inuit of northern Canada refer to these body sensations by the term *qilualatsijuq* – the ability to feel nervous contractions. Again, we see how divination can use many means to the same end (Tedlock, 2006:62). Clearly, we cannot exhaustively list all the means in all human groups. This book offers some notable examples of disaster anticipation. Nevertheless, a brief review of divination across time and space will give an indication of the many diverse ways in which it has evolved and developed.

Divination, decision making, and comparative studies

Although few such studies have been done, there has been interest since early times in comparative approaches to divination. An eloquent example is *De Divinatione* by Cicero (44 BC) (Cicero, 2004). Yet, most likely because of its use in ranking human societies, being viewed as one of many signs of underdevelopment,

divination has long been scorned by proponents of modern rationality. It was formerly associated with superstition or fantasy and excluded from impartial comparative study. This tension between ancient and modern views suggests that the questions raised by study of divination should be answered through a broad interdisciplinary approach.

Not so long ago, Jean-Pierre Vernant (1974) suggested that the logics of divination foreshadowed those of the sciences. The former was 'an essential first step toward positive thinking and emergent science.' This view is certainly an improvement over the Great Divide between pre-logic and logic. It takes us beyond Lévy-Bruhl by treating nonmodern rationality and scientific rationality on the same footing. This theoretical approach is promising but introduces a new bias, as pointed out very recently by C. Calame (2017). This historian begins by listing the forms of Greek divination. The Greeks told the future not only through dreams and omens but also through the way birds fly, the internal organs of sacrificed animals, and the flames and smoke from burnt offerings to the gods, not to mention writing, numbers, stars, and so on. He says it is a mistake to speak of a 'divinatory mentality' in contrast to science. Instead, he believes that 'the Hellenic practices of divination are defined indigenously, as a *tekhnê*, a technical art' (Calame, 2017:397). These forms of divination belong to secular and not divine knowledge, specifically the realm of semiotics. The signs are interpreted by humans and through human know-how:

[These are] practical forms of knowledge that provide humans with artisanal ways to meet their basic needs: food, housing, trade, health. Most of these forms involve working with an environment that is viewed as a system of signs, a semiotic system.
Calame (2017 : 397)

The contrast between the respective positions of Vernant and Calame is symptomatic of a recent change in understanding and describing nonmodern institutions (including divination). Such institutions are no longer seen as preceding the sciences. Instead, they exist alongside the sciences, on the same level.

In keeping with this change of perspective it becomes interesting to define and examine the ways of telling the future in all their diversity – to understand them as codified cultural systems for interpreting past, present, and future events (Sindzingre, 1995:202). We should assess these practices on their own terms and examine the conceptions they refer to. Consequently, we should avoid lumping them in with practices that come from other contexts, and which serve to resolve other life problems. This abusive tendency is exemplified by Victor Turner, who, distinguishing between revelation and divination, likened the ‘paranoid style’ of Ndembu diviners to the way politicians act in modern Western societies (Turner, 1975:242).

Our recent thematic issue for *Anthropologie et Sociétés* (Laugrand, Simon 2018b) deals with new approaches to logic and science. This theme is justified by recent research in neurophysiology that has described anticipation as a normal mental process for understanding events (Berthoz and Debru 2015). It thus transcends the boundaries of culture and history. We can add that it is also not proper to humans as animals and plants are doing much better in this field... (Byl, Laugrand, Simon, 2021)

All these major epistemological changes to the way we understand nonmodern institutions are consistent with and mirror an empirical reality that is no less noteworthy: the old boundaries are getting blurred in all areas of life for individuals and for communities. Divination is no exception. On the one hand, old techniques are being enriched through borrowings from elsewhere in almost all cultural contexts. On the other hand, these borrowings are made in all directions, and ‘modern rationality’ is looking to other cultures for ways to be more attentive to the environment and to the omens that its inhabitants provide. To put things another way, ‘Science’ cohabits quite well with mediums, clairvoyants, and diviners. This has been shown by studies in Iceland (Gissurarson and Swatos, 1997; Pons, 2004), Canada (Meintel, 2011), South Korea, and Japan (Bernier, 2018). Divining and foretelling thus run counter to the tendency of modern analysis to compartmentalize by time and

by place. Whether the future is being told by scientists with pie charts or by diviners with animals and/or artifacts, the common thread is that forecasting will help us deal adequately with the world and its many risks. This is no less true for the West. Pierre Maranda put it simply when talking about Markov chains and the essentially probabilistic nature of quantum physics: ‘People prefer having forecasts that are false, as with weather forecasts, to not having any’ (Maranda, 2014)⁴.

Of course, divination takes many forms, as do its underlying cognitive schemas. The social sciences have uncovered a wide range of ontologies (Descola 2005, 2014) and cosmopolitics. Although diverse practices have been filed under separate headings (folklore, belief, knowledge, action...), all of them tend to show a general wish to anticipate and influence future events, to control fate as much as possible, and to understand it in advance. How, then, does a single cross-cultural problem give rise to so many solutions in so many cultures?

This question calls for a comparative approach to divining and foretelling, and for more specific questions. How do communities imagine themselves acting on the future? How do they frame these imagined ways of acting? How do they view them? Finally, when confronted with strange or ordinary events, why do communities give some individuals (oracles, shamans, priests, prophets, diviners, healers, statisticians, climatologists, politicians, experts of all sorts...) or institutions (science, clergy, researchers, etc.) the general task of anticipating, foreseeing, knowing, or deciphering the future and influencing it?

All these efforts to divine and foretell have been reported from many cultural contexts. Even when the monographs are not specifically about the topic, they often provide interesting data. To date, comparative studies have been done only on neighbouring cultures, except for recent research by Lambert and Olivier (2012) and Curry (2013). An extensive body of data is thus available for comparative work, but almost all of it is highly dispersed among

numerous studies that were never designed for this purpose. Furthermore, divinatory practices have been explored very unequally, as seen in the following review of the literature.

In Europe and the Middle East, these practices have intrigued many authors, mainly historians³. The Greek and Roman civilizations have received the most attention, although research explicitly devoted to divination has been done on Mesopotamia and the Muslim world (Rochberg, 2004; Savage-Smith, 2004; Abraham, 2006). Medievalists have been interested the most in astrology (e.g., Boudet, 2006), which they classify as traditional knowledge, along with fortune-telling. According to Laplantine (1985), attitudes toward the latter have swung back and forth between denigration and keen interest (see also Berthod, 2007; Régnier, 2007). It is also in medieval Europe that anthropologists have studied divination in relation to imagination (Bloch, 1991), medicine, particularly diagnosis and prognosis (Rossi, 2007; Zeitlyn, 2012), and economics and contemporary politics where ‘governance by the numbers’ (Supiot, 2015) tends to be viewed as a specific way to manage human or nonhuman phenomena that currently exist or are expected to develop. Attention has especially focused on the way numbers and statistics are being used to manage communities. This research is the outcome of investigations into our relationship with the world, specifically forms of logic and power differentials. Emphasis is on the individual’s outer forms and inner impulses in a digital world (Jorion, 1997, 2008; Desrosières, 2010). Forecasting is seen as mirroring a slow maturation of Western referents, such as truth and reality (Jorion, 2009), and its role in the world has led to unprecedented ways and means to understand, explain, and comprehend phenomena on a global scale. Modern forecasting may eventually lead to computer tools being applied to ancient techniques of forecasting (Del Re, 1993).

Countless anthropological studies have been done in Africa and Madagascar, where divination exists in multiple forms. Its omnipresence in the monographs echoes its importance in local communities (see Peek 1991 for a detailed review). After path-brea-

king papers by M. Griaule and D. Paulme about jackals in Dogon culture, and by Evans-Prichard among the Azande, V. Turner (1961, 1968, 1975) and W. Bascom (1969, 1980) came to dominate discussions on divination, paving the way for many case studies and collective works. Let us cite several classics: Sibrée (1892); Adler and Zemleni (1972); Loewe and Blacker (1981); Devisch (1985); Peek (1991); De Boeck and Devisch (1994); Gufler (1995); Hammond-Tooke (2002); Graw (2006); Van Beek and Peek (2013). Geomancy, for example, has given rise to many studies that have described its mathematical properties (Jaulin 1966) or its mental processes (Bloch 1968) or the links between the two (see Chemillier *et al.* 2007). Africanists have also explored divination systems in relation to sorcery and healing techniques (Fainzang 1986; Kirby 1993; Fratkin 2004; Turner 2004), narrative knowledge and performance (Olupona, Abiodun 2016), and art and poetry (Pemberton, 2000; Werbner, 2015). They have furthermore studied divination systems among migrants, particularly in terms of permanence and reconfiguration (e.g., Traoré, 2015). Bascom (1980) already addressed all these themes when he published nearly 200 divination poems by Salako, a Yoruba diviner from Nigeria. We can further mention work by P. Peek (1991), who, in concentrating especially on African cases, continued in the tradition of classic authors, from Durkheim to Evans-Pritchard, who considered divination to be the most equitably shared ‘thing’—a classification system where diviners bring together rather than set apart. It may thus be useful to understand divination as a knowledge system. Indeed, Peek showed that divination can be characterized as an ‘epistemology of a people’ (Winkelman, Peek 2004:4). It enables communities to strike a balance, hence the observation that divinatory practices reappear in areas going through great transformations.

In a more dispersed manner, several studies have focused on divinatory practices and omens in Asian societies (Lot-Falk, 1968, Humphrey, 1976). Quite a few studies have been done on divination in China, where it was key to the development of writing (Keightley, 1978; Schipper, 1982, Kalinowski, 1991, Baptandier, 2003, Vandermeersch, 2013), and on divination in ancient Japan

(Rocher, 2012). Regarding the nomadic indigenous peoples of Asia and the circumpolar regions, we should cite papers by Roberte Hamayon (2012) and her team (Delaplace, 2005, 2010, Lavrillier, 2005, Merli, 2010, Stépanoff, 2010), and analyses by Ruhlman (2012) and Swancut (2012) for Mongolia.

In the Americas the essay by Bastide (1968) on African Americans was long considered to be the only work on divination. Nonetheless, some old studies had been done on scapulimancy in North American Indigenous societies (Cooper, 1928, 1936, Speck, 1935, Tanner, 1978, 1979; Dominique, 1991, Savard, 2004) and star gazing among the Navaho (Wyman, 1936a, 1936b). The subject has been neglected, as B. Tedlock (2001:195) points out in the opening quote. In these societies, divination seems inseparable not only from shamanism and healing (see Lyon, 2004 for a review; see also Brunton, 2002, Guédon, 2005) but also from the desire to 'make things happen' in culture areas where an unstable duality prevails (Lévi-Strauss, 1991) and where games are socially important (see for example Petit, 2009 for the Inuit). Paradoxically, divinatory systems have well withstood Western colonization of the Americas. This has notably been the case in Mexico (Colby, Colby, 1981, Colby, 2004, Guilhem, 2015) and among the Inuit. Laugrand and Oosten (2010) for example studied the *qilaniq*, highlighting its persistence for over 400 years. Such examples show that these practices have endured despite major transformations of these societies. Recently, the Caribbean has seen many new studies, notably in Cuba (Diantaill, 2001; Holbraad, 2012), where fieldwork has addressed the subject in terms of ontologies. In many Amerindian societies other divinatory practices await analysis. These practices take multiple forms: dream interpretation, star gazing, reading of visible or tactile omens on the body, use of games, etc.

Finally, divination has been studied in South-East and South Asia through research on possession and mediumship in India (see for example Majumdar, 2004), Malaysia, Indonesia, Borneo, and the Philippines. In these regions, divination is studied the most regarding shamanism and the animals it uses, like birds

and pigs (Flattery, 1968, Le Roux, Sellato, 2006; Laugrand, 2015). Recent work has shown the persistence, in Indonesia notably, of very old Chinese divinatory techniques, like *jailangkung*⁶. There is much in the literature from these Asian countries on sacrifice (see for example Gibson 1980, Hoskins 1993, Howell, 1996), but links between sacrificial practices and divination are not examined. Divination has been studied much less in Papua New Guinea and Australia, mostly in the context of sorcery (Craig, 2008).

This brief review remains very incomplete and highlights what remains to be studied, to gain more insight into the underlying logics of anticipation. By reviewing the very wide diversity of acts, discourses, and practices, as well as the changelessness of concern about the future, we have initiated a project that is oriented above all to the eventual research it is intended to motivate. It may be tempting to reduce this concern to a universal angst vis-à-vis the unknown and the mortal condition of men and women. Here, we more reasonably seek to compare different cultural contexts methodically, recognizing that this concern exists across space and time. The challenge is even more complex because there are no 'terms exempt from ethnocentric and Eurocentric presumptions' for dealing with divination (Devisch, 2018).

Frameworks of divination and divinatory knowledge

Compare the discourses of rational science (by economists, demographers, computer programmers, climatologists, and other 'experts') with those of societies that for millennia have used the logic of the senses to read signs of future events and anticipate them, should help in looking more adequately into the exact meaning of anticipating, foretelling, and foreseeing. This is a way to open the possibility of dialogue between the different ways of framing the shared and partly globalised future of the humanity. But behind the project of anticipating, the heterogeneity of the discourses and practices is notable. Three dimensions illustrate the way in which local specificities are manifested.

We will begin with the first dimension: the causal systems that communities imagine and use, and which validate their way of thinking about the future. We refer here to the concepts used by the protagonists (truth, reality, ancestors, cosmic dynamics, signs, probabilities, encoding...) and at the referents they rely on: laws of physics or economics that make forecasting conceivable because the future is mechanically and causally produced, intentional beings (with whom one may enter into communication), theories of signs, natural authority, possible occurrences in a controlled digital environment, stable cosmic dynamics...

Among the Wayuu of Colombia and Venezuela, for example, prediction is based on a particular understanding of events and the dynamics that lead to their occurrence. In this ethnographic context, each occurrence is considered through the lens of an intentional-relational scheme that assigns a voluntary origin to all phenomena. Contra the notion that there exist arbitrary contingencies, mechanical laws or unmotivated facts, each event is viewed as the manifestation of a will (Simon, 2017; 2020a). In this respect, diseases like all types of calamities are presented, not as the result of misfortune, but as the deliberate projects of intentional beings (Simon, 2018). Their occurrence is thought of as a concretisation, previously engaged by the presence and/or action of beings who are capable of hindering or facilitating the projects of humans. Refuting the idea of contingent occurrences, the Wayuu apprehend auguries as the perception of events, as they exist prior to their concretisation, i.e., in an intentional mode. Based on the idea that phenomena are always precipitated voluntarily, pre-vision doesn't appear as an access to an already written form of the future or of one's history. Rather, it is matter of relating with the entities and beings that are on the path of individuals, and that nourish projects for them, whether they are disastrous (deceiving or 'taking away', i.e., killing) or benevolent (giving keys for success in daily activities, for example). Thus, the predictive quality of dreams is supported by the idea that all incidents reflect deliberate projects and doesn't rely on the idea that there is an already written version of one's future.

Second dimension: conceptions of time and phenomena in the future. From a linear conception of time where events have a relationship of cause and effect to a circular conception where events repeat themselves and mirror each other, the efforts to tell the future must accommodate different constraints. In the same way, whether occurrences are viewed as signs, whether phenomena are thought of as an ongoing and partly inescapable journey, or whether coming events are conceived as meritorious gains to be negotiated, there are specific strategies and appropriate procedures each time. In this regard, the case of the Australian Aborigines seemed to offer us a noteworthy counterpoint⁷. Sylvie Poirier and David Turner (2016) emphasize the singularity of the Aboriginal conception of time, which cannot be dissociated from space. Past and future merge into a 'relational and composite' present, making divination uncertain and even unnecessary:

Among the Australian Aborigines everything that happens already has a virtual existence in the Dreaming, as a space-time and cosmogonic and cosmological order. The Beings of the Dreaming, who are at the origin of all that is, including territory and knowledge, still live in the present and take an active part in the deploying – better yet, the unfolding – and becoming of the world. Such a conception gives both a special flavour and a special density to experience of the 'present,' since the present carries the heritage of all that has been and the potential for all that will be. It is this conception that authors have tried to capture through the expressions 'everywhen' (Stanner, 1979) and 'continuing present' (David Turner, 2016). The divinatory techniques of the medicine men and the dreams serve to examine and signify what has happened (death, accident, illness, and other) and not what will or may happen. Not that the Aborigines are unconcerned about what will happen, but they seem to have made the choice of letting it happen, and even being caught by surprise. This is what Povinelli called 'the language of indeterminacy' (Povinelli, 1993). The dream experience has nonetheless achieved a very special epistemological and ontological status. Everything that happens must be mediated by the dream, as an intermediate space-time between the ancestral order and the present, between the virtual and the here and now. What exists in the Dreaming, including spirit children, must transit by the dream to happen in the present. Poirier (personal communication, April 8, 2018)

Finally, a third dimension is the ontological statuses of agents of prediction (or interlocutors of communications, sources of injunctions), i.e., objects and/or beings that serve to tell the future, anticipate events, and determine whether the events are positive or negative (animals, artefacts, helping spirits, cumulative and supposedly representative data). Measuring devices, probes, maps, compiled data, sensors, indicators, transparency windows, animals, plants, powerful agents ... the artefacts and/or beings are described in terms of their own 'agentivity': through the status they are assigned, the essence they are believed to have, the sources of their effectiveness, the tasks they are given, the social differentiations they produce, and so on.

The fact remains that, despite these heterogeneities, two themes run through the cultural contexts. One is the use of specialized knowledge and know-how. The other is the need for a specific framework. These themes lead *in fine* to fruitful ways of comparing the detailed descriptions.

Foreseeing and foretelling require the knowledge and know-how of specialized people. This activity is thus confined to the margins of daily life and the 'normal' course of things. Summoning ancestors and invisible beings, deciphering clues, making sense of occurrences, compiling, and interpreting the data ... all of these hermeneutic tasks are assigned to people with a special status, who operate on the fringes of more usual activities. The average person thus delegates such tasks to the scientist and the shaman, the ritual specialist and the medicine man, the dream interpreter, and the economist. Such people, independently of where and when they use their respective skills, show that foreseeing and foretelling require knowledge and know-how. They alone possess the ad hoc experience and techniques.

From this standpoint, we see that much effort is needed to reduce the complexity of the many interconnected factors in Chinese divination in Taiwan (S. Homola, S. Simon). This complexity echoes that of contemporary economic, climate, and health fo-

recasting, which generates projections from huge quantities of data (respectively C. Bréda, F. Keck). Rites thus exist in many contexts, and they show that foretelling and foreseeing are processes that need special skills and knowledge. Another constant is use of artefacts (keeping everyday objects at a distance and diverting them from their primary uses, resorting to objects with no normal use, like bones, or very specialized tools, like statistical data or astrological calendars). Thus, divination often involves managing the agentivity ascribed to nonhuman objects, places, or animals (S. Simon, Laugrand *et al.*). To this end, a diviner may specialize in agents that are appropriate for a certain social or ontological status.

Foretelling is also the outcome of an encounter between two entities or levels of existence. The encounter takes place within a specific framework. Divination and action on future events require an appropriate context to bring about an encounter between distinct entities and/or space-times. Although it is true that dreams are a special mode of experience and may have many distinct referents and conceptual thicknesses in various cultural contexts, they nonetheless share with rituals and games a special framework. Besides often having complex, ambiguous (and sometimes antagonistic) dynamics, the dream framework convenes the regimes of space and time that are needed to understand the future. The practices of foreseeing initiate a dialogue between different points of time: an event with its origin and its plausible or probable outcomes; an occurrence with its causes and its statistical resonances in the future; an act with its agent-mediated effects; a somnolent community torn between a 'here' and an 'elsewhere'; and data that have as much affinity – in a linear conception of time – with a 'before' as with a 'now' and 'later.'

Parallel to this, it is noteworthy that divination is a technique for encountering and communicating. It often involves an ontological encounter between distant beings, as do, more explicitly, the convening of ancestors or the ritual context. Dreaming and drumming alike both convey the idea of a desired and relatively

controlled encounter with dimensions of space and time and with beings who may tell the future.

The idea of specific skills being practised on the fringes of more usual activities and more common forms of knowledge is not totally foreign to modern contexts. Although methods of divination often keep their distance from dominant scientific, legal, and political systems, economic analysis assumes a tendency to specialize through its notion of 'predisposition.' It has also developed on the periphery of society and uses a style of argument that harks back to Greek and Latin rhetoric. Its discourse is thus scientific: constraints on admissibility, criteria of objectivity, and modes of validation. It is also from the periphery, i.e., from the outside, and with little regard for local sensibilities and the empirical data underlying such sensibilities, that scientists look for cause and effect and try to make sense of environmental issues and draw lessons for the future. From their standpoint, scientific protocol looks more like a rite than a sequence of actions with a purely objective goal.

These continuities run through diverse geographic and cultural contexts. Doubtlessly, they explain much of the personal energy (both cognitive and practical) of those who know what will, should, or cannot happen.

A comparative look at anticipation

To close this contribution, we would like to highlight some specificities and cross-cutting features of anticipation practices, starting from our research fields in Southeast Asia.

The Mentawai illustrate the variety of procedures that can be engaged in the same collective, to see events coming or to make them happen (Simon forthcoming). Living in the tropical forest that covers the Bat Rereiket valley (Siberut Island, Indonesia), these horticulturalists have developed a strong knowledge of their environment.

To foresee the occurrence of potentially dangerous events, the Mentawaians adopt a posture of attentiveness to modulations in the environment. They too sometimes consider outlying events to foretell future outcomes, granting predictive roles to specific bird species. In particular, the songs of the kuliak (the ashy tailorbird, *Orthotomus ruficeps*) and of the kemut (the greater coucal, *Centropus sinensis*) provoke behaviours (Forestier *et al.*, 2008:62–63). The former is a land bird endemic to the island of Siberut, common in all biotopes (Kemp 2000; Meyers, 2016:72, 136). The latter lives in humid forests and swampy bogs, as well as in areas subjected to human activity (*ibid.*). The respective songs of these two birds fosters a prudent behaviour. The song of the kuliak prohibits leaving the house, warning of dangers lurking outside; that of the kemut suspends all activity (Forestier *et al.* 2008:62–63). The Mentawaians thus prove attentive to these birds' behaviours, whose predictive powers depend on 'the contingency of their own lived world', to use Scott Simon's formula (2018:152).

The attention paid to these birds' songs by the Mentawaians denotes an attentive posture that confers an annunciatory function to a sound. The songs here figure in a semiotic relationship wherein an occurrence – a behaviour or a sound – refers to a signified. Whether the relationship between sound and omen is indexical or symbolic brings us back to the causal regime binding these two elements. It is worth noting that this type of inference is widespread, in all geographical areas. This denotes a specific way of involving oneself in the world, a propensity to apprehend incidents as reflections (or heralds) of current or future phenomena. It also denotes a sensory knowing of the environment and an inclination to interpret some of its variations as resulting from entanglements between disparate phenomena (a sound and a future incident).

In such cases, the 'omens' do not require specific devices to emerge. On the contrary, they exemplify a fairly widespread tendency, that of detecting auguries through variations in the environment – in this case, through animal behaviours.

Beyond this attentive posture, the Mentawaians also frequently resort to specific devices to predict future outcomes. These devices form an integral part of all ceremonies (*uliat*). They differ from 'spontaneous' omens in attaching divination to an active stance, rather than a more passive foreseeing. It relates more directly to 'making it happen' than to 'seeing it coming'. This mantic could be understood as a 'constraining' action on the course of things. It relies on hens (*goukgouk*) and pigs (*saina*), to which the Mentawaians express their wishes. They grab the hens (or crouch down beside the pigs) (*Illu.*) to explain what is expected of them. The animal is then circulated to everyone present to point out the beneficiaries of the requests. The Mentawaians then break the hens' necks (or slit the throats of pigs). This killing is understood to convert the victims into beings capable of fulfilling the stated aspirations. Following the sacrifice, the Mentawaians extract the hearts of pigs or the stomachs ventral mesenterium of chickens (*Illu.*). The signs thus rendered visible are meant to reflect the intentions of the sacrificed animals, manifesting their desire (or lack thereof) to accomplish the tasks assigned to them. In a serious tone, the assembly member reading the organs pronounces 'maeruk!' ("it's good!") or "tamaeruk!" ("it's not good!") to establish the omen. A bad outcome launches a new sacrificial process since the realization of human desires depends entirely on the animals' assistance.

In this context, animals are no longer 'listened to'; they are truly petitioned as beings capable of influencing the course of individual lives. The hens and the pigs' figure at the center of intersubjective relationships, as partners and privileged interlocutors (Simon, 2020b; 2021). For the Mentawaians, a peaceful passage in the world is thus unthinkable without resorting to animals. Indeed, their practices suggest the attribution of singular characteristics to hens and pigs. Foreseeing a happy or unhappy future is possible precisely because the animals' sacrifice generates their ability to carry out human desires. They are differentiated beings, ones that allow humans to compensate for their inability to fully control their existence. They reflect a complex inscription in a world that

remains inhospitable without a recourse to beings possessing qualities that humans do not. Without these beings' support, rituals are bound to remain unsuccessful. As sacrificial beings, animals are intermediary figures between humans and the forces shaping the course of their lives.

Here we see how animals are present in anticipatory practices. This can also be illustrated from other ethnographic contexts in Southeast Asia. In several articles and research about the knowledge of the Alangan Mangyans and the Ibaloi of the Cordillera (Philippines), Laugrand *et al.* (2018, n.p.) have found many examples of bird and insect omens. Here are a few examples. Among the Alangan Mangyans of Mindoro, birds, and small creatures (or insects) provide sound omens. Indeed, the Alangans tell the future mostly by decrypting the sounds of these animals, which are identified by onomatopoeic words. The same point was made by Forth (2010: 232-33) about the birds of the Nage of Indonesia and was attributed by Feld (1982:48-50) to the 'invisibility' of the birds. Far from disappearing, these traditions and practices are still being passed on, despite Christianization of the Alangans and introduction of schooling.

This is seen with the *kuykuran* (or *kuru kuru* in Tagalog), a tiny bird. Dina Vicente explains:

If you go off to work in your ploughed fields or in a field of corn or anywhere, if you leave the house and hear a bird that sings like this: 'ootootootootootoot!', that means: 'Don't leave!' In fact, that means there is a bad spirit over there who will cause you problems. You don't know it, but if you persist in going where you wished to go, when later you get back home, you'll die! That's how your illness starts. On the other hand, you can go there the next day without any problem. That's how it is. Anyway, even today, here, among us, when we hear this kind of bird singing - and we know there are some here flying about in the vicinity - we pay attention. This song is a sign, an omen that tells you not to continue your way. It's a bird that's as nice as a swan or a pigeon. This bird is very much appreciated by Indigenous people, and it's a bird we don't trap or kill. On the contrary, we make sure these birds multiply.

This applies even to the Tagalogs. If an Indigenous person sees a Tagalog with this bird and he has trapped or is trying to kill it, the Indigenous person will tell him: 'Hey! My friend! Release that bird! It's very precious to us.'

Humans do not understand bird calls and must learn what they mean. Like all birds, the *kuykuran* is never captured. The Alangans count on it to warn them of coming dangers. Isagani Garong added:

What I'm going to explain to you today concerns the animals that God created [...]. One of the most important animals is the *kuru kuru* bird, which is recognized by its chirping. This bird is the bearer of an omen, and when we go to a remote place, we must always pay a lot of attention to it. If the bird has been singing and we still continue on our way, it's certain we'll soon have some little health problems. It's certain, an illness will appear. That happens because a bad spirit always passes near the place where the bird is located. And if we don't go farther and sit down for a while, even for just a few minutes, that's enough to throw things off. By doing that we'll be able to get going safe and sound because the bad spirit has moved on.

The *kuru kuru* is a helper that can alert humans to the presence of illnesses or bad spirits. Thanks to it, humans can thwart bad spirits.

Another bird is nocturnal. Dina Vicente tells how it can be recognized by its cry:

When it's night it makes a cry like: 'weet! weet! weet!' [...] We then know there's probably an *aswang* nearby. [...] Around midnight, for example, if Indigenous people hear the sound 'weet! weet! weet!', they wake up, even if tired. When there's an *aswang*, you can't stand on the floor. You have to stay by the walls, you have to stay stuck to the wall. [...] You can get your blood sucked out.

To put it briefly, Laugrand *et al.* (2018) feel that the ethno-entomology of sounds needs further development. Sounds clearly seem to be a common denominator for divination by ornithomancy and entomancy. Indeed, the Alangans hear birds and insects before they see them. The latter make sounds that are intelligible to humans who know how to interpret them as good or bad omens, or as clues to the presence of benevolent or malevolent spirits.

To divine, the living needs their departed loved ones, their ancestors, their spirits, or the unseen world. The last of these may speak the language of computer calculations or bird calls to tell humans how to live a good life. Divination thus appears as a form of communication (between the living and the dead or between the diviner and his/her clients), and as a practice-based undertaking, often with living mediators, like birds, or quasi-living ones, like computers and software.

For divination, the body is a key medium from which the diviner or a client obtains or senses information. Some senses have a greater role than others. Although 'to divine' does mean to have a vision or a dream, it can also mean to smell – 'to have a nose for something,' as they say. It can also doubtlessly mean to hear. In this sense, divination often involves an intermediary step: a form of trance or an altered state of consciousness, hence the role of drums or substances to make the body more receptive.

In the Philippines, Laugrand, Laugrand and Tremblay have similarly studied this use of birds, which still inform humans in the mountainous regions. For the Blaans, birds are staunch allies that inform them about many subjects and dangers. Although these mountain dwellers occasionally eat them, they pass on their knowledge about birds and bird calls to younger generations.

These few examples taken from Indonesia and the Philippines illustrate how populations scattered in different habitats and regions have long used animals to anticipate events that constrain their daily activities and even threaten their way of life. In this sense, their sophisticated knowledge reflects a widespread, cross-cultural propensity among Indigenous peoples to study the surrounding environment, its variations, and its inhabitants to establish an adequate relationship with it. These cases show that anticipation procedures are above all a reflection of ways of being part of the world.

Conclusion

The desire to know and control the future remains fundamental in a world where everyone hopes to ward off insecurity and be reassured. Modernity is therefore driving the need to know the future or to make a desired future happen. Regardless of denomination, religion, or doctrine, humans seek to know what lies in store and even innovate by introducing new techniques with toys, cakes, or animals, whether in the street, on TV screens, or on web-based networks (Bernier, 2018).

Because it is a cross-cultural phenomenon – and because it is central to the current issues facing the world – anticipation invites a comparative perspective. This latter is both diachronic, i.e., observing changes and continuities in practices and discourses over time, and synchronic, i.e., observing geographic differences between different contexts and within the same context through examination of opposing ways of foreseeing and interpreting future events.

Undoubtedly, humans have always sought to master the twists and turns of fortune, as have probably other animals. Has not the struggle against *fatum*, fate, been the culmination of Christianity and modernity? Is it not inseparable from the idea of progress? Behind the diverse problems and practices, we find, among other things, questions of authority and destiny that are never resolved by chance but by the human ability to make things happen. We also see that divination is not incompatible with forms of scepticism and ultra-rationality. It spells out problems more than solutions. It amounts to, in fact, a search for meaning, for an acceptable interpretation, and even for a kind of healing, hence its remarkable vitality in times of disasters, calamities, cultural change or instability.

We conclude with Singleton (2018), who speaks to the inanity of the very notion of divination as a cross-cultural reality. In fact, he views it as a fantasy. He shows that the Wakanongo of Tanzania have no real divinatory practices but rather ‘residual divination.’ Yet diviners do appear in his article. First there is the *mfumo*, a

sort of diagnostician, and then the *mganga*, a prescribing doctor. Just as present are the materials for divination: intestines of goats, figures in the sand, and multiple objects. Singleton rightly points out that the missionaries fought divination, and yet it still enjoys a place in Biblical and Christian tradition. The author concludes that it would be wrong to view divination as an irrational alternative to science – the supposedly true voice of reason. It is better to see divination as an existential category that can help us understand things. We may be divining without knowing it...

2. INTERPRETING DISASTER: RESILIENCE AND THE FOLK PERCEPTION OF VOLCANIC ERUPTIONS

Maria Bernadette L. Abrera

Introduction

Mayon volcano in the Philippines, renowned for its majestic symmetry, remains one of the most active volcanoes in the world with an approximate seven-to-twelve-year interval period between eruptions⁸. While the volcano with its singularly distinctive cone has been synonymous with the tourism industry of the province of Albay⁹, it has nonetheless remained a perennial source of conflict between residents and the local government units particularly in times of danger. Approximately ten per cent of the population of Albay is estimated to be residing in threatened areas of up to 10 kms radius from the summit, with more than ten percent of this threatened population belonging to the population at risk inside the six-km radius of the permanent danger zone¹⁰. During the 2014 eruption, the permanent danger zone was extended to 11 kms for the safety of the residents, but the people nonetheless kept returning despite the forced evacuation order and some markers of the danger zone put up by the local government went missing¹¹.

There are 17 villages found within the permanent danger zone. The fertile volcanic soil that makes it suitable for cultivation has led to human settlement around the volcano. The farmers also raise livestock, mainly cattle and carabaos¹², from the abundant vegetation in the area. Their perception of the volcano and the threat it poses to them is vastly different from the government's appreciation of its hazards and risks. This has led to recurring problems regarding safety when the government issues evacuation orders upon the advice of the Philippine Institute of Volcanology and Seismology (PHIVOLCS), the institute under the government's Department of Science and Technology that is mandated to mitigate disasters related to geotectonic phenomena. This study looks at the popular perception of Mayon volcano from the historical, social, and cultural perspectives based on oral narratives

and historical records to document folk knowledge about danger signs and indications of impending eruption. Identifying the cultural relationship of the people with the volcano and the popular perception of indications of disaster will be helpful in crafting official policy and effective procedures that will reduce casualty with lesser skepticism and resistance.

Mount Mayon

Mount Mayon forms part of the Bicol region's volcanic chain aligned with the Philippine trench in the Pacific ring of fire (Punongbayan, 2004 :38). Among the volcanoes in this chain are Mount Labo in Camarines Norte province; Mount Isarog and Mt. Asog/Iriga in Camarines Sur; Mount Masaraga and Mount Malinao (Albay); Mount Bulusan in Sorsogon; and Mount Cagmasoso in Catanduanes. There are many other lesser-known peaks. Mounts Mayon and Bulusan are active to the present; Mt. Asog was last recorded to have erupted in 1642, while Mt. Malinao has no historically recorded eruption. In the recorded portion of the Bicol epic Ibalong, it ends in a simultaneous eruption of three volcanoes Hantik, Isarog, and Kulasi, but Mayon is not mentioned: the erupting volcanoes are in the Camarines provinces and not in Albay¹³.

Mayon Volcano is found in Albay province, 300 km southeast of Manila and rises to 2,462 m covering an area of 314.1 km² with an estimated base circumference of 62.8 km¹⁴. This includes seven municipalities: Camalig, Malilipot, Sto. Domingo, Polangui, Guinobatan, Daraga, Bacacay, and two cities, Ligao and Tabaco. It is classified as a stratovolcano and has a rock type ranging from basalt to olivine-bearing pyroxene andesite¹⁵. Because of its imposing symmetrical structure, it has stamped its identity to the place. A 19th century Spanish traveler remarked, 'To talk of Albay, it is not possible to veer (away) from dedicating a memory to Mayon (Alvarez Guerra, 1887:53).' In fact, there are historical accounts from the Spanish colonial period in the XVI to the XIX centuries in which the difference between 'Albay' and 'Mayon' was indistinct, for the political boundary between Albay and Ca-

marines province was always identified with the volcano and the volcano itself, being a prominent geographical landmass, acted as a representative of identity of the province and carried its name (Buzeta, Bravo, 1850 :280).

The Bicol historian Mariano Goyena del Prado provided an explanation for its name: 'The word Mayon [g] comes from the substantive *magayon* which means beautiful and sublime. It is truly beautiful and of perfect periphery, and sublime and attractive is its proud and lofty figure (Goyena del Prado, 1981 : 154).'

Mayon in Myths and Legends

The people living around the volcano have mostly devoted themselves to the cultivation of the land. The 16th century missionaries who first arrived found abundant rice and coconuts in the province, forest, and sea products, along with pottery and textile industries (Realubit, 1983:22 – 23). The folk perception of the volcano is found in the legends that have been created about it to explain not only its name but its origins and nature. These tales recognise the binary character of Mayon, being both life-giving/generative and the life-threatening/destructive.

The legendary and tragic Daragang Magayon was the only child of the tribal chief *Makusog* (Potent) of Rawis (Eugenio, 2001:179 – 180)¹⁶. Many suitors sought her hand in marriage, but she proved elusive until *Ulap* (Cloud), the son of the Tagalog chief, arrived in their shores. They fell in love and became betrothed. This enraged Magayon's spurned suitor *Pagtuga* (Explosion) who captured her father *Makusog* to force her to marry him while *Ulap* was away. As the wedding of *Pagtuga* and Magayon was about to commence, *Ulap* returned from his land and a fight broke out. *Ulap* was able to slay *Pagtuga* but as Magayon rushed to his side, she was struck by an arrow. *Ulap* held the dying maiden in his arms and he in turn was struck by a spear by *Linog* (Earthquake), a henchman of *Pagtuga*. The grieving father buried the couple together in each other's arms alongside wealth and gifts to bring

to the afterlife. With the passage of time, a mound began to rise on the site which reminded the people of Magayon's sublime loveliness. When Mayon erupts, they believe it is the Magayon spurning the attempts of *Pagtuga* and *Linog* to steal the grave goods buried with her; when the crater is covered with clouds, it is *Ulap* bending down to kiss his beloved and as he cries, his tears are the rainfall that caress the slopes.

This romance is the most popular legend, but folklore has other myths that connect the volcano to the Philippine indigenous belief system, where mountains are the dwelling sites of deities. The first relates that the benign deity *Gugurang* lived in Mount Mayon while the evil *Asuang* resided in neighboring Mount Malinao (Eugenio, 2001:3 – 6) (Eugenio, 2001:3 – 6). *Gugurang* had the greater power since he possessed fire and thus gained the allegiance of the people and received their *atang* (offerings). *Asuang* became envious and desired to have some of the fire. As he had the power of invisibility, *Asuang* stole the fire from *Gugurang* in Mayon. However, the latter gave chase and got back the fire but not before a huge blaze was created. *Gugurang* called on the heavens for rain and threw a thunderbolt that cut Mount Malinao into half. People took some of the embers to keep them warm, thus possessing fire for the first time.

The other myth tells of the god of destruction, *Kalaon*, who demanded sacrifices and feasts from people to honor him (Eugenio, 2001:257 – 258). Eventually however, the people became prosperous and forgot their rituals of appeasement to *Kalaon*. He then commanded his son to punish them, but his son did not obey him. *Kalaon's* rage shook the earth and flaming stones and molten rock began to flow down from Mayon's crater. As he set to unleash greater destruction, the supreme deity *Bathala* intervened and turned him into a cloud, where he could only bring lightning and rain to the people. In Bantayan, San Miguel island in Tabaco City, whenever the people experience rain and lightning, they remark, 'It is *Kalaon* again bringing destruction on us.'

The etiological Daragang *Magayon* legend is situated in a recognisable precolonial setting. It does not demand action nor impose authority on the listener but rather creates a link between the mythical era and the historical period, a continuity from the legendary to the contemporary since every geological occurrence of the volcano revives the retelling of the legend. Thus folklore binds the volcanic activity to its history and the tale becomes an ongoing activity much like the volcanic phenomenon.

The listeners/observers watch and participate in the continuing love story as they watch Mayon repulse Pagtuga, or as Ulap envelopes *Magayon* in a kiss or weeps for his beloved. These Mayon myths provide us with a window by which we can glimpse the precolonial world view, their beliefs and value systems, their understanding of themselves and the world around them, which we can use to explain the impulses and responses of the people to the natural environment. These myths underlie the relationship of the residents with Mayon, who view the volcano with affection rather than fear. Mayon was either the beloved maiden *Magayon* or the dwelling place of the benevolent deity Gugurang. The supreme deity Bathala had kept the destructive force of another deity, Kalaon, in check, limiting it only to rain and lightning. These folklore offer us an insight into the precolonial mentalities embedded in the regard for the volcano, combining tragedy, spiritual duty, and exceptional love and beauty. These provided a foundation not only for a flexible adoption of or adaptation to the coming of Catholicism but also for solidifying this change.

The power of these narratives about the two-edged characteristic of Mayon arises from the experience of its spectacular vista and its fertile slopes, as well as the intermittent devastation that it brings. In fact, popular lore has utilised the destructive aspect of Mayon in order to socialise and discipline children. To teach the value of hygiene, parents and nannies of young children threaten that unless they keep their hair clean and free of head lice, these insects will fly them off and drop them in the crater of Mayon¹⁷.

The cycle of rest and activity of the volcano became a cycle of tranquility and trauma among the people who had to live with a geological phenomenon that sustained and on occasions, took life¹⁸. Volcanic eruptions were among the natural calamities that visited upon the province, along with storms, plagues, and locust infestations. The earliest recorded beliefs about Mayon therefore indicated a mentality of coping and appeasement in the attempt to understand its nature and successfully navigate its wrath. There was a special rite of thanksgiving, *atang*, for the deity Gugurang which consisted of one-tenth of the harvest and partaken communally during the ritual. (Mintz, Britanico, 1985 :231). A ritual called *hidhid* in the ancient religion was a type of exorcism performed by a *balian* (priestess) on a sick person or after a calamity destroyed the town, like locust or pest infestation or typhoons (Goyena del Prado, 1981 : 27, 30.). Since *hidhid* was conducted when any public calamity destroyed the town (Goyena del Prado, 1981 : 27), we can infer that it was also performed after a volcanic eruption. This ritual was intended to help in the recovery and healing process of either the person or the community on whom it was performed (Goyena del Prado, 1981 : 27)¹⁹.

A New Perspective

Colonisers from Spain began to settle in Philippine towns and reconnoiter the islands by 1565. On account of the *patronato real*, friar missionaries joined the royal expeditions and they in turn went to various parts of the islands seeking the conversion of the indigenous population to the Catholic faith. The ancestral beliefs found by the Franciscan friars in Albay was connected to Mayon volcano. The people believed that their ancestors remained in the volcano and after some time returned to earth in different forms, some half-men and half-animals, some misshapen and black although this was not yet believed to be their final form. The friars decided to approach the matter directly by ascending the mountain with some of the men from the town in order to show them the error of their belief (Schumacher, 1987:70–72). The first friar to ascend was Fray Pedro Ferrer, OFM together with

some local men, but they abandoned him before they reached the summit. Next, Fray Esteban de Solis, OFM undertook the ascent with the same guides and this time one remained with the friar all the way to the peak. He then asked the man to call on whomever he wished of his ancestors to prove that they were not in the volcano and that such belief was only a deceit of the devil. Thus the man was convinced and asked for baptism; upon their descent a hundred more people from Albay were baptized. The spread of the story of the ascent and conversion led to more baptisms from other towns. Thus, the direct confrontation by the friar of the traditional belief was effective because he and the courageous guide were able to return alive, and with this tangible demonstration showed the folly of the old beliefs. (Schumacher, 1987:70). The shift in belief and allegiance was immediate but obviously needed sustained religious instruction to root out the deeply planted animism which held that the countless spiritual beings residing in natural sites could help or harm human life.

Thus one can infer that Mayon volcano had an active spiritual role in the rich tapestry of general and specific beliefs of the people of Albay. From being the pivot in the earlier animist belief, it became a stepping stone in which Christianity came to establish new world views, norms, and social order. The connection between Mayon and the spiritual world however, from the animist belief to the Christian faith, underlay the entire relationship of the people with the volcano.

Popular Perception of Danger Signs

As a geological event, the people who lived in the shadow of the volcano learned to interpret her numerous moods and managed to live under its constant threat. These warning signs of an impending danger were taken both from historical sources, particularly written eyewitness accounts of the 1814 and 1897 eruptions, and from ethnographic data from residents within the six-kilometer radius of the crater. Although separated by more than two centuries, the

changes they observed are notably comparable. We can discern from the historical records the people's perception of the volcano as their responses through time have been particularly similar.

The first record of its eruption was in 1616 but the first extended account was of the 1766 eruption. The latest documented eruption as of this writing was on 12 August 2014, putting at 51 the number of recorded eruptions of Mayon, in varying intensities and characteristics²⁰. The Philippine Institute of Volcanology and Seismology (PHIVOLCS), classified hazards created by Mayon eruptions in four interrelated kinds: airfall tephra, lava flows, lahars, and pyroclastic flows²¹.

The physical signs of danger perceived before an eruption give the people a sense of security that they will not be caught unaware of an impending eruption. There are some four signs according to current oral lore: unusual animal behavior, the drying up of springs and wells, the presence of a visible glow, *banaag*, at the crater, and the smell of sulphur. Historical records also document thick smoke and subterranean rumblings (Calleja, Sierra, 1928:2).

Farmers living in the slopes of the volcano recount stories heard from their elders about finding animals in their vicinity, primarily snakes, monkeys and wild boars coming down from the higher zones. This unusual occurrence gives them a first warning about an impending eruption and would begin watching the volcano more closely. Nowadays, however, there are no more boars and monkeys because they have lost their habitat as there are no more trees in the higher slopes; these had all been burned by the lava flow of successive eruptions²². They would find snakes inside their houses, especially if these had cement floors which were cool. In the Mayon Planetarium and Science Park situated 2,802 feet above sea level, roughly halfway up the volcano, snakes would be seen in the cemented parking lot²³. These would be warning signs but the eruption would not yet be imminent. One resident found it similar to warning signs of a coming typhoon: if they saw a bird species that was not from the mountains but rather a species from

near the sea, they would prepare for a typhoon to hit land within a week's time²⁴. Unusual animal behavior would extend to their farm animals – carabaos, cows, pigs. These will not run away but they will observe them to be very noisy especially at night, making low crying sounds and being noticeably disturbed²⁵. When they notice the nighttime crying of the animals, they will expect an eruption to occur in three to four days, so they will begin preparing for an evacuation.

The 1814 eruption recorded how the animals reacted to the ongoing disaster: the dogs howled, other animals grunted, and the birds made very shrill sounds (Calleja, Sierra, 1928:7). The chirping of birds was also taken as an expression of sorrow and animals such as bulls, carabaos, and dogs were observed moaning altogether, an *aviso* (sign) of imminent disaster²⁶. Native deers were still present during that time, as their howls were recorded as part of the animals' woeful lament on the ongoing 'infierno (Calleja Reyes, 1992 :227).' After eruption, the sense of normalcy was likewise heralded by the animals but with a difference in the sounds. The people again heard chirping birds, barking dogs, and mooing carabaos but this time seemingly expressing joy and deliverance (Calleja Reyes, 1992 :233).

Senior volcanologist Ed Laguerta affirmed that these unusual animal behaviors could be attributed to the temperature changes when the volcano starts acting up. Toxic gases particularly carbon dioxide begin to be emitted although not yet detected by humans and thus not in lethal quantities since as the gases come down from the crater, they become diluted²⁷. He clarified that the smell of sulphur can be detected only by hikers who go near the summit, while the escaping animals will be noticed by farmers in the upper portion of the volcano.

The drying up of springs is another visible danger sign²⁸. This would be noticed even by residents at the foothills of the volcano beyond the permanent danger zone. When they notice that even the springs in the lower areas dry up, they then begin to observe

the volcano very closely as it may erupt within three to four days. In 1993, people reported that the deep wells around the volcano had dried up, convincing them that an eruption was imminent²⁹. The farmers report that the springs do not dry up during an El Niño phenomenon; it is only with Mayon that the springs become dry. Laguerta explains that this is due to the presence of magma intruding into the surface and once the water passes through the rising magma, it turns into steam and the springs become dry³⁰.

Another physically observable sign is the glowing crater, or a light visible at the peak of the volcano. This is called *banaag* (light) that is seen especially at night. It indicates that the magma has reached the top or is already outside the crater itself, signaling Mayon to be closer to eruption than the other indicators. The glow at the crater is most visible if the volcano has not erupted in the last five years, so when it is detected it is a definitive precursory sign³¹.

It is from these signs that a resident within the permanent danger zone area stated with confidence that the volcano does not erupt without warning³². The danger however is when the warning sign comes too close to the eruption, as shown by the experience and evidence from at least two eruptions, the 1814 and 1993 eruptions.

The 1814 eruption was known to be the most destructive of all the Mayon eruptions. The explosion came within the hour of the first signs of danger. Of the numerous records of this event, one remarkable account was by a local storyteller who chanted in epic form the extraordinary tragedy of 1814, when the volcano 'rained burning stones (Calleja Reyes, 1992 :211–215).' Before the eruption at seven in the morning, the people awakened early on the first of February to see a cloud that 'appeared like a star' since it appeared to glow with a translucent light of changing colors. Being a strange phenomenon, they believed it to be a 'bad comet' so that they began to ask each other about its significance, as they had never before seen something akin to 'rare meteors' at the summit of the volcano. At the centre of this group of multi-coloured lights was a brilliance that was surrounded by a black

shadow that resembled the appearance of frothy ocean waves. More clouds appeared and the rain fell, when the 'comet' became much larger, greatly frightening the people. Then they heard sounds in the distance, similar to dynamites being set off in the mines, as the mountains trembled. The cloudburst rose with flashes of fire and light and then descended as dark ashes upon the greatly frightened people, accompanied by deafening sounds. After an hour, at 8 in the morning, the entire Albay province was shrouded in darkness and the winds suddenly stopped blowing. However, the bulls, carabaos and dogs kept moaning in the villages which the people took to mean as a warning of greater disaster. Soon enough, as darkness covered the town, lava, ash, boulders, fire and sand rained on them so that the townspeople thought that the end of the world had come. Lightning, thunder and the toxic fumes were relentless as the hot sand and flames fell on the people comparing them to suffering the pains of hell, so that they seemed, the same eyewitness remarked, 'to have lost their senses and forgotten their loved ones'. The explosion was immediately followed by a powerful earthquake that heaven and earth moved, mountains and hills shifted and the sea water rose. After six hours of eruption and rampage, Mayon slowed down. The silence of the dead reigned, and slowly signs of life emerged: sounds of birds, dogs, and carabaos. People emerged from their hiding places and found their homes and church burned to the ground, and thousands dead.

During the 1814 and 1897 eruptions, the people first experienced tremors followed by a column of smoke rising from the peak. The major 1814 disaster certainly taught the people to seek safety immediately upon these signals. In 1897, the townspeople of Libog town, now named Sto. Domingo, immediately hied off after an earthquake and smoke came from the volcano, but returned after a month when the earth seemed to have quieted down. However, they immediately fled again when the tremors resumed. Those who believed that the eruption would no longer be enormous paid for the mistake with their lives: three days after the resumption of the tremors, a strong explosion and earthquake unleashed rivers

of fire in different colors of blue, green and red (Calleja, Sierra, 1928:25). The ashfall covered the sun, and the summit became like a huge glowing ember with lightings and thunderbolts so that people began to panic, running with their belongings and falling, losing their serenity and possessions all at the same time.

During the deadly 1814 eruption, tremors were felt the day before the eruption. However, there was not sufficient warning for the people to flee to safer ground as the volcano erupted right the next day beginning with stronger tremors at daybreak and followed by huge columns of smoke with varied colors. This fascinated and frightened the people but there was no attempt yet to evacuate. It was only after a deafening blast and the heavy sand and ashfall that enveloped them in darkness when they realised that something big was happening, which completely threw the people into panic³³.

The 1897 eruption coincided with the Philippine revolution against Spanish colonialism, and while the Tagalog provinces were caught up in the fires of the revolt, Albay residents feared another kind of threat. The June 26 eruption had been preceded by a month of rumblings, billows of smoke and fire that kept the people awake at night. Lava would flow down the slopes and ashes and stones fell. The people believed that the volcano might burst into fragments, release all the fires within her and burn all the surrounding towns (Ataviado, 1953: 52.). The height of the volcanic activity on June 26 was preceded by a deceptive calm, making the people believe that the eruption was over, until a deafening blast and a violent quake came in the afternoon. Yet the people still did not flee even when the cloud of volcanic dust blackened the sky. It was only when the farm residents came rushing down the slopes that the people in Sto. Domingo began to flee to safer locations. However, it was too late for some four hundred people who were overtaken in flight or unable to leave their homes due to the suddenness of the explosion (Ataviado, 1953:55). Stories remain of how rescuers who first arrived in Sta. Misericordia village in Sto. Domingo found people who seemed to be frozen in time doing their normal tasks, carbonised during the eruption: families gathered

around the table, a woman looking out the window, a farmer in the field³⁴. The senior volcanologist confirms this saying that the victims were mummified, suffering instant death in the same way as the victims of Mt. Vesuvius in 79 AD³⁵. In the succeeding 1928 eruption, only one person was recorded to have died of the volcanic gases, a man who had originally escaped from Malilipot, Albay with his family but returned in order to harvest the sweet potatoes from his farm (Calleja, Sierra, 1928:56).

The violent eruptions caused great terror and hysteria among the people, who did not know what to do or where to go: distraught women ran out into the streets carrying pillows or utensils believing they were holding their babies, and when one realised her error she sought to return to their house but it had already been carried off by the lava flow; others were like madmen dashing all around looking for missing family members; everywhere lost children were crying out for their parents (Calleja, Sierra, 1928:31–33).

When the volcano emitted glowing rocks in 1814, the people of Cagsawa and Budiao protected themselves with the skins of animals and with wood; those who were exposed died. Government census declared that 1,200 persons died, but tradition held that the deaths reached 20,000 persons (Calleja, Sierra, 1928:15). In the 1897 eruption which primarily ravaged Libog (Sto. Domingo) town, the people shielded themselves from the ashfall by wearing wet sacks which protected their eyes and noses. To escape from the intense heat, people plunged into the river or into water tanks and barrels and any other large containers, and the survivors had burns in some parts of their body that remained exposed (Calleja, Sierra, 1928: p. 30). Casualties were officially tallied at 350 persons most likely due to pyroclastic flows, with the violent phase lasting for 17 hours³⁶.

There were those who knelt down to pray in sorrow for their sins, while there was complete pandemonium as people ran down their homes shouting, crying, seemingly dazed and unable to recognise even relatives (Calleja, Sierra, 1928:7). Some died of cardiac

failure. No one could speak and the only sound they could make was prayer. Dogs and other animals, including birds, made sounds 'of despair'. Religious officials were among the first to respond for help, beginning with the Bishop of Nueva Caceres which administered Albay province, and the provincial governor together with parish priests who also contributed money to aid the survivors.

Experience vs. Science

The accounts of the major eruptions from the late 19th century until the early 20th century reveal how the local government began to formulate a policy for the people's welfare during eruption.

In 1928, the rumblings began in January although the eruption did not occur until June. During this time, science and experience were at odds, as the learned assured the people that the emissions were steam, while the elderly were convinced that it was smoke. By June, when fire became visible at the crater, 'experience won over science' and at the end of the month people were beginning to flee to safer grounds as lava spewed out of the summit (Calleja, Sierra, 1928:42). The people ridiculed the 'knowledgeable scientists' and scornfully imitated their pronouncement of 'there is no danger if there is no explosion' with derisive gestures (Calleja, Sierra, 1928:44). It did not help at all that these scorned experts spoke to the people wearing gas masks, which only added to the alarm. The provincial governor, advised by the experts, issued a circular indicating where the people should go in case of a massive eruption. Unfortunately, the designated towns for evacuation – Malinao and Polangui – were remembered in folk tradition to have been destroyed in a previous eruption and therefore they considered as a death sentence the order to evacuate to those areas³⁷ (Calleja, Sierra, 1928:48). The evacuation plan was likewise impractical as the people were told to wait for the governor's order before they should leave, and therefore it was a complete failure as nobody delayed their escape and not to the designated areas either.

In 1993, a similar conflict occurred. The explosion on 2 February that year caught the volcanologists flatfooted, noted the newspapers, and they could not immediately determine whether it was an eruption or just a ‘mild ash emission’³⁸. Moments before the eruption, however, German and Israeli tourist hikers near the summit of the volcano heard an ominous rumble and smelled the stench of sulphur, then a column of ash rose from the crater and the debris fell down the slopes, fortunately opposite them³⁹. An immediate evacuation was ordered for tens of thousands of residents as the PHIVOLCS raised the alert level between three and four (out of five), indicating an imminent hazardous eruption⁴⁰. Media played up the danger with screaming warnings of a ‘big bang’ and a ‘tidal wave’⁴¹ and forcible evacuations were carried out by armalite-carrying military men who enforced a 10-kilometer ‘no-man’s land’ from the summit of the volcano⁴². A countdown for eruption was begun as the PHIVOLCS director, Raymundo Punongbayan, predicted an eruption for the following day, the 7th of February due to the combination of full moon and high tide⁴³. However, no such eruption occurred and after a week civil officials had a difficult time keeping the residents in the evacuation centres⁴⁴. Due to the alleged failure of the PHIVOLCS to warn the public about the start of the eruption, the governor of the province announced, not without political interest, that he would file a ‘multi-million peso lawsuit’ against government scientists and lodge separate ‘homicide charges’ against the volcanologists due to the deaths that resulted from the initial blast⁴⁵. The Director of PHIVOLCS, Raymundo Punongbayan, became a hate figure in the Bicol region for the agency’s supposed incompetence in monitoring the volcano and failure to warn the people on time, thus resulting in at least 70 deaths⁴⁶. Two years earlier during the Mt. Pinatubo eruption, Punongbayan had shot to celebrity status for his accurate prediction of that eruption as well as his authoritative discussions of the 1990 earthquake that devastated northern Luzon island, so that he had been proposed as a presidential candidate in 1991 and then in 1992 was invited to join the administration’s senatorial ticket⁴⁷.

Volcanologist Ed Laguerta believes Punongbayan made the prediction of a major eruption – labeled by media as a ‘big bang’ – in order to mitigate the disaster⁴⁸. Having just experienced the Pinatubo disaster two years prior, they were concerned about a huge eruption and wanted the preparedness to be at a maximum. This earned a lot of skepticism and distrust from the people.

This disjunction between experience and science is captured in the persistent popular belief in the town of Tiwi, Albay where the patron saint is the Blessed Virgin Mary under the title of Our Lady of Salvation. This image has reportedly warned the people of impending disasters and other dangers when her image would disappear from the church and when found, they would see thin spikes of the *amor seco* (*Chrysopogon aciculatus*) at the hem of her dress, indicating that she had walked around town to tell people to prepare for an oncoming danger. They relied more on looking for these flower spikes on the Virgin’s dress than on any advice from government agencies⁴⁹.

An Apocalyptic Experience

Eruptions of the volcano have consistently been regarded as a religious phenomenon. The recorded memories of the eruptions capture the pandemonium and shock and generally describe the eruption as the day of apocalypse. The usage of the terms *el fin del mundo* (the end of the world), *el tribunal divino* (the divine tribunal), and *que tendrá este mundo al fin de sus siglos* (when the world will come to the end of its centuries) highly suggest the visualization of the Christian judgment day, the catastrophic hour of purging the world of its sinners (Calleja, Sierra, 1928:7; Calleja Reyes, 1992:225). In the 1814 song of the native bard, the people interpreted the appearance of the bright comet as *cometa aciago* (comet of bad omen) (Calleja Reyes, 1992 :215).

There is one popular reaction that connects the various eruptions throughout history: the people’s spiritual response to the event. In 1814, when the volcano exploded in a plinian-type eruption⁵⁰

emitting ash, rocks and firebombs, the fear silenced the people and some lost their minds, but ‘almost everybody knelt down to pray (Calleja, Sierra, 1928:7).’ The religious outlook of the people could only have been reinforced by the story from the town of Budiao, whose entire population perished in the 1814 eruption except for the parish priest, Fr. Juan de la Torre. He fled with such haste and trepidation that he was without his hat and took shelter behind a coconut tree, with ‘two pigs from the town, two from the hills, a crow with broken wings, and a skinny rat with its young [...] all brothers united in holy peace (Goyena del Prado, 1981: 156).’ The priest’s remarkable survival was definitely something that would have gained the attention of the people. Being a priest, the testimony of his survival would be a powerful tool to engage the Albay people to the teachings of Christianity.

In the 1897 eruption that severely affected the barrios of Libog, Albay a story went around that the town itself was spared because the people were warned by a priest to flee to safety because of an impending eruption. No one had seen him before, a pious-looking foreign priest holding a rosary who asked them to pray it so that they may be saved. The town was spared and people began looking for the priest who had saved their lives but he could not be found. Based on their description of his cassock and the rosary, the parish priest showed them a picture of Sto. Domingo (St. Dominic) de Guzman, whom they immediately recognized as the priest who had warned them of danger⁵¹. The town of Libog was later renamed Sto. Domingo in his honor.

In 1993, prayer rallies were held as people began evacuating and preparing for the ‘big bang’ and a High Mass was offered in the Albay Cathedral, with rosary crusades undertaken in the evacuation centres⁵². More dramatically, an outdoor mass in a field within the danger zone was offered as thanksgiving for the lives that were spared and as petition to God to stop the volcano from erupting⁵³. The people’s reception of the mass was significant, with a resident saying that they had to hold the mass in the field

within sight of the the volcano and confess their sins ‘so that Mayon will calm down⁵⁴.’

At present, the PHIVOLCS has removed its observatory from the Mayon Skyline in Tabaco City. This was effected after the 1991 Pinatubo eruption when Punongbayan declared that those who warned people of danger should not put their own lives in danger⁵⁵. Interestingly, the highest structure now in the Mayon Skyline is a chapel built by private devotees, and a cross dominates the skyline. Called the Holy Rosary Mountain chapel, it began as a makeshift structure in 1987 and is now a concrete building housing numerous religious images donated by devotees. A lone volunteer takes care of the chapel which had a difficult relationship with the Catholic priest of the parish, who had previously believed them to be a cult⁵⁶. This was caused by the attraction of the place to the *Rizalistas*, a religious cult based in Mt. Banahaw, that believes in the divinity of the Philippine national hero Jose Rizal. The Rizalistas used to come in pilgrimages to hold their rituals in the parking lot of the Mayon Planetarium. The arrangement and lay-out of the images in the chapel does resemble the look of a chapel in Banahaw and it is sustained by the donations of devotees who are called *kapatiran* or brotherhood, just as the Rizalist cult members are referred to. A title of one of the images of the Virgin Mary in the chapel is Our Lady of the Most Holy Rosary of Mount Mayon, which is an adaptation by the local residents. Its feast is celebrated on October 17 each year⁵⁷. The new parish priest has been more conciliatory with the group and now celebrates a mass in the chapel once a month, on the second Saturday. Beginning in 2017, an annual mass was to be celebrated by the bishop of the diocese, Bp. Joel Baylon, DD⁵⁸. The civil government has likewise added to the the religious atmosphere of the Mayon skyline by putting up crosses on the roadside to signify the 14 stations of the cross. Annual stations are prayed during the Holy Week, with the priest carrying a cross, from the foot of the volcano all the way up to the Holy Rosary mountain chapel.

Mayon volcano therefore continues to threaten the lives, properties and crops of the residents but also more notably transforms the socio-cultural and religious interactions of the people. It continues to be a significant and relevant factor in shaping their coping mechanism to hazards and risks, and in the formation and development of popular spirituality.

The beliefs, knowledge, and spirituality of the people fuse into a life and culture that has been called the normalization of threat (Bankoff, 2007:26). A young boy in the hazard zone in Pawa, Legazpi City, asked what he would do in case of an eruption, broke into a wide grin and replied without any trace of fear, 'Run! Other than the adaptation manifested in the material culture and economy of the Filipinos, one may also cite the popular perception and lore as an evidence of the communities and individuals' acceptance of hazards and disasters as a 'frequent life experience' (Abrera, 2003)." The folk manner of managing the disaster is a historical continuity that passes on from generation to generation, despite the creation and implementation of disaster laws and plans, and the continuous scientific and technological progress on eruption hazard and risk mitigation and management spearheaded by the government and non-government institutions. This folk knowledge was emphasized and justified in the 1897 eruption, in which the people who originally went out of the volcano's reach yet came back as the volcano acted peacefully. This was the initial situation until Mayon had started to rumble, emit smoke and ashes, lava, and hail, and create havoc, to which the authors of the account blamed that the people "trusted their calculations which were more or less logical and scientific, more than history and tradition our forefathers bequeathed us (Calleja, Sierra, 1928:12)." There are themes which traverse through psychology, sociology, and ethnography that may be used to understand the narratives of eruptions.

In the context of Mayon disaster, appeasement is molded by the spiritual background of the people. It is the folk interpretation of the disaster, in which safety and salvation reside in calming the

volcano through pleading with God. During the precolonial times, appeasement was seen as a direct solution since the gods such as Gugurang and Kalaon were the cause of eruptions as symbols of their wrath. This process was modified in the context of Spanish colonial period, in which the Christians would call on to God to quiet down the fury of Mayon, or spare them from tragedy. Eruptions are a frequent and normal life experience and it is in the hands of the God to take control of the situation by calming the volcano and rescuing them from any hazard.

Resilience works towards the ability to control the situation of danger, the acceptance of loss and the conditions under which the loss occurred. The religious culture of the people plays a major role in understanding their situation and holding on to their faith in order to navigate through the danger. Spiritual appeasement and bargaining came to the fore when "in the presence of that horrible spectacle [...] almost everybody knelt down to pray. Some genuflected, prayed acts of contrition and asked mercy from the Almighty (Calleja, Sierra, 1928:7)." The precolonial people had made offerings or *atang* to Gugurang in appeasement. Christianity redefined the acts of appeasement by addressing such to God and shifting the material offering to a spiritual sacrifice. Bargaining turned toward spiritual potentialities: a renunciation of sin and the promise of moral and spiritual correction. As it continues from the precolonial mentality to the present, the actuality of disaster is believed to be justified by the people's excesses and sins. The disaster is accepted as justified due "our excesses": the 1814 catastrophe was explained by the native bard as a punishment from heaven (Calleja Reyes, 1992 :223). Processions, masses and confessions erupted alongside the 1993 and 2017 volcanic activities. Atonement has been made constant through the erection of a chapel in the mountain itself.

Similarly, humour has sustained the people through the various dangers brought by nature. After the 1897 eruption, "survivors were telling jokes while collecting grotesque disfigured bodies of the dead (Bankoff, 2007:28)." A friar's comment was recorded,

“The pain in their hearts was great but the jokes were compared to water that extinguishes fire (Bankoff, 2007:28).”

Conclusion

Their coexistence with Mayon has given the residents of Albay a familiar and confident relationship with the volcano born of experience. This has produced folklore that reflect both the benefits and the misfortunes they derive from Mayon and reveal their benevolent as well as sacred relationship with the volcano in pre-Christian times.

The popular perception of warning signs prior to eruptions shows a keen observation of the characteristics of Mayon, from the uncommon behaviour of animals to that of the volcano itself. These danger signals that they read from natural phenomena are the same in both the historical and ethnographic data. The keen familiarity with Mayon among those who live in the danger zones has enabled them to distinguish characteristics of new phenomena such as El Niño from signs of volcanic activity, assuring them that they will not be caught by surprise by any eruption. This practical knowledge has actually been verified and explained by science, as represented by the government agency that monitors volcanic and seismological activity.

The technical knowledge and equipment came only in the 20th century, however, leading the Mayon residents to remain sceptical of the official predictions of eruptions and policies on safety and evacuation. Failure to be given their own farmlands has likewise contributed to the farmers' decision to remain in the slopes of the volcano where they continue to farm. The strong religious outlook by which the volcanic eruptions have been viewed persists; religious rituals have been adopted that fall within the domain of appeasement and atonement in order to stem divine wrath that is believed to be manifested in the eruptions.

The persistence of the religious interpretation of Mayon volcano is a significant factor in building up the character of resilience and the process of coping with its attendant disasters. This should provide both civil and religious leaders with a strong opportunity for engaging the people to educate them towards increased safety and compliance during times of heightened risk from the volcano. Mayon volcano has metamorphosed from being a precolonial seat of the local deities to a signifier of the Albay people's disaster adaptation, resilience, and coping and has become part of how they live their faith. It is not only a geographical landmark but also an embodiment of popular spirituality

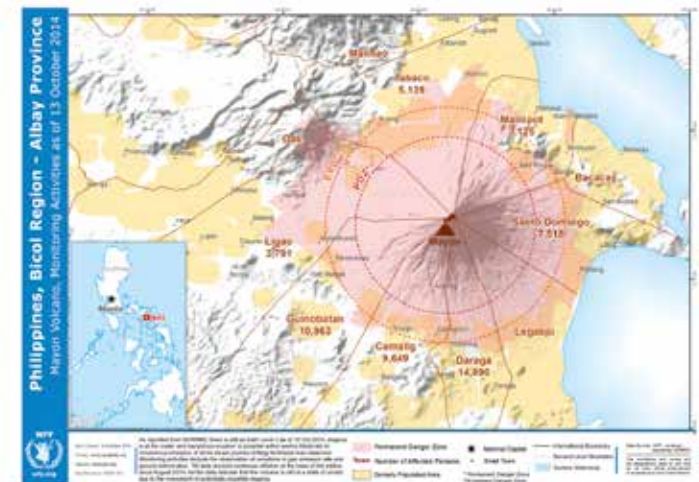


Fig. 1: Mayon volcano hazard map
Source: <https://geonode.wfp.org/wfpdocs/2176/>
A map of the 2014 eruption showing the permanent danger zone and the extended danger zone around the volcano.

3. HOW TO PREVENT SOCIAL DISASTER: THE USE OF PIG IN BLAAN RITUALS (MINDANAO)

Antoine Laugrand

Abstract

The Blaan of Malbulen dwell in the southeastern mountains of Mindanao. They settled in these uninhabited lands during the past eighty years, fleeing the lowlands and the crimes they had committed there. If the Blaan are protected by altitude from most ‘natural’ disasters such as typhoons, they remain at the mercy of ‘social’ disasters such as *tamduk*, or sickness. These disorders are caused by the *busaw*, evil spirits sent by humans to possess and kill their enemies. A murder endangers the whole society as it could lead to a *sbanù*, a blood feud that will last until one clan disappears – dies or flees. The Blaan have one way of preventing such a social disaster: the ritual of the *datah sdè*. It aims to push the *busaw* spirit that possessed the sick person, out of his body, by luring it into a substitute body, that of a pig. This chapter explores how *tamduk* sickness can occur among the Blaan, and how it is cured through *datah sdè* ritual that is described and further analyzed.

Introduction⁵⁹

The Blaan are part of one of the most numerous indigenous groups, or *lumad*, in Mindanao, Philippines (Gaspar, 2015). They practice slash-and-burn agriculture, and hunt boars and birds. The Blaan of Malbulen (Little Baguio)⁶⁰ dwell in a mountainous area, in the crater of the Latian volcano. They settled in these uninhabited mountains during the past eighty years, fleeing the lowlands and the crimes they had committed there⁶¹. Like many other indigenous groups in the Philippines, the Blaan practice the *sbanù*, or blood feud. Unlike the headhunting practices that took place in the cordillera (Renato, 1980), the Blaan take no prestige nor pride from taking one’s life. A *sbanù* simply begins with the death of a person. If there is no witness, or if the death is considered suspicious – e.g. after a sickness –, his *gakèd*, his lineage,

brothers and cousins until the eighth degree, will look for the person responsible for his death. They will mention every person he had a quarrel with before, and they will check if someone was recently seen roaming around his house. The reasons behind a murder are manifold, but in many cases, they are associated with stealing, jealousy, and extramarital affairs. Once a murderer has been identified, he is hunted by the avenging family until he dies or disappears. The killing of a person represents a blood death that must be returned to regain the balance of strength between both sides – or even fall back to another ‘disorder’ (Macdonald, 2019). If he cannot be caught, his close kin may be targeted instead. These conflicts are never-ending, and often the best solution is to flee. Such experiences led the Blaan of Malbulen to escape the lowlands in small groups and adopt a way of life that corresponds more to that of nomads than to that of sedentary peoples. With that many enemies, they built their houses on the mountaintops to ‘see and hear everything’, ready to fight or flee at any moment. Killing a murderer or killing one of his kin allows one to take back from the aggression. Conflicts can thus last for several generations, until a party disappears or when an agreement has been made. For the latter option, the intervention of a *bong to*, a ‘big person’, is needed. Just like the *datu* who ruled all over the Philippines⁶², the *bong to* are wealthy leaders in charge of negotiating with other tribes and resolving conflicts (Laugrand, 2018 :8). These powerful leaders can stop an ongoing blood feud by performing the ritual *sadyandi*, a blood pact that transforms one’s enemies into his own kin through drinking each other’s blood⁶³.

With the efforts of the Catholic Church and the introduction of the Filipino *barangay* system⁶⁴, the occurrence of *sbanù* with a machete or a gun is nowadays less and less common. The *imò*⁶⁵ – secret formulas used to kill enemies – are however becoming more and more popular. The *imò* are poisons that can be thrown using a blowpipe or mixed with coffee or food. This non-visible way of attacking the other guarantees the anonymity of the poison maker called *fun imò* (owner of *imò*). Using *imò* is a very effective way of killing your enemy without putting your own kin at risk.

But as they are secret formulas, an unexpected death or sickness is always suspicious and can lead to accusations. *Imò* and *shànù* can be thus associated with witchcraft, and as J. Favret-Saada placed it from her own experience with French witchcraft in the Bocage, ‘words are warfare’⁶⁶, meaning that even simple words can trigger a fight.

The Blaan have access to a health clinic established by a Catholic mission. They must comply with national health laws which make little sense to them. As an example, women are legally required to give birth in the *barangay* center of Little Baguio, which is located eight hours away on foot from the farthest areas! A foreign doctor offers his services, and several nurses are also present in the center. The Blaan are curious of biomedicine, especially of the opening of the human body, as they do not practice it themselves. Their own medicine⁶⁷ use *bulung*, a mix of plants and barks that are applied on wounds, or rituals that have the power to drive sickness away. The Blaan never open a human body on purpose.

If the Blaan are protected by altitude from most ‘natural’ disasters such as typhoons, they remain at the mercy of ‘social’ disasters such as the death of a close kin. Death is never thought as ‘natural’. It is a consequence of human behavior. If not caused by the machete or the gun, death generally occurs through sickness. For the Blaan, the disorders that we usually call ‘disease’ (from the perspective of the practitioner) or ‘illness’ (from the perspective of the patient), are of a different nature. The Blaan generally refer to sickness⁶⁸ as *tamduk*, literally ‘it hurts’. Some *tamduk* can be easily cured by a *mloos*, a kind of shaman or healer chosen by *loos* spirits that possess his body by ‘sitting’ (*mnè*) in him, and that lend him powers to heal. The ‘light’ sicknesses (*tukay*) *tamduk* – such as what we call fever, headache, diarrhea, malaria, amoebiasis, etc. – are named by the organ they affect, as in ‘*tamduk tien*’ – ‘it hurts the stomach’. Most of these can be cured with the blaan medicine called *bulung*. But when a person experiences strong and lasting pain that cannot be cured by *bulung*, it is said to be *kamdis*, a strong *tamduk*. Many expressions are used to describe those *tamduk*: they

refer to vitality, to the breath, to the sight, to the senses of hearing, smelling, tasting; to the body senses and to the *nawa*, the living breath or soul that resides in the human body and travels out during dreams. Such *tamduk* are treated in a very specific way. If not treated by a *mloos*, *tamduk* can lead to the death of the person. In other words, if the *tamduk* is left as is, it may lead to a social disaster for his family, and further to a social disequilibrium that must be balanced⁶⁹, as the family will want to avenge his death and kill the one who caused the *tamduk*. This can easily trigger a *shànù*, a blood feud. When a *tamduk* cannot be cured by *bulung*, it is said to have been caused by an *imò* – human-crafted poisons that affect the skin or an organ⁷⁰. The *tamduk* is materialized inside the body by the presence of a *busaw*, an evil spirit that is sent by the *fun imò* to possess its victim’s body and kill it. If the *mloos*, the healers, know how to cure most of the *tamduk*, in some instances evil spirits are too strong. To avoid a ‘social disaster’, there is an alternative, the strongest of all the rituals: the *datah sdè*. By cunning, this ritual allows the living ones to transfer the sickness from a person to a pig. This ritual is known and practiced throughout Mindanao. Kaulo and Manobo, two neighboring indigenous groups, perform it as well. Even the Bisaya, the ethnolinguistic majority that came from the lowlands, reach for the Blaan *mloos* to be cured from the *anting-anting*, the Filipino witchcraft⁷¹.

In this chapter I will first briefly introduce my research methodology and explain how I became aware of *shànù* practices using *imò*. I will then give an overview of the *mloos* and their relationships with *loos* spirits. I will further describe the ritual of the *datah sdè* on how to transfer a *tamduk*, and analyze its sequences. Lastly, I will explain how human and nonhuman beings are interwoven in ways that one’s actions can have consequences affecting the whole community, and how in such cosmology there can be no ‘natural’ disaster, but only ‘social’ disaster caused, prevented, and resolved by the humans.

Methodology

My research was conducted during five stays totalizing eleven months of fieldwork: between January 2015 and October 2019. In an unstable and rather volatile context brought by the presence of the Philippine Army and the New People's Army (NPA), a group of rebels that recruits its soldiers among the indigenous peoples, I entered the community of Malbulen through Fr. Pierre Samson, a catholic missionary who spent more than 45 years in the area and is well-known for his welfare among the community, regardless of their church. During my first stay, I focussed on learning the Blaen language. With the anthropologist Frédéric Laugrand, we organized two workshops on the intergenerational transfer of knowledge in 2015 and 2018⁷². These work activities consisted in gathering a group of elders and youths during a period of seven days. Each elder was provided with an opportunity to speak and share his/her knowledge through round table discussions. The participants shared their experiences as members of the community and about the history of their land. We recorded what elders and youths had to say and discussed with them the life stories and personal experiences they wanted to pass on to future generations. The anthropologists acted as facilitators in organizing such activities, asking questions to trigger the memories of the elders. All the information was recorded in the Blaen language, transcribed by the author and a team of Blaen youths, and translated to English by a Blaen translator. The verbatims of the two workshops were published in both Blaen and English languages (Laugrand, Laugrand, vol.7, 2021; Laugrand, Laugrand vol. 10, 2021).

Additionally, in 2018 I volunteered to be the translator of a foreign doctor, as he did not speak Blaen. I was his assistant during the surgical operations and the prescription of medicine called *tambal*, a Bisaya term used by the Blaen to name foreign medicine. It is linguistically separated from the blaen recipes called *bulung*. Every day at the health clinic we welcomed 'patients', although most of the time they were just curious people who wanted to see the 'white doctor' and test his skills and abilities. From this experience, I witnessed people that were affected by witchcraft or lighter

tamduk and who came to the clinic to see if the doctor was capable of curing them (see Fig. 1 and 2). The doctor observed that some of his patients were the victim of poisons, but his explanations to treat them did not make much sense for the Blaen. When he would explain the cause of the sickness, he would refer to a lack of hygiene or of proper use of medicine. When he would prescribe antibiotics and ask his patients to drink tablets for a specific number of days, the Blaen would immediately stop all medicine as soon as the pain was gone, as if the nature of the *tamduk* – literally 'it hurts' – resided in the pain itself. Their views did not match those of the doctor when he prescribed medicine. From his perspective the tablets must be taken until after the pain is gone, to guarantee that the sickness has been wiped out of the body.



Fig. 1. *Imò sifif*, a poison that causes the flesh to rot. Health clinic, March 2018. Photograph of the author.



Fig.2. *Imò butiti*, a poison that causes the stomach to swell. Health clinic, April 2018. Photograph of the author.

How to become a *Mloos*

In the Blaen language, *loos* is a generic term that designates the type of spirits that empower humans by possessing their bodies. Blaen also refer to them as *fun to*, owners of humans. A *mloos* is a person chosen by the *loos* spirits to be empowered. The 'm' prefix indicates an action, as in a verb; in this regard *mloos* means 'the one who activates the *loos* spirits.' According to the Blaen, the purpose of the *mloos* is to help the living ones, although they should only heal their own kin.

In 2018, during our workshop, Rosita, an elderly woman from Malbag, suddenly spoke about how she became a *mloos*, after having almost died of a *tamduk* in 2015:

You first need to be very sick; to the point that your kin think that there is nothing else they can do for you. You need to undergo twelve nights without eating, just vomiting and having diarrhea. When there is no more *noos* [wind] in your belly, and when your body and your face look like that of a monkey. [...] First there were beings that were born inside me. I was surprised, they were four, two men and two women. I took a stone and I hit myself, thinking it was just a dream. 'Why are you doing that?', my husband asked. I told him: 'This is just the effect of coffee.' I did not tell him [the truth]. During the second night, they [the *loos*] told me: 'Now we are following you, we will be part of you, and you, you will help others.' —'How can I do that? I don't even know how to heal!', I told them. 'We will advise you until the end, as long as you do not quarrel with others.' The two little women told me: 'First you will become very sick, you must clean your sins, until you agonize, until you vomit. When it be done, you will be clean.' I told myself, 'I am not dead.' They replied: 'No, you are not dead, we are inside you.' So I cleaned myself. A week passed, and I told them 'I am going to die, feed me.' And they told me: 'No, you will not be fed.' After ten days, the people in my family who were looking after me were worried, they said that I had enormous teeth and that my skin was swollen. After eleven days of starvation, my small body became big. I felt observed and followed. They [the *loos*] told me: 'You look bad, be careful; tonight, do not go to the doctor, follow us instead.' I went to the house of Minda [a powerful *mloos*], and she told me: 'the weather is beautiful, later you will speak with them [your *loos*; implying they will become one with Rosita]'. And her

prediction was accomplished. On the fourteenth night of starvation, I saw them slowly approaching... Then it was over, I did not feel pain anymore, I was clean. They told me: 'We are going to speak with you later, we will help you.' I have many granddaughters and grandsons, [when they are sick] they never go to the doctor, I am always the one who heals them. When I massage them, they become strong, they play. They told me [her *loos*]: 'never sin, never steal, never kill; if you ever sin, we will not be there anymore, we will be *msud* [gone, transferred] (Rosita, Workshop 2018).

After almost dying of sickness and starvation, Rosita was chosen by *loos* spirits that possessed her body. It is said that they *mnè*, they sit inside her body; a term that is also used to say 'to inhabit' a place. The spirits bestowed her their knowledge and healing powers, at the only condition that she respects a few rules: she must not misbehave and must only use her knowledge to help her own kin. If she violates this code of conduct the *loos* told her that they would leave her body and never come back, meaning that she would lose all her powers. The knowledge of a *mloos* is secretly kept within the *gakèd*, the close kin. Practicing since 2015, Rosita says she can communicate with her *loos* in her dreams, or whenever they want to speak with her. Her *loos* help her take care of her family; they advise her on the making of *bulung*, the Blaen medicine, and for the required treatments for the sick ones. Because of her powers as a *mloos*, Rosita can also see signs that others cannot. If she cannot sleep, or if she feels a breath (*mngu-hul*) in her back, it means that there is a problem with one of her kin. She is one of the few *mloos* in her village. *Mloos* can be male or female, but most of the time it is the role of women. Priests, such as Fr. Pierre Samson, are considered by the Blaen to be *mloos* because they are said to be empowered and possessed by their own Catholic spirits. In many other parts of the world, like among the Inuit, it is not rare to see missionaries being associated with shamanism by the people they seek to convert (Laugrand, 2002).

The one who knows how to cure *imò*, or poison, also knows how to make them. Some *mloos* have evil deeds and are chosen and empowered by evil spirits known as the *busaw*. The *busaw* have a

monstrous body, they live on the cliffs and inside the caves, the places where humans should not go. They spend their time lurking in the forest to hunt and catch the humans they eat dead or alive. They can possess the human body to slowly kill it, thus materializing the *tamduk* inside. When humans travel in the mountains, they must use cunning not to get caught. They carry mirrors and strong scents, and they put their clothes upside down to mislead the sight and the smell of the *busaw* (Laugrand, Laugrand, 2020).

In any case, the status of *mloos* is held secret to prevent others from accusing them of making *imò*. Only the *fikî* (fake, charlatan) make themselves heard in public, saying that they are *mloos*. Suspicious actions from the others, such as roaming around a house, or being invited by a stranger, are thus feared and avoided. *Imò* are made of plants, insects, fish, chemicals and spoken formulas. These poisons are prepared with real expertise and knowledge of the forest's components. The secret of a recipe and its effect guarantees the anonymity of the maker. But some of the *imò* are well known, and a secret business may take place.

When they are thrown with the help of a blowpipe, *imò* can damage the skin (see image 1). It can also be applied on a wooden stick called *imò flafà*, a poisoned stick that is placed on the path of its victim to surprise and kill him. The *imò salban* is a sharpened stick put in a hole and hidden by leaves so that the victim will fall inside and die. The *imò* can also be placed in coffee or food offered to a guest, as in the *butiti* (name of fish) that makes the stomach swell until it explodes⁷³. The *imò salmon-salmon* rotten the lips and makes its victim vomits blood. While most of the *imò* affecting the skin can be cured by the *mloos*, the *imò* that are consumed are usually fatal.

Once a person is affected by an *imò*, its effect on the body is materialized by a *busaw* that possesses and occupies an organ or a part of the human body. The only way to get rid of the *busaw* (and of the sickness) is to lure it, to have it transfer into another

body. The only way to do so is through the performance of the ritual of the *datah sdè*, the strongest healing ritual of the Blaen.

How to transfer the *tamduk*: the ritual of the *datah sdè*

Preparation of the ritual

The expression *datah sdè* comes from the words *mdatah* (highest, mighty, powerful) and *sdè* (pig); among the Blaen it is considered the greatest ritual for healing. It requires a pig, but it can also be done using two chickens (*enuk*) and called *datah enuk*.

After a *mloos* advised to perform the *datah sdè*, the sick person must sleep for three nights preceding the ritual in the house of one of his kin. He will stay there and hide until he is completely cured – at the time when the *busaw* will have lost his track. The *mloos* can be assisted by men or women who know how to do the ritual properly. But the *mloos* will be the one to organize and build all the necessary. Two days are needed for the preparation. The healer builds a *lewig*, a kind of shelter usually built to rest near the fields. The *lewig* built for the *datah sdè* is a miniature of a real house (see image 3).



Image 3. The *lewig*, a miniature house. Bolo-Bolo, July 2016. Photograph of the author.

It is erected with six pillars. Any wood can be used, with the exception of the *lagwang*, a tree that has red leaves, a color that symbolizes blood and attracts evil spirits. The roof is made of *kalon*, or coconut leaves. Four platforms are added, they contain several house items: cooked rice in bamboo, betel and areca nut, a basket, and a bag of rice. A machete, a spear, and a musical instrument *flintang* are hung. A chicken is tied under the *lewig*, and a pig is placed on a *klukub* beside the house, a miniature pigsty. A fire is lighted and a musical instrument *edel* is installed near the miniature house. The close kins participate in the preparation. They bring a pig and enough rice to feed all the members of the village who are invited to the ritual.

Dancing and shouting: to attract the busaw

When the *lewig* is built, the ritual may begin. While the assistants play music on their instruments, a woman dance around the *lewig* where the sick person sits. She holds a chicken, a basket, coconut and betel leaves. She begs the *busaw* that entered the sick person's

body to leave, performing large gestures with the chicken and the items to push the spirit away. A man catches the pig by its ears and follows the woman. He tosses the pig and raises it above his shoulders to draw attention on it. The man completes eight turns around the *lewig*. The dancers follow a distinct rhythm instigated by music that accelerates after each turn is completed.



Image 4. Dancing and shouting with the pig to attract the *busaw* out of the sick person's body. Bolo-Bolo, July 2016. Photograph of the author.

Dancing and fighting: to ensnare and to transfer the tamduk

Once eight turns are completed, two men arrive holding a blanket. They place themselves between the *lewig* and the *mloos* who now holds a spear. The spear represents the *busaw* inside the sick person's body. The *mloos* tries to come closer to the sick person by trying to cross the blanket. He is stopped by the chicken and the pig carriers. They dance and fight at the same time. The blanket puts the distance, as a moving wall. Following the rhythm of the music, both sides successively move forward, then backward, raising their weapons and animals in the air. The *mloos* frighten the human beings, threatening to affect with *tamduk* those who would get struck by the spear. The woman who carries the chicken is facing the *mloos*, she protects the sick person and his *lewig* using

the chicken and the basket as weapon and shield. The man who carries the pig stays behind her, moving left to right, he tries to draw attention on the pig, shaking it from top to bottom. The pig must squeal loudly to successfully bait the busaw. The kins may join the dance, beside the sick person, they shout and move their body to scare the busaw and show that the sick person is as strong and vigorous as they are. On the opposite, the pig must look like it is vulnerable. The man carrying the pig turns around the lewig four times and confronts the *mloos* again.



Image 5. Dancing and fighting to ensnare and transfer the *tamduk*. Bolo-Bolo, July 2016. Photograph of the author.

To read the entrails, to get rid of the tamduk

Then, it is the victory; the humans let the spear-carrier – representing the *busaw* – pass through the blanket and touch the pig. It means that the *busaw* has successfully been transferred from the sick person's body to that of the pig. The pig is triumphally lifted in the air and brought on a platform of the *lewig* where it is laid on its right side, facing the rising sun. The *mloos* slowly pierces the pig's heart with the spear, making it shout again, and pour its blood on a bucket. Some of its blood is thrown away; the rest is kept to be later mixed with the meat. One of the participants marks the *lewig* and the forehead of the sick person with blood, a gesture

showing that the *tamduk* (or the *busaw*) was successfully transferred away. The pig is then opened by the *mloos*. He tries to locate the place (*banwe*), or the organ that the *busaw* affected – occupied. He is looking for *lawà* (literally cobwebs) on the organs, or any wound, scorch, rottenness, or abnormality of the pig's insides. Once the affected organ has been identified, it is removed and thrown along with the six pillars used to make the *lewig* in the direction of the rising sun. The effect is analogical because removing the *tamduk* from the pig also removes it from the sick person. The *Blaan* never open their own bodies to treat sickness – conversely of what the doctor does in surgical operations –; they use the pig's body instead to identify the sickness and remove it.



Image 6. Following the transfer of the sickness, the *mloos* and his assistant triumphally lift the pig. Bolo-Bolo, July 2016. Photograph of the author.

Sharing the meat to be collectively immunized

Pig's meat is then separated into eight parts. Four pieces are cooked on the fire with the blood and eaten by all the participants of the ritual. The sick person keeps the four other pieces to be eaten afterwards in the house where he hides. All the participants must eat the meat to be immunized against this *tamduk*. Whoever refuses to eat is endangered of becoming sick – to be affected and possessed by the *busaw*.

Conclusion

Pig is cunning

The *lewig* is the center of the action. The sick person sits inside while the *mloos* and his assistants dance around the structure. This miniature house instigates different scales. Three days before the ritual, the sick person must swap home. He sleeps in one of his kin's house until the ritual is over and until he recovered completely from his *tamduk* – at the time when the *busaw* will have lost his track and stopped affecting him. For this to happen, the *busaw* must first believe that the sick person now lives in the *lewig*, the miniature house, where the sick person sits. In Blaán spatial practices, the place where one sits (*gumnè*) is associated with the place that one occupies, that one inhabits (Laugrand, 2021:58 – 61). In fact, the *lewig* possesses all the features of a real house: a roof made of *kalon*, or coconut leaves, six pillars, several platforms that divide the structure into separate rooms. Common house items such as rice, basket, spear, and plants lay on the floor. A chicken is kept under the bamboo floor, and a pig is placed in an enclosure nearby. All the main elements of a real house are present to make this fake house realistic (see images 7 and 8).



Image 7. A Blaán house. Malbag, August 2016. Photograph of the author.

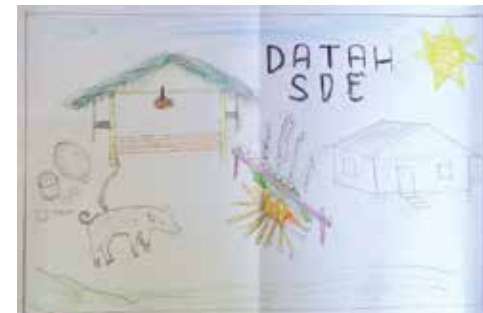


Image 8. Drawing of a *datah sdè*. The miniature house, or *lewig*, can be seen on the left, while the real house stands on the right. Drawing by Lory Macatunao, 2015.

To attract the *busaw* out of the sick person's body, the humans must lure the *busaw* onto a human space, where its human prey live. To prevent the *busaw* from coming back among them, all the participants must separate themselves from the fake house where the ritual was conducted. The dishes used to eat are left on site and unused for three days. The *lewig* is then burnt to make the

busaw believe that the person affected has died⁷⁴. Part of the pig's blood and meat are thrown in the direction of the sunset, where the *busaw* originates; it is the opposite direction of where the *mloos* threw the affected organ and the six pillars of the house. All these gestures aim at deceiving the *busaw* so that he loses track of the sick person. When the humans burn the *lewig* – as if the sick person had died –, it is intended to make the *busaw* believe in his fake death in his fake house.

The *datah sdè* is also marked by different sounds. During the ritual, music frames a specific time and space, that of a ritual, a dance and a fight. The acceleration of the musical rhythm accompanies the gestures until the peak of the action is reached: when the spear passes through the blanket and touches the pig, marking the transfer of the *busaw/tamdruk* to another body. Several actions of the ritual emphasize repetitions. The pig carrier repetitively dances eight times around the *lewig* where the sick person sits. The pig's meat is divided into eight pieces: four for the sick person and four for the other participants of the ritual. The number eight thus symbolizes sociality at its best⁷⁵. It is used for marriage, as one can marry one of his cousins only after the eighth degree. One can have up to a maximum of eight wives. The lineage of man is said to start with the eighth child of Noah. Among the Mangyan Patag and many other groups, the number eight embodies a totality, a set of four pairs (Luquin, 2004 :408). In these cosmology settings marked primarily by analogism (as well as animism) (Descola, 2005), the duality of beings prevails. Humans, animals, as well as manifold nonhuman beings, possess a body and a soul that can be separated through dreams or rituals. Their interiority can pass from one body to another. The transfer can either empower, sicken, or cure a person.

Pigs and *mloos* are mediators between worlds and bodies. They alone can prevent the imminent death of a sick person victim of an *imò/busaw*, and the social disorder that would follow: that of revenge and vendetta (*sbanù*). The *mloos* have the power to carry the spear representing the *busaw*, thus acting as mediators between

the humans and the spirits. The body of the *mloos* itself is inhabited by *loos* spirits. The motions of the pig lure the *busaw* away. By squealing, the pig exposes its vulnerability, inviting the *busaw* to attack it. The pig is the only body that can be substituted to a human body⁷⁶. Its sound is essential as it draws on it the attention of the *busaw*. In the Philippines, pigs are the most used animals in rituals as they often play the role of mediators. For instance, among the Alangan (Laugrand, 2015 :201–227, Laugrand, Laugrand, Tremblay, 2018 :274–288) and the Tau-Buhid of Mindoro (Rosales, 2021:137–151.), as well as with the Ibaloy of the Cordillera (Laugrand, Laugrand, 2019 :105–124), pigs must squeal and speak for the humans to request help, benediction or guidance from spirits, deities, or ancestors. Here, the pig is also a mediator as its body is used to trick the *busaw*.

To prevent social disaster

Among the Blaan the use of pig can prevent social disaster: the potential death of a kin member affected by *tamdruk*. Because it would be associated with an *imò* aiming to kill its victim, it would further trigger vengeance from his own kin to avenge his death and cause a *sbanù* to occur and prompt one side to either fight or flee. Sicknesses are thus conceived by Blaan as potential social disasters that are caused by humans, but that can also be prevented by them. Blaan medicine makes a distinction between the herbal *bulung* that are used with light *tamdruk*, and the ritual of the *datah sdè* to cure strong *tamdruk* caused by *imò*. Cunning appears as the best way to deal with *busaw* spirits.

Social disasters are caused by the actions of human beings and must be thus resolved by them, or prevented using the power of the *fun to*, or *loos*. In the Blaan language, it is relevant to note that such conception as to what ecologists call 'natural disaster' or 'natural hazard' is never conceived that way by the Blaan. Spirits called *fun*, literally the 'owners', own the land and every place. They own the animals and every living thing except the humans. Natural occurrences such as an earthquake, a typhoon, a branch that falls,

a strong wind, a bird that sings, etc. are associated with the actions and intentions of the *fun* spirits that interact and send messages to the humans. One could argue that in such cosmology, there can only be social disasters, where the humans, by their actions and behavior, are the ones causing disorders materialized by typhoons, earthquakes, sicknesses, etc. For the Blaen, specific rituals and gestures must be performed to restore the equilibrium – or pass to another disequilibrium – of the world.

Spirits play an important role, as they are the ones helping the *mloos* healers to mediate between the bodies, and at the same time, they are the ones affecting and materializing the *tamduk* in the human body. Spirits are powerful and feared by humans, but they can be dealt with by deceiving their body senses to confuse them and make them believe in a fake house, a fake death, and a fake body.

Humans sit (*mnè*) to inhabit. They occupy the places (the bodies) of *fun* spirits. Conversely, the *loos* sit in the bodies of the humans they occupy to grant them knowledge and powers. The *busaw* take possession of a human body organ to inflict a *tamduk*, a sickness. When they settle to another place, the humans destroy their home by burning it. Conversely, when *loos* occupy the body of a human, they may bring it back to life after causing the death of a *mloos*, or attempt to destroy it when a *busaw* causes a *tamduk* to a person. From the human point of view, inhabiting is never permanent, it is a temporary action. It is a logic of inversion: humans possess a body that they move on places that they occupy, while *fun* spirits possess a place that they inhabit like a body. The latter may occupy human bodies to make them sick or grant them powers. It is also a homology between the interior and the exterior, from the body to the place, and from the place to the body. Possessor or occupant, it all depends on the perspective one takes. To use the words of E. Viveiros de Castro, only *mloos* and spirits are capable to change their ‘perspective’, or ‘clothing’ (Viveiros de Castro, 1998 : 429-462.). We can see here a type of perspectivism, not Amerindian, but Blaen.

The very notion of pain – *tamduk* –, as well as the process of curing a sickness, is not only about the sick person; it is rather connected to the whole collectivity: his kin and allies, as well as enemies. The Sword of Damocles hanging above their heads is a mass killing, a blood feud. Thus, a sickness that can lead to this social disaster must be prevented at all costs. Here, the stakes are entirely different than those concerning a patient among naturalist biomedicine. In this latter perspective, pain and sickness are associated with individual issues, either physical or psychological. The close kins of the patient are generally believed to be of secondary interest.

Addressing schizophrenia and other ‘cultural’ sicknesses, ethnopsychiatrists like Toby Nathan, Isabelle Stengers, and Philippe Adréa (and before them, George Devereux) have worked towards creating a therapy that goes beyond cultural boundaries. Their objective was to establish for the therapists a method to understand better their patients coming from different contexts, by acknowledging the connexion of the individual to his group (Nathan, Stengers, Adréa, 2000 : 9–43). While the idea of conciliating anthropology, ethnopsychiatry, and biomedicine is tempting, we can wonder if the Blaen cosmology isn’t just simply incompatible with that of biomedicine? Incessantly troubled with the distinction of ‘biological’ and ‘cultural’ sickness – or the ‘real’ sicknesses and the placebo effect –, biomedicine is struck in a corner when it is confronted with other cosmologies that do not use the same images.

In 1979, in a debate on sociobiology at Laval University, C. Lévi-Strauss pointed out that culture, or the experience of a society and its individuals, influences genetics much more than the opposite⁷⁷. Thus, the study of biological markers would lose much interest, in that its starting point would no longer be genetics, but social or cultural divergence; a task (that of explaining sickness factors) that would ultimately be much better suited to anthropology than to the ‘natural’ sciences. Following Lévi-Strauss, I argue that to understand Blaen conflicts like *tamduk* and *sbanù*, one must take it into its broader cosmological context, and not as a strict ‘health’ issue’.

PART 2

EXPERIENCING DISASTERS THROUGH THEIR PSYCHOSOCIAL ASPECTS

4. RUMORS, PANIC, AND DISASTERS: THE EXPERIENCE OF CANDELARIA TOWN IN QUEZON PROVINCE, PHILIPPINES, 1934 AND 2014

Kerby Alvarez

Introduction

The histories of disasters and disaster response in the Philippines have been an emerging focus of research in the social sciences. Philippine environmental history is being regarded as a pressing agenda in the reconstruction of local and national histories. Research and narratives concentrating on topics on the history of the Philippine environment, natural resources, environmental institutions, ecological science and management, and natural and man-made threats have been an evolving academic discourse. In times of disasters, rumors are one of the prime instigators of fear and panic to people. Whether in everyday life situations or cases of emergencies, rumors cause massive disruptions in the normative state or orderly thinking and response of individuals or a collective. And in many cases, panic experiences are unnoticeably repeated or become part of a cycle of events where people are rendered helpless. The panic and stress instigated by these rumors hamper the proactive way of responding to the dangers of situations caused by natural hazards. A study of these rumors provides an avenue where the complex interplay of local culture, scientific knowledge, and people's vulnerability can be viewed, mainly through how rumors dictate people's actions and views towards natural hazards. The mass hysteria of Filipinos concerning typhoons, for example, has a surmountable influence on the way they view and respond to such environmental threats. This 'cultural trait' of spreading and absorbing rumors, though maybe labeled as a product of collective panic, was once described in the 1930s by Jesuit scientist Miguel Selga as '*tifonitis*' or the 'mass state of fear of people in the archipelago due to the frequency or extraordinary intensity of typhoons.' (Bankoff, 2007:179).

This paper is a case study of how Filipinos perceive natural hazards in a local-traditional and scientific manner. It will examine the case of the Candelaria town in the province of Quezon (formerly Tayabas), wherein incidents of massive panic happened twice, eighty years apart, in 1934 and 2014. These events have similarities and portray a continuity of people's cultural consciousness towards disasters. A comparative diachronic analysis of the two events sheds light to the complicated conjectures of local knowledge and scientific norms and illustrates an image of Filipino vulnerability.

Figure No. 1: Candelaria Town in Quezon Province⁷⁸



Environmental Events as History

The history of natural hazards and threats falls into the discipline of environmental history. The study of the natural environments includes the method of analyzing how communities and societies changed physical landscapes. Hughes (2009) defines environmental history as the '... use of ecological analysis as a means of understanding human history', and an environmental historical narrative as '... an account of changes in human societies as they relate to the changes in the natural environment. (Hughes, 2009:4)

The study of the natural environments includes the method of analyzing how communities and societies changed physical landscapes, as well as how the natural structure of the earth dictated the form, nature and flow of human settlements. From this standpoint, we can see the value of the human aspect in reconstructing histories of natural hazards in the Philippines. Using physical environment-human being relationship, environmental history narrative will attempt to present conniving and competing facts and mentalities on the reconstructed narrative of historical events. It has been defaulted to environmental historians to cross and bridge two disciplines: history and geography. These two disciplines merge as ideological pillars in environmental history, as well as a manifestation of what Bankoff (2016) argues as 'transenvironmental' (Bankoff, 2016:335 – 357). Geographic knowledge can be used as a vital construct in examining the influence of the physical environment on human history. As a body of knowledge, geography 'includes above all the study of physical environment...', and the prime goal in interrelating it the historical reconstruction is 'to discover in what ways and to what extent this environment affected history.' (East, 1965:2).

From this standpoint, it can be profoundly argued the value of the human factor in reconstructing histories of natural hazards in the Philippines. Using physical environment-human being relationship, the narrative will attempt to present conniving and competing facts and mentalities on the reconstructed narrative

of historical events. As a body of knowledge, geography 'includes above all the study of the physical environment and the prime goal in interrelating it the historical reconstruction is to discover in what ways and to what extent this environment affected history.' (East, 1965:2). As history is merely, or should be, empirical and partly theoretical, it is important to craft the subject matter of the study into units of reality. Natural hazards belong to the long-standing, unknown past reality. We should view these hazards as events or set of events, that are isolated to the temporalities of human consciousness. As Inkpen (2011) argues, the 'isolation an event from a spatial and temporal continuum immediately highlights the explanatory framework...' (Inkpen, 2011:319). These are turning points, actual past events that cause changes to human communities and shakes the status quo of structures and social orders. The study will generally narrate historical realities about the Filipino environment through model events, such as natural hazards.

The natural sciences extensively explain the environmental in a detailed and mathematical manner. Reconstructing the history of the environment by centering on natural hazards produces a broader and wide-ranging intellectual landscape of events. The immanent nature of certain ecological sciences produces the laws governing the natural events and/or catastrophes; on the other hand, as this study will use, the configuration aspect refers to the 'series of states that have uniquely occurred through the interaction of immanent processes with historical circumstance: the context of the process. In other words, the configurational aspect refers to the particular history of an area and how that history altered that area (Inkpen, 2011:325). As Camba (2012) explains, hazards and disasters 'present an opportunity for a society to reflect both on its relationship with nature and on its relationship with itself.' (Camba, 2012 :217). A configurational approach to the occurrence of natural hazards is needed to extract historical ideas and mentalities from the disastrous events, thus making the study and all-encompassing attempt to look at the history of the Philippine environment. Hoffman and Oliver-Smith (1999) illustrate our understanding of hazards and disasters, as they

problematize the idea of human and human culture in between natural events. Disasters spring from the 'nexus where environment, society, and technology come together – the point where place, people, and human construction of both the material and nonmaterial meet. (Hoffman, Olivier-Smith, 1999:1). It involves a combination of a potentially destructive agent from the natural and technological sphere and a population in a socially produced condition of vulnerability (Hoffman, Olivier-Smith, 1999:4). Furthermore, they explicate:

'... The historical background of disasters comes to light through chronicles, archives, and annals. The relevatory documents may not particularly concern disaster; often they focus on political and economic matters, especially demographic shifts and food production. Even so, they disclose the creation of vulnerable segments, the policies, the prejudices, and actions that comprise the disaster conundrum and the minute and sometimes surprising ways in which societies recover. (Hoffman, Olivier-Smith, 1999:5)'.

Understanding how people have become vulnerable or eventually invulnerable to disasters can be viewed on how science contributed to the crafting of new knowledge pertaining to disasters. Towards the second half of the 19th century, the world recognizes science as the primary epistemological framework in human development. (Camba, 2011:120). These brought a new light in enriching the status of science as substantial for reforms, not just a prerequisite to divinity and salvation. Also, Spain at these times has accepted the new means in administering colonies, social punishments, and even their views on the cause of disasters (Camba, 2011:120).

Candelaria Town, 1934 and 2014

In times of hazards and disasters, rumors are one of the prime instigators of fear amongst people. Whether in typical life situations or in cases of natural hazards, they cause massive disruptions in the normative state of orderly thinking and response of people and institutions. And in many cases, these experiences are unnoticed or repeated, or become a cycle where people are rendered to be helpless; the panic and stress caused by these rumors hamper the proactive way of responding to the certain natural hazards.

The available collections of historical accounts of typhoons landings in the Philippines during the last three to four centuries can be classified into three: (1) reports of maritime accidents caused by typhoons at the seas, (2) '*cronicas*' (chronicles) of different municipalities and provinces, and (3) the organized meteorological observations from weather stations during the height of Manila Observatory's scientific development (1860s–1940s). From those collections, it appears that there are several forms and levels by which responses are manifested by the people. Bankoff (2007) concludes that most of the recorded typhoons were notable because of the intensity of destruction they brought, or for some divine nature of the disaster. (Bankoff, 2016:159). The intensity of damage typhoons brought can be primarily associated with floods, though the occurrence of the latter is not dependent on the former. The local accounts of peoples based on chronicles refer to flooding in connecting with the passage of typhoons (Bankoff, 2016:166, Bankoff, 2003:49). It was only in the end decade of the 19th century that the observatory was able to reach the provinces. This can be seen with the way people, and the colonial government, has responded to disasters, either in terms of mitigation or damage alleviation. But despite these, it can be observed the culture of townspeople to treat disasters as divine phenomena.

The 1934 Experience

One interesting case was the incident that took place in the town of Candelaria in Quezon in 1934. In a letter of Mariano C. Ramos

to the director Miguel Selga of the Philippine Weather Bureau (PWB) on 27 November 1934, the former asked for clarification about the rumors that spread in the town regarding a typhoon, and a subsequent flood, which will hit the town⁷⁹. In his letter, he said:

'Rumors has been rampant among the common masses in this locality right after the typhoon last November 15, that another typhoon is forthcoming before the end of the month. It is said that this coming typhoon is even more severe than the former and is characterized by a big flood. This locality according to the belief will be submerged in water some three meters deep although I know no big river to overflow likewise in Mauban, Tayabas. This belief is made stronger of [*sic: by*] the occurrence of [*an*] earthquake last night at about nine o'clock, which probably you are already aware of. Now that the undersigned considers you only the best authority on this matter, I hereby seek your comment with regards to this matter. As the belief has been formed without any scientific basis, which led me to doubt, but because of the excitement of the people, so I was forced to consult you. Also, please inform me as to the cause, origin, and extent of the last earthquake⁸⁰.'

In his reply, Selga clarified the issue, saying that the rumors have no foundation; that the town was well-drained and is hard to be flooded⁸¹. He considered such pronouncements as unsound, fatal, and detrimental to the public good, and cause suffering and anxiety in the mind of the people⁸². This correspondence exchange is just an example of the wide array of scientific investigations made by the Manila Observatory regarding people's beliefs on typhoons. For example, in the towns of Mauban in Tayabas, the people believe that during the 1873 and 1890 typhoons that passed by the province, there was a ball of fire called the '*fuegos santelmos*' (fireballs) at the center of the storm⁸³. This idea brought fear to people and considered it a sign of the end of the world. Related to this idea was the spread of rumors to some towns of Tayabas and Cavite, and in the farms of the Bicol region regarding a great typhoon that will hit their towns. As mentioned earlier, Selga of the observatory coined the term '*tifonitis*' to describe this collective state of fear. (Bankoff, 2016:179). An anonymous letter from an

old man in Mexico town in the province of Pampanga also spread rumors that a typhoon will destruct their town (Bankoff, 2016:179).

The 2014 Incident

A similar incident happened almost eighty years later. On 22 July 2014, a false tsunami alarm left one person dead and caused massive panic amongst the residents of Candelaria town in Quezon⁸⁴. Thousands of people crammed the town center to seek refuge, many also went to the nearby bus stations to evacuate to other towns. As an official of the city’s disaster risk reduction committee said:

‘... We really don’t know where the rumor came. We suddenly received information that there are some people evacuating the area... It was really chaotic. I told our staff to block the people and tell them that there is no truth to these rumors but they told me they could not stop the rush of the people⁸⁵.’

In an initial observation, an unverified SMS message caused panic, which spread like wildfire amongst the residents. And the urgency of the people to believe in the message was created by the series of hazards and disasters that hit the country: Typhoons Henry and Glenda (July 2014), the Bohol earthquake and Super Typhoon Yolanda in October and November 2013⁸⁶. One should note that several things should be debunked from this incident. First, that it was a false alarm, as a tsunami was not likely to happen because there was no occurrence of an earthquake. Second, its geographic location suggests a very small or even, a rare incidence of an earthquake, as there are no fault lines are proximal its nearest coastal territory, and the closest mountain from the town, Mount Banahaw, has been an extinct volcano since the middle of the 18th century. Comparing the two events provides a picture of actions and responses of various sectors to these events:

1934 Event	2014 Event
•Rumor of a big typhoon and a big flood – word of mouth •The information “came” from the nearby/condition in nearby town •Unwarranted panic •No deaths/injuries A local resident communicated with the authorities	•Rumor of tsunami – through text message and/or the information “came” from nearby/condition in the nearby town •Mass hysteria, massive evacuation •One recorded death A local town chief tried to calm the situation, but people didn’t heed to his call

It is interesting that given the time period difference between the two incidents, it manifests some forms of cultural continuity in how people view hazards. The proliferation of rumors circulating in times of environmental hazards is still prominent in the town mentioned. Despite the developments in technology and communication, how does the phenomenon of false news, and massive panic, still linger? What are the factors that need to be considered in understanding and evaluating this incident or phenomenon? On what grounds should social science and policymaking intervene?

Prior and In-Between: The 1743 Banahaw Eruption and the 1995 False Evacuation in Quezon Province

The 1934 earthquake in the Southern Luzon region caused significant topographic changes in the area, as well as cultural and historical memories to the people of Tayabas and Laguna (Selga, 1941:4–13). One can diachronically connect this earthquake to succeeding earthquakes, such as the ones in 1743 and 1937 that happened in the region, had a lasting impact correlation with people’s social memory of hazards and disasters. Mojarro (2018) argues that based on several 18th century ‘*relaciones de sucesos*’ (newsletters) of several religious missionaries who were assigned in some parishes

in Southern Luzon, the earthquake severely affected the towns of Sariaya, Tayabas, Lucban, located in the present province of Quezon, and the towns of Majayjay, Liliw, and Nagcarlan in the province of Laguna. (Mojarro Romero, 2018:100 – 102).

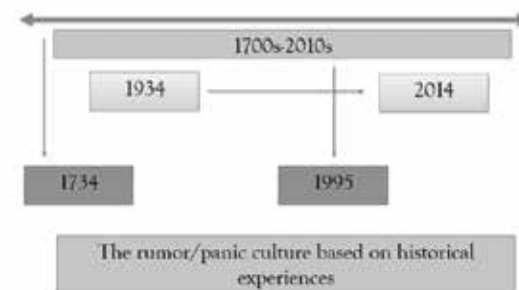
Selga of the PWB made a scientific-historical study about the notable Luzon earthquakes in the 17th and 18th centuries, based on available documentary materials. In summary, these are the earthquakes in Luzon during the 16th to 18th centuries that has available information and/or documentation:

YEAR	AFFECTED AREAS
1599	Manila
1600	Manila
1610	Manila, Eastern Luzon
1627	Western Luzon (Cagayan-Caraballo area)
1645	Manila, Cagayan, Ilocos
1658	Manila
1665	Manila
1700	Manila
1728	Manila, most parts of Luzon Island
1735	Eastern Luzon (specifically Baler)
1743	Southeastern Luzon (specifically Tayabas)
1749	Manila and nearby suburbs
1754	Southern Luzon provinces
1766	Manila and nearby suburbs
1767	Estimated most of Luzon
1770	Estimated most of Luzon
1796	Estimated most of Luzon

Table No. 2
List of select 16th to 19th-century earthquakes in Luzon Island⁸⁷

In this list, one can observe the perennial occurrence of earthquakes in the Luzon island. Although the numerical measurement is not provided or cannot be determined, these are the most notable in terms of destructions as chronicled in various historical sources.

Figure No. 2
Rumor/panic culture based on historical events



Further in his research, Selga analyzed the earthquake of San Andres in Manila in the year 1645 (Selga, 1941 a.), and the big earthquakes of January 1743 that affected towns in the provinces of Tayabas and Laguna (Selga, 1941 b). First, the 1645 San Andres earthquake, which struck during the feast of St. Andrew in November of that year, and had its epicenter at the district of San Andres in Manila, was considered as the largest in the seismological history of the country (Selga, 1941 a: 3). Second, the Sariaya earthquake destroyed the town's church and convent; the people from nearby towns (such as Tayabas) heard the sounds of landslides, as stones, water and inundations hit Sariaya. Indeed, this earthquake in the Southern Luzon region has left significant topographic changes in the area, as well as cultural and historical memories to the people of Tayabas and Laguna. (Selga, 1941 b: 4-13.). On the one hand, these events, especially the 1745 earthquakes, serves as the historical precursor of the 1834 event.

On the other hand, another event can be considered the in-between event of the 1834 and 2014 event, and this happened almost two decades before the latter, on 06 November 1995, wherein a massive evacuation of people happened in the town of Lucena in Quezon, as an aftermath of Super Typhoon Rosing⁸⁸. A radio report from DWTI-Lucena caused the panic of evacuation as reports of rivers running along the towns of Tayabas, Sariaya, and Lucena were to overflow reached them. The following day, the news proved to be erroneous and gravely misinformed the people⁸⁹. An investigation was made by the state volcanological agency, but it did not solve the lingering question of massive panic. (Sabit, Sandoval, 1995:94).

Plotting the additional events mentioned in relation to the focal events studied, the 1934 and 2014 events are involved in a complex series of events; events that are similar in nature but different in actual details. What binds them together is the mystery of why the people of the town in Quezon province are inclined to believe in unverified news when it comes to threatening environmental hazards.

The 1934 and 2014 events are manifestations of the complex interplay of rumor and panic culture, and a clear case of the need for a holistic scientific intervention. Rumors are both content and avenue of dangerous information and dissemination. The cohesive character of rumors with 'scientific reality' urges people to turn into instant panic and trauma, which evolves into a habitual and repetitive cycle of mass anxiety. One can dismiss the cases as merely isolated cases of misinformation and miscommunication. But closely working with archival data, as well as relating it to the general and specific cultural practices, it can be noted that local culture, and the culture of science perception are important factors to be considered in understanding these events. Oral histories should be verified scientifically, and I think, this is one crossroads of science and local culture. Valid fear is a fact, but proper communication and information dissemination is a clear mechanism on how to lessen the risk it brings. Mariano Santos' response to

the panic in 1934, wherein he immediately made formal communication with experts and agencies, was a clear sign of established pattern of risk-reduction protocol. The communication lessened the proliferation of reactive response from the populace, and it was clear that there was an agency ready to respond to people's needs. On the other hand, the 2014 event was a clear sign of the lack of structured response, and a reactive approach to the risk rumors and fears convey.

Analysis and Conclusion: Hazards, Culture, and Risk Communication

How can we make sense of this culture of panic in times of disasters? The historical reconstruction of past events that are highly explainable through scientific norms, and fall into the understanding of human cultures, requires the serious application of research rudiments in the science of the past: context and sources. Disasters are considered social texts; though droughts, floods, earthquakes, and volcanic eruptions are physical phenomena, they are interpreted and conceptualized socially, thus hazards and disasters are socially constructed and defined (Endfield, et. Alii: 305):

'... The ways, in which a particular event is perceived, experienced, and interpreted, however, determine whether it becomes inscribed into community memory as oral history, ideology, technological and physical adaptation, custom, artifact, or narrative. These different forms of remembering and recording the past represent the chief modes through which information is transferred across generations. (Endfield, et. Alii: 305).'

Moreover, Bankoff (2009) describes hazards as Filipinos' 'frequent life experience', wherein environmental hazards as considered part of daily life, and threats caused by nature are normalized (Bankoff, 2009:265). Evident is this idea in the way Filipinos look at disasters, is a significant aspect in the development of Filipino life, as it is apparently found in a lot of historical records, de-

sign, and construction of infrastructures, agricultural systems, settlement and subsequent relocations and migration patterns. (Bankoff, 2009:266).

Given these modalities, we can argue that hazards and disasters, as experienced by human communities, as time goes by, becomes social realities perceived, understood and interpreted in a social manner. To comprehensively reconstruct the historical development of Filipino society in the context of human-natural hazard relations, an approach is by pointing out the traditional/cultural systems of Filipinos that, undoubtedly, influenced how they responded or how mentalities and behaviors toward hazard flourished through time. Components such as the following would be valuable: natural hazards such as typhoons, earthquakes, volcanic eruptions, and their epiphenomenal hazards; the political and socioeconomic systems which include institutions, power relations, source of living and settlement structures; and traditional belief systems such as folk traditions, epics, oral histories, and local chronicles.

The complex interplay and interrelation of local culture, scientific knowledge, and people's vulnerability are manifested in how rumors and fears dictate people's mentality and response to natural hazards. On the side of the Filipinos, hazards are generally viewed in a very cultural way. Most Filipinos considered natural hazards as a manifestation of God's wrath. With a form of fanaticism to Catholicism that was present in people's minds leading to the Church's control over people's mentality, the wrath of God was inevitable. Thus, the only thing that can save them, based on available sources, was to pray and continue being good servants of the faith. During calamities, people run into churches to conduct '*novenas*' and pray until a storm passes their town. A few days after, parishioners usually conduct processions of saints to ask protection and guidance, so that hazards will never happen again. The historical experiences of Filipinos pertaining to typhoons and earthquakes have a surmountable influence on the way they view and respond to the challenges of the natural environment.

Natural hazards commonly refer to the physical phenomena of destruction; on the other hand, natural disasters are defined as 'confluence of social, economic and political development of naturally occurring event.' (Camba, 2012 : 217.). Hazards refer to the potential for damage that exists only in the presence of vulnerable human communities (Hewitt, 1983:5). The potentialities attributed to hazards are always directed to the causal flow of the physical environment-social impact (Hewitt, 1983:5). With this, disasters, as an outcome by a definite hazard, occur because of the chance recurrences of natural threats, modified in detail but fortuitously by human circumstances (Hewitt, 1983:5).

Ancient Philippine societies have developed their own notions of the environment, the celestial world, and the processes it involves. Everyday life is a clear manifestation of the thriving of a culture based on human's adaptation and perception of the natural space where they are living. Meteorological and seismological processes are part of the cultural communities, and of the civilization that was established in different parts of the archipelago. (Ambrosio, 2010:4). Economic activities such as farming, fishing, hunting, and trade were influenced or patterned after how the environment 'behaves'. (Ambrosio, 2010:5). Different ethnic groups have their own set of terminologies and deities assigned to each and every environmental phenomenon (Ambrosio, 2010:59-60). Filipinos have a wide variety of knowledge and superstitious beliefs pertaining to the natural environment. This is probably a by-product of individual and collective experiences. Rumors or unverified information or news that spread like wildfire in times of calamities are, fortunately, and unfortunately, part of the cultural grammar of Philippines society. Can this be prevented? Intervention from science is imperative to contain this cultural norm from exacerbating threats to further danger to communities. This is where proper scientific communication can be put into the equation. Risk communication, at commonly put, deals with the experts intentionally conveying about health and environmental risks, obtained from scientists and technical experts, to a target audience of non-experts through designated channels; it also dwells into

any public or private communication of individuals or social risks, with or without intentional goals conveyed from any source to any recipient through any channel. (Plough and Krinsky, 1987:4 – 10). One particular outcome risk communication purposefully set into is being to make individuals aware of a particular hazard, thus awareness is considered the first step in educating and changing the behavior towards hazards (Baker, 1990:347). From this communication ideas and knowledge are indispensable. The field of crisis communication aims at preventing or lessening the negative outcomes resulting from a crisis (Spence, Lachlan, Griffin, 2007:541). The informative function of this field encourages the receiver to take some action to avoid the possible threat or harmful effects and create a rational understanding of the risk (Spence, Lachlan, Griffin, 2007:541). An individual's ability to take actions during a crisis brings about a sense of empowerment, allowing individuals to feel as though they have some control in the situation (Spence, Lachlan, Griffin, 2007:543).

In the cases presented, a complex layer of everyday cultural practice, the need for a science-based action and behavior, and institutional presence are highly observed. In many critical life cases, rumors are both content and avenue of dangerous information and dissemination. It can be noted that both in the 1934 and 2014 incidents, past experiences, not necessarily their own, results in the spread of unverified news. Anthropologists argue that the 'pattern of vulnerability that society has conditioned the behavior of individuals and organizations throughout the life history of a disaster far more profoundly than will the physical force of the destructive agent.' (Hoffman, Olivier-Smith, 1999:29). Therefore, we can assess that vulnerability has psychosocial nature, as it also pertains to the human's lack of capability to obtain counter-emotional apparatus in different disaster experiences. In summary, vulnerability transcends into the geographic, socio-political and psychological facets of people facing constant chaos due to natural hazards.

The 1934 and 2014 events in Candelaria town in Quezon Province are valuable documented cases where people tend to believe in rumors over factual data. The general sentiment over fallacious statements in past experiences should be considered in the way historical realities are to be studied – it should be pointed out, and people should learn from those events. It is needed that science should be above rumors. Collected oral stories should be verified, as much as possible using science. The high level of vulnerability lies not only on the latent parameters of understanding but also on the cultural norms people follow and manifest. It may seem that a reverse chronology that the 1934 event manifested a more structured way of community institution relation.

The concept of vulnerability has time dimensions; it has historical context of its own. Vulnerability in the past might be different from the vulnerability of today. Coping with disasters develop as time progresses. Through the introduction of scientific knowledge, people are given avenues to basically understand situations, and to prevent extreme damages to natural hazards. But developments in science did not actually mean invulnerability. In the cases presented, there were a variety of responses the Filipinos did to cope with the disasters. These differed from one another, depending on how other social factors entered the scene and affected the flow of events. From an anthropological perspective, vulnerability is coined as 'adaptive failure', which is an essential element of a disaster, particularly in location, infrastructure, sociopolitical structure, production patterns and ideology that characterizes a society. (Hoffman, Olivier-Smith, 1999:29). With these, an image of abstract vulnerability can be seen.

It is highly observable that Filipinos have a lot of shortcomings and incapacities when it comes to coping with the effects of worsening environments hazards and conditions. Ideally, the state maximized all of its resources in building a formidable disaster risk reduction management that fits the contexts and necessities of the country. Aside from strengthening local participation in planning, execution, pre- and post-disaster governance, the go-

vernment, together with the much more active civil society groups and non-government organizations which are undoubtedly more capable than many state institutions, are gradually changing the mentality and attitude landscape of people from a reactive to a proactive disaster response mechanism. Aside from making the people equipped with the locally crafted and nationally executed disaster risk reduction and management program, investing in efficient and effective communication mechanisms should also be prioritized. Communicating scientific ideas about hazards are incredibly convoluted; it requires another nationally driven state program to create a culture-based communication mechanism for Filipinos, given our experiences when it comes to coping with nature's threats. A society that has an efficient communication system can overcome challenges brought about by the natural environment and disasters induced by the vulnerable human populations. It is necessity for the experts, the communications, and the public, to revisit our relationship as actions in communicating ideas to lessen the disastrous effects of natural hazards to our society. As Bankoff (2007) suggests:

‘Technology fails to provide a sense of security: the predictions of the state’s meteorological and seismic agencies are generally portrayed as unreliable, while most engineering accomplishments are viewed as futile and inconsequential. (Bankoff, 2004:92)’.

From this view, we can infer that the reliance on scientific institutions alone does not guarantee the people with a secured life. Hazards such as typhoons and earthquakes are inevitable forces of nature; thus, the damage is such as irrefutable outcome. A critical study and use of the local and indigenous cultural norms are indispensable in a more appropriate disaster response mechanism. What modern science has provided is a pragmatic idea that damage can be lessened, not totally prevented.

5. SALIENCE OF INDIGENOUS FILIPINO VALUES AND MENTAL HEALTH IN PHILIPPINE DISASTER RISK REDUCTION AND MANAGEMENT POLICIES

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The Philippines experiences an average of 10 to 25 disaster events per year, affecting a total of 9.29 million Filipinos in the past 5 years alone (Bollettino, Alcayna, Enriquez, Vinck, 2018:1). The particular experience of Super Typhoon Haiyan (local name: Yolanda) in 2013 has put mental health at the forefront of disaster risk reduction and management in recent years. Even as the amended cluster approach was adopted in 2008, which initially stated that psychosocial services are a part of the cluster headed by the Department of Health⁹⁰, the overwhelming demand and very limited resources led to the realization that mental health needs to be prioritized and given more value. Typhoon Haiyan exposed the need to revisit the mental health system of the Philippines. This has caused increased attention to the mental health needs of the victims and the responders as well. In a survey, 42% of the responders and victims stated that, at any time, they had suffered mental health problems related to the typhoon such as stress-related reactions, post-traumatic stress disorder (PTSD), depression or anxiety, and 12% of them said they still experienced mental health problems 30 months after the disaster (Hugelius, Gifford, Örtengwall, Adolfsson, 2017). It has been noted in the same study that mental health problems were frequently reported and had longer effects than physical problems. In addition, there are relatively few resources in the Philippines – both in funding and in skilled personnel – allocated for mental health and psychosocial support services (Landoy, Hechanova, Ramos, Kintanar, 2015). There are a total number of 2,051 mental health professionals in the Philippines, which means there are only two (2) mental health workers per 100,000 population; and only 0.22% of the total government health expenditure was spent on mental health (World Health Organization, *Mental Health Atlas Member State Profile*, 2017).

As policies directly guide the allocation of governmental resources, it is important to identify the salience of mental in Philippine disaster risk reduction and management policies and guidelines. Salience, especially in political studies, can be perceived as 'the amount of [relative] importance an actor attaches to an issue' (Miller, Krosnick, Fabrigar, 2016). It is anchored on the notion that if an actor perceived the issue as salient, he actively thinks and musters information about it. Actors, particularly decision-makers, who perceive high value of salience to a certain issue will most likely put substantial political and economic resources on it (Thomson, 2011). Psychosocial services became part of the response clusters in disaster risk reduction and management documents in Memorandum Circular no. 12 of 2008; then, psychological rehabilitation was stated as an objective in the area of disaster rehabilitation and recovery in the National Disaster Risk Reduction and Management Plan 2011–2028⁹¹. Eventually, the Pocket Emergency Tool of the Department of Health⁹² specified MHPSS as one of its jurisdictions and elaborated on the services they provide to address mental health needs.

There is also a need to identify the salience of indigenous values within such policies to measure how much these policies are aligned with the values of the people it seeks to serve. The need to integrate local methods and interventions was recognized in the Implementing Rules and Regulations of the Philippine Disaster Risk Reduction Act of 2010. The law must 'ensure that disaster risk reduction and climate change measures are gender responsive, sensitive to indigenous knowledge systems and cultures, and respectful of human rights⁹³.' *Sikolohiyang Pilipino* or indigenous Filipino psychology – 'a psychology owing to the experience, thought and orientation of the Filipinos, based on the full use of Filipino culture and language' (Pe-Pua, Protacio-Marcelino, 2000:1). – may be used as a standpoint in crafting policies and guidelines for providing MHPSS services in DRRM. *Sikolohiyang Pilipino* asserts that research, services, and policies are better served through indigenous, homegrown development with the direct welfare of the Filipino in mind. In addition, *Sikolohiyang Pilipino* describes indigenous

values as *kapwa* or shared identity (core value), *kagandahang loob* or shared humanity (linking socio-personal value), *pakikiramdam* or knowing through feeling (pivotal interpersonal value), and *lakas ng loob* or guts (confrontative surface value). (De Guia, 2013) Cases of extraordinary resilience can be observed in Filipinos. A phenomenological study on the resilient traits of orphans aged 11 to 22 years old, victims of Guinsaugon landslide in 2006, was conducted by Versoza in 2008 to understand the varied dimensions of resilience. Using expressive art therapy, she linked some indigenous values to explain the resilient traits of the orphans. First, there is positive emotions displayed by the orphans and it is manifested as love and care being received by them from family members, sponsors, and volunteers. The author also stressed that feelings of hope were also highly evident and are attributed to their faith and religiosity. In addition, the overwhelming material assistance stirs feelings of hope and aspiration for a brighter future as it represents 'help in times of helplessness'. Second, hardiness to stress can be attributed to Filipinos' *lakas ng loob* or inner strength. The orphans recalled how their parents taught them to have inner strength in times of unfortunate situations. Lastly, spirituality enabled them to accept the circumstances as a meaningful part of life. This has become their ultimate coping mechanism to endure extreme life event (Lyra, Versoza, 2011:26–37). Studies such as this offers alternative paradigm to understand human behavior. This would entail construction of psychological knowledge by exploring localized ideas and practices in a context that is free from external and foreign influences. As such, direct adoption of western policies, which is a top-down approach, run counter to *Sikolohiyang Pilipino*, which espouses a bottom-up approach. As the Philippines conform to international agreements of the Sendai Framework⁹⁴ and IASC guidelines^{95 96} how do we reconcile this with indigenous approaches such as *Sikolohiyang Pilipino*?

This study aims to measure and describe the salience of indigenous Filipino values around mental health and psychosocial support in Philippine disaster risk reduction and management (DRRM) policies. Salience is one way to measure how much a value is truly

valued by the authors of these policies, which then direct which values are enacted in the community. The study has two research questions: (1) Is mental health and psychosocial support valued, as measured by salience in DRRM policies? (2) Are indigenous Filipino values present and upheld within DRRM policies?

Methodology

The study used quantitative and qualitative approaches in analysing mental health-related constructs and indigenous values in national documents on disaster risk management. The first layer of analysis consisted of content analysis to measure the salience of mental health-related keywords. Through this, pertinent concepts on mental health surfaced and these were mostly local mental health and psychosocial support interventions and methods identified in the documents. The second layer of analysis was a document analysis of identified local interventions, methods, and services through the lens of *Sikolohiyang Pilipino* or Filipino Psychology, particularly looking for explicit or embedded indigenous values.

The units of analysis in this study were Philippine documents on disaster risk reduction and management. Priority was given to national documents that served as a basis for other materials. Fifteen materials were selected: six (6) from the National Disaster Risk Reduction Management Council (NDRRMC), two (2) each from the Department of Health (DOH), Department of Social Welfare and Development (DSWD), and the Office of Civil Defense (OCD), and one (1) each from the Congress, House of Representatives, and Department of the Interior and Local Government (DILG).

Quantitative Analysis

Quantitative Content Analysis is a widely used research method in which texts, any quantifiable material that can be put through repeated scrutiny, are systematically grouped, recorded,

and analysed (Coe, Scacco, 2017). This method was employed to measure the salience of mental health-related keywords. Measuring mental health-related keywords in national risk reduction management documents will help locate and give impressions on the perceived value of mental health relative to other issues in disaster management.

Concepts from framing analysis were used to guide the operationalization of salience in the documents. Salience was measured in terms of four key variables namely Frequency, Centrality, Prominence, and Overall Presence (Entman, 1993:51–58). These variables were measured per keyword as it appears in the material. Frequency was indicated as the number of times the keywords appear in the entire material. Frequency was almost always present in a simple content analysis method. Likewise, Centrality can be operationalized as the degree of focus given to the keyword (i.e., 1 – keywords are the main subject, 2 – keywords are the secondary subject, or 3 – keywords are mentioned alongside the main topic). Moreover, Prominence was a descriptive measure in terms of size and placement of keywords in the material. It also includes visual and aesthetic elements such as font and typeface. These components contribute to the higher effectiveness of communication (Michaelson, Griffin, 2005). Contrary to other variables mentioned above, Overall Presence described the depth of coverage of all the keywords in the entire material (i.e., 1 – summary mention, 2 – less fully inclusive coverage, 3 – clear and detailed coverage).

Seven MHPSS-related keywords were used: MHPSS, Wellness, Psychological, Well-being, Emotional, and Psychosocial. Occurrences of these keywords were recorded and analysed systematically through a coding scheme designed to measure salience. To ensure mutual understanding of the concepts, two rounds of pretest entries were compared and intercoder reliability was calculated using Cohen's Kappa ($k=0.9$). Data generated from the content analysis can be pushed further by pairing it with other research methods (Coe, Scacco, 2017). Thus, a qualitative method was also employed to increase the depth of discussion.

Qualitative analysis

Qualitative analysis, specifically document analysis, was used to obtain the indigenous cultural values operating in national DRRM frameworks from the same set of documents. Document analysis is an organized method of evaluating or reviewing both printed and electronic document (Corbin, Strauss, 2008) such as manuals, memoranda, and various public records. The process incorporates elements from both content analysis and thematic analysis (Bowen, 2009:27–40.). This includes finding, specifying, assessing or making sense of, and integrating data covered in the documents. The data generated (e.g., excerpts and entire text) are then classified into major categories or themes (Labuschagne, 2003).

In the present study, any interventions, services, and methods employed in national DRRM frameworks that state or imply operative indigenous cultural values were coded as either ‘explicit’ or ‘implicit’. Values regarded as ‘explicit’ (e.g., *bayanihan*) are those directly mentioned in the documents, while those not clearly stated but only implied were considered as ‘implicit’ (e.g., *family-centeredness*, sense of community, *kagandahang loob*, and spirituality and religiosity). These explicitly or implicitly expressed indigenous values were further coded as the related value. Indigenous cultural values were operationalized in this study as extensive goals that members of a social group (i.e., Filipinos) are encouraged to seek. They serve as justifications for measures taken in striving towards these goals (Schwartz, 1999:23–48) and are perceived by the social group as proper, commendable, and good (Williams, 1970). Similar codes were then grouped into major categories.

Results & Discussion

Framing analysis of the documents reveals that MHPSS-related keywords are relatively low in salience in national DRRM frameworks. There are five ‘Filipino’ indigenous values (*family-centeredness*, sense of community, *bayanihan*, *kagandahang loob*, and spirituality and religiosity) that emerged from the document

analysis of the same frameworks. The quantitative and qualitative results are explained and elaborated further on.

Mental Health in DRRM Frameworks

There were 631 occurrences of the keywords across all documents, with ‘psychosocial’ being the most mentioned ($n = 255$), followed by ‘MHPSS’ ($n = 121$), ‘mental health’ ($n = 118$), ‘psychological’ ($n = 88$), ‘well-being/wellbeing’ ($n = 31$), ‘emotional’ ($n = 16$), and ‘wellness’ as the least mentioned ($n = 2$).

In terms of frequency, the Department of Health (DOH) Pocket Emergency Tool 4th Edition had the greatest number of keywords mentioned ($n = 184$), while the Philippine Disaster Risk Reduction and Management Act of 2010 had mentioned the least number of keywords ($n = 1$).

The National Disaster Risk Reduction and Management Plan 2011–2028 had the highest score for centrality ($\bar{x} = 1.7$, $s = 0.77$) and is closely followed by DOH Pocket Emergency Tool 4th Edition ($\bar{x} = 2.0$, $s = 0.94$). Most of the keywords found in these materials appear to be the secondary subject or discussed alongside important concepts. An exemplary case would be the placement and order of the keywords most often under the Health cluster with Water, Sanitation, and Hygiene (WASH) and Nutrition.

Keywords were most prominent in both DOH materials. There were several instances where they appear in the section header in a bold and slightly larger font. In addition, DOH Pocket Emergency Tool 4th Edition had the highest score in the overall presence ($\bar{x} = 2.3$, $s = 1.11$). The keywords were covered in the materials, but the coverage is less fully inclusive or incomplete. DOH documents having the highest MHPSS-related keyword frequency and the most central and prominent keywords are expected since the Department of Health is the appointed government agency to provide MHPSS services⁹⁷⁹⁸⁹⁹.

Overall, MHPSS was not very central nor salient in the majority of the documents. When they are mentioned, no details or concrete action steps were provided. This result is consistent with the claim of Galappatti and Richardson (Galappatti, Richardson, 2016). that MHPSS has not obtained enough resources and efforts in disaster mitigation, prevention, and preparedness areas. It is important to note that DOH has training manuals on MHPSS, but these were not referenced in the framework documents. Despite agreeing to the global consensus on DRRM with an MHPSS focus, a content analysis of our laws and guidelines show relatively little valuing of MHPSS in their local DRRM frameworks. Challenges such as underinvestment and lack of mental health professionals continue to encumber mental health care in the Philippines (Lally, Tully, Samaniego, 2019:62 – 64). Mental health in disaster setting was recognized as a priority concern in the country (Weintraub, Garcia, Birria, Severya, Ferir, Ali, Tayler-Smith, Palmera Nadera, Van Ommeren, 2016: 336–344). It is therefore important to articulate these values not just in press releases but in our local laws and guidelines to ensure effective implementation.

MHPSS keywords are expected to become more visible eventually in national documents on disaster response and management due to the recent passage of Republic Act 11,036 or the Philippine Mental Health Law last June 2018. Through this law, the appropriation of substantial political and economic resources for the improvement of the mental health system in the country will be guaranteed. This would also mean a more structural and formal integration of mental health programs and services in different areas of concern, including disaster management. Furthermore, the law explicitly stated in its objectives to ‘Strengthen effective leadership and governance for mental health by, among others, formulating, developing, and implementing national policies, strategies, programs, and regulations relating to mental health;’ and ‘Strengthen information systems, evidence and research for mental health¹⁰⁰.’ In time, this will increase the valuing of mental health in public documents as well.

Indigenous values in DRRM frameworks

In the context of indigenous values, only 9 out of the 15 documents contain relevant interventions, services, and methods. Despite it being the majority, it would have been appropriate for all DRRM framework documents to have indigenous values incorporated in the services since it is stipulated in the IRR of the PDRRMP of 2010¹⁰¹ that disaster risk reduction efforts should be perceptive about indigenous knowledge systems. There are five major Filipino values (*family-centeredness*, sense of community, *bayanihan*, *kagandahang loob*, and spirituality and religiosity) that emerged from the analysis – which can be tied in by a single core value – *kapwa*. *Bayanihan* is the only directly articulated indigenous value in the documents, while the others were implied through employing certain DRRM strategies. While *Sikolohiyang Pilipino* postulated that some indigenous cultural values encapsulate the experiences of Filipinos, there could be variations in value systems between Filipino societies and regions. Thus, the present study could not ascertain if all the indigenous values cited hold the same level of significance for all Philippine culture groups. Specific measures that factor in indigenous values were found to help address the mental health needs of the people affected by disasters.

Kapwa is the acknowledgment of shared identity in others; a core concept encompassing the psychology of Filipinos (Enriquez, Kapwa, 1978 : 100-108.). It was perceived by Enriquez as underlying interactions with both members of the ingroup and outgroup (Enriquez, 1994). De Guia states that this core value connects the inmost recess of a person with those outside the self, including total strangers. She even elaborated that *kapwa*, as a core value in the traditional Filipino value system, upholds the inclusion of others – human and nonhuman (e.g., spirits, animals, & plants) – in the concept of the self (De Guia, 2013).

The mental health help-seeking behaviours of Filipinos can be affected by who they consider as *kapwa*. Filipinos are more open to express their feelings and concerns to those they consider as *hindi ibang tao* (one-of-us) as opposed to *ibang tao* (outsider).

Mental health professionals may be considered as *ibang tao* and so people tend to be polite, formal, and agree to their medical advice but there is no certainty that they would be followed. When the interaction with the professional enables her or him to transition from being *ibang tao* to *hindi ibang tao*, Filipinos are more likely to entrust themselves to the care of the professional (Tuliao, 2014). Incorporating indigenous values and context will allow for more appropriate and tailor-fit mental health policies, ensuring that these policies are better equipped to serve the needs of the community.

Family-centeredness. One of the first groups a person shares her or his identity with is their family. The Filipinos' identity and social status are mostly characterized by their families, which act as their primary source of support – social, emotional, economic, and moral (Miralao, 1997:189–215). For the Philippine society, the family is of central importance; and the affinity for family is preferred and admired. One of the distinctive values most Filipino families have in common is family-centeredness (Morillo, Capuno, Mendoza, 2013, 5–28). This supports *family-centeredness* as a prominent indigenous value that emerged from the interventions and services found in national DRRM frameworks. The services offered by concerned government agencies during disaster preparedness, response, and recovery can be observed as family-oriented. Examples of these are distributing family kits, disseminating family guides for disaster preparedness and response, conducting capacity building/training on family-based disaster preparedness, and giving family service assistance. One of the immediate concerns of those affected by disasters is contacting and locating their loved ones. Mental health service providers should take actionable steps to allow survivors to get in touch with people important to them (Ruzek, Brymer, Jacobs, Layne, Vernberg, Watson, 2007:17–49). Restoring family links is the objective of the family service assistance provided by the Philippine Red Cross (PRC) during disasters¹⁰². Helping in the provision of family/peer support system for the bereaved is a task of concerned government and non-government¹⁰³.

Sense of community. Filipinos' sense of family can be extended to non-relatives. They relate to people they do not know by attributing familial names – *kuya/manong* (older brother), *ate/manang* (older sister), *tita* (aunt), *tito* (uncle), *nanay* (mother), and *tatang* (father) – to make them feel that the other person is not a stranger. Doing so encourages deeper affiliation as they get acquainted, and it can also signify that the other is part of the family (Morillo, Capuno, Mendoza, 2013, 5–28). Maharaj states that apart from being a form of shared familial identity, *kapwa* bridges the individual to the community. It can be an instrument in dealing with the community's experience of loss and the healing that needs to be done. Adverse settings such as disasters can foster community spirit (Maharaj, 2016: 34–40). Bankoff observed that the number and intensity of hazards Filipinos face inspire forms of community support and a sense of community welfare (Bankoff, 2015:430–447). This *sense of community* can also be observed as a value during disaster preparedness, response, and recovery as government agency efforts are targeted towards the community. Some of these efforts are conducting capacity building/training on community-based disaster preparedness and facilitating the creation of community-based self-help groups. Certain mental health interventions during disaster response seek to encourage connectedness and boost a sense of community efficacy (Hechanova, Ramos, Waelde, 2015 :610–618). Services indicated in national DRRM frameworks may also increase the community spirit by setting up community facilities¹⁰⁴ and communal spaces in evacuation centres¹⁰⁵. Use of community rituals for the dead (e.g., gathering of relatives for the official closure of mourning and Holy Mass) were found to provide comfort (Ignacio, 2011:26–37). Also, support from the family, peers, and community can significantly improve the survivor's capacity to cope with post-disaster distress¹⁰⁶.

Bayanihan. The community-orientedness of Filipinos manifests through *bayanihan*. This is defined as any collective voluntary effort to attain a mutual goal (Barrameda, Barrameda, 2011:132–151). It is an indigenous tradition of people going out of their way to help others in need (Ealdama, 2018). This Filipino value is exhibited

during disasters through mobilizing members of the community and sharing of labour (Gaillard, Pangilinan, Rom Cadag, Le Masson, 2008 : 383–395). *Bayanihan* is evident in national DRRM frameworks as the only indigenous value explicitly written in a couple of documents (i.e., national guidelines and response plans). An example of this is indicated in the NDRRMC's National Disaster Response Plan Management for Terrorism-related Incidents and National Disaster Response Plan for Earthquake and Tsunami, 'fostering of the spirit of *Bayanihan* in the concept of unity and cooperation of all stakeholders'¹⁰⁷. An explanation for the direct promotion of this value in disaster setting is that high social capital positively affects disaster preparedness, response, and recover (Aldrich, Meyer, 2014 :254–269). Social capital refers to the community members' connection network that yields altruism, collective values, and understandings. It enables and encourages groups and individuals to have faith and help each one, collaborate, and look after one another. This is demonstrated in our country through *bayanihan*¹⁰⁸.

This value is also used as a coping mechanism during disasters, especially in poor communities. People tend to rely on themselves when external aid is inadequate. It stirred feelings of belonging and basic sense of security in all phases of disaster, (Ignacio, 2011, 6–37) consequently uplifting the emotional well-being of community members. It has become the natural course of action for the survivors to reach out to others and start rebuilding their communities. Hence, internal resilience, in both individual and community levels, is enhanced when this indigenous form of support is employed⁵¹. Moreover, *bayanihan* was closely tied up to another Filipino trait – *pakikipag-kapwa* or the ability to empathize. This is the driving force of *bayanihan* spirit⁵⁶. Classic examples of *bayanihan* spirit can be seen in the reconstruction and clean-up of schools, sharing of aids, and rebuilding of roads.

Kagandahang loob. Another indigenous value similar to *bayanihan* became apparent from the analysis. *Kagandahang loob* is roughly translated as good will or deed (De Castro, Sy, 1998 : 563–580).

It also entails voluntarily helping one's *kapwa* or the people one shares her or his identity with; without any reason other than the people in need being one's *kapwa* (Reyes, 2013:1–26). However, Church and colleagues translate this socio-cultural value as shared humanity (Church, Katigbak, 2002 :129–148). Castro et al. further explains that *kagandahang loob* centers on the initiatives done willingly in fulfilling obligations and duties⁵⁸. They further explain that aside from the act, one's emotions and feelings must be noted since *loob* literally means 'inner part', which indicates the importance of the intentional component of the behaviour. It is not *kagandahang loob* when one expects something in return when helping. This value can be observed, though superficially since the *loob* component of it cannot be regarded, in a couple of government programs and initiatives during evacuation and disaster recovery. The provision of '*pabaon package*' and the '*Balik-Probinsya Program*' are examples of these. The former aims to supply evacuees with food packs they can bring when going back home, while the latter intends to provide transportation assistance to evacuees in their return to their places of origin. These services offered to internally displaced persons can be seen as *kagandahang loob* as the support given to the survivors is extended to their recovery from the disaster event. Volunteerism during such an adverse event is also an exemplar of this value. Volunteers offer their services to those affected by disasters without expecting anything in return. According to a DSWD guidelines, the volunteers serving their agency during disaster risk management and response are given recognition and *pasasalamat* (thanksgiving) after the service or on a semester or semi-annual basis¹⁰⁹.

Spirituality and religiosity. As previously stated, one's self-concept or identity can also include non-human elements such as spirits. Filipinos are recognized for their deep sense of spirituality (Yabut, 2017); and they value being *maka-Diyos* or being religious (Bata-ra, 2015 : 3–21). In a demographics study by Lippman and Keith (Lippman, Keith, 2006:109–123), large proportions of young adults in the Philippines place great importance in God and religion in their lives. Spirituality and religiosity are different, but they

tend to overlap. Spirituality refers to the search for the sacred through individual and private practice, while religiosity pertains to the search for the sacred through the religious practices of one's community (Hill, Pargament, Hood, McCullough, Swyers, Larson, Zinnbauer, 2000:51–77). These concepts overlap as religiosity could be viewed as a manifestation of spirituality by participating in an organizational or community system (Bauer, Johnson, 2018 :14–36). In addition, both values are positively linked to prosocial behaviours, but they differ in terms of the recipients of these behaviours. Religiosity correlates to prosocial behaviours toward ingroup members (kin, friends, people of the same religion, etc.), whereas spirituality is linked to prosocial behaviours toward both ingroup and outgroup members (people outside one's circle) (Saroglou, Galand, 2004 :97–132). Values of *spirituality and religiosity* are fostered by national DRRM frameworks during disaster events. Specific government agencies, such as the DOH¹¹⁰ and the Dead and the Missing Cluster of NDRRMC¹¹¹, are tasked to facilitate spiritual and religious practices and manage human casualties with religious considerations. Spiritual services are also used as an intervention, particularly provided to children in need of protection. Faith-based organizations are considered by NDRRMC¹¹² as a part of the cluster system in disaster response. A possible explanation for the promotion of these values in a disaster setting is that the sense of spirituality and religiosity serves as a resource for coping⁶².

Furthermore, Conde (Conde, 2004:159 – 166) mentions that in the Philippines, spirituality is acknowledged as an important coping mechanism during adversities and disasters. In these times, psycho-spiritual approaches are frequently assimilated in psychosocial interventions. The impact of disaster on a person's well-being is moderated by religion and spirituality (Aten, O'grady, Milstein, Boan, Schrub, 2014 :20). The comfort religion brings helps protect survivors from the negative emotional effects associated to loss of resources and is also correlated with posttraumatic growth (Cook, Aten, Moore, Hook, Davis, 2013:352 – 366). It has been emphasized that integrating community spiritual activities as

part of reconstruction and rehabilitation efforts may hasten the acceptance of adversities in the context of God's will and plan (Ignacio, 2011:26 – 37). Hence, the provision of spiritual services and facilitation of religious practices in evacuation camps as indicated in national DRRM documents may positively impact the affected person's mental health.

Conclusion

Despite the need to address significant mental health and psychosocial support concerns during disasters, there is relatively low valuing of mental health and psychosocial support as measured by salience in national policies. This has potentially significant implications on resource allocation, particularly in hiring and training MHPSS personnel and development, implementation, and sustainability of MHPSS programs. Visibility is an essential first step to solving this resource gap and policies that value mental health will go a long way in providing the political infrastructure needed to adequately address MHPSS concerns.

Bayanihan seems to be the only explicitly stated indigenous Filipino value in national policies on disaster risk reduction and management. *Bayanihan* describes the coming together of a community in times of crisis or need and seems particularly apt for a disaster context. The use of the *bayanihan* value is a good reminder to focus not just on the individual but on the community, both when it comes to needs and resources. *Bayanihan* then has the potential to serve as the value foundation for an indigenous Filipino disaster risk reduction and management policy. The other values that were not explicitly stated but embedded (*kapwa*, family-centeredness, sense of community, *kagandahang loob*, and spirituality and religiosity) seem to serve as prerequisites for *bayanihan* to exist. The identification of the family as the basic unit rather than the individual (e.g., allocating relief goods to families vs. individuals, family-based trainings, family-based assessments) are more culturally congruent and thus lead to a more effective response. Developing a comprehensive mental health and psychosocial support response that recognizes and addresses shared identities at different levels – family, community, humanity, spirituality – will contribute towards a more indigenous approach to disaster risk reduction and management.

PART 3

AFTER DISASTERS: RESILIENCE AND ADAPTABILITY

6. STEALING A MARCH ON MASAMANG PANAHON [BAD WEATHER]: AN ETHNOGRAPHY OF RESILIENCE AND ADAPTABILITY OF THE *TAGA-ISLA* [PEOPLE FROM THE ISLAND] OF *TALIM* ISLAND, PHILIPPINES

Angelito S. Nunag

Talim Island

Talim is an island in the middle of Laguna de Bay¹³, the largest and most important lake in the Philippines, that is under the jurisdiction of two municipalities in the province of Rizal in Southern Luzon: namely Binangonan and Cardona. It is the biggest and most populated of the nine islands within the lake¹⁴ with a land area of 14.4945 km² and a total population of 36,628¹⁵. Owing to its dagger-like shape, this hilly island was named *Talim*, the Tagalog word for a blade. Volcanic in origin, this narrow sliver of volcanic rocks rising to 420 meters forms the western side of the Laguna caldera (Wolfe, Self, 1983:160, 163–164) and is situated southeast of the city of Manila, the country's capital. It is separated from the mainland, Binangonan, by Diablo Pass or *Navotas* Strait on the north, and can be reached through a thirty to forty-minute ferry ride from here or from Sta. Rosa, Laguna on the south (Nunag, 2021:25) (see Fig.1). It has a low-elevation range covered with bamboos, the principal material that the *taga-isla* [people from the island] use in furniture making and aquaculture, their main livelihoods. Below, large fish pens measuring five to twenty-five hectares owned by corporations and Manila-based businessmen, and small fish cages measuring 75 m² to one hectare owned by well-off *taga-isla*, surround the island (Nunag, 2021:25, 34).

Talim is composed of twenty-four *barangays*¹⁶ situated along the shoreline, seventeen of which are under the jurisdiction of Binangonan, while the remaining seven are under Cardona. These *barangays* are geographically isolated from one another due to natural barriers; however, with the construction of a road, which they call 'highway', that snake through adjacent *barangays* in recent years, many are now connected except the ones in the

south. Essential public services are inadequate too. Most of the communities are devoid of adequate water supply and rely only on artesian wells that are distributed inequitably in every *barangay*. Power lines are installed improperly such that a gust of wind can easily cause power outage as bamboos and tree branches constantly come into contact with these lines. Mobility is also hampered as the only means of transportation is a motorized tricycle, a motorcycle attached to a passenger cab, that painstakingly inches its way through a very narrow road that cuts through densely packed neighbourhoods. It is so narrow that motorized tricycles cannot pass each other without one yielding and clearing the road of the litter of household items at the same time. The telecommunication system is also poor; there are no telephone lines and the signal for cellular phones is intermittent. Moreover, access to education is limited due to financial incapability and the limited number of educational institutions. Although nearly all *barangays* have public elementary schools, there are only four secondary schools, and students who want to pursue higher education have to go to either the mainland or Manila. Access to health services is also lamentably poor as there are no doctors except for the physicians in the lone hospital on the island¹⁷. One *taga-isla* even warned me not to get sick for there is only one doctor, hence, encountering an emergency is as good as dead.



Fig. 1. Map showing Talim Island in the middle of Laguna de Bay (Laguna Lake) vis-à-vis the surrounding provinces and the metropolis. Source: maps.google.com. Map modified and scaled by Julia Giezl Nunag

***Taga-isla*, the people from the island**

The term '*taga-isla*' is a label that the inhabitants of *Talim* take great pride in (the prefix *taga* means *from* and the word *isla* means *island*). However, its meaning goes deeper than just it being an appellation as it embodies their identity and values that separate them from the *taga-labas* (*labas* translates as *outside*), people from the outside. It encapsulates the attributes that they ascribe to themselves, genuine kindness, sincerity, purity, and unpretentiousness, which, from their point of view, enable them to lead a peaceful and secured life. They further believe that the kind of life and traits that they possess are lacking among the *taga-labas*, hence, contrary to the derision that the *taga-labas* attach to the term *taga-isla*, they treat it with respect and praise, and embrace it as a badge of honor (Nunag, 2021). On the first night of my six-month fieldwork in *barangay* Sapang in 2017, such valuation of themselves was very evident as they dared me to either sleep on the street or leave my rented house open through the night; so confident that no harm would come to me and that I would wake up with my wallet still in my pocket. Moreover, they proudly underlined that on the island '*walang nagugutom*' [no one gets hungry] as a *taga-isla* is always there to rescue a fellow *taga-isla*. That no one gets hungry is truly remarkable in a community where the average income of a family of five members is ₱350 a day, which is equivalent to €6.11 a day.

A really bad *masamang panahon* (bad weather)

The social condition on *Talim* is further aggravated by the frequent occurrence of hydrometeorological phenomena such as *unos* [thunderstorm] and *bagyo* [typhoon]. These phenomena are collectively referred to as *masamang panahon*, which translates as bad weather, and includes other natural events like *kulimlim* [darkening skies], *ipo-ipo* [waterspout], and *buhawi* [tornadic waterspout]. The lumping together of these phenomena in this label offers a glimpse of the *taga-isla*'s cognition and approach to hydrometeorological hazards. From their perspective, an entity (hydrometeorological phenomenon) is distinct from its act (the process by which the inherent destructive force of *masamang panahon* is unleashed upon

humans, their properties, and environment) and its aftermath (the consequences of its act, emphasizing the gravity of destruction) (Nunag, 2021:111 – 114). This explains why hydrometeorological phenomena *per se* are not perceived as hazards unlike the definition of United Nations International Strategy for Disaster Reduction (UNISDR) on hazards as ‘a dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage’¹¹⁸. For them, a hydrometeorological phenomenon cannot be automatically considered a hazard just because it is dangerous and has potential to inflict damages, for the simple reason that *masamang panahon* is a weather entity with inherent ‘bad temper’; hence, it cannot be regarded as a hazard for expressing its ‘nature’. Such cognition accounts for their passive attitude before an *unos* or a *bagyo* (Nunag, 2021:112), an effective strategy in dealing with hydrometeorological phenomena.

On average, twenty typhoons enter the Philippine border each year, eight or nine of which usually make landfall¹¹⁹. In 2019, the total rainfall in Luzon during the typhoon season¹²⁰ (July to November) accounted for 30 to 60 percent of the total rainfall for that year. Concerning rainfall contribution during various monsoon regimes, the typhoon days in the mid to late of the northeast monsoon 2018–2019 accounted for 30 percent of the total rainfall over Luzon, while 60 to 70 percent over Northern and Northwestern Luzon and 40 to 70 percent over the rest of Luzon during the southwest monsoon. During the early phase of the northeast monsoon 2019–2020, the rainfall over Northern and Central Luzon, Metro Manila, and CALABARZON (a region composed of the provinces of Cavite, Laguna, Batangas, Rizal, and Quezon) constituted 40 to 80 percent of the rainfall during the typhoon season.

That these phenomena had impacted their lives is evidenced by the rich stories they have about them which are stored in their memories. Tales about rockslides, floods, and houses, boats, fish cages, and pens being tossed up and shattered on their way

down abound, as well as stories of anticipation, opportunity, and improvement of their lot brought about by the very destructive impact of thunderstorms and typhoons. Particularly remembered are those that greatly affected their lives and left either short-term or long-term effects. In 1972, super *bagyo* *Gloring* (international name: Rita, Category 5), though did not make landfall, intensified the southwest monsoon flow over Luzon, resulting in a prolonged period of torrential rains and the ‘most disastrous [*sic*] flooding in the history of the area’¹²¹. The elderly *taga-isla* recalled how water rapidly rose and reached the road which is located at the foothill, submerging and destroying houses along the shoreline. In 1995, another category 5 *bagyo* named *Rosing* (international name: Angela) struck the Philippines and wreaked havoc on Southern Luzon and Metro Manila, causing widespread damage to property and infrastructure, floods, and power outages by one-third of the country¹²². Recognized as one of the most intense typhoons of the decade with peak wind speeds of 155kt¹²³ (178 mph), its effects left an indelible impression on the *taga-isla*. They recounted how big waves smashed their houses while strong winds blew their roofs, uprooted trees, and knocked down power lines. Moreover, fish pens and cages were completely obliterated as they watched in fright¹²⁴. They also recalled similar experiences during the onslaught of *bagyong* Frank (international name: *Fengshen*), a category 3 typhoon, in 2008.

In the following year, *bagyong* *Ondoy* hit the Philippines and caused massive flooding that submerged Metro Manila, Rizal, and other nearby provinces, prompting the president to declare a state of national calamity¹²⁵. Although *Ondoy* only had a maximum intensity of 90 kt¹²⁶ (103 mph), the amount of rain it poured in a span of six hours was measured at 341 millimetres¹²⁷, which is equivalent to about a month’s worth of rain for the area¹²⁸. The devastating effects were greatly felt on *Talim* as fish pens and cages were washed out while floods lasted for three months. The houses along *libis* [shoreline] were submerged and battered by angry waves, forcing the *taga-isla* to evacuate to the hills. For three months, they had to contend with living with floods, power

outages, and athlete's foot¹²⁹. Their plight was further aggravated as *bagyong Santi* (international name: *Mirinae*), a category 2 typhoon, hit the country several weeks after *Ondoy* made landfall¹³⁰. In 2010, they suffered the same fate when category 1 *bagyong Basyang* (international name: *Conson*) ripped through Luzon. Two years after, the *habagat* [southwest monsoon], which was enhanced by typhoon *Haikui*, brought heavy rains in Luzon, flooding Metro Manila, Central Luzon, and CALABARZON¹³¹. The amount of rainfall it dropped for three days almost doubled that of *Ondoy*'s¹³².



A strong unos batters the fish cages.
Photo: Angelito Nunag (07 June 2017).

In the following year, another *habagat* enhanced by *bagyong Maring* (international name: *Trami*) poured rains for five days over Luzon, the amount of which surpassed that of *Ondoy* and the previous *habagat*. It flooded the same places as the previous one; the worst was recorded in the province of Laguna¹³³. In 2014, Luzon, particularly the southern part, was hit again by another category 3 *bagyo* named Glenda (international name: *Rammasun*), destroying many fish cages in Laguna de Bay, Rizal, and Batangas, and leaving ₱8.3 billion (€141.3 M) worth of agriculture and fisheries damage¹³⁴. On October 26, 2020, *bagyong Quinta* (international name: *Molave*) ravaged Southern Luzon, and then super *bagyong Rolly* (international name: *Goni*), a category 5 typhoon, followed suit a few days after¹³⁵. Houses being pummeled by angry waves, roofs being blown away, trees being uprooted by fierce winds, fish pens and cages being washed out, and power outages are the recurring themes in the stories of the *taga-isla* as they recount their experiences of these *bagyos*.

While it is true that their already difficult socio-economic condition and high vulnerability to devastating *bagyo* put them in a very insecure and risky state, there is also no denying their resilience and adaptability. The *taga-isla* are able to persist because their social, cultural, and economic organization is adapted to these harsh conditions and environment, and because their local knowledge, adjustments, and responses are suited to the constant challenges that *masamang panahon* poses to them.

Social organization and cooperation

In mitigating the adverse impact of *masamang panahon*, kinship remains an important factor before, during, and after its onslaught. Annually, members of a clan who are either scattered in different *barangays* on *Talim* or have settled in the city or nearby provinces meet to renew their ties. Aside from celebrating their bond, this gathering is a show of strength as members proudly donned their tee-shirts printed with their clan's name and were obliged to pitch something in with the expenses to make an impression to the

community. More importantly, this is an event of strengthening their sense of security as they are expected to come to their aid in times of crisis. In the event of a devastating *bagyo*, the affected members take shelter from fierce winds and rains in their relatives on the hill within the barangay, where they are offered food, moral support, and even cash loans to rebuild their ruined houses. If more help is needed and if even the ones on the hill are in need, their kin from other unaffected barangays can be relied upon.

Kin also play an important role in maintaining fish cages. The *kuya* [older brother or 'big brother'], either a sibling or a brother-in-law and physically able, is entrusted with the task of overseeing their younger siblings' cages. This trust emanates from the authority he holds in the family and is reinforced by the respect afforded to him by his siblings. In matters pertaining to the maintenance of fish cages, his opinion is always sought; hence, before an impending *bagyo*, his disposition prevails while his siblings' consent and offer the necessary labor. The significance of this relationship lies in the critical need for prompt action before an imminent *bagyo* in order to mitigate loss.

At the family level, the head, with the help of his older sons, is in charge of securing the externals of the house and its periphery while the wife and younger offspring are responsible for the internals (i.e. raising the furniture to a higher level and securing clothes, toiletries, important documents, etc.). This dichotomy is further reflected in the protection of livelihoods as the former are expected to tend the boats and fish cages while the latter help in securing the cottage industry. If evacuation is needed, the abled males are left behind to look for their properties whereas the females bring their children to safety to their relatives on the hill. Thus, in times of *masamang panahon*, the labour that the males have to carry out takes a toll on them, as the females empathize with their *nakakaawang sitwasyon*¹³⁶ [pitiful situation].

Social cooperation is another significant factor in hazard mitigation. In the event of *bagyo*, it is markedly expressed in the

spirit of *bayanihan*¹³⁷ when the community works as one for the common good. Out in the lake, the fishers who are done tending their cages voluntarily help others who are not yet done with theirs. Back on land, the present abled males compensate for the absence of those who are in the lake by assisting the wives of the latter in securing their houses. Meanwhile, fishers who are busy reinforcing their homes and have no time to tie up or bring their boats to a higher place are relieved of such burden by the men in the community who secure the boats on their behalf. When everyone is done with their personal affairs, the men work hand in hand in constructing makeshift roads and bridges. During the construction, people pitch in their own bamboos and *anahaw* [fan palm, scientific name: *Saribus rotundifolius*], the very materials they use in their fish pens and cages. In evacuating their livestock, people on the hill offer their pigsties¹³⁸.

In addition, religious organizations also provide a great deal of support. In the aftermath of *bagyong Ondoy*, for instance, the parish church of *barangay Janosa* distributed cookware, blankets, and groceries. To help rebuild their homes it also handed out construction materials such as hollow blocks and cement, which they unwillingly sold to obtain money to buy food as the flood dragged on for months. Moreover, the Tiberiade Community Foundation Inc. through San Damiano, a foundation in *barangay Sapang* which was established by the Fraternity of Tiberiade in Belgium, gave out food packs and rice¹³⁹.

It is evident that local adaptive systems and adjustments are already in place and working quite well to mitigate hazard loss on *Talim*. The social organization is fittingly adapted to the harsh condition and constant threat of *masamang panahon*. These local social adaptations and the social harmony that is concomitant with their execution, however, are being upset by local politics which is triggered by external factors. The arrival of assistance from local and national governments signals the start of a rift in the community and the end of social cooperation. Accusations of favouritism, corruption, and politicking cause a chasm in the

populace. Barangay officials, particularly the *kapitan*¹⁴⁰ [captain], are accused of hiding relief at the barangay hall and favouring only those who voted for them. Meanwhile, the residents on the hills question the ones from *libis* for receiving relief, prompting the latter to dare the former to trade places with them.

Shifting subsistence and economic opportunism

Historically, the modes of subsistence on *Talim* constitute sensible adaptations to its difficult and harsh physical environment. In the 1960s, prior to the introduction of aquaculture in the lake, farming and fishing were the primary livelihoods on *Talim*; the former being the major source of provisions while the latter being the minor. During this period and until the 1970s, the *taga-isla* cultivated rice along the shoreline and on the mountain (Nunag, 2021:63–65). With the proliferation of aquaculture in the 1970s and the increasing unreliability of rainfall due to changes in the weather patterns, which they call *ulyaning panahon* [senile weather], they abandoned rice farming in favor of aquaculture and low-maintenance crops that easily yielded profits. Those who continued farming opted for crops that could withstand heat and the *ulyaning panahon* such as banana and *balingoy* [cassava] while others ventured into massive cultivation of bamboos on the hills because of the booming aquaculture industry. Meanwhile, fishers also opted for low-maintenance species such as tilapia (*Oreochromis niloticus*) rather than bangus [milkfish] (*Chanos chanos*) because tilapia rearing was less labour-intensive and its production cost was lower since it did not require people to man the fish cages for daily security and feeding. The value of this strategy lies in their conviction that the amount of investment at risk from *bagyo* is relatively smaller than that of *bangus* rearing.

Since aquaculture profit is seasonal, another strategy that they adopted was to engage in open water fishing for their daily sustenance while waiting for the harvest season. In times of *bagyo* when fishing is not possible or in times when the catch is scarce, during which they think that the *laway nagdamot* [the lake has turned

mean], they resort to bamboo furniture making. In the aftermath of *bagyo*, they turn the devastation into opportunity by taking advantage of the abundance of milkfish that escaped from the ravaged fish pens of wealthy businessmen (Nunag, 2021:140.) or of the gill nets that were blown away by strong winds and littered the lake. During this time, a fisher earns an average of ₱15,000 to ₱20,000 (₱261–₱348) in three days, enough to raise money for cottage industry capital or the improvement of his house. In the aftermath of *Ondoy*, some earned as much as ₱200,000 (₱3483) in three weeks from collecting and selling salvaged gill nets¹⁴¹. One of them who happened to be a barangay *kapitan* was even accused of corruption for the good fortune that had befallen him, claiming that his money came from theft. After each devastating *bagyo* or *unos*, it is common to see improved houses on *Talim* as they use their earnings to build concrete houses (Nunag, 2021:140–141). The economic opportunity resulting in their ingenuity of turning disaster into opportunity is so great that this event has been called *bangusan* (from the root word, *bangus*), a much-anticipated occasion in the aftermath of *masamang panahon*.

The malleability of their livelihoods in the face of *masamang panahon* is complemented by the flexibility of their economic roles. The fisher father and his abled sons become furniture makers in the event of *bagyo* or when the ‘lake has turned mean’, joining his wife and younger children in one pursuit. Thus, *bagyo* can be regarded as a cohesion force that bonds household members, as it gives them the opportunity to work physically together. Because of this and of the economic opportunity that it brings, *masamang panahon* particularly *bagyo*, hence, is both a positive and a negative force contrary to the prevailing view that it is just a destructive phenomenon. This is consistent with their belief that a hydro-meteorological phenomenon *per se* is not automatically a hazard. Meanwhile, such a dual notion of a natural phenomenon is also noted among the riverine communities in Bangladesh, where they perceive *borsha* (‘normal’ annual flooding) as a beneficial phenomenon while *bonna* (abnormal flooding) as detrimental (Emdad Haque, Zaman, 1993:93–107, Zaman, 1993:985–996).

Stealing a march on *masamang panahon*: local knowledge, adjustments, and coping strategies

Besides the adaptability of their socio-economic organization, the *taga-isla* have developed strategies and mechanisms with which to grapple with *masamang panahon* through their constant interaction and intimate relationship with their natural environment and with the nonhuman beings that inhabit it over a long time. These interactions and relationships make them adaptable because through these they are informed of the peculiar behaviours of the ecosystem and its nonhuman inhabitants. In turn, these behaviours, which are contained in their body of local knowledge, guide them in formulating local adjustments and coping strategies to mitigate the adverse impact of hydrometeorological phenomena (Nunag, 2021:110, 142, 145–146). Thus, they are able to act promptly and accordingly, and employ the right game plan, resulting in stealing a march on *masamang panahon*.

Feeling and seeing the weather

It is common to hear among the adult *taga-isla*, especially the fishers, that '*alam na alam namin ang hangin*' ['we know the wind very well'] (Nunag, 2021:89). This claim encapsulates their profound understanding of the wind, making it an intrinsic component of their existence and consciousness (Nunag, 2021:89.); hence, they come up with efficient local forecasting and early warning systems revolving around the elements. Perceptual cognition is at the core of their weather prediction. Using the sense of touch and sight, they observe the slight changes in the movement, direction, strength, and behaviour of the winds as well as the changes in their physical environment, providing them vital information in their mitigation schemes. The arrival of *Sabalas*¹⁴² wind, for example, brings along cold air and warns of impending *masamang panahon*. Hence, as soon as the air turns cold they begin to brace their houses and moor their boats. In contrast, the advent of *Salatan*¹⁴³ carries warm air and signals the start of fine weather (Nunag, 2021:131.). Thus, depending on their tactile experience of the elements, they employ the appropriate mitigation measures.

The use of tangible environmental indicators is also present in other cultures. In Batanes, the northernmost province in the Philippines, people use the temperature of the wind to foretell the temper of the sea (Uy, Shaw, 2008:59–63) while in Catanduanes in Southern Luzon, people combine the temperature with the smell of the wind to predict typhoon (Sarmiento, 2011:68–86). Moreover, the farmers of Burkina Faso in the Sahel-Sudan region correlate temperature with rainfall while the *Kenyah Badeng* in Malaysia also combine smell with temperature to make weather predictions (Roncoli, Ingram, Kirshen, 2002:409–427, Kumar Puri, Garay-Bayarazarra, 2011:21–30).

Besides the tactile experience of the wind, the *taga-isla* also utilize visual perception of the elements. They combine the perceived physical attributes of the winds with their spatial characteristics to forecast weather. There are four major winds that prevail over *Talim* Island, namely: *Hilaga*, *Timog*, *Habagat* and *Amihan*. *Hilaga*, which translates as north, is the intense winds that flurry from the northwestern side of the island; its arrival is associated with the advent of *masamang panahon*. Meanwhile, *Timog* [south] is the fiercest and strongest winds that blow from the southeastern side and is dubbed as the 'King of the Winds'. It is associated with the termination of *masamang panahon* because they believe that only the 'king' could command the typhoon to stop. On the one hand, *Habagat* is the powerful winds that prevail on the western side and brings rain all over *Talim*. It is linked with *masamang panahon* because it hauls up houses, swells the lake, and creates huge waves. On the other hand, *Amihan* is the strong winds that gust from the eastern side; it presages good weather (Nunag, 2021:82–85).

In addition to the elements, they also rely on the visual experience of the natural surroundings. They are particularly keen on the interaction between the clouds and the mountain, noting that if *nagkumot ang bundok* [the mountain has blanketed], *masamang panahon* is sure to come. Thus, if thick dark clouds blanket the summit of the mountain, they are already forewarned of the imminent bad weather. They also observe the movement of the clouds

in relation to the lake waters. If the *panginoren*, a phenomenon characterized by the rapid movement of the clouds, occurs and the lake water below is calm, then heavy wind blows are expected.

The use of visual perception of the elements and natural environment in weather forecasting is also employed by different communities in various parts of the globe. The inhabitants of Malalison Island in Antique province in Western Visayas monitor the clouds vis-à-vis the mountain to predict bad weather (Siar, Ortega, Babol, 1993:440–460). Meanwhile, the rural communities of eastern Terai of Nepal and the Chitral district of Pakistan look at the colours of the water and clouds to anticipate floods (Dekens, 2008:59–63). On the one hand, the *Ivatans* of Batanes and the *Catandunganons* of Catanduanes utilize wind directions, and on the other, the *Kenyah Badeng* and the coastal communities in Bangladesh combine visual and spatial attributes of clouds and winds (Uy, Shaw, 2008, Sarmiento, 2011, Puri, Garay-Bayarazarra, 2011, Howell, 2003).

Among the Euro-American cultures, weather lore and proverbs based on observable phenomena are utilized by farmers and shepherds to forecast weather (Strauss, 2003:39–60).

Weather forecasting through nonhuman interaction

In grappling with *masamang panahon*, local knowledge continues to be a significant component in hazard mitigation. Contained in this body of local knowledge are stocks of know-how, skills, perceptions, beliefs, and understanding of the natural world and its nonhuman inhabitants that the *taga-isla* utilize to their advantage. They take, for instance, the crowing of a rooster and the croaking of frogs in the middle of a *bagyo* as a sign of its eventual demise. This belief has its root in their propensity for noise amidst a natural phenomenon and deem the crowing and croaking as the animals' way of fending off *masamang panahon*. They also regard the flight of *kalangay-langayan* [swallows] (*Hirundo tahitica*; *Hirundo striolata*)

at a very low altitude and the curious behavior of *bakaw* [striated heron] (*Butorides striatus*) of building a nest in the lower part of a tree as omens of bad weather (Nunag, 2021:147–152). Similarly, they deem the surfacing of common earthworms (*Lumbricus terrestris*), *palakang Kabakab* [bullfrog], *susong buwili* [freshwater snail] (*Jagora asperata*), and *susong Hapon* [terrestrial snail] (*Achatina fulica*) as portents of *masamang panahon* and flood. Interestingly, they believe that the height that the latter has reached indicates the height of the flood (Nunag, 2021:154–157).

The linking of animals' peculiar behaviours with natural phenomena is also observed among other Asian and African communities. For example, the tribal peoples of *Rajahstan* in India and the *Kenyah Badeng* also take the noise of the chickens and frogs to be signs of bad weather (Pareek, Trivedi, 2011:183–189; Puri and Garay-Bayarazarra, 2011). In Albay, Philippines and in Vietnam, the flight of goose and dragonfly is linked with flood and rain (Dalisay, 2017:75–102; Nguyen Ngoc Huy, Shaw, 2008 :59–63.), while in Burkina Faso and *Rajahstan*, bird's nest location also has to do with flood and rain (Roncoli, Ingram, Kirshen, 2002, Pareek, Trivedi, 2011). Meanwhile in Bangladesh, the movements of ant's presage flood and heavy rains (Howell, 2003, Irfanullah, Motaleb, 2011:80–90).

It bears mentioning that the *taga-isla*'s understanding of the link between the natural world and the animals' behaviors is constituted in the dialectics between absence and presence (the presence of noise necessitates the absence of *masamang panahon* while the absence of noise requires the presence of *masamang panahon*); and between top and bottom, and below and above, where the aberrant behavior of the animal is linked with these dichotomies and the occurrence of *masamang panahon*. For the *taga-isla*, the occurrence of *masamang panahon* has to do with the departure from the usual or expected behaviour of the animals. Accordingly, aerial animals are expected to 'dwell' and move high above the ground, and by no means they are to dwell and move below or near the ground. In contrast, animals that dwell in the water or live underground

are expected to settle and roam around either in the water or below the ground, but not on the ground. In other words, aerial animals are beings of the atmosphere and their domain is high above the ground, while aquatic and underground animals are beings of the underground and their domain is below the surface. On that account, animals' behaviours, say, birds flying at low altitude, are an aberration and are, thus, taken to mean as a sign of imminent bad weather.

It is also worth mentioning that although various cultural communities in Asia and Africa make use too of animal behaviours to predict the weather, its application on *Talim* shows a stark contrast. For example, among the *Kenyah Badeng* and the tribal communities in Rajahstan the frogs' croaking and chickens' crowing presage rainfall, whereas among the *taga-isla*, these signal the end of *masamang panahon*. Moreover, among the herders of Burkina Faso, bird's nests hanging high on trees portend heavy rains while nests hanging low signal scarcity of rainfall. On *Talim*, this belief works in the opposite manner. Curiously, this marked difference in the application also reflects a marked difference in the subsistence system, as the *Kenyah Badeng* and the inhabitants of *Rajahstan* and Burkina Faso are all herders and farmers residing in farming villages while the *taga-isla* are fishers living in a coastal area.

Local innovations and inventions

Evidently, the utilization of local knowledge in dealing with *masamang panahon* makes them resilient and adaptable by being two steps ahead in hazard mitigation. This approach is further bolstered by adopting local adjustments and coping strategies involving small-scale structural measures. In light of the constant threat of fierce winds and angry waves, they have come up with an innovation called *tarundon*, an improvised fortification made up of either concrete or bamboo or *anahaw*, to safeguard their houses. To protect their walls and roofs against the wrath of *bagyo*, they reinforce their houses with *serga* or *bangkis*; the former involves tying the whole house to a post or tree using a strong rope (nylon

or hemp) and a bamboo fastener over its roof, while latter entails tying just the roof to a post or tree. Even the stacking of houses against each other has become an incidental defence against *masamang panahon*, as the ones sandwiched in the middle need only to employ *bangkis*, unlike the ones at the end that are compelled to apply *serga* since they are more vulnerable to strong winds. In times of flood, improvised roads and bridges made up of bamboo and *anahaw* are constructed. Inside the house, they build a bamboo pallet and raise it near the roof to serve as a temporary shelter. During an evacuation, chapels and schools are also converted into temporary shelters.

Fishing adjustments to typhoon hazards also form part of the local measures on *Talim*. In securing their fish cages, the fishers tie their cages to *tarungkals* or bamboo pins, which are buried at the bottom of the lake. The alternating branches of a *tarungkal* beneath the lake keep the cages in place amid the strong wind. The size of the cages is also kept to a minimum for easy retrieval in times of *bagyo*. A preference for bighead carp (*Hypophthalmichthys nobilis*), locally known as *Taiwan*, over tilapia is gaining ground because it is a cheaper and more resilient species. Hence, losing them during *bagyo* would only incur a minimal capital loss.



A house on *libis* is tucked under a road and reinforced with *serga*.
Photo: Angelito Nunag (01 November 2015).

Conclusion

There is no denying the resiliency and adaptability of the *taga-isla* in the face of *masamang panahon*. Their social, cultural, and economic organization is undeniably adapted to their difficult and harsh physical environment, containing adjustments and adaptations that are suited well to their way of life and its challenges. Social organization, cooperation, and relationships are already in place and functioning well to mitigate the adverse impact of *masamang panahon* and to meet their need for physical survival and order. Their modes of subsistence too are fluid, constantly shifting and adapting to the demands of time, and continually appropriating new ones with optimum benefits at the expense of the old ones. The flexibility of their economic roles further adds up to their economic resilience as well as their propensity for turning hazards into economic opportunities.

The understanding of their natural world and the utilization of this knowledge in mitigating hazards also increase their resiliency. By being forewarned, they are able to devise timely and appropriate adjustments and coping strategies, thereby, stealing a march on *masamang panahon*. These adaptive measures contain local innovations and inventions that are born of their intimate relationship and constant interaction with the natural world and the nonhuman beings that inhabit it over a long period. As such, the efficiency and suitability of these local innovations, inventions, strategies, and adjustments to their way of life and hazard mitigation initiatives should not be played down.

There are sensible insights that we can gain from the *taga-isla* regarding grappling with natural phenomena and hazard mitigation. Their resiliency and adaptability illustrate the indispensability of the interdependencies of environmental, social, cultural, and economic phenomena in tackling hazard mitigation issues. The recognition of this point is significant not only because it leads to the formulation of effective and correct policies on hazard management and risk reduction, but also because it recognizes the capabilities of local social, cultural and economic systems to devise

corrective measures to minimize loss, and also because it prevents the disruption and destruction of these systems that are well in place in the local communities and are adaptable to natural hazards.

Moreover, their cognition of hydrometeorological phenomena prompts a rethinking of our view on the concept of natural hazards. For them, a natural phenomenon cannot be conceived automatically as a hazard; this is reflected in their approach to *masamang panahon* before, during, and after its occurrence. While it is true that they do not wish for a *bagyo* to happen, it is also true that they do not entirely detest it. Its desirability is expressed in their anticipation of its demise, racing each other to the lake to partake of the fortune. Thus, *bagyo per se* is neither a hazard nor an evil but an opportunity to better lives for the *taga-isla*. This point of view also affords them calmness before a *masamang panahon*, another effective means to boost their resilience. Such cognition also finds its significance in policy formulation as it reminds us of the wrong tendency of the prevailing policies on hazard mitigation, which call for drastic and impractical measures such as relocation of the people instead of the more effective and practical measure of exploiting their capability to live with 'hazards'.

7. RECONSTRUCTION WITH LOCAL ARCHITECTURE IN THE AFTERMATH OF THE TYPHOON HAIYAN

Elsa Cauderay, Florie Dejeant, Thierry Joffroy & Olivier Moles

During the last decades, disasters due to natural hazards have tremendously grown, causing huge human and economic losses, in particular for people's habitat¹⁴⁴. This situation mainly results from increased exposure and vulnerabilities due to climate change, rapid and uncontrolled urbanization, as well as less preparation and resilience capacities within the population. Global projections show that this situation will continue to deteriorate and, thus, may lead to more and larger disasters, with the first victims being the poorest strata of the population.

The Philippines is located in an extremely hazard-prone area and is ranked among the countries deemed most exposed to natural hazards¹⁴⁵. On average, about fifteen calamities are yearly recorded. Among them, storms and floods are the most frequent, but the Islands are also exposed to earthquakes, volcanic eruptions, landslides, and tsunamis.

The country has a long history of disaster response, being the first to have established a national office focusing on managing emergency relief¹⁴⁶. As for civil society, there is a long and strong tradition of community-based organizations and pluralistic networks engaged with local stakeholders in disaster response (Bankoff, 2007).

In 2013, from November 6 to 9, the super typhoon Haiyan¹⁴⁷ struck the islands located in the central part of the Philippines. It has been the strongest tropical typhoon ever recorded. It has devastated a wide area, particularly the Eastern, Central, and Western Visayas¹⁴⁸, causing more than 6,000 deaths and affecting 16 million people, destroying and damaging over one million houses.



Fig. 1 Map of Panay Island in the Philippines with the Typhoon Haiyan path, and the location of the two reconstruction projects

In Panay Island, Typhoon Haiyan strongly hit the remote communities of Indigenous Peoples (IPs¹⁴⁹) living in the province of Aklan and aggravated their already difficult living conditions by damaging their main source of food and livelihood, their crops, and their homes. In the three *barangays*¹⁵⁰ of the municipality of Libacoo, 98% of the houses were fully or partially damaged.

Next to Aklan, in the province of Capiz, though the population concerned are not Indigenous People, the situation observed was similar with major damages observed in three *barangays* of the Municipality of Cuartero.

The Diocesan Social Action Center (DSAC) of Kalibo rapidly implemented a first-relief operation to assist the indigenous communities of Libacoo. After this emergency phase, the DSAC engaged in a Shelter and livelihood Improvement project, supported by Caritas Belgium and Secours Catholique – Caritas France. Housing recovery activities were implemented in three targeted communities. Priority was given to the most vulnerable families and those whose houses had been totally damaged and had not yet been rebuilt.

Similarly, the Panay Center for Disaster Response (PCDR), based in Iloilo, received support from Caritas Luxembourg to implement an Early Recovery Project in the province of Capiz. As continuous attention was needed, PCDR and Caritas Luxembourg started a 2-year multi-sectorial Rehabilitation Project in 2015 to address the needs of 12 targeted communities in this area. The shelter component targeted three communities of Cuartero.

Both projects included assistance from CRAterre for the fine-tuning of the intervention strategies and implementation of activities.

Overall hypothesis

In post-disaster responses, the humanitarian community currently tends to develop new strategies that aim at supporting the affected local populations in self-recovery efforts rather than delivering temporary and transitional shelter. The idea is to support the population in view of medium and long-term stages of recovery as well as improving their resilience capacity in preparation for new hazards to come.

In territories prone to frequent natural hazards, people have always developed specific building cultures¹⁵¹ that have integrated disaster-resistant housing design and building practices to make human settlements safer. In a continuous effort and learning process, builders and communities have always tried to build back safer, making the best use of the local resources available and, at times, including exogenous innovations. As a result, numerous disaster-resistant building cultures have been developed, allowing populations to cope with the existing risks at the local level and encompassing tangible and intangible aspects such as preparedness, alert system, and relevant approaches for reconstruction.

Regarding local building practices, within our globalized world, ‘modern’ materials and building methods, as well as foreign architectural patterns, tend to prevail over traditional practices

and resources. However, this is not always done with capacities to respect the standards. Quite often, the ability of traditional practices to minimize the effect of natural hazards or provide solutions for potential quick recovery is overlooked. This 'technico-cultural' diversity collapse contributes to the loss of important knowledge and to increased vulnerabilities.

Thus, a new hypothesis for guiding reflection on post-disaster reconstruction strategies is emerging, which suggests that a comprehensive understanding of the context should be done prior to any strategical and technical proposal. The idea is to identify and analyse what people do by themselves (i.e., their building cultures) at various scales – local materials, building details, building system, architectural shape, urban planning, etc. —, to be able to take stock of the existing strengths and weaknesses before any suggestion be made for a (recovery) project (Joffroy, 2003).

Developing post-disaster responses based on existing good practices does not lead to some nostalgic return to the past. Adaptations and improvements can be identified through a reverse engineering process. Identifying, understanding, recognizing, and, where needed, improving and strengthening local practices often result in very useful knowledge for the definition of relevant disaster risk reduction and reconstruction programs. This approach has been promoted for years by several experienced organizations¹⁵², and some recent projects¹⁵³ have proven that considering local building cultures is extremely valuable when working towards enhancing community resilience in terms of housing.

Additionally, this approach ensures the respect of local culture and customs, the identification of the real basic needs, and the valorisation of local knowledge and capacities (Caimi, 2015). It also favours the identification of gaps or links between local development issues, and further, to take them into account in the project design.

Specific hypothesis for the two projects in Panay Island

The high recurrence of hazards in the country has a strong impact on Filipino culture. Several scholars have studied this deep integration of hazards into the fabric of Filipino social and political life. Going further in the analysis, Greg Bankoff (Caimi, 2015, Bankoff, 2007) points out that Filipino culture can be regarded as the product of community adaptation to natural hazards. This finding is most evident in the agricultural system, in the half-nomadic rural lifestyle, and in local building traditions as well. Many tangible and intangible specificities of the country actually correspond to coping strategies that allow continuity of life despite the frequency and intensity of disasters.



Fig. 2 Emergency shelter built before the typhoon, 2014
© CRAterre, Cauderay E.

A most notable coping practice is the traditional mutual aid system known as *bayanihan*. This community spirit exists at all levels of society but livelier in rural areas for agriculture and housing construction and post-disaster reconstruction. This mutual aid system allowed families to bounce back quickly despite a lack of funds. In the aftermath of Haiyan, the high efficiency of the *bayanihan* practice impressed the international community. Therefore, it has quickly appeared relevant to consider this social practice in promoting appropriate disaster response measures.

Besides that, the initial assessment confirmed that local building practices are particularly well adapted to the risk context: specific wood connections, rattan tying, bamboo ballasting system for roofs, ventilation system to mitigate wind strength, etc. It was identified that the damages to the local houses mainly resulted from a lack of maintenance linked either to land tenure insecurity or to some level of depreciation of the traditional building models. It was a challenge to ensure that building techniques and architectural proposals reinforced a sense of pride within the population.

The unavailability of local materials was another challenge. This issue was either a direct result of the damages caused by the typhoon or because of deforestation processes entailing scarcity of the specific wood species needed for the main structural posts of the houses that need to resist when embedded into the ground. Thus, the projects also explored the close relationship between the need to protect or manage the environment as a crucial resource for construction purposes.

Overall methodological approach

The projects adopted a participatory approach that led to define a set of complementary activities, including regular evaluation. That has presented the advantage of making it possible to adjust the initial choices made for the response both in terms of technical

models and for the implementation of activities such as construction, training, and awareness activities and tools.

From the preliminary stage of the projects and along their implementation, the dynamic and participatory reflection is crucial to identify critical issues that may or may not need to be addressed: access to sites, availability of water (and possibly drinking water), land tenure situation, roots of deforestation, gaps regarding building rules and regulations, lack of building equipment, etc. To ensure a satisfactory impact of the project, attention was paid to make support for the most vulnerable also beneficial to the whole community. Thus, priority was given to affordable and easy to duplicate options with the potential to repair or improve the existing while capacity building and awareness activities have been included.

The experience has shown that one of the best ways to understand a situation and engage a good dialogue between the experts, the local partners, and the population and artisans, is to initiate a process of building one or several prototypes quickly. Located in accessible and visible locations, the prototypes are an opportunity for getting feedback from the population. It is also an opportunity to set up a mutual and creative learning process with the local artisans on technical details, construction site process, and design.

The construction of prototypes is also an opportunity to measure quantities and time and to compare and evaluate the relevance, capacities to adapt, and progress. This process is beneficial for preparing an accurate budget and planning.



Fig. 3 Pilot house in Oyang built within the shelter project in Libacao, 2014 © CRATERre, Caimi A.

Having been involved in two post-disaster projects in Panay Island made it possible to compare the results of such methodology applied to two nearby contexts but with different challenges and stakeholders. Exchanges on experiences and knowledge between both projects have been part of this iterative process.

Projects challenges and implementation

Challenges of the project in Libacao

Several indigenous communities live in Libacao, among them the Tumandok in *barangays* Dalagsa-An and the Bukidnon in *barangays* Oyang and Manika. They are mainly settled upland, in remote mountainous areas, and, despite external influences, they have managed to sustain their culture, language, and rituals. They are represented by their own council and chieftain. One of their primary concerns is the absence of land tenure security. The communities have not been issued the Certificate for Ancestral Domain Title and remain at risk of expulsion related to mega-dam projects and military zone extensions. IPs are not used to receiving external support and, within their rich traditions, have maintained many disaster-coping strategies. The challenge was to fill the gap

between their ability to recover on their own and the needs they were not able to meet while maintaining sustainable and resilient houses and practices.

Project development in Libacao

A preliminary joint mission was organized in March 2014 by the DSAC, together with the international stakeholders, to carry out an assessment in the field. This mission allowed identifying the urgent needs as well as the strengths and weaknesses of the local building cultures and stakeholders' capacities and had made it possible to build a shared understanding of the situation before the start of the project. This assessment was carried out through a participatory process. It allowed agreeing on the methodological approach to adopt and on the project's overall framework and strategies. This first step led to prioritizing the most remote *barangays* of Libacao where needs were very high, and no support was to be provided by other national and international actors.

A pilot phase of six months was implemented. Its main objective was to build six pilot houses in strategic locations within the community and facilitate training for the carpenters and engineers. In order to improve the pilot houses throughout the construction process, the evaluation of the first house built led to readjusting some technical details of the following five pilot houses. In parallel, technical sheets were developed for training sessions. Each pilot house provided on-the-job training to build or reinforce the capacities of DSAC engineers and local carpenters. In the meantime, the first draft of the educational kit for Resilient Housing Awareness-raising sessions was developed and tested towards community members. Subsequently, lessons learned from the pilot phase led to its extension by five months. The whole pilot phase and its extension made it possible to readjust the overall strategy, such as the sizes of the houses (six or eight piles), the organization of the spaces (kitchen outside, location of doors), and to include repair and upgrading options. It also allowed for a more in-depth assessment of the local knowledge and techniques.

It enriched the initial findings and improved the response through specific design adaptation for each *barangay*, such as wall panel types and strong but flexible foundations. This first phase also brought a better understanding of the *bayanihan* social practice and its potential and limitations within the project.



Fig. 4 Propping system built before a typhoon, 2014
© CRAterre, Cauderay E.

The main phase started in April 2015 for two and a half years. The selection of beneficiaries was conducted through a community-based process. It included a complaint collection system. In parallel, building and repair activities were scaled up according to the needs identified in the three targeted *barangays*. The experience in logistics gained in the early stages of the project helped to overcome the inaccessibility of the most remote *barangays*. Continuous technical training and retraining sessions were organized to strengthen local capacities and increase the number of trained carpenters and supervisors. The educational kit for awareness-raising was reviewed and enriched, and each community participated in related sessions.

Just before the full completion of the project in October 2017, the partners participated in the capitalization of the project.

Challenges of the project in Cuartero

In Cuartero, the assessment revealed that most people's difficulties are linked to the many drawbacks that GMO-corn crops have generated. In all three communities, the environment is severely affected by a high level of deforestation and pesticide pollution that also affects people's health. In regard to housing, on the one hand, the induced severe economic conditions inevitably impact the capacity of populations to properly maintain, build, or recover their house after a disaster. On the other hand, the absence of vegetation protection and the erosion of soils due to deforestation have increased the vulnerability of built structures to typhoons and landslides. In many cases, the relocation of a house results more from the choice to extend a field rather than to find a safe place. Therefore, the main challenge was to highlight the causal link between landscape degradation and vulnerability to disasters and, to some extent, to the scarcity of some building materials.



Fig.5 Affected environment due to extensive GMO-corn agriculture in Cuartero, 2016 © CRAterre, Dejeant F

Unlike the project in Libacao, the project framework in Cuartero had been outlined and approved by the donor before the first assessment step. Despite this constraint, the joint assessment carried out in the three targeted *barangays* in November 2015 led to question some of the proposed responses, such as the use of plywood instead of proposing the valorisation of local bamboo and its related knowledge. It resulted in many changes made to the initial proposal by giving more focus on the potential of adequate use of local building materials in a reasonable way, thus with more chances to reinforce resilience. This preliminary assessment also highlighted the relevance of creating links with other components of the project. As a result, a specific housing resilient awareness session was included in the DRR curriculum, and the planned dormitory for indigenous students in Tapaz has also been constructed using local techniques. It was a valuable opportunity to train local carpenters and to demonstrate the viability of a well-built contemporary building based on local building culture principles.

A pilot phase of five months started in March 2016 and included the construction of 9 pilot houses at strategic locations. The first three buildings were the opportunity to conduct on-the-job training sessions in each *barangay* towards local carpenters as well as to build capacities within PCDR staff. Another training course on assessing damaged houses and how to repair them was organized through the repair of a pilot house. In the meantime, educational materials were prepared based on the ones developed within the project in Libacao with adapting and enriching them. A training of trainers' course (ToT) was also developed to train PCDR's community facilitators in conducting awareness-raising sessions towards the 12 communities targeted by the broad project.



Fig. 6 On-the-job training for carpenters in Cuartero, 2016
© CRAterre, Cauderay E.

Many delays in the pilot phase's implementation led to extending it for an additional five months, allowing to carry out the community-based beneficiaries' selection and to achieve the pilot houses as well as additional building and repair activities. Continuous and final evaluation of the pilot phase resulted in reconsidering some technical solutions making them closer to local practices and more affordable. As an example, being quite inaccessible, concrete foundations poles were discarded in favour of the locally well-mastered wooden pillars embedded into the ground with options of extension joints. Indeed, its durability performance, having more precise data on the appropriate wood used for it, had been reconsidered. Besides that, the option for repairing and upgrading existing houses was judged by all parties as being technically efficient, cost-effective as well as time-saving as compared to new buildings. This review of existing options helped in adjusting the project strategy towards more repair and upgrading activities and enabled them to include more beneficiaries within the same framework.

The main phase of eight months started in December 2016. In parallel to the repair and building activities scaling up, additional training and retraining sessions were conducted, allowing a pro-

gressive capacity upgrading. An assessment of the knowledge and skills of the carpenters was carried out to validate and value their learning outcomes. Dissemination activities such as open-house visits and forum events were organized with the local authorities.

At the end of the main phase, a capitalization workshop was carried out between local and international partners, as part of the broad capitalization process conducted for both projects. As it coincided with the end of the project in Libacao, deliverables and publications for both capitalizations were developed jointly. Therefore, the technical guide (Cauderay *et al.*, 2017) and the Disaster Resilient Housing Awareness (Dejeant *et al.*, 2017.) training kit developed throughout both projects were finalized. The main result of the capitalization process was the publication of a booklet (Cauderay, Dejeant, Moles, 2018) in which local and international partners participated.

Results and impact

Projects achievements

In Libacao, from 2014 to 2017, the DSAC and the communities of *barangays* Dalagsa-An, Manika, and Oyang participated in the construction of 120 houses, 129 extensions, 226 latrines, and the repair of 106 damaged houses, benefiting a total of 226 households. They successfully overcame the day-to-day challenge related to the difficult access to these remote *barangays*. Throughout those activities, the project allowed improving the skills and knowledge of three engineers, eight supervisors, and 96 carpenters. Being involved in the coordination and follow-up of community building sites using the *bayanihan* system, six professionals enhanced their capacities in social facilitation. They were also trained to facilitate awareness-raising sessions that 1,062 households attended.



Fig. 7 New house with kitchen extension in Libacao, 2016
© CRAterre, Moles O.

In Cuartero, within the framework of the presented project, from 2015 to 2017, PCDR and the communities of *barangays* Putian, Manhunod-Hunod, and Carataya, participated in the reparation and improvement of 30 houses and the construction of 16 houses. One technical lead, three foremen, and 43 carpenters improved their capacities throughout the different training sessions and the project activities. Additionally, three community facilitators received continuous support in coordinating and facilitating the project's building and social activities. In total, 11 PCDR community facilitators were trained in delivering the Resilient Housing Awareness course. Therefore, while actual building and repair activities were only targeting three *barangays*, awareness-raising activities were disseminated within the 12 *barangays* targeted by the project, allowing 200 community members to attend the sessions.



Fig. 8 House repaired and upgraded in Cuartero, 2017
© CRAterre, Dejeant F.

In Tapaz, in 2016, a dormitory for 50 Tumandok students was designed by a Filipino architect in consultation with the local partners and CRAterre. It consists of two buildings, one of 185 m² being the sleeping area and the other one of 75 m² being the dining area. These two buildings are mainly constructed with wood and bamboo and illustrate very well several elements of the local architecture and its various disaster-resistant technical solutions.



Fig. 9 Student's dormitory project in Tapaz, 2017 © CRAterre, Dejeant F

Project impact in Libacao

During the project in Libacao, IPs were particularly responsive to the approach of integrating the specificities of their traditions and culture. The awareness-raising sessions, as well as the continued discussions among community members, carpenters, and engineers, allowed the project to be particularly well-received. Indeed, the demonstration of the first pilot house helped to build confidence in the project approach.

During the project, some of the technical solutions proposed were re-used by non-beneficiaries. These cases of duplication highlighted the relevance of the solutions suggested as well as the effective capacity of households to apply them on their own.

Nevertheless, awareness activities have been too limited to ensure a larger interest within non-beneficiaries. Furthermore, some of the project's technical choices do not seem to have always been well understood, resulting in gaps in the skills gained.

At the local partners' level, the project was a real opportunity to reinforce all their skills. For both local and international partners, it was a chance to experiment with the local building culture approach and its positive outcomes. This process led the DSAC to engage very actively in implementing all activities. However, the team had to deal with other partners implementing shelter projects based on different approaches at the same time. Therefore, in order to respect the limited time frame, outputs were sometimes favoured resulting in less awareness and capacity-building activities and probably less overall and durable impact.

Regarding the proposed methodology, the remoteness of communities, seasonal farmer work, challenges concerning the transport of materials, conflicts on land issues as well as dual authorities (IPs and LGU¹⁵⁴), and local armed conflicts were dealt with through the constant improvement of the project's strategy. The response quality was also re-evaluated and improved at each stage of the project. It included, for example, the decision to add kitchen and

toilet components to the houses in order to respond not only to a real need but also to the long-term improvement of comfort, health, and safety conditions.

Project impact in Cuartero

All the carpenters involved have greatly enhanced their knowledge and their understanding of resilience principles. Carpenters revealed to be key actors in raising awareness. Their interest and commitment to sharing and receiving knowledge with the community have been tremendous. They feel more confident in applying the existing local techniques highlighted, revised, and valued throughout the project. Also, the project participated in enhancing teamwork and cohesion among them.

By establishing links with other project components (sustainable agriculture, livelihood, tree planting, housing), communities and other stakeholders such as government agencies and partner organizations have realized that the local resources issues can be addressed in the long term and build on existing resilience methods and capacities.

At the partners' level, all staff members have appreciated and adopted the proposed local building culture approach. Their knowledge and skills have greatly improved in the social, technical, and managerial areas. At the institutional level, the approach proved to be highly consistent with the vision of PCDR and its actions in the field and the staff is now convinced that advocating towards the recognition of local building cultures is a way to improve the resilience of communities.

Looking forward, the project provided an opportunity to understand and raise the various housing-related disaster risk issues, such as the adverse effects of GMO-corn crops. Thus, to tackle the root of the problem, a holistic approach quickly appeared to be appropriate. While efforts were made at the level of the commu-

nities, PCDR has initiated an advocacy campaign with a closing Forum event with the participation of government agencies and local organizations, but its impact remains quite limited.

Lessons learned

The two projects presented in this article had the particularity of having been implemented in the same Island of the Philippines in the aftermath of Typhoon Haiyan. Though the two projects had similar objectives, the fact that they were implemented in two different geographical areas and within different institutional contexts led to make different decisions both regarding the building techniques promoted and the project strategies. Thus, after the initial assessment of the local building cultures, similar activities were planned, but in different strategical frameworks. Therefore, reflecting on the lessons learned can be useful in the future in the Philippines and hopefully elsewhere as well.

Identifying local strengths from the start and relying on them

A paramount step in both projects has been the participatory field assessment of the local building cultures at an early stage. A major challenge to be addressed in the two contexts was the lack of maintenance due to the depreciation of local building cultures associated with the loss of confidence in local knowledge, but also with risks linked to the non-preservation of local resources. As a response, the first prototypes, apart from allowing the improvement and fine-tuning of technical options, helped to clear away some of the initial negative perceptions. The quality of these first achievements has made it possible to re-establish pride and self-confidence. In particular, formalizing technical solutions based on existing building techniques and local materials through on-the-job training was highly appreciated by the carpenters involved. The projects promoted the need but also the benefit to build using local knowledge and resources, as well as to Anderson act towards their recognition to allow communities to recover pride and self-confidence in local knowledge.



Fig. 10 Raising-awareness session towards community members in Cuartero, 2014 © CRAterre, Cauderay E.

Though very successful when conscientiously implemented, the awareness-raising campaigns remained probably insufficient, specifically those involving local authorities, government agencies, and other relevant organizations. Further projects should, therefore, include similar advocacy campaigns and actions to build partnerships and, as much as possible, target relevant stakeholders from the onset.

Identifying the main challenges faced by the local community

In Cuartero, it gradually became clear that the problems with the quality of local housing were linked to recent agricultural practices. That led to consider that the two problems should be tackled together, fostering the relevance of a holistic approach.

Retrospectively, identifying such links at an earlier stage would have been very advantageous with potential leverage for both housing and agricultural recovery and resilience. Nevertheless, raising awareness takes time, and it is of primary importance to let the communities understand the roots of their vulnerability. Both projects have triggered new dynamics in valuing and protecting

local resources, but, most of all, they have helped the people and decision-makers to question their general resilience.

Identifying, together with the community, the correlations between issues in different sectors should then be understood as a critical element within the proposed methodological approach. However, as it is very challenging to understand all factors in the initial phase, context understanding should be taken as a continuous activity.

Extending the impact: accessibility and replicability of the proposed solutions

In both projects, accessibility and replicability were strongly considered. That led to abandoning some of the proposed alternatives. By prioritizing repair and rebuilding activities close to the day-to-day job of the carpenters, the projects anticipated the fact that they would make their own selection of what is feasible and affordable for their future clients.

Both projects faced scarcity of local materials, temporary or permanent, leading to consider essential the protection of places where they can be sourced from. So, proposing a project based on local resources could appear contradictory when materials must be sourced from other areas, resulting in additional costs. Still, in both cases, the adopted strategies prioritized the continuity and enhancement of know-how while also considering the revival of local production, leading to handling the issue in a short and long-term perspective.

Adopting an iterative process including both new construction and repair activities

Both projects implemented housing assistance to housing repair and rebuilding with salvaged materials. These activities were very well received, well above expectations. This observation confirmed the 'culture of risk' of Filipinos, which materializes through both

technical and social assets. In particular, the local-style houses are easy to repair and upgrade, and the *bayanihan* spirit proves to be efficient. This critical finding leads to advocating for self-recovery support in any post-disaster housing projects in the Philippines and elsewhere as well.

Nevertheless, strategies and processes related to self-recovery assistance need to be further capitalized and studied, as they have to be flexible (in terms of quantities and time) and require specific skills. And still, the construction of pilot houses was very useful for getting people's interest. However, one should consider that new constructions may not generate as much of an impact as assistance to self-recovery activities could.

That leads to recognizing the importance of allowing an iterative process. Continuous evaluation throughout the two projects (both formally and informally) allowed to question the interventions and propose improvements along the way. This process was sometimes difficult to understand but has always been accepted when well-argued and sufficiently discussed to reach consensus and keep a sense of ownership amongst stakeholders.



Fig. 11 Training on repair and upgrading of houses for carpenters in Cuartero, 2016 © CRAterre, Dejeant F.

Conclusions and perspectives

In most hazards' prone areas, local communities have developed and tested ways to get prepared and be able to recover successfully. However, with the changes in the ways of life, there are some changes in the socio-economic vulnerabilities, environmental degradation, depletion of natural resources, land pressure, and foreign building materials and technologies are being adopted. Those are some important factors contributing to weakening the current resilience capacity, more specifically that of the poorest strata of the population. Of course, the international community often mobilizes resources to assist both the governments and the populations in post-hazard situations. Nevertheless, whatever the level of funds available is, only a portion⁵⁵ of the affected population can be provided with support. Most of them recover by self-rebuilding and through the local informal building sector.

Thus, an important issue that the international community needs to address today is: how the rich local knowledge of coping with hazards can be valued, improved, and disseminated amongst the whole affected communities allowing them to make informed choices while recovering? In many instances, local solutions exist, but they are overlooked when they can serve as a basis for proposing solutions that are technically and socially appropriate. They also allow respecting the local culture and the natural environment while maintaining the possibility of making the best use of the resources it offers. While lifestyles change, communities, populations, and societies must (re)build confidence in their capacity to develop and evolve their own knowledge with the potential for relevant combinations with valuable and sustainable external inputs to be better prepared for the future.

This approach applied for the two projects in Panay Island appears to align with the issues raised and discussed during the international conference 'disasters, indigenous knowledge and resilience' in Quezon City in April 2019. Various presentations highlighted the urgent need to integrate indigenous knowledge in disaster risk reduction and management plans, as many studies and

researches recognize it as a relevant strategy for facing calamities at local and broader levels¹⁵⁶.

These two projects were developed in such a spirit of reviving pride and confidence within the communities in what they have at hand, accessible and affordable. They were tailored to the local contexts but also to the partners' visions and capacities. In that respect, they included strategies to address the increasing vulnerability to hazards through various perspectives, such as social vulnerability, resource scarcity, environmental degradation, and resilient housing inaccessibility. By basing the disaster response on local knowledge and local capacities, the project achievements brought new leads and perspectives to the existing natural disaster management framework at the local level. In addition to the construction work, many efforts were made to spread this positive vision of the local culture and its potential to achieve the expectation of 'modernity'. The projects' strategy included the development of technical documents as well as capacity building within the organizations so that the process could be continued after the end of the projects.

However, although relevant activities were implemented to this end, such as the capitalization of experiences and knowledge management, preparing the 'after' remains an issue. The end of these two projects has led to the closure of contracts for many trained staff. How could we better ensure the continuity of the developed knowledge and further build capacities in preparation for the future?

This situation leads to recommend raising these issues at the early stages of any project and at a larger scale, looking at potentials for fostering institutional anchorage, either governmental (including local), educational or non-governmental, or taking advantage of existing networks. It also calls for greater commitment to context-based preparedness so that post-disaster response could be limited.

Given the number of calamities and disasters each year, the Philippines is considered as an essential case study area to understand community resilience and vulnerabilities. Poverty and food insecurity lead a great number of people to live in vulnerable situations in areas exposed to natural hazards. The relevant research carried out by Jean-Christophe Gaillard (Gaillard, *et al.*, 2008 : 371–390) shows that the dominant view in natural disaster risk management, in the Philippines or elsewhere, tends to emphasize the 'exceptional' nature of hazards, dissociating them from the daily vulnerability like land tenure issues. Thus, the international community may consider giving special attention to this country as a mean of pursuing research on the potential of enhancing local building cultures from a technical, social, cultural, and strategical point of view. It would be very valuable in addressing the current lack of references and shared experiences on how to support self-recovery adequately. In that respect, field projects, such as the two covered by this article, that comprise research components before, during, and by their completion have a paramount potential. At the beginning of a project, such a practice allows the co-identification of the fundamental problems, needs, and expectations of the target communities and facilitates the construction of a common vision and common strategies amongst all partners. Then, observing what happens during the project represents a significant opportunity for understanding and revealing thorough knowledge of the local resources and people's capacities and criteria. It also allows to evaluate the actual capacities of the proposed strategies to respond to the shared objectives (technical, social, cultural, economic, governance) and, if needed, to make some adjustments¹⁵⁷. Finally, lessons learned from such experiences are beneficial for better planning new projects towards more efficiency in terms of conditions set for ensuring improved resilience of the local communities. Overall, that argues for recovery organizations to more systematic adopt research components in their project, if not adopting a more inclusive action research approach as was done for these two projects in Panay Island in the aftermath of typhoon Haiyan.

BALI REFUGEES IN A TRANSMIGRATION AREA: VOLCANIC ERUPTIONS, LOCAL WISDOM, AND THE BUILDING OF BALINESE CULTURE IN THE MO- DERN INDONESIAN STATE

Phil I Ketut Ardhana, Ni Wayan Radita Novi Puspitasari

The eruption of Mount Agung, the highest mountain in Bali, in 1963, brought about both change and continuity since it eliminated several villages, mostly located in the Karangasem and Klungkung Regencies. The eruption, however, did not only result in disaster but also gave a blessing to the sustainability of the Balinese culture. This occurred in the transmigration area during the Old Order period when around 19 Balinese family heads were moved from their original areas to the area located on the southern tip of Sumatra, in the Lampung Regency. Therefore, it can be understood that the Balinese who are Hindu adherents live not only in Bali, but also outside Bali Island. It means that those migration processes would strengthen the creation of multicultural ideas in the Indonesian archipelago. Discussion of these issues is considered significant to examine the various social and cultural problems affecting the Balinese refugees in the transmigration areas and finding answers is expected to have a better understanding of how a culture can develop and contribute to the life of a multicultural Indonesian society (Ardhana, Sunaryo, Sulandjari, 2011).

This move was not so new, as when Indonesia was under the Dutch colonial rule, the colonial government introduced a program into the Indonesian archipelago which related to the program on plantations, developed on the east coast of Sumatra. The program greatly benefited the Dutch colonial regime in Indonesia in general and Sumatra in particular. Therefore, when the Dutch colonial rule ended in Indonesia in 1945 due to the Japanese occupation during the Second World War, this Dutch program continued in the succeeding period when the newly independent Indonesian government decided to develop it further.

The Old Order regime under the leadership of Soekarno, the first President of the Republic of Indonesia and his bureaucrats developed this program into the transmigration program which was one of several population movements from one island to another in the Indonesian archipelago. In the 1950s, for example, due to yet another shortage of labor in Sumatra, the transmigration program brought skilled workers in agriculture, not only from Bali but also from Java. While most of the skilled workers from Java had trade qualifications, like, carpentry, workers from Bali were better known as reliable workers in agriculture. Both the Javanese and the Balinese dominated the newly developed transmigration area. With the eruption of Mount Agung in 1963, it seems that the Lampung region in the southern part of Sumatra was one option able to accept refugees affected by the disaster: those Balinese who lived at the foot of Mount Agung, for example, in Tangkas, in the Klungkung Regency.

However, the Balinese arrived in the fertile Lampung transmigration area to face several problems. First, during the reign of the Old Order (1945–1967) there was a policy to properly accept their arrival and the Balinese, most of whom were Hindu, were given land to cultivate for their livelihoods in the agricultural sectors. As newcomers in the region, they accordingly worked hard and the resulting ‘social jealousy’ amongst other local people was inevitable. From the Population Census in 2010, it is noted that there are certain populations who are not Hindu, and much of the population in there are Muslim. This can be seen as follows:

The Total Number of Population in Lampung based on Religions.

No.	City/district	Hindu	Muslim	Christian	Catholic	Buddhist	Confucianist
1	West Lampung	1760	412,683	2751	532	173	0
2	Tanggamus	772	530,331	1560	2492	387	26
3	South Lampung	15,014	873,654	12,829	5598	1116	34
4	East Lampung	16,513	913,200	13,247	5909	2236	49
5	Central Lampung	40,379	1,093,801	15,815	14,715	1818	54
6	North Lampung	2416	570,594	6160	3989	662	33
7	Way Kanan	11,784	386,762	4265	3169	200	6
8	Tulang-bawang	10,686	375,274	7847	2724	357	19
9	Pesawaran	359	389,577	3618	2183	1467	8
10	Pringsewu	2561	350,297	2875	7316	599	21
11	Mesuji	4742	178,733	2599	658	192	3
12	West Tulang-bawang	3015	238,659	6601	1969	311	11
13	Bandar Lampung City	3111	816,807	31,345	14,049	13,016	326
14	Metro City	400	134,911	3743	3711	1588	6
15	The Lampung Province	113,512	7,264,783	115,255	69,014	24,122	596

Source: Data Sensus Penduduk 2010-Badan Pusat Statistik Republik Indonesia

This was possibly because the Balinese refugees also brought their Balinese culture and developed it in the areas they inhabited. In fact, they not only brought Balinese traditions and culture to the new territory but also the skills that they already had had for generations in the agricultural sector. They managed the agricultural land diligently and became strong farmers, even introducing the *Subak* (irrigation), a traditional Balinese farming system. Not only Hinduism was developed, but also the Balinese culture in general terms, so they built Bali based on the Hindu or Indic lessons in the transmigration area.

During the New Order period (1968–1998) the area occupied by Balinese refugees in the Sidorejo Village, for instance, underwent rapid development where various aspects of Balinese culture were successfully further developed and strengthened by introducing the Balinese cultural tradition such the Banjar system or Balinese Hamlets. This *Banjar* system is also well known as the smallest units in Bali itself. Some private parties saw the development of this Balinese village and started threatening to develop private projects in agriculture and livestock breeding. This raised concerns among the Balinese and created conflicts between them and the businessmen, who were thought to have originated from among the cronies of the ruling regime. The conflict continued until the fall of the New Order, which had ruled the Indonesian state as an authoritarian and centralized system for more than 32 years.

The New Order regime was replaced by the Reform regime where transparency, democracy and clean governance were firmly encouraged. In turn, the Balinese refugees used this opportunity to strongly fight for their rights, as their arrival in the transmigration area had been in accordance with state policy. Through their representatives in the parliament, efforts were made to convey their wishes to the government of the Reform era. What they were fighting for is in accordance with the *Nawacita* program of the Reform government, under the present President, Joko Widodo. This, however, does not mean that there was no turmoil in the next period. The progress that had been made caused jealousy

among the local population, but cooperation among migrants as the newcomers in the regions such as the Javanese and the Balinese ethnic groups seems to be continuing.

There are several questions that will be addressed in this paper. Firstly, what is the background of the region of destination of the Balinese refugees? Secondly, how do Balinese refugees face certain conflicts with the local people? Thirdly, how is the Balinese culture brought to the transmigration area in Lampung, South Sumatra? Fourthly, what is the sustainability of the culture in the present and future in the context of the global era? These are some significant questions that will be discussed and analysed in this work.

Introduction

This chapter is the result of a field research study carried out in Lampung (southern part of Sumatra) in Indonesia from December 2018 to January 2019. In geographical terms, it can be said that Lampung has fertile soil that is adequate to develop agricultural products. It is considered a suitable place for the Balinese who migrated to the region due to the natural disasters that occurred in Bali in the early 1960s. To obtain the data presented, descriptive and analytical methods with an interdisciplinary approach related to the concepts of social sciences and humanities studies were used. In addition to this, the data was collected by using qualitative and quantitative methods to gauge the success of the Balinese in accordance with the transmigration program in Indonesia. The analysis used in this research was by implementing certain concepts through looking at the historical aspects, social migration, religious sociology and political culture of the Balinese trans migrants as well as the local people in Lampung, South Sumatra.

The data collected in this research is both primary and secondary with the primary data obtained by collecting information through systematic observation, focus group discussion (FGD), in depth interviews and content analysis. Through this method, it was

expected to attain a research result. In addition to this, in FGD interviews were also used. The secondary data was collected through library reviews and field reports in accordance with the dynamics of the Balinese trans migrants in Lampung. It can be said that this research was done in order to get information related to understanding to what extent the role of the Balinese trans migrants with the local people in the context of social interaction in the region, was reached.

From the above, there clearly are certain issues that need to be looked at in this paper, namely, how have the Balinese migrants to Lampung reacted to the impacts of the eruption of Gunung Agung since 1963? How did they anticipate social, cultural, economic, and political issues in Lampung due to the different geographical situation? And how did they adopt, adapt to, and accelerate the new local culture? Those are some questions that need to be analysed to reach a better understanding about the Balinese migrants, most of whom Hindu are, in facing many issues in the context of their daily lives in Lampung. This study is a socio historical one, stressing how the Balinese migrated to Lampung and implemented their cultural traditions where the migrants and non migrants can live side by side despite a few social conflicts which could not be avoided.

This study of Hindu dynamics in the southern part of Sumatra has been carried out in order to have a better understanding of Firstly: the position of the Balinese in Lampung in particular and in Indonesia in general; Secondly: the mapping of the Balinese people in the context of a multicultural society; and Thirdly: to see the extent of the involvement of the Balinese amongst the local people in Lampung in terms of social, cultural, economic and political aspects in the context of the role of the younger generation, so that we can understand the concept of sustainability in Lampung in particular and in Indonesia in general.

Some Views on Natural Disasters in Balinese Culture

Indonesia is well known as part of 'the ring of fire', where many volcanoes dot the archipelago of more than 16,767 islands with 9,000 without a name. Indonesia is an archipelagic region and is a vast country in terms of natural richness. Due to its geographical situation, it can be said that Indonesian people live in a dangerous situation if they do not have certainty regarding how fast recovery can be activated due to an eruption, tsunami, earthquake or other natural disasters that happen so often in the region.

From the historical perspectives, Indonesians have long had their own ways of how to anticipate any threats to their lives. Based on Balinese concepts who live in Bali and on the Indonesian cultural concepts in general, it can be said that they have certain concepts related to a harmonious life. This can be seen in how the Balinese, for instance, view their world regarding the mountain and the sea relationship. The Balinese see a mountain as a place for God while the sea is a place for evil. However, they respect the balance and the harmonious relationship between man and God, man and man and man and nature, calling it *Tri Hita Karana*.

It is important to note, that the Balinese also really respect nature which they consider having many symbolic meanings as can be seen from some evidence in archaeological and historical sites and the traditional puppets, in which both the Balinese and the Javanese have similar historical cultural dynamics based on the Indian or Indic lessons, namely, the Indian epics the *Ramayana* and the *Mahabharata*. In these Balinese and Javanese puppets, the opening image is called the *Gunungan* meaning the mountain. Therefore, it can be said that the Balinese really believe in the significant role of the concept of *Gunung* or mountain, from where the water comes to irrigate their rice fields on which most Balinese depend through the agricultural sectors.

It is even said that the natural phenomena are always related to a certain situation that could happen soon. For instance, the eruption of the highest mountain in Bali, the Gunung Agung, in

1963, was a disruptive event which could be seen as a signal. Since it was believed that after the eruption of the Gunung Agung certain social and political chaos occurred when two years after the eruption, the Indonesian Communist Rebellion against the legal government took place. Beliefs of these kinds are the same as those rooted in animism and dynamism in Hindu or Indic lessons and the like that we can see at the present time in Bali and in other Indonesian areas in general (Ramstedt, 2003).

From Krakatau to the Eruption of Gunung Agung and the Early Development

Lampung is in South Sumatra, bordered by the Bengkulu Province with the main city, Bandar Lampung. It is located close to the Sunda Sea and the eruption and earthquake of the Krakatau Mountain that happened in the second part of the nineteenth century (1883). There are many geographical and historical documents telling us about this natural disaster and relate to the social, cultural, economic, and ecological impacts on both West Java and Lampung.

If we look at the society in Lampung it is a multicultural one. This can be understood in terms of migration and historical processes, related to the Dutch colonial policy called the plantation system in the nineteenth century. In addition to this, it is also related to the transmigration policy that had been conducted by the Indonesian government after the Independence of the country (Bracken, 2015). This transmigration program was not only conducted in Sumatra, but also other islands like Kalimantan and Sulawesi.

However, it does not mean, that there was no ethnic migration before the Balinese transmigration program to Lampung since Javanese migration had already occurred in the context of Indonesian history before the coming of the Balinese to the region, due to the close position of Java and Sumatra with Lampung in a part of the South Sumatra Regency which became an autonomous province in 1963. The first Balinese migrants came to the region in

1957 particularly from the Tabanan and Gianyar Regencies in Bali. There is no clear argument regarding whether there are important reasons for this in the context of the development of Lampung. It can be understood, though the islands in Indonesia are bordered by the seas, in fact the sea is not considered to be a separation but is an integrated aspect of the Indonesian archipelago.

When Mount Agung erupted in 1963, all the villages in areas close to the mountain, particularly in the Unda River or Kali Unda area disappeared due to the natural disaster. At that time, all the refugees were placed in Balinese *banjars*, (a small unit of a Balinese community). Between 1963 and 1968 through the local government of Bali program – the Bali governor at that time was I Gusti Bagus Sutedja – many were brought to Lampung and at that time there were some Balinese political figures in Jepara Village in Lampung to look for a suitable place for the Balinese refugees (See also: *Transmigrasi Masa Doeloe, Kini dan Harapan ke Depan*, 2015).

The discussion on the Balinese transmigration to Lampung cannot, of course, be separated from some phenomena in the context of the eruption of Gunung Agung that occurred in 1963 causing many human and natural disasters. This means that the eruption brought about not only the geographic change but also the demographic changes namely, the movement of the Balinese to other regions in the Indonesian archipelago. Some victims had been sent to Kalimantan and Sulawesi while others were sent to Lampung. Indeed, it can be said that the natural disaster in 1963 resulted in the transmigration program of the Balinese to Lampung the consequences of which we can see in the region until the present time. In other words, it can be said that the eruption caused the continuities and changes for the Balinese who had their own culture which they brought to the new place (Staab, 1997).

It can be understood, that following the eruption the Balinese faced a situation of having to move to other regions, since most of the local villages had disappeared. However, the eruption of Gunung Agung although a great human disaster for the Balinese,

had a positive impact on their culture outside Bali, particularly in the transmigration regions. Indeed, it can be seen in the period of the Old Regime in 1963, when around 19 Balinese householders (*Kepala Keluarga*), most from Tangkas Village in the Klungkung Regency, had to be moved to other regions like Lampung in the southern part of Sumatra. Until now the total number of Balinese who are Hindu in Bandar Lampung is around 500 householders. The social relationship between the Balinese migrants and the local people in Lampung has overall, been harmonious and peaceful. If there was a conflict between the Balinese and the local people it would be solved together, based on social and cultural capital that had developed over the long time of their history in Lampung (Ardhana, 2019:17–35).

Local Wisdom and Multiculturalism in the Context of the Building of the Modern Indonesian State

Lampung is considered by the Balinese as their second home. The total population of Balinese and Hindus is second after the Muslims who are in most of the population in Lampung. Though there are differences in terms of religious beliefs, a harmonious and peaceful life can be seen among them. The Javanese and the Balinese who as the incomers in Lampung have been recognized as inhabitants in Lampung, due to the long process of the dynamics of the people in Lampung (Leushuis, 2014). The Javanese are usually good at industry and building construction, while the Balinese are highly regarded in the agricultural and agrarian sectors. Since the Balinese are closely linked with this agricultural issue, it is not surprising, if they have some values on innovation and creativity in developing and improving the local culture as an asset to develop the national culture in the area.

The eruption of Gunung Agung influenced the dynamics of the Balinese in Bali and outside Bali. It did not only affect the Balinese but gave a positive impact to be able to continue the Balinese cultural identity in the new location in the Sidorejo village,

in the southern part of Sumatra. It can be understood that the transmigration program in Indonesia seems to have made certain impacts on the movement of the Balinese who brought their cultural identity to Lampung. In fact, it seems that the Indonesian transmigration program post Indonesian Independence was rooted in the previous period namely, in the Dutch colonial period. In the 19th century, the program, known as colonization, related to plantation issues was developed particularly in the eastern coastal areas of Sumatra Island.

The colonization program that had been introduced by the Dutch colonial power, of course, gave certain benefits to the Dutch in the Netherlands Indies in general and in Sumatra in particular. However, due to the downfall of the Dutch colonial power that had been attacked by the Japanese in the Second World War, it was possible for the Indonesian government to take over their economic and political powers. Though, the Indonesian government got its independence following the hard struggle against the Dutch colonial power and the Japanese military rulers, nevertheless, the Indonesian government continued the previous program of transmigration in Indonesia.

The first President of the Republic of Indonesia was Soekarno. His father was a Javanese from East Java and his mother a Balinese from the northern part of Bali, Singaraja. Soekarno developed the transmigration program, from one region to other regions in the Indonesian archipelago, particularly in Kalimantan, Sulawesi, and Sumatra. Five years after Independence, in the 1950s, due to the lack of labour in the plantation program in East Sumatra, the Indonesian government reintroduced the transmigration program by inviting Javanese and Balinese to work in the agricultural sectors.

However, though the central government in Jakarta had invited those people, in fact, they had different or various skills, for instance, the Javanese were good at trade activity, while the Balinese were good at agricultural work such as in the rice growing sectors, based on the *subak* system or traditional Balinese agricul-

tural system (See also: Covarrubias, 1986). Both groups, namely, the Javanese and the Balinese had dominated the places of work in Lampung, where there was much fertile soil good for paddy plantations. In addition to this, the Balinese for instance, did not only bring their own cultural traditions but also certain agricultural skills in the agricultural sectors, based on their local wisdom, ensconced in the Indian or Indic lessons. They even introduced their traditional irrigation system in 1976, called the *Subak* that they had practised on the Island of Bali. That was several years after the beginning of the New Order regime. The Balinese migrants worked hard in the agricultural sectors, so that they could improve their incomes by selling agricultural products such as rice, cassava, and the like. They worked diligently and appreciated the local wisdom so that they were well known as the pioneers in the agricultural sector in Lampung. It is not surprising, if the Balinese farmers as well as the Javanese farmers have a good reputation in the agricultural sectors. Their coming to Lampung had some positive impacts through which most of the migrants were becoming 'the haves' in their new home. This also meant that since they were successful in the agricultural sectors, they automatically improved the standard of their religious life and built Hindu temples that were really needed in the transmigration areas.

However, there were some problems that the Balinese had to face in order to find a solution to the increasing conflicts caused by social jealousy. Initially, particularly in the Old Order Regime (1945–1967) there had to be a willingness to accept their coming to Lampung. At that time, the Balinese had already been awarded certain lands to be managed in terms of agricultural sectors. Most of the Balinese were well known as good and diligent peasants or farmers, particularly in the wet rice plantation, if we compare them to the other people in the region.

The social relationship between the two groups had lasted for a long time in terms of a harmonious and peaceful situation, so that any issues or social and economic problems could be solved together. This commitment was social and cultural capital

for both sides working synergetically since some of them were Balinese Hindus, it was easy to accuse them of bringing their cultural traditions to Lampung. This not only included the religious lessons, but also the customary law of the daily lives of the Balinese in Lampung until the present time. However, (For detailed information about the *desa adat* or *desa pakraman*, see further: Surpha, 2002). This became a significant issue that was very often related to the economic and political issues in Lampung (Ardhana, Maunati, 2015).

In addition to this, it is important to note that most of the local people were Muslim adherents. Therefore, it seems, the social jealousy could not be avoided amongst them. One of the important causes was that the Balinese brought their cultural identity, including Balinese architecture which later developed in Lampung. It means that not only did they develop the Hindu religion but also the Balinese cultural traditions in general.

Three years after the eruption of Gunung Agung, particularly in the New Order Regime (1968–1998) the location of the Balinese migrants, namely, in the Sidorejo Village, had developed very well in terms of the wealth of the people and their Balinese architectural style houses. Certain factions or groups saw this Balinese development as very worrying as they felt they could develop certain projects instead of the Balinese communities in Lampung. Some private factions seemed to resent the new Balinese development in Lampung in order to themselves develop some projects in fisheries and farming. This caused some friction between the Balinese and the investors who were thought to be from the New Order regime cronies. This conflict lasted until the end of the New Order regime in 1998; a Regime which had held power for more than 32 years by implementing centralistic and authoritarian policies.

The New Order regime in 1998, was replaced by the Reformation Regime under President Joko Widodo, a Javanese from Solo in Central Java, who implemented certain principles on democratic

society, good governance, and the like. The Balinese migrants under the leadership of Anak Agung Oka Mahendra began to struggle for their human rights in the village of Bandar Agung, Lampung in accordance with the legal or formal status of their lands in Lampung, since their coming to Lampung was by invitation by the central government in Jakarta due to the eruption of Gunung Agung in 1963. Through their representative body in the parliament they tried to deliver their willingness for their lands to be ceded from the central government in the reformation period, so that they would have a secure situation regarding their lands.

It is significant to note that what they fight about until the present time is relevant to the *Nawacita* policy program that has been introduced by Joko Widodo. This can be understood, since their demands to get their rights in the transmigration lands had been agreed to since the Old Order period. In addition, it is important to note that of nine villages there were four that have not yet finished determining the status of their lands. However, it does not mean that there is no resistance any longer. There were some improvements for the Balinese in Lampung, which later became a source of social jealousy for the local people and also the investors, who wished to invest in Lampung

The investors demanded the Balinese move to other places close to the local peoples' places, since the areas they occupied could be used for the fishery and farming sectors. As trans migrants who are legally installed by the former government, they of course have the struggle spirit to defend their rights on their own lands. So, it does not mean that they will give up against the investors, who would remove them from their places. This can be understood, since for such a long time, when they were in Bali in the time of the eruption of Gunung Agung, they had already had a certain spirit of struggle to be able to continue their lives. It means that their struggles will not end until they can permanently hold their rights to their lands in Lampung that had been already legalized by the central government during the Old Order regime. That

has become the 'key of success' for them to reach sustainability in their lives in Lampung.

This success is, of course, not separated from the significant role of the main figures with high motivation and high creativity coming from Bali, where they originated very close to Mount Agung in Tangkas Village, Klungkung Regency. These creative groups have high motivation to struggle for their daily lives in the new locations. Based on their experiences they tried to improve their willingness to develop their local culture in this, the Balinese culture, in the new places in Lampung (Sjoberg, 1965). From this perspective, it can be understood how the people should develop the local culture to be able to develop the national culture.

However, though there was conflict, the Javanese and the Balinese could synergistically work in terms of social and economic aspects, side by side, in a peaceful way. Many issues between the Balinese and the Javanese for instance, could be solved in terms of shared commitment to solve these problems. It can be understood since both the Balinese and the Javanese consider themselves as coming from ancestors from the Majapahit kingdom in the fourteenth century. In addition to this, it can also be said that some parts of the Javanese in hilly mountain areas are still Hindu until the present time. In Lampung itself, the Balinese people who are Hindu, are the second biggest group after the Muslims amongst the local people.

Until the present time, it is understood that most of the people in Lampung consist of the local people who are born in the villages in Lampung itself, the Javanese migrants who are Muslim and the Balinese who are Hindu. Both groups can live side by side and even marry each other, though they have differences in terms of religious beliefs. This has become a source or idea on the emergence of a multicultural society in Lampung. However, it often happens, that though the Javanese women who are Muslim follow the beliefs of their men who are Hindu they need consistent guidance to be

a good Hindu. If not, then the women will leave their men and come back again to their original beliefs as Muslims.

It seems that the current religious guidance does not work very well in instructing the people to be a good Hindu adherent. This needs the involvement of the higher Hindu institutions in order to be able to implement the Hindu beliefs. Therefore, sustainable guidance is a must, not only in the family or bigger institutions to guarantee the people to be Hindu adherents in an Indonesian multicultural society, based on the idea of Pancasila.

Conclusion

From the above analysis it can be concluded that the eruption of Gunung Agung in 1963 had strongly affected some issues on cultural and demographic perspectives. This can be understood in terms of social, cultural, economic, and political aspects regarding the emergence of a multicultural society in Indonesia.

However, until the present time, there is not much information regarding the dynamics of the Hindus in Lampung in particular, and in Indonesia in general. Therefore, the involvement of the Balinese migrants in Lampung has played a significant role. Though they are different in terms of cultural identities, by improving the local culture in order to be able to strengthen the national Indonesian culture their role is very significant. The aim is to minimize social, cultural, economic, and political conflicts not only in the present time but also for the future.

In addition to this, the understanding of the Hindus in a region seems to be significant for the local and national governments in formulating any guidance for a better life not only currently but also soon. From this perspective, is recognized the necessity to have wise behaviours to have a better understanding of how to manage the dynamics of the different groups based on ethnicity, religion, tradition, language, and habits to be able to live side by side, based on tolerance between one and another group in the context of unity and diversity based on Pancasila.

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NOTES

1. See also the recent IPA in several Belgian and Dutch universities, entitled *City and Society in the Low Countries (ca. 1200-ca 1850). The 'urban conditions': between resilience and vulnerability* on <http://www.cityandsociety.be>], as well as the program of the conference of the European Society for Environmental History, Munich, 21–24 August 2013 [<http://www.eseh2013.org/program.html>]

2 All the papers of this book have been presented at the International Conference on 'Disasters, Indigenous Knowledge and Resilience', held by the Center for Applied Research in the Social Sciences at its International Conference on Disasters, Indigenous Knowledge, and Resilience held at the University of the Philippines – Diliman (UP Diliman) on 3–4 April 2019.

3. This text is based on our introductions to two issues published in *Anthropologie et Sociétés* on the theme of 'divining, foreseeing, and making happen' (Laugrand, Simon, 2018a). We wish to thank the FNRS (F.6002.17), which partly funds our research through the project 'Devinaus.'

4. Livre 4. La sémiotique et la probabilité, *Les Possédés et leurs mondes*, available on the *Anthropologie et Sociétés* website (<https://www.anthropologie-societes.ant.ulaval.ca/pierre-marranda-livre-4-la-semiotique-et-la-probabilite>) April 17, 2018

5. Caquot and Leibovici (1968); Vernant (1974); Smadja and Geny (1999); Veyne (1999); Bouché-Leclercq (2003); Belayche and Rüpke (2007); Rüpke (2013); Stoneman (2011); Georgoudi et al. (2012); Santangelo (2013); Calame (2017).

6. On divination in China, see notably Puett (2002), Wang Chong, Kalinowski (2011); in Central Asia, see notably Róna-Tas (1972).

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22 Mr. Elvis Millares, *Barangay Quirangay*, Camalig, Albay, 21 July 2016.

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24 Mr. Elvis Millares, *Barangay Quirangay*, Camalig, Albay, 21 July 2016.

25 Mr. Elvis Millares, *Barangay Quirangay*, Camalig, Albay, 21 July 2016.

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27 Eduardo P. Laguerta, senior volcanologist and chief, Bicol region Philippine Institute of Volcanology and Seismology (PHIVOLCS), 10 June 2017, Legazpi City.

28 Mr. Elvis Millares, *Barangay Quirangay*, Camalig, Albay, 21 July 2016.

29 Echeminada, De Los Santos, Lacson, « Prayer rallies held as folk, wild animals flee, » *The Philippine Star*, 6 February 2017 : 4.

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- 32 Mr. Zaldy Perol, Holy Rosary Mountain chapel, Mayon Skyline, Tabaco City. 24 July 2016.
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- 48 Laguerta, 10 June 2017. He described the 1993 activity as a 'phreatic explosion,' steam eruption without lava ejection.

49 Escalante, Dapitan City, 15 July 2017. Escalante hails from Sorsogon City in the Bicol region.

50 A powerful explosion that ejects gas, ash, and rocks, creating a tall eruption column as with Vesuvius in 79 AD and Pinatubo in 1991. See <<http://www.volcanolive.com/plinian.html>> and <http://www.phivolcs.dost.gov.ph/html/update_VMEPD/Volcano/VolcanoList/mayon.htm> accessed on 2 July 2017.

51 This story was related in the 1960s by the author's grandparents, Rosalio and Anatolia Gregorio, who were native residents of Sto. Domingo, Albay. The name change, made through a Republic Act, occurred in 1959 and there had been questions about the choice of the new name of the municipality, since Franciscan friars and not Dominicans were the evangelisers of the province. Catholic tradition holds that the Blessed Virgin Mary first revealed the devotion to the rosary to St. Dominic. See Robert Feeney, 'St. Dominic and the Rosary,' accessed from <http://www.catholic-pages.com/prayers/rosary_dominic.asp> on 2 July 2017.

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54 Tangbawan, 'House-to-house search or Mayon holdouts,' *Malaya*, 15 February 1993:1.

55 Eduardo P. Laguerta, senior volcanologist and chief, Bicol region Philippine Institute of Volcanology and Seismology (PHIVOLCS), 10 June 2017, Legazpi City. Equipment and technology had improved such that the scientists can observe signs of activity from a safe distance.

56 Mr. Zaldy Perol, Holy Rosary Mountain chapel, Mayon Skyline, Tabaco City. 24 July 2016.

57 Holy Rosary Mountain Chapel Facebook page. Accessed from <<https://www.facebook.com/zaldy74/>> on 2 July 2017.

58 Mr. Zaldy Perol, Holy Rosary Mountain chapel, Mayon Skyline, Tabaco City. 24 July 2016.

59 I express my gratitude to the *Fonds de recherche du Québec Société et Culture* (FRQSC) for providing me a research scholarship for my M.A. (#207,281) and my Ph.D. (#272,114).

60 Little Baguio is in the municipality of Malita, Davao Occidental province. Its former name, Malbulen – literally 'in the moon' because of the many puddles of horse urine that looked like the excrements of the moon –, was changed to Little Baguio after a politician renamed it, as part of a plan to create a tourist spot for the wealthy.

61 Linguists separate the Sarangani Blaan from the Koronadal Blaan (Hsiu-chuan Liao (2008). 'A Typology of First Person Dual Pronouns and Their Reconstructibility in Philippine Languages', *Oceanic Linguistics*, no 47, 1:1–29), although they are both Bilic languages, like Tboli, Tiruray and Bagobo (Blust, R., 'The Greater Central Philippines hypothesis', *Oceanic Linguistics*, no 30, 1991:73–129). The Blaan of Malbulen speak Koronadal Blaan. From the words 'koron', or 'cogon' (*Imperata cylindrica*), and 'nadal', or 'datal' (plain), Koronadal means 'the ones who dwell in the plains of cogon grass.'

62 Kikuchi, 1989, and Gloria, 2014:91–96. For a critical analysis of the *datu* from the perspective of the linguists, see the discussion of Blust, 1980:205–247.

63 For a description of this ritual, see Laugrand, 2021:89–91.

64 From the Spanish word *barrio*, *barangay* refers to the smallest administrative unit, encompassing several villages.

65 *Imò* literally means 'to do'; it is also used in the *saglà kurà* (horse fights) by the *bong to* leaders who play their status and prestige through their horse's victory, see Laugrand, 2018.

66 'La parole c'est la guerre' (translated by the author), Favret-Saada, 1977 :27.

67 I refuse to use the term 'ethnomedicine' as it is obviously ethnocentric: it undervalues the local knowledge and put it on an unequal relationship with 'biomedicine', as if the latter was not ethno-influenced as well by its own ontological views and practices. See the work of Latour, 2006. The same problem occurs with 'ethnoscience', 'ethnomusicology', etc. See Singleto, 2006:3 – 68.

68 I refer to the definition of sickness given by Kleinman as 'the understanding of a disorder in its generic sense across a population in relation to macrosocial (...) forces' (Kleinman, 1988:6).

69 According to Favret-Saada, blood feud could be a way to pass from a social disequilibrium – or disorder – to another, instead of reconstituting an idyllic social order (Favret-Saada, Book 3. 'Au Laboratoire d'Études de Sociologie et d'Ethnologie Comparative, débats et discussions', *Les Possédés et leurs mondes*, F. Laugrand – interviewer –, 2018, Available online: <https://www.youtube.com/watch?v=6W8hmoc3W2M>).

70 *Tamduk* can also be caused by *fun* – spirits that own the places – angered at human's behaviour, e.g. for not offering something to them before taking a resource on their land. The treatment and prevention of the *fun*'s affliction is yet slightly different, see Laugrand, Laugrand, 2020:111 – 140.

71 Witchcraft, or *anting-anting* in Tagalog and Binisaya, is common in the Philippines. A very informative exhibit on the subject entitled 'Anting-Anting: The Secret Soul of the Filipino' was held at Musée du Quai Branly-Jacques Chirac, Paris, in 2019. See also Rosales, 2019 :110–159.

72 For a complete description of this methodology, see Laugrand, 2019:158 – 167.

73 The *imò butiti* is famous for its deadly effect (see image 2). In the village of Lifuan, it has caused many to flee the place after dozens were poisoned.

74 Usually, when one dies inside a house, the latter is burnt, and the place is never inhabited again.

75 In China, in addition to being the lucky number, the number eight is the perfect number because it is from the eight trigrams that all the transformations of the world unfold in the art of Achilleomancy and the Book of Transformations, or *Yi Jing* (易經).

76 Interestingly, the pig is considered to be the best donor for skin and organ xenografts and transplants on human beings, making it the animal whose body and organs are the closest to that of man. See Rémy, 2009 :112–125.

77 Lévi-Strauss, C. (1979), 'Claude Lévi-Strauss à l'Université Laval, Québec (septembre 1979)'. Film prepared by Ivan Simonis. Québec : Université Laval, Laboratoire de recherches anthropologiques, no 4.

78 Mike Gonzales, 'Map of Quezon Showing the Location of Candelaria.' Wikimedia Commons <File: Ph locator quezon candelaria.png|Ph_locator_quezon_candelaria>

79 Mariano C. Ramos to Miguel Selga, 27 November 1934, TYP S1.1 001 Typhoon Data Records, Manila Observatory Library and Archives.

80 Mariano C. Ramos to Miguel Selga, 27 November 1934, TYP S1.1 001 Typhoon Data Records, Manila Observatory Library and Archives.

81 Miguel Selga to Mariano Ramos, 28 November 1934, TYP S2.2 001, Typhoon Data Records, Manila Observatory Library and Archives.

82 Miguel Selga to Mariano Ramos, 28 November 1934, TYP S2.2 001, Typhoon Data Records, Manila Observatory Library and Archives.

83 Eulogio Pelejo, 10 November 1928, TYP S2.1 003; Juan V. Eleazar, 18 November 1928, TYP S2.1 004, Typhoon Data Records, Manila Observatory Library and Archives.

84 '1 dead as hundreds flee false tsunami alert in Quezon.' *Philippine Daily Inquirer*, 23 July 2014.

85 '1 dead as hundreds flee false tsunami alert in Quezon.' *Philippine Daily Inquirer*, 23 July 2014.

86 '1 dead as hundreds flee false tsunami alert in Quezon.' *Philippine Daily Inquirer*, 23 July 2014. 'NDRRMC Situation Report on Typhoon Henry as of 22 July 2014' <<https://bit.ly/2r5OFm8>>; "Typhoon Glenda (Rammasun) sweeps through the Philippines" <<https://bit.ly/2FCBC5H>>.

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88 Requentina, "Supertyphoon now threatens Metro Manila," *Manila Bulletin*, 03 November 1995, p. 1; "Supertyphoon leaves at

least 79 dead," *Manila Bulletin*, 04 November 1995; Masaganda, "'Rosing" dead reach 600; damage heavy,' *Manila Bulletin*, 06 November 1995, p. 1.

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92 Department of Health & World Health Organization, *Pocket Emergency Tool 4th Edition*, 2012

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136 Ethnographic Workshop, *Barangay Bangad and Janosa, Talim Island*, January 9–13, 2017; Ethnographic Workshop, *Barangay Sapang, Talim Island*, February 21–25, 2017

137 *Bayanihan* is derived from its root, *bayani* which means “hero”. In the local context, *bayani* represents selflessness and service to others – qualities possessed by the Philippine national heroes, which they try to emulate in times of crisis.

138 Ethnographic Workshop, *Barangay Bangad and Janosa, Talim Island*, January 9–13, 2017; Ethnographic Workshop, *Barangay Sapang, Talim Island*, February 21–25, 2017.

139 Ethnographic Workshop, *Barangay Bangad and Janosa, Talim Island*, January 9–13, 2017; Ethnographic Workshop, *Barangay Sapang, Talim Island*, February 21–25, 2017.

140 The local executive at the *barangay* level is called *barangay kapitan*.

141 Ethnographic Workshop, *Barangay Bangad and Janosa, Talim Island*, January 9–13, 2017; Ethnographic Workshop, *Barangay Sapang, Talim Island*, February 21–25, 2017.

142 *Sabalas* is a variation of northeast monsoon locally known as *Amihan*.

143 *Salatan* is a variation of southwest monsoon locally known as *Habagat*.

144 Between 1998 and 2017 climate-related and geophysical disasters killed 1.3 million people and left a further 4.4 billion injured, homeless, displaced or in need of emergency assistance. While the majority of casualties are due to geophysical events, mostly earthquakes and tsunamis, 91% of all disasters are caused by floods, storms, droughts, heatwaves and other extreme weather events. In: Wallemacq & UNISDR, & CRED, *Economic Losses, Poverty and Disasters 1998–2017*, 2018.

145 World Risk Index (2018), the Philippines is at the third rank, after Vanuatu and Tonga.

146 National Disaster Risk Reduction and Management Council. <https://ndrrmc.gov.ph/>

147 The international name is Haiyan, and the local name is Yolanda.

148 Administrative names given to several groups of islands surrounding the Visayan Sea.

149 The Philippine Constitution of 1987 recognizes the rights of indigenous cultural communities. Despite this national IPs law, they are among the poorest and most marginalized of the Filipino society. A major factor causing food insecurity and poverty among IPs is the loss of their ancestral lands due to their displacement linked to development projects and extractive industries involving mining, dam construction and logging operations.

150 A *barangay* is a political administrative division in the Philippines, which dates back from the pre-Hispanic period. It is placed under which are subdivided into several *barangays*.

151 The concept of Building Cultures invites to consider Habitat through 1) the construction process; 2) the organization of the construction, its maintenance, its social and economic

impact; 3) the design and arrangement of spatial components as well as their use(s); 4) the symbolic character of the structure as a whole, or of some of its specific elements.

152 The proposed approach stems from collective reflections conducted during several international meetings. They have resulted in a manifesto titled *Promoting local building cultures to improve the efficiency of housing programmes* co-signed by Misereor, Caritas France and Caritas Bangladesh, the IFRC, CRA-terre and Fondation Abbé Pierre.

153 For example, in Haïti, with ten years' experience and feedback from the field: in Joffroy *et al.*, 2019.

154 Local Government Unit

155 The proportion of affected families directly supported by national and international aid rarely exceeds 20%. In: Parrack, *et al*, 2014 :44–58

156 For example : Olivier de Sardan, 1995.

157 Iterative approach, which allows adaptation of the project choices (technical, implementation strategies such as training, sensitization, etc.)

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