Thirsting for Recognition: A Comparative Ethnographic Case Study of Water Governance and Security in the Highlands of Kalinga, Philippines

Mémoire

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Sous la direction de:

Jean Michaud, directeur de recherche
Résumé

Basé sur une recherche ethnographique de neuf mois, ce mémoire présente une étude comparative des incertitudes, risques et vulnérabilités vécues à l’ère d’instabilités environnementales et climatiques aux Philippines, ainsi qu’aux enjeux contemporains liés à la sécurité ainsi qu’à la gouvernance de l’eau dans les hautes terres de Kalinga, une province située dans la région administrative de la Cordillère au nord de l’île de Luçon. Divulguant, pour ce faire, les fondements et les opérations du gouvernement coutumier de l’eau d’irrigation, cette étude souligne les fondements intrinsèquement politiques de la disponibilité et de l’accessibilité de l’eau comme ressource, ainsi que pour la protection des droits autochtones et le développement des ressources naturelles.

Abstract

Based on a nine-month ethnographic research conducted in 2015 and 2016 amongst three indigenous communities of the Kalinga highlands, a province and ancestral domain located in the Cordillera Administrative Region of Northern Luzon (Philippines), this comparative academic study examines the local experiences and responses to contemporary threats to safe and sufficient supplies of irrigation water. It further provides a detailed account of the constitution and functions of prevailing customary water governance systems and practices. This study, thus, defends the need to correlate water security to governance, whilst insisting upon the importance of articulating preventive and responsive policies and interventions with local contexts and conditions.

Keywords: water governance, water security, customary water governance systems and practices, indigenous knowledge, Kalinga, Philippines.
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Glossary

Apo: the Kalinga term for grandchild and grandparent.

Akis: see Bugis – this Kalinga term is a synonym for Bugis. It is one of several dialectic variations of the same word.

Ancestral Domain\(^1\): refers to all areas belonging to indigenous peoples since time immemorial and continuously to the present, except when interrupted by war, forced displacements or through deceitful means, as a consequence of government projects or any other voluntary dealings entered into by government and private individuals/corporations, and which are necessary to ensure their economic, social and cultural welfare. An ancestral domain encompasses all visible and imperceptible organic, living and inanimate components found within a delimited territory held under the individual or collective claims of ownership, occupation or possession of indigenous persons and peoples. These include alienable and disposable lands, including housing allotments, agricultural lands, forests and pasture lands, hunting grounds, burial grounds, worship areas, bodies of water, minerals and other natural resources. These also comprise lands which may no longer be exclusively occupied by indigenous peoples, but which they historically accessed for their subsistence and traditional activities.

Ancestral Land: refers to lands occupied, possessed and utilised by indigenous persons, including households, families, clans and kin folks since time immemorial. These encompass, but are not limited to residential lots, rice terraces or paddies, private forests, swidden farms and tree lots.

Anitos: the Kalinga word for spirits (applicable to all three dialects employed by the indigenous communities of this study).

Balikbayan: a Tagalog term designating a Filipino’s “homecoming”.

Barangay: Tagalog term for the second to the smallest administrative unit of the Philippine State (the smallest being the sitio). As explained by Hirtz (2013: 904), the word barangay — which can be loosely translated as ‘village’ — was first introduced as an administrative term under President Marcos through PD 557 in 1974, replacing barrio which had previously been the term for [this] political unit”.

Bodong: the political and judicial peace-keeping system or mechanism of Kalinga. Commonly termed a peace pact or treaty, the Bodong may also be called the Fochong, Budong, Pochong and Vojong/Vochong in other Kalinga dialects.

Bolo: machete in the Kalinga dialect and in Tagalog.

Bogis: see Bugis – this Kalinga term is a synonym for Bugis. It is one of several dialectic variations of the same word.

Bugis: Kalinga term designating the territorial boundaries established in the Pagta. Also known as Akis, Bogis and Kigad in other Kalinga dialects.

\(^1\) The following definition is inspired from the formal definition provided by the 1997 Indigenous People’s Right Act of the Philippines.
Binudngan/Binodngan: the Kalinga term used to identify a person, which refers to the bond or relationship established through the Kalinga Bodong. It is applicable to all those belonging to a common subtribe, intended for all people originally from or presently living on a common ancestral domain. Membership is inherited through birth or attributed to a married spouse (although in the latter case, a person’s identity remains defined by their birthplace and secondarily attached to that of their spouse).

Carabao: the Tagalog term for water buffalos.

Encomiendas: name of the Spanish land system implemented in 1568 introduced by King Philip II, which gave Spanish soldiers, civilians, and religious orders formal land rights. This designated whoever lived in these encomiendas as tenants obliged to pay an annual tax (known as a tribute) to Spain (Guillermo & Win, 2005: 139).

Igorot: a word, otherwise termed Igorrote, Ygolot or Ygorrote, this is the generic word for identifying the indigenous peoples of the Cordillera Administrative Region in the Philippines. Whilst commonly employed to broadly designate the peoples inhabiting this space, this name is not typically chosen to specifically define those generically branded as such. The names these people prefer, in fact, refers to their ethnolinguistic origins and geopolitical affiliations.

Ili: the Kalinga word for the smallest administrative unit recognised by customary law, equivalent or resembling in shape and size a village, hamlet or settlement. It is often said to roughly correspond to the official Philippine definition of the barangay. However, their boundaries may somewhat differ since their definition abides to different of rules. The geopolitical demarcations of the ili naturally predate those of the barangay.

Ilokano: the name of an ethnolinguistic group of Northern Luzon (Philippines) and of their dialect. The word may also be spelled “Ilocano”. It is the name of the lingua franca” (common language) of Northern Luzon.

iGuinaang: people of the ancestral domain and subtribe of Guinnang.

iKalinga: people of the Kalinga tribe and province.

iSumacher: people of the ancestral domain and subtribe of Sumacher.

iTurkaw: people of the ancestral domain and subtribe of Turkaw.

Jeepney: sometimes called jeeps, Jeepneys are vehicles commonly used throughout the Philippines for public transportation and occasionally as private buses. These were originally made from the abandoned U.S. military jeeps used during the Second World War.

Kabunyan/Ahunyan: the name for God in the Kalinga dialects of the three sub-tribes that participated in the following study.

Kailian: a descriptive term commonly used by all subtribes throughout Kalinga for all those belonging to a common ili (known as umili) from rights inherited through birth or matrimonial affiliation.

Kaingin: the Kalinga term for swidden farms or shifting cultivation.
Kasupang: the Kalinga term used by a Bodong-holder to designate his or her counterpart, meaning the Bodong-holder from the sub-tribe whose peace pact the former holds. For instance, the counterpart (Kasupang) of the Bodong-holder from the Sumacher subtribe assigned to the sub-tribe of Turkaw is the Bodong-holder from the Turkaw subtribe appointed the subtribe of Sumacher.

Manang: the Ilokano word for older sister. This term is commonly used throughout the Kalinga province to identify or designate relationships of close proximity between older and younger women.

Palay: the Tagalog term for unhusked rice grains.

Pakoy: the term used in the ancestral domain of Turkaw (Kalinga) for unhusked rice grains.

Pagta: the Kalinga term designating the provisions of the Kalinga Bodong.

Pangat (singular): the Kalinga word for leader.

Papangat (plural): the Kalinga word for leaders.

Purok: the official Tagalog term the subdivision of a barangay. The term appears interchangeable with that of “sitio”, although the purok is typically believed to be located in or near relatively urban areas. Both, however, designate identical areas.

Sangguniang Bayan: the Tagalog and official name for elected municipal councillors or legislators.

Sitio: a term inherited from the Spanish colonial period designating territorial enclave found within a barangay. A sitio is otherwise and officially called “purok” in the Tagalog language, but somewhat used to designate the subdivisions of barangays located in rural areas. It represents the smallest political subdivision in the Philippines.

Tagalog: the official language of the Philippines. Thus, when speaking of the language, the word Tagalog is also known as Filipino. “Tagalog” additionally designates an ethnolinguistic group in the Philippines whose mother tongue happens to be the national language. Interestingly, this groups is not the demographic majority in the Philippines.

Uma: the term used in the Kalinga dialects of the Guina-ang and Sumacher people to designate swidden agricultural lands.

Uva: the term used in the Kalinga dialect of Turkaw to designate swidden agricultural lands.

Umili: the Kalinga term for community, which explicitly refers and correlates to the word ili.
Abbreviations

AD Ancestral Domain
AFP Armed Forces of the Philippines
APEC Aragorn Power and Energy Corporation
BIBAK Benguet, Ifugao, Bontoc, Apayao, and Kalinga
CADC Certificate of Ancestral Domain Certificate
CADT Certificate of Ancestral Domain Title
CARP Comprehensive Agrarian Reform Program
CAR Cordillera Autonomous Region
CBFMA Community-Based Forest Management Agreement
CHARMP1 The 1st and 2nd Cordillera Highland Agricultural Resources Management and 2 Project
CLUP(s) Comprehensive Land Use Plan(s)
CP Certificate of Precondition
CPP Communist Party of the Philippines, also known as the Partidong Komunistang Pilipinas
CIS Communal Irrigation System
CNI Commission on National Integration
DA Department of Agriculture
DENR Department of Environment and Natural Resources
DepEd Department of Education
EDSA The Epifanio de los Santos Avenue (EDSA) represents a limited-access circumferential highway around Manila, the capital of the Philippines. When speaking of the EDSA Revolution, also termed the People Power Revolution of 1986, it refers to a series of mass demonstrations that began in 1983 and culminated on February 22–25, 1986 by the departure of President Ferdinand Marcos and the restitution of democratic rule
ENSO El Niño and El Niño Southern Oscillations phenomena
FAO Food and Agriculture Organization of the United Nations
FBI Field-Based Investigations
FPIC Free Prior and Informed Consent; It may either reflect the objective stated by the acronym, meaning the “free, prior and informed consent”, or to the process according to which this shall be pursued. For the latter, it shall typically pertain to the meeting conducted for the required presentation and acceptance of any research or development projects that concern indigenous peoples or their ancestral domains. In the context of this study, the FPIC will moreover implicitly or explicitly pertain to the formal regulations and the government agency whose mandate is the implementation of the 1997 Indigenous Peoples’ Rights Act (also known as the IPRA Law).
ICC Indigenous Cultural Community
IKSPs Indigenous Knowledge Systems and Practices
IWRM Integrated Water Resources Management
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>IP(s)</td>
<td>Indigenous People(s)</td>
</tr>
<tr>
<td>IPEd</td>
<td>Indigenous Peoples Education Framework</td>
</tr>
<tr>
<td>IPRA (Law)</td>
<td>Indigenous People’s Rights Act</td>
</tr>
<tr>
<td>KALAHİ- CIDSS</td>
<td>Kapit Bisig Laban sa Kahirapan – Comprehensive Integrated Delivery of Social Service</td>
</tr>
<tr>
<td>LGU(s)</td>
<td>Local Government Unit(s)</td>
</tr>
<tr>
<td>MGB</td>
<td>Mines &amp; Geo-Science Bureau (part of the DENR)</td>
</tr>
<tr>
<td>MPDO</td>
<td>Municipal Planning and Development Officer</td>
</tr>
<tr>
<td>MTB-MLE</td>
<td>Mother Tongue-based Multilingual Educational material</td>
</tr>
<tr>
<td>NCIP</td>
<td>National Commission for Indigenous Peoples</td>
</tr>
<tr>
<td>NEDA</td>
<td>National Economic and Development Authority</td>
</tr>
<tr>
<td>NGP</td>
<td>National Greening Program</td>
</tr>
<tr>
<td>NIA</td>
<td>National Irrigation’s Association</td>
</tr>
<tr>
<td>NPA</td>
<td>New Peoples’ Army</td>
</tr>
<tr>
<td>NIPAS</td>
<td>National Integrated Protected Area System Act</td>
</tr>
<tr>
<td>NWRB</td>
<td>National Water Resources Board</td>
</tr>
<tr>
<td>PANAMIN</td>
<td>Presidential Assistance on National Minorities</td>
</tr>
<tr>
<td>PCIP</td>
<td>Provincial Commodity Investment Plan</td>
</tr>
<tr>
<td>PDPFP</td>
<td>Provincial Development and Physical Framework Plan</td>
</tr>
<tr>
<td>PPP(s)</td>
<td>Public-Private Partnership(s)</td>
</tr>
<tr>
<td>PSA</td>
<td>Philippine Statistics Office</td>
</tr>
<tr>
<td>RA</td>
<td>Republic Act</td>
</tr>
<tr>
<td>RBCO</td>
<td>River Basin Control Office</td>
</tr>
<tr>
<td>SB</td>
<td>Sangguniang Bayan</td>
</tr>
<tr>
<td>SIFMA</td>
<td>Socialized Industrial Forest Management Agreement</td>
</tr>
<tr>
<td>STIFRMSP</td>
<td>Sustainable Traditional Indigenous Forest Resources Management Systems and Practices</td>
</tr>
</tbody>
</table>
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I dedicate this master’s thesis to the people of Kalinga, may your wisdom, strength and devotion inspire us all.
Thirsting for Recognition: A Comparative Ethnographic Case Study of Water Governance and Security in the Highlands of Kalinga, Philippines

As I drew the preliminary sketches of this study, water had yet to become the subject of a two-year academic research, emerging from numerous informal discussions held with indigenous community members and representatives during a preliminary ethnographic study conducted in Kalinga, in the Cordillera highlands of Northern Luzon (Philippines). A mounting source of concerns and conflicts – extending beyond local experiences, transgressing territorial circumscriptions and easily delimited timeframes –, water presented an opportunity to unearth the foundations, configurations and experiences of vulnerability, risk and uncertainty.

Situated along a typhoon belt on the Pacific rim, known as the Ring of Fire, the Philippines is considered one of the world’s most hazard-prone countries; with earthquakes, volcanic eruptions, tropical cyclones, floods and landslides causing over a thousand deaths per year (Hilhorst, Van der Haar and Leeftink, 2015: 513). It features amongst the top ten countries with the highest rate of population affected by weather-related disasters, estimated at 130 million from 1995-2015 (CREDC & UNISDR, 2015). The tropical cyclone season in the country typically begins in June until December, with the months from July to September reputed for the most frequent occurrence of more than three cyclones per month (Castro, 2013: 307).

In the wake of unprecedented climatic changes and uncertainties, these preoccupations transpired from the numerous scientific enquiries, which sought qualifying and quantifying the impacts of water’s presence, absence or overabundance. As highlighted by the Intergovernmental Panel on Climate Change (IPCC) (in Honkonen, 2017: 6) climate change has been predicted to significantly disrupt seasonal water flows, and diminish renewable surface and groundwater sources, whilst accentuating meteorological droughts, through the absence or decline of precipitations, as well as agricultural droughts, from increased evapotranspiration. Whilst science has, over the course of multiple decades,
provided crucial meteorological forecasts of the hydrological changes induced by global warming, illustrating how ecosystems would or shall react to its cumulative and mutually reinforcing impacts, climate change will undoubtedly provoke unforeseen transformations that will, in a way or another, reflect the progressive, yet nonetheless dramatic impacts on water quantity and quality. For Honkonen (2017: 7), the relevance of security will consequently grow as climate change intensifies, in response to the exacerbation of pre-existing inequalities, simultaneously given by the uneven physical distribution of freshwater, as well as developed through historic, political, economic and sociocultural divides.

Social scientists discussed the interconnection and mutual constitution of social and hydrological relationships for improved water governance (Krause & Strang, 2016; Strang, 2009; Linton, 2010); water’s significance and value; the ethical dilemmas occasioned by water governance (Shmidt & Peppard, 2014); the accessibility, sustainability and affordability of water. Scientific definitions of the invaluable substance that water, in its material fluidity, embodies, accordingly, moulded the ideological debates or “paradigm wars” (Shiva, 2002: x) that sought “fixing its flow” (Linton, 2010: 3) as an essential resource to the creation and sustenance of all possible life ways and forms.

This academic research offers a comparative ethnographic case study of water governance and security in the highlands of Kalinga, a locality and population of the Cordillera Administrative Region, in the Northern Philippine Island of Luzon. In the first chapter, I shall examine relevant theoretical conceptions of water to demonstrate, as requested by Krause and Strang (2016: 633), how social and hydrological relationships are interconnected and mutually constitutive. This investigative query exposes the defining characteristics and features underscoring representations of water as a “total social fact” (Orlove & Caton, 2010; Linton and Budds, 2014; Boelens et al. 2016; Strang, 2008), a lubricant of “social functions” (Perreault, 2014; Wilson, 2014) and universal prerequisite to life. I subsequently provide a critical appraisal of the notions of water governance and security, prominent to this academic work, in order to explicate the complex networks of formal and informal interactions over multiple and overlapping scales underying water’s
significance and value. A nuanced and critical assessment of issues pertaining to the forms and functions associated or assigned to water are later discussed through a critical review of the dominating Integrated Water Resources Management (IWRM) framework, indigenous water governance and sustainable local livelihoods.

The second chapter exposes the methodological choices and activities performed throughout this academic endeavour, beginning with a descriptive account of the craft and complexities of qualitative research, followed by the presentation of the epistemological posture intentionally adopted in this work’s execution. A brief exposition of the preliminary ethnographic study, conducted from December 2014 until January 2015, then follows. After discussing the motivational factors, concerns and interests mobilised in the conduct and accomplishment of this research, I present the ethical requirements and certifications required in the development of collaborative partnerships with indigenous peoples in the Philippines, as well as the chosen anthropological methods and research instruments; including the sampling process, the form and functions of comparable ethnographic case studies and the specificities of focus group discussions.

The third chapter provides a concise depiction of the prominent historical legacies shaping contemporary aspects of water governance and security in Kalinga; the colonial invasions and foreign occupation of the Philippines by the Spanish Crown (1565-1898), the United States of America (1898-1946) and the Japanese, during the Second World War (1942-1945), the independence of the Philippines, the Chico River hydroelectric development project and the constitution of the new democratic regime, following the dictatorship of Ferdinand Marcos.

The fourth chapter draws a portrait of the current Philippine State through a succinct description of prevailing indigenous rights and water laws, followed by a presentation of the Cordillera Administrative Region (CAR). I shall then expose the formal administrative delineations of the Kalinga province and subsequently highlight the local conceptions and definitions of Kalinga, as the designation for an indigenous tribe and ancestral domain,
which at once embodies the prevailing geopolitical and sociocultural boundaries established by customary laws.

The fifth chapter delves into the analytical depths of this ethnography. I initially introduce the ethnographic research areas, to later circumscribe and correlate indigenous references of climatic and environmental transformations to water insecurity, explicated as the loss of references, which curtails the ability of indigenous persons to predict, manage and respond, both pre-emptively and responsively, to irrigation water shortages. Once the vernacular definitions of seasonal periods and regularities complete, I shortly discuss the uncertainties triggered by the mounting incapacity of Kalinga persons to accurately predict, strategically adapt and sustainably react to the unprecedented meteorological changes engendered by global warming. This subsequently leads to a detailed account of customary laws governing irrigation water in three ancestral domains of Kalinga, including the protection watershed areas; the prevailing access, use and distribution modalities regulating irrigation water rights; individual and communal responsibilities; as well as the coping mechanisms, strategies and techniques enacted in response to water scarcity. These integrated, preventive and counteractive policies, I further defend, reflect local visions of ownership and belonging, which consider humans as embedded, rather than outstanding and dissociated from their environment – a humbling condition, which restricts possibilities and potentials to mutually beneficial and interactive partnerships with all non-human constituents of their ancestral domain. I conclude this analytical chapter by defending that water security is simultaneously correlated to, and explicated through governance, which then constitutes an intangible construct, encompassing physical manifestations and experiences, shaped by judicial frameworks and sociocultural norms, indigenous laws and national development.

The final chapter reiterates the essential components previously addressed throughout this academic research, disclosing its limits and highlighting additional opportunities to further engage with the elements considered as central or peripheral to this work.
1. Theoretical Framework

1.1 The Anthropology of Water

Anthropological accounts of water, in contexts of both scarcity and abundance, address a vast and complex array of topics, including kinship, territory, hierarchy, conflict, identity, representations, symbolism and heritage. Rarely a research object in its own right, water has typically provided a contextual setting or subject through which anthropologists critically examine sociocultural, political and economic issues. Water, as argued by Orlove and Caton (2010), represents a “total social fact”, at once a sociocultural and material substance through which all aspects of life are generated and recreated (Babidge, 2016: 84; Strang, 2005: 370). As beautifully put by Bakker (2003 in Perreault, 2014: 234-235), water “lubricates social functions and life itself”, both as a “factor of production and a product of social labour (…) universally necessary for individual bodies as it is for civilisations”. For Swyngedouw (2004: 28 in Perreault, 2014: 235), water similarly designates a “hybrid thing that captures and embodies processes that are simultaneously material, discursive, and symbolic”. The substance embodies, as such, “life’s commonwealth” (Strang, 2005: 367), imbued with meaning and used, exchanged, consumed, transformed, recycled, worshipped or fought over in accordance with the values on which these rest (Brown & Schmidt ed. 2010).

Numerous theoretical frameworks were crafted to represent and qualify the intricate relationship developed and maintained between humans and water. The term “waterscape”, for instance, derived from the term landscape, reflects what Orlove and Caton (2010: 408) describe as the culturally meaningful, “sensorially active” places in which humans interact with water and with each other (Swyngedouw, 2009). The hydrologic network, or what Hastrup (2009 in Wilson, 2014: 2) has called waterworlds, proposes a compelling definition of the elaborate interactions between, as well as amongst, people and water over extended periods of time and space. Water has, moreover, been conceived as an integral component of sociocultural and political regimes through the concept of “water regimes” (Hastrup 2009 in Orlove and Caton, 2010 407-408). This reference incorporates the
multiple factors that have led to numerous and diverse freshwater water management systems and practices into an expansive and interactive nexus. Water regimes highlight the existence of multiple and overlapping water governance rules and institutions (Hastrup 2009 in Orlove and Caton, 2010: 408). Countless ethnographic accounts further link water to the emergence, development and operation of complex agricultural societies, notably those of Wittfogel’s (1957) hydrological theory of the rise of the state, the Balinese religious ritual and irrigation practices by J. Stephen Lansing (1991), as well as the remarkable water governance system and practices underlying the Angkorian Empire, the Aztec city of Tenochtitlan, and the Byzantine Constantinople (Mithens, 2010).

The term watershed (or water catchment) has otherwise been used to define the specific topographical basin through which water drains to the lowest point (Orlove and Caton, 2010: 406). Each connected basin is said to form a watershed unit, enabling the delimitation of commensurable management areas, comprising specified environmental features and components. These boundaries, moreover, circumscribe a population. Watershed units vary considerably in terms of scale and size. They typically reflect a particular scientific conception of water and governance correlated to the principles and standards set forth by the Integrated Water Resources Management approach (discussed later). Watersheds are not, however, necessarily, nor entirely unproblematic; they vary in scale and may contain smaller sub-watersheds and connections of groundwater, but may also ignore the complex interdependence of water sources and flows for the sake of administrative simplicity and coherence (Stensrud, 2016B: 61). As further defended by Ferreyra et al. (2008 in Mclean, 2017: 3)

the imposition of watershed-based planning at a local scale is not meaningfully engaged with, and that more flexible planning processes are required that respond to existing social and political realities if successful and sustainable water planning is to occur.

The concept of “hydrosocial cycle” most accurately discloses the processes that mutually define and (re)configure water through the lens of political ecology (Budds, 2009; Boelens et al. 2016; Linton & Budds, 2014). The existence and significance of water emerge, accordingly, from a process of co-constitution and material circulation (Linton & Budds,
For Linton (2003: 24), this theoretical expression portrays water through “relational dialectics”. Borrowing the words of David Harvey (in Linton, 2003: 24), the author defends the significance of this analytical perspective and instrument “for dialecticians hold that elements, things, structures, and systems do not exist outside of or prior to the processes, flows, and relations that create, sustain, or undermine them”. The concept describes, in other words, water’s constitution as a substance shaped through a circuit of material and sociocultural interactions (Wilson, 2014), illustrating the historical circumstances, as well as ecological and sociocultural processes, that produced and sustained water to serve particular sociocultural, economic and political ends (Linton & Budds, 2014). In so doing, the concept highlights how complexly nature and culture are intertwined (Orlove and Caton, 2010: 403; Strang, 2004), therefore providing, in the words of Hoogesteger, Boelens and Baud (2016: 93), the necessary leverage for uncovering how interrelated physical, normative, organisational, financial and agro-productive elements are embedded in culture and politics (see also Boelens, 2014 and Swyngedouw, 2009). Consequently, as explained by Schmidt and Peppard (2014: 536), the hydrosocial literature offers the relevant framework for a critical analysis of the policies and scientific norms that predominantly reduce water to chemical–molecular understandings deprived of substantiating references to social, cultural, economic and political activities. As further argued by Wilson (2014: 6), the analysis of hydrosocial cycles unveils the similarities and differences in sociocultural and material relations to water between and amongst humans, as well as the conflicts that may occur as a result of the differences. Boelens et al. (2016: 9) additionally contend that investigating the contents of hydrosocial regimes and networks reveal the “socio-natural politics of water governance” and territorial planning systems, which may, furthermore, provide alternative ways of conceptualising and building sustainable relationships with all the physical and sociocultural constituents of our sociocultural and natural surroundings.

1.2 Water Governance

The concept of water governance complements understandings of water’s hydrosociality. The concept broadly speaks of the political, judicial and sociocultural systems, processes and practices that underlie, yet also determine water access, use and management rights as well as responsibilities, (Tortajada, 2010: 299; Wilson, 2014: 1-2; Bakker, 2003: 3; Moss &
Newig, 2010). Water governance encompasses formal and informal decision-making systems, processes or practices, which occur through the interplay of a complex network of multi-scalar and overlapping institutions (Dore, Lebel & Molle, 2012). It additionally calls upon the need to recognise, acknowledge and represent water’s sociocultural definition, as profoundly symbolic and imbued with meanings associated to and determined by beliefs, whilst reconsidering dominant visions and practices that circumscribe water’s significance and value (Linton & Budds, 2014: 170; Linton, 2014). The concept of “governance”, as explained by Bridge & Perreault (2009 in Perreault, 2014: 236), defines economic and political coordination as the regulating mechanisms that enable institutional stability, thus counteracting water’s inherent mutability, fluidity and inconsistent geographic distribution.

The availability of water, a universal prerequisite for life, in sufficient quantity and quality is by no means uniform. As put by Biswas (2008: 5), water is in constant motion, passing from a state to another and from a location to another. Extraneous materials input by humans and nature are carried through water’s transformations and circulation, making it neither homogenous, constant nor consistent over time (Biswas, 2008: 5). Its propensity to flow as well as its inherent mutability, as told by Orlove and Caton (2010: 405), renders water an unquestionably collective resource governed through regulatory frameworks, conventions and protocols, including property laws and human rights.

The recognition of water’s fundamental qualities has not, however, translated into worldwide, coherent legislative and judicial orders, but innumerable configurations that reflect historically constructed territorial demarcations, as well as particular economic imperatives and political priorities. Schmidt and Peppard (2014) contend that the monolithic and universal approach put forth by the human rights’ discourse ignores the specificities of historical and geographic contexts by claiming the supremacy of a unique, individualistic rationale. Radonic (2015: 41), further endorsing their stance, judiciously links this prevalent and hegemonic legal framework to the overarching political economy of neoliberal capitalism, where personal entitlements supersede collective rights.. When speaking of rights, as eloquently put by Stensrud (2016B: 59), one should, thus, refer to “a culturally and historically specific system of symbolic communication through which people act and through which they negotiate social and political relations”. The discursive
framings of water as a human right or need further highlight underlying issues regarding the regulatory roles and capacities of government bodies and institutions, international organisations and civil society (Mukheibir, 2010: 1028).

Whilst rights to resources derive from law, their authority and legitimacy rest on cultural values and beliefs since, as explained by Engel Merry (1992: 361). For Pradhan & Meinzen-Dick (2003; 2005), rights hinge on legitimising discourses and institutions, which are, themselves, embedded in cultural values and beliefs. The word “right” itself formally defines fairness, justice and equity, whilst there exists no singular, independent and uncontested “right”, law or legal system. Notions of equality and fairness have thus been central in debates regarding the access, distribution, use and consumption of water.

In the words of Roa-García and Brown (2015: 1-2), equity refers to proportionality based on merit or historical injustice; whist equality is associated with outcomes equally distributed amongst group members. Accordingly, laws do not merely concern acts, rules, administrative orders and court decisions, enacted or made by various State bodies, but rather consist of cognitive and normative orders that are generated and maintained in particular social fields (Pradhan & Meinzen-Dick 2003). These may generate and enforce rules, or “normative and cognitive repertoires”, specific to particular times, peoples and spaces such as indigenous communities, villages or nation-states, which interact with those prevalent in other contiguous or overlapping places (Ibid.). As stated by Orlove and Caton (2010: 405), water laws are a crucial site of contestation between prior customary laws and nationalist reforms. Contestations, they add, shift the course, purpose and meaning of water between different individuals and groups (Ibid.).

The coexistence and interaction of multiple legal orders or mechanisms is known as legal plurality\(^2\) (Roth, 2014: 1; Pradhan & Meinzen-Dick 2010: 41 in Brown and Schmidt ed.; Holzinger, Kern & Kromrey, 2016; Engel Merry, 1992). Legal plurality recognises and highlights the existence of multiple legal and normative orders. This conceptual framing

\(^2\) Following Roth (2014: 1), I purposefully replaced the commonly used term “pluralism” for “plurality” or “plural” to discourage the positive connotation the first implicitly conveys. Far from promoting a negative outlook, I chose a nomination that suggests neutrality.
discloses the complementarity and contradictions of interacting judicial and political orders, whilst bringing into question the capacity of government organizations to solely or comprehensively regulate competing water needs and demands. It further suggests that legal and administrative uniformity conceals the ideological ramifications and problematic enactment and enforcement of rights (Mulwafu, 2010: 752). The legal plurality of water could therefore be considered in relation to bundles of rights which may, at various times and degrees, complement or contradict one another (Pradhan & Meinzen-Dick in Brown and Schmidt ed. 2010: 2010: 43). These may broadly concern rights pertaining to the access and withdrawal of water for intended use or, conversely, to decision-making rights relative to the capacity to regulate or control water access and use (Ibid.).

The authority and legitimacy of claims to water may, therefore, expose latent or tacit power struggles, embedded in the judicial, political and sociocultural norms and regulations put forth to defend particular populations, values or objectives (Brown and Schmidt, 2010: 43 in Brown and Schmidt ed.; Leach, Mearns & Scoones, 1999). In the words of Engle Merry (1992: 360), law is more than a system of meanings; it is also a form of violence endowed with the legitimacy of a constituted authority. Negotiations and struggles, thus, reveal differential capacities and strategies to gain or sustain power over water in correlation with, but also in opposition to certain interests, values and objectives. It therefore appears necessary to examine the cultural dimensions of competing visions and struggles over rights in concrete situations, as stated by Fan (2016: 426), by “exploring the practical experience of a community, especially the voices, knowledge claims, and perspectives of those involved in activism”. Acknowledging the existence of multiple normative orders within the same political space and the interactions between these orders is therefore fundamental to the study and practice of water governance (Wilson, 2014: 6).

1.3 Water Security

Water security refers to what Zeitoun (2013: 11 in Lankford et al. [ed.]) terms a multilateral nexus, encompassing food, climate, and energy. The concept highlights the dynamics and tensions relative to the occurrence and experiences of water shortage, on the one hand, and the multi-scalar coping or adaptation mechanisms or strategies, on the other (Allouche,
2011: S3). It further circumscribes the multiple and overlapping causes of water insecurity, the inseparability of biophysical and sociopolitical processes from which these emerge, at various scales, times and places.

As presented by Hurlbert and Gupta (2016: 340), the notion of “security” denotes the existence of risks and uncertainties, which from a realist perspective may appear objective, independently measured and scientifically calculable, but, in fact, rely on socially and culturally ascribed perceptions and experiences of vulnerability and endangerment that may, at once, hinge on principles or values exclusive to certain groups or populations (such as women, elders or children) as well as the unique experiences of certain people or persons (Ibid.). This reaffirms the arguments of Fan (2016: 426), who insists that definitions and representations of (in)security must emerge from contextually grounded perspectives.

The “water security” concept may, however, target various aspects or address specific components or issues pertaining to uncertainty, insecurity or risk, and that may, additionally, evoke issues relative to supply, demand or various combinations of both (Mukheibir, 2010: 1027). Rather than attesting of conceptual imprecisions and ambiguities, the multiple, overlapping or conflicting definitions of security must be considered as preferential angles, interests, capacities and scientific orientations. Whilst these may not provide the stance defended here, it is nonetheless crucial to highlight their necessity in achieving the comprehensive study of water security.

A “highly securitised” formulation of water security, for instance, offers a perspective restricted to water’s forms, function and value (Zeitoun 2013: 14 in Lankford and al. [ed.]). Security, in such cases, correlates to the physical availability of the resource in sufficient quantity and quality to fulfil basic human needs (Cook & Bakker, 2012: 97). This body of work, usually termed “water resources security”, focuses on assessment tools, technological remedies and volumetric measurements, such as water stress and shortage indicators. Accordingly, water security is commonly attained or pursued through “armoury or concrete” rather than through the messier realm of policy and governance (Zeitoun et al., 2013: 3 in Lankford and al. [ed.]). Another perspective conceives water security as the
functions and services required to access and protect the physical substance of water; to safeguard its content from contamination, spillage and waste (Cook & Bakker, 2012: 97; Hoque et al. 2016). As such, water security concerns pollution to surface water, groundwater and marine waters from nutrients and pesticides (comprising nitrate, phosphorus, soil sediments, salt, and pathogens) generated by agricultural and livestock activities, mining development and industrial waste (Parris, 2011: 33). Water security, thus, appears contingent to substantial financial costs and consequently subject to payments made by those benefiting from the structures and services required to sustain regulated usage, exploitation or consumption standards. These fees may either befall on persons labelled as clients or governments subsidising such expenses. The Ministerial Declaration of the Second World Water Forum, adopted in 2000 (in Honkonen, 2017: 4-5), clearly exemplifies this ideological posture by defining water security as a means of

[ensuring that freshwater, coastal and related ecosystems are protected and improved; that sustainable development and political stability are promoted, that every person has access to enough safe water at an affordable cost to lead a healthy and productive life and that the vulnerable are protected from the risks of water-related hazards.]

These conceptualisations echo what Linton (2014) terms the “modern hydrological discourse”, which essentially abstracts all forms and sources of water from the sociocultural, historical, and political conditions in which these are produced. Recusing water to a common abstract and timeless identity, water may then be reduced to a scientific formula: hydrogen dioxide (Linton, 2014: 111; Linton, 2008). What has otherwise been termed a “modern” representation of water emerged from a particular kind of hydrological expertise, which restricts knowledge to “a complex of quantities” and scientific measurements that depicts water as an objectified resource suitable for the application of instrumental reason for its assessment, valuation and consumption (Linton, 2014: 111-113).

Responding to these critics, water security has alternatively been construed as both the context and conditions according to which “there is a sufficient quantity and quality of water, at an affordable price, to meet both the short-term and long-term needs to protect the health, safety, welfare and productive capacity of households, communities, neighbourhoods or nation” (Witter & Whiteford, 1999: 2 in Cook & Bakker, 2012: 97).
This complements the definition put forth by O’Brien, St Clair and Kristoffersen (2010), which associates water security to the protection and fulfilment of people’s vital needs and in the development of the capabilities required for the creation of satisfying lives for themselves and others. Considered as such, the security concept embraces a wide and inclusive range of factors leading to water’s sustainability and productivity. It somewhat reiterates the definition put forth by the Global Water Partnership (2000 in Cook & Bakker, 2012: 97), which includes the protection of ecosystems, the fundamental human rights to safe and sufficient supplies of food (the provision of which is dependent on water), but also (and especially) the fair distribution, the efficient government and the sensible valuation of water. Customary governance plays, accordingly, a leading role in protecting the fair access, use and management of water. Water security constitutes an inherently political matter in as much as scarcity may apply to certain groups at particular times, reinforcing or perpetuating discriminations against ethnic or religious minorities or women, for instance (2013: 13 in Lankford and al. [ed]; Mukheibir, 2010: 1027). As stated by Mukheibir (2010: 1029; see also Fan, 2016), scarcity inevitably emerges from a combination of three forces, namely: 1) the depletion and degradation of natural resources, 2) population growth and 3) uneven distribution or access – yet nonetheless remains the product of power, poverty and inequality rather than an outcome of physical availability. The heightened uncertainties, stress and conflicts resulting from the accumulation and interaction of these negative impacts justify the need for a comprehensive definition of water security; which must not, therefore be considered or addressed in an isolated way that focuses only on climate as a risk driver to the exclusion of other, often more dominant, drivers of water risks (OECD, 2015).

Water conflicts, as argued by Wateau (2011: 260-263), must not, therefore, be represented as the inevitable consequence of inegalitarian distribution and physical scarcity, but as a political phenomenon, which occurs in regions abounding in water. Water conflicts appear to extend or exacerbate territorial, socio-economic or political disputes regarding managerial rights over natural resources, which, for Rodríguez-de-Francisco and Boelens (2016: 140-141), pertain to the design and administration of infrastructures that transport water, as well as national policies and judicial frameworks. Hence, as noted by Allouche
(2011), the major issue is not water scarcity per se, but water government within as well as between Nation-states. Moreover, as argued by Babidge (2016: 86), the nature and terms of these conflicts unveil the ways in which water is valued and governed, as these disclose the interests and objectives at stake. As further noted by Biro (2008: 91), the tensions and violence around water may thrive regardless of the explicit occurrence of armed conflicts or warfare with a brutality matching physical assaults, but experienced at different scales. Politics, in the words of Claygill (2013: 62-63), may accordingly represent an alternative form of warfare; a sanctioned means of confrontation, where those partaking in conflicts dispose of uneven judicial, political and economic capabilities. These, in other words, embody the ‘silent violence’ of water wars (Biro, 2008).

1.4 Integrated Water Resources Management (IWRM)

The prevailing ideological framework of Integrated Water Resources Management (IWRM) provides a poignant contemporary illustration of reductive, disconnected and unrealistic water government designs produced and enforced by the State as well as global development organisations. IWRM has recently re-emerged as the dominant paradigm in the discursive framing of international water policy (Conca, 2006 in Cook & Bakker, 2012: 98; Allouche, 2016: 142). Primarily implemented through the private funding of international agencies and organisations, IWRM has been acclaimed as the solution to worldwide water problems (Biswas, 2008: 6-7). A common definition offered by the Global Water Partnership’s Technical Advisory Committee defines IWRM as “a process, which promotes the coordinated development and management of water, land and related resources, in order to maximise the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems” (Schmidt, 2010: 7 in Brown and Schmidt ed.; Biswas, 2008: 7). IWRM generally argues for a broad, multi-sectorial approach to water management, including economic efficiency, social equity, and environmental sustainability (as quoted from the Global Water Partnership, 2000 by Orlove and Caton, 2010: 409; Giordano & Shah, 2014: 364; Molle, 2008: 132). For Zwarteveen and Boelens (2014: 144-145), IWRM stems from a heightened political consciousness of water’s vulnerability proposing solutions that combine three sets of beliefs: a belief in
markets, a belief in participatory processes of deliberation and a belief in engineering. However, as put by Mukheibir (2010: 1032):

> despite the fact that IWRM has been put forward as the most sustainable way to incorporate multiple competing and conflicting demands for water resources since the first UNESCO International Conference on Water in 1977, the most common criticism is that there is still a large gap between theory and practice.

Biswas (2008: 10) convincingly argues, however, that IWRM is reductive and internally inconsistent, thus unusable. Without comprehensive guidelines rendering otherwise ambitious or inspirational water governance objectives pragmatically unattainable. The blatant disregard of existing water planning, management and decision-making processes underscores the unrealistic norms and standards disconnected from local realities (Ibid.). As highlighted in the 2003 World Bank report (quoted in Molle, 2008: 149), IWRM models and strategies were said to demonstrate a “lack of understanding and adaptation to the needs and concerns of local circumstances”. In fact, the absence of what Hunt calls a “contextual fit” may prove dysfunctional or even counter-productive (1999: 302 in Shah et al., 2001: 93; Shah et al., 2001: 89). Ignoring the global distributions of mean annual rainfall and potential evapotranspiration; the scale and complexity of informal water access, use and consumption; the local origin uses and management of water proves fatal to IWRM (Shah et al., 2001: 102-103). Concurring, Biswas (2008: 21) adds that different cultures, social norms, geophysical attributes, systems of governance, institutional arrangements, legal frameworks and decision-making processes, amongst other things, contradict the proclaimed efficiency of a water government framework indifferent to the specificities of particular peoples, places, situations and circumstances.

As defended by Orlove and Caton (2010: 409) and reasserted by Stensrud (2016B: 61), the definition of water’s inherent worth and economic value conceals deep contradictions on the ways of assessing and establishing the rights to access, use and manage water. IWRM does not venture into the complex political question of implementation, meaning how its principles will be struggled over and fought out in concrete settings (Orlove and Caton, 2010: 410). It does not question the significance, nor the definition and value of water as a right or commodity, further neglecting the paradox underlying the objective pursued in
relation to the means deployed for their attainment (*Ibid*.*). Moreover, IWRM fails to address tangible water problems and local priorities, becoming what Molle (2008: 132; Giordano & Shah, 2014: 373) describes as an ideal that individuals and societies should strive to reach. In other words, with increasing popularity, IWRM has become an end in itself – undermining, in certain cases, established and functioning water management systems and practices, whilst setting back needed water reform agendas, or serving as a decoy for the pursuit of hidden, alternative agendas, in others (Giordano & Shah, 2014: 364).

Although integration may seem neutral, numerous ethical judgements exist within IWRM, such as the visions put forth in water’s definition; the origin and interests served by water use in relation to particular populations or activities as well as the definition of priority water needs or demands (Schmidt, 2010: 8 *in* Brown & Schmidt ed.). Molle (2008: 148) asserts that knowledge is wrongfully portrayed as neutral and unquestionannably ‘true’, dissociated from the interests and objectives that studies might be funded to demonstrate or from the orientations endorsed by those conducting the research. IWRM follows and therefore endorses a rational, which embodies “causal assumptions about how societies work and normative beliefs about how they should work, as well as conceptions about international relations, governance, or how to exercise power” (Molle, 2008: 146-148). Accordingly, it conveys the authority of eminent international organisations and experts, mobilizing significant financial resources, which further discourages and excludes alternative thinking models that preexisted and efficiently function (Giordano & Shah, 2014: 364).

IWRM process thus reflects a dubious form of “progress” that overshadows the probable failure of the intended outcomes. For Shah and al., (2001: 110) this becomes most apparent when considering the incompatibility of the institutional river-basin management models in developing countries. In this respect, IWRM holds unrealistic expectations, ambitious or impossible objectives and preoccupations that ignore local priorities, which stem from the significant historical, geographic and sociopolitical disparities of the countries that designed, and presently endorse IWRM, from those that must now implement its rules and principles.
It additionally fails to consider and clarify whether or not it must include or disregard a number of correlated issues to water governance and security, such as the nature, hierarchy and legitimacy of competing water demands; environmental pollution and solid waste disposal; the collection, treatment and disposal of wastewater; the relationship between water, sanitation and health as well as; whether, and to what extent climatic and environmental changes and variability should be integrated to water management procedures and practices (Biswas, 2008: 11). The serious questions raised by these uncertainties reveal profound flaws in the IWRM approach and the impossible task of successfully achieving what it commands, namely the fair reconciliation of incompatible differences through a universal framework, as judiciously argued by Biswas (2008).

1.5 Indigenous Water Governance

The concept indigenous governance refers to a vast scholarship concerned with issues pertaining to identity, sovereignty, self-determination, values and ways of knowing, historical and ongoing colonialism as well as the resulting consequences of marginalisation (Von der Porten & de Loë, 2013 in Wilson, 2014). Sovereignty regards the capacity or ability of deciding and enacting particular sociocultural relationships with nature (Ibid.). Self-determination pertains to the assertive declaration of indigenous governance to freely pursue economic, social and cultural development, the ability and capacity of a people to determine and pursue a collective vision, as well as revitalise and enact beliefs, values and principles3 (Von der Porten & de Loë, 2013: 149-151). These notions may further entail the pursuit or proclamation of indigenous nationhood or the rejection of entrenched colonial legacies, or demand the recognition and upholding of the inherent rights of communities “to make decisions, based upon [their] laws, customs, and traditional knowledge to sustain [their] water, for all life and future generations” (Wilson, 2014: 2; Von der Porten & de Loë, 2013).

3 The 1997 IPRA Law notably associates these capacities and objectives to the notion of indigenous political structures, defined as “organizational and cultural leadership systems, institutions, relationships, patterns and processes for decision-making and participation identified by ICCs/ IPs such as, but not limited to, Council of Elders, Council of Timuay, Bodong Holders, or any other tribunal or body of similar nature”.

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Local, traditional, ecological or indigenous knowledge systems are essential considerations in water governance discussions. These at once refer to the dynamic and cumulative body of knowledge, experiences, practices, processes and beliefs held by particular members of indigenous or non-indigenous societies as implicit and obvious rules or sustained, enacted and enforced by certain sub-groups, such as women, elders or persons endowed with supernatural gifts or abilities (Leonard et al. 2013: 624; Hilhorst, Van der Haar & Leeftink, 2015: 509; Wilson, Walter & Waterhouse, 2015: 94; Sirima, 2015). The 1997 IPRA Law of the Philippines similarly define Indigenous Knowledge Systems and Practices pertain to:

systems, institutions, mechanisms, and technologies comprising a unique body of knowledge evolved through time that embody patterns of relationships between and amongst peoples, [as well as in relation to] their lands and [environmental] resources, including such spheres of relationships which may include social, political, cultural, economic, religious spheres, and which are the direct outcome of the indigenous peoples, responses to certain needs consisting of adaptive mechanisms which have allowed indigenous peoples to survive and thrive within their given sociocultural and biophysical conditions.

This knowledge is usually transmitted orally through narratives, stories or historical anecdotes from a generation to the next. Their teachings demonstrate the intimate and prolonged interaction of a population with their surroundings. Indigenous knowledge has further been said to convey fundamental cultural codes and conventions, as well as remarkably detailed accounts of nature’s composition, expressed notably through extensive vocabularies and classification systems (Roncoli, Crane & Orlove 2009: 94 in Crane & Nuttal [ed.]). Rooted in local habits, institutions, norms, practises, communication channels and rites, indigenous knowledge systems have grown in popularity from the progressive recognition and appreciation by scholars of their resourcefulness, wisdom and resilience (Hoolie, 2016). For Mapfumo, Mtambanengwe and Chikowo (2016: 73), internal creativity, experimentation and interaction with external systems underlie their current significance.

Indigenous cosmovisions represent water differently from the conception and experiences put forth by the dominant system of neoliberal capitalism: whilst conceived as a utilitarian resource according to characteristics provided by economic and scientific measures or principles by the latter, the value and significance of water promoted by the former refute the dissociations underscoring the serviceable purposes or functions ascribed to this
substance (Wilson, 2014; Bakker and Cook, 2011; Boelens, 2003; Boelens et al., 2006; Perreault, 2005, 2008; McGregor, 2012). For example, Wilson (2014) qualifies the relationship that the Koyukon Athabascan people of Ruby forged and actively maintain with nature and non-human entities as a one of “complex connectivity”, resting upon “a sense of kindredness” with all aspects of the ecology, uniting humanity, water and land (Kassam, 2009: 85 quoted in Wilson, 2014: 4). This interconnection collides with the instrumental conception of water sanctioned by our current political economy, which fails to acknowledge and value the complex material and socially constructed meanings of water (Wilson, 2014: 4).

Moreover, when considering local and indigenous water governance systems and practices, Boelens and Vos (2014) argue that user-managed systems typically involve the active definition of water rights through the physical creation of irrigation facilities. These infrastructures, established through collective labour, thus grant and embody individual rights to the access and use of irrigation water. Water infrastructures, for Wateau (2011: 259), may also embody a society’s collective memory, as proven by the canal structures of Madagascar, which define kinship and underscores statutory claims. The author further explains, by referring to a study conducted by Bouguerra (2007 in Wateau, 2011: 261), that the ethno-political ingenuity of societies in Maghreb whom, in constructing the Algerian Foggaras and Meskat, have operated for several millennia an efficient, economic, adapted and sustainable water management system. Their sensitivity to ancestral water heritage reflects the prevailing association of water to dignity, humanity and self-respect (Ibid.).

The physical maintenance of irrigation canals, for Boelens and Vos (2014: 60), constitutes a means of reinforcing as well as consolidating social cohesion, a sense of identity and belonging rooted in the “rationality of creating, affirming and defending water rights, and (re)producing their own hydro-social community, [related] to the material creation of hydraulic property. This “socio-physical creation process”, interwoven with historical struggles for water access and rights, effectively seems, as convincingly stated by the authors, at the heart of collective action in local water governance (Ibid.). In other words, the creation process, as well as the continuous preservation of collective hydraulic
properties, defines “hydraulic identities and cultures” fundamental to the sustainability of local livelihoods (Boelens & Vos, 2014: 60).

Defending a similar position, Roth (2014: 3) describes the Subak as “irrigation societies” a key institution in Balinese society, covering between hundreds and thousands of hectares planted with irrigated rice, comprising an extensive range of functions, including “construction, maintenance and repairs, agricultural scheduling and pest control, conflict resolution, and rituals and ceremonies related to water and rice cultivation”. Similarly, in Eritrea, a small country in the Horn of Africa, the principle of “full farmers’ participation” mandates all who access and use a common water source to “contribute labour and whatever material he owns to the (re)construction and maintenance of any damaged irrigation canal], no matter whether or not the structure(s) directly or indirectly affect the supply of water to his [or her] field”, regardless of religion, age, wealth or rank (Mehari, Schultz & Depeweg, 2005: 7). Irrigation water is distributed by leaders in accordance to the location and dimensions of the rice paddies. This allocation system favours low-lying grounds, contrary to the rules and procedures observed in the spate irrigation systems of Yemen (locally known as the “al-aela fil aela” system, which literally translates as “the top is at the top”), which grant absolute priority to upstream users (Mehari, Schultz & Depeweg, 2005: 11).

As told by Tipa (2009: 103), the Maori of Aotearoa/New Zealand have, for generations, emphasised the importance of considering a catchment in its entirety: “from the headwaters to the coast, including the source of the river, the passage, and network of tributaries, the lower floodplains, the interface with the saltwater including the river mouth, estuaries, and harbours at the coast”, whilst integrated management in New Zealand emerged as a conceptual framework for effective water governance during the last three decades. Rather than fragmenting and compartmentalising the environment, a holistic conceptualisation of nature integration, interdependencies, and interrelationships underscores Maori water governance (Posey, 1999 in Tipa, 2009: 103). People play a significant, if not decisive role within this continuum. For indigenous communities, this entails momentous responsibilities towards Nature. Trawick’s (2001: 363) description of the prevailing water governance
practices in the Peruvian Andes, which he describes as emerging from a “tradition of fairness and justice between elites and commoners in a land where the resource was scarce, unpredictable, and a source of constant concern”, uphold a similar posture. These practices regard the autonomous control of water flows, a geographically and contextually adapted water distribution system, the consistency and uniformity of watering procedures and rights, the correlation of collective access and use to seasonal and meteorological conditions, prevailing proportionality and equality principles dictating the appropriate frequency, duration and quantities of irrigation water required for every field and transparency, for the rules hold no exceptions and are widely known (Trawick, 2001; Brown and Schmidt ed. 2010).

The system of usos y costumbres, prevalent amongst the Quechua- and Aymara-speaking communities of Bolivia, provides another eloquent example of effective water governance practices (Perreault, 2008). Specific to a particular area, the usos y costumbres (meaning “customs and habits”) represent the distributive rules and principles that determine the access and use of irrigation water, the mandated labour or monetary contributions of all users for the maintenance of irrigation canal systems, as well as the fees/penalties for inadmissible or reprehensible behaviours, such as water theft and the shirking of responsibilities (Perreault, 2008). According to Perreault (2008: 840), these vary amongst canal systems in relation to the quantities and periodicity of water availability, topographic particularities, the number of irrigators, the watering needs of locally grown crops and climatic conditions as well as in accordance with seasonal cycles and contextual conditions, such as the periodic outmigration of local irrigators and water shortages due to drought. The daily application of usos y costumbres, thus, secures local and indigenous water rights and, by so doing, renders the concept essential to local livelihoods (de Haan 2000 in Perreault, 2008). Livelihoods, consequentially, encompass the cultural and symbolic processes that invest life with meaning (Bebbington 2000; Moore 2005 in Perreault, 2008).

As declared by the UNESCO-IHP, cultural diversity engenders the multiple human possibilities necessary for generating sustainable adaptations in a changing world (2009 in Johnston [ed.] 2012: xi). Moreover, as put by Hastrup (2009), the “chronic disaster”
embodied by climate change requires creative responses, in addition to physical and conceptual flexibility that enables resilience, or in other words, the capacity to withstand and adapt mounting uncertainties (*in* Stensrud, 2016B: 59). It therefore appears undeniable that indigenous knowledge enhances the adaptive capacity to manage, adjust, learn and cope with different climatic and environmental changes; to respond or recover from disasters; and to increase the ability of households and communities to recover from disturbances (Carpenter et al. 2001 *in* Hoolie, 2016: 696-697). As further argued by Folke (2006 *in* Hoolie, 2016: 697), the combination of knowledge and the capacity for renewal, innovation, and reorganisation constitute critical dimensions of adaptive capacities and resilience.

Whilst indigenous institutions, such as rotational agriculture or labour sharing, for instance, regulate communal living, their process and outcomes are highly instrumental to disaster response, often without people realising it (Hilhorst, Van der Haar and Leeftink, 2015: 517). Coping appears inherent to social practice and responsive to change, embedded in the sociocultural organisation of communities, in particular the systems of mutual aid and assistance (Hilhorst, Van der Haar and Leeftink, 2015). In fact, as argued by Roncoli, Crane and Orlove (*in* Crane and Nuttal ed., 2009: 101), adaptation frequently consists of balancing risks and uncertainties. These may otherwise correspond to what Lam and Saumik (2013: 43) termed “agrarian institutions” (i.e., risk-sharing mechanisms), which are shaped by interpersonal relationships and often supplement weak formal institutions like social security programs (Devereux & White, 2007; Fafchamps & Gubert, 2006 *in* Lam and Saumik, 2013: 43).

### 1.6 Local Sustainable Livelihoods

The livelihood concept refers to the ability to innovate in order to reduce risks or create new opportunities. Akin to what Papadopoulos call “acts escape”, the concept speaks of “the mundane, hard and sometimes painful everyday practices that enable people to craft situations that seem unimaginable when viewed through the lens of the constraints of the present” (2008: xiii). For Du Toit and Neves (*in* Scoone, 2014: 844), livelihoods take extensive forms of know-how, connections, experience, co-operative ability and aptitudes
enabling the negotiation of conflictual terrains, to seek out meagre resources, identify transient opportunities and bend them to one’s purpose. The livelihoods approach thus qualifies the presence or absence of possibilities, opportunities and capabilities, inherited, given or acquired within particular circumstances or settings. The concept highlights the multidimensional and multiscalar definition of vulnerability when speaking of “the factors constraining or enabling access to mobilise these resources; and the activities or strategies that are undertaken, at individual, household and community/group levels” to prevent, respond or counteract their occurrence (Bonin & Turner, 2012: 96). These may further encompass diverse forms of informal safety nets, including employment, inter-household transfers of food, livestock and loans, borrowing grain from kin, exchanging goods and services with neighbours and relatives, and credit arrangements with relatives (Lam & Saumik, 2013: 43). Rigg (2006) extends the livelihood concept to non-farm opportunities, which expand and heighten levels of mobility as well as the vulnerability of those who divorce their subsistence from land. Livelihoods, as judiciously put by Scoones (1998), stem from a web of social reciprocities and obligations intentionally pursued or manipulated to secure access to resources and assistance at critical times. Bonin and Turner (2012) further associate the livelihood approach with everyday politics and resistance. Quoting Scoones (2009 in Bonin and Turner, 2012: 96), they assert:

a livelihoods approach offers an important critique of, and way forward from, earlier overly structural explanations of unequal development, demonstrating a more comprehensive understanding of the dynamic and complex nature of how people endeavour to create and sustain a meaningful living.

As such, it recalls the concept of agency theorised by Strang (2005: 367) and Ortner (2006), which speaks of the ability of enacting or attaining particular visions of sociocultural, moral and environmental order through material action. Strang (2005: 367) further explains, quoting Geertz (1973: 201-207) that agency theoretically combines the tactical means or devices employed to reach particular goals and the penalising contexts preventing their realisation. Entwining this approach with the significance and functionalities attributed to, or embodied by water, she convincingly argues that:
This is particularly relevant in considering how people use material resources such as water to act creatively upon the world, expressing their identity, forwarding their interests, and transforming and regenerating themselves and their surroundings over time. No social or environmental reproduction can occur without water, and it is thus literally and symbolically ‘essential’ to this creative process (Strang, 2005: 367).

Nygren and Myatt-Hirvonen (2009: 850-851), however, insist that in spite of the remarkable assiduity and creativity these strategies display, the discriminatory or unbalances structures remain the fundamental issue addressed by these activities. They comprise institutional, normative and circumstantial settings that underlie and concurrently define an array of possibilities and constraints, according to which these livelihood activities and strategies emerge. Vigh (2008: 11) similarly highlights that a person’s capacity, termed agency, is not actually the question one should ask when endorsing the livelihoods approach, since the ability to act and reactive performances are, in fact, innate — but it is rather the possibilities and opportunities that one should carefully examine; that is, to what extent we are able to act within a given context.

As such, the livelihood concept recalls that of resistance as theorised by Gramsci (1929 in Claygill, 2013) – a resemblance couched in the predicted, desired and unforeseen impacts of a necessary response to oppressing conditions. These, accordingly, may at once be active or affirmative, on the one hand, and reactive or defensive, on the other. Regardless, resistance, for Gramsci (in Claygill, 2013: 141), is inherently political, conjuring either gradual organic transformations or rapid “conjunctural” changes that target or affect various scales, levels and timeframes. The emergence and deployment of these responses both answer and challenge their conditions by simultaneously attempting to redefine a particular living situation and alter the settings that established such limitations in the first place. Conceived as such, applying the conceptual framework of livelihoods illuminates the unintentional, overt or tacit political dimension of subsistence strategies.
2. Methodological Framework

2.1 Doubts and Definitions: The Making of a Research

2.1.1 The Craft and Complexities of Qualitative Research

In a scientific article entitled “From bricolage to thickness: making the most of the messiness of research narratives”, Lambotte and Meunier (2013) challenge popular assumptions depicting the research process “as a succession of linear, structured and planned practices that exclude informal and unplanned practices, engaging with the unexpected or the uncertain” by standing for the complex and non-linear descriptive notion of bricolage. The concept of bricolage defines research as a meticulous, strategic and cautious “mixing, improvisation, risk taking and engineering” (Ibid.). This conception of research as an eclectic, somewhat disorderly, yet rigorously conducted process corroborates a definition put forth by Lévi-Strauss (1966 in Kaomea, 2016: 100), which essentially speaks of research a perpetual process of manipulating and reworking a finite field of intellectual and material resources to carry out a varied set of tasks. Accordingly, the concept of bricolage designates the creative use of existing resources and materials, acquired, developed or gained throughout a person’s existence, whilst encompassing the opportunities, possibilities and limits determined by particular environments, circumstances and situations (Lambotte & Meunier 2013: 86). Research, as Bernard (2006) asserts, is effectively a craft. Kincheloe (2001 in Lambotte & Meunier, 2013: 87) describes, in a similar fashion, the process of qualitative research as fundamentally interdisciplinary and contextually fitted to the meticulous investigation of a complex phenomenon. As told by Paillé and Mucchielli (2007), qualitative research stems, above all, from the desire and ability to relate to what may, at first, appear incoherent, foreign or irrational in order to provide a comprehensive and detailed account of the significance of perplexing situations interrogated through such scientific enquiries, to ultimately disclose the reasons and causes for different, yet fundamentally analogous human experiences.

When considering the impact of a person’s positionality and personality on the access to
different informants and data sources, clearly, she adds, quoting De Neve and Unnithan-Kumar (2006: 5 in Cornet, 2012: 41-42), “anthropological fieldwork has never been completely determined by the researcher”. Nonetheless, ethnography, a cornerstone of anthropology, I argue, provides the detailed explanatory context for diversity in human experiences and behaviours, which enables a more abstract and reflexive understanding of its underlying patterns and commonalities (Strang, 2008: 44). Moreover, critical and engaged research acknowledges the abundance and politically charged nature of knowledge, delivering by so doing new insights and reformulating accepted interpretations of standardised and unilateral definitions of various realities in unanticipated ways (Kincheloe, 2001: 687 in Lambotte & Meunier, 2013: 87).

2.1.2 Epistemological Posture and Research Orientations

The process, design and objectives of this research emerged from a dialectic and participatory approach – one that primarily argues for the invaluable potential of research as means of breaching historical, socioeconomic and political inequities by unveiling, through constructive scientific enquiries, unspoken or ignored truths; as a right and privilege one has the moral duty of equitably sharing with those who actively take part in its execution and accomplishment, as well as with society (at both local and global scales) for knowledge to foster and contribute to productive dialogues; and finally, as not merely a mechanical scientific project designed and conducted for results substantiating one’s competence or capabilities, but as an enriching process, dependent on trust, humility and generosity, which offers an opportunity to critically reflect on present situations and envision forthcoming times. I further sought highlighting the necessity of collaborative processes in scientific enquiries, more so for those employing qualitative methodologies or addressing human-induced situations, as a means of rendering the work not only profitable for whoever engineers, analyses and ultimately manufactures a written account of the results, but also for those who voluntarily dedicate significant time and energy to this end.

This enquiry preconized empirical data collection modalities enacted through a comparative ethnographic case study, which mobilised focus group discussions and interviews to grasp and depict indigenous (and inherently local) conceptions, experiences and knowledge of
water governance and security in the highlands of Kalinga. Ethnographic fieldwork, which consists of a relatively extensive stay in the actual settings of the investigated situation’s occurrence, led to detailed qualitative reports of not only the constitution, but also the conception and rational underlying, as well as the operation and impacts of indigenous water governance and water insecurity on three subtribes. It additionally enabled a finer and more intimate understanding of the definitions and experiences of water security for populations cultivating irrigated rice fields in a context of climatic and environmental uncertainty.

2.1.3 “What Brings You to Kalinga?”: Ethnographic Beginnings

Research, I believe, reflects multiple concerns and questions. These may, at once, translate personal doubts, uncertainties or discontents whilst, by drawing from our intimate perceptions and experiences of reality, unveil problematic or unsettling aspects of our society. These worries and critical reflections typically converge in the definition and conduct of scientific endeavours, which then represent both a medium of expression and a tool for addressing a particular situation. Accordingly, this research combines an opportunity presented by my socio-cultural identity as a half-Canadian/Filipina with an interest in the making and expressions of vulnerability and its counterpart, resilience. Conducting my research on the Philippines appeared pragmatic and sensible. Double-citizenship offered significant benefits, such as the official and informal recognition of the interests served by my research through the association of my “return” as the daughter of an expatriate, represented by the renowned or popular concept of balikbayan, which literary designates a Filipino’s “homecoming” (Turgo, 2012: 667; Guevarra, 2006). It is worth mentioning that my kinfolk provided crucial references and insights relevant to the economic and political realities of the Philippines, whilst considerably alleviating the financial and emotional burden of extensive ethnographic research. Phone calls to my mother would also shed light on ambiguous situations, clarify doubts and confirm sentiments regarding appropriate behaviour in various contexts. Nonetheless, to prevent interference, distractions and conflicting interests, I purposefully dissociated my research terrain and topic from the residential area of my family and from their domains of work and expertise.
My initial research outline emerged from the written and spoken accounts of various sources. This process began with an extensive documentary research on Filipino history, then a thorough review of daily prints, public broadcasts and news reports. It highlighted prevalent local issues, concerns and debates, drawing my attention to the significant role played by the Indigenous Cultural Communities (ICCs) of the Cordillera Administrative Region in the constitution of indigenous rights, an official and unprecedented recognition in South East Asia. Academic publications revealed leading worldwide and context-specific research questions and topics, although few specifically addressed the Cordillera Region. Whilst this was problematic for the definition of my research framework, the absence or deficiency of recent academic literature also presented an opportunity to fill a gap and, therefore, contribute in a modest way to the scientific enterprise. With uneven and partial coverage, I chose an area where existing, although limited, research had previously been accomplished and that offered a contextual setting resembling those of the Mainland Southeast Asian Massif otherwise known as Zomia where my advisor, Jean Michaud, holds extensive knowledge on the strategic resistance and livelihood practices of the Hmong ethnic minority inhabiting southwest China and Vietnam – preoccupations and pragmatic reasons that led me to the province and indigenous peoples of Kalinga. Three indigenous communities or subtribes from the equivalent number of ancestral domains were thus targeted in the hopes that one would graciously accept my research proposal. The selection process relied on geographic characteristics relative to the formal circumscriptions within the province, comprised of municipalities and barangays, in contrast with the indigenous political and sociocultural demarcations of ilis and ancestral domains.

A two-month preliminary fieldwork (December 2014 – January 2015) provided an opportunity to validate the relevance and feasibility of my research design. Courtesy calls are highly considered in Kalinga. These were therefore considered essential to the successful accomplishment of my research endeavour. Endorsing this sociocultural standard, I learned, conveys a sense of cultural sensitivity, respect and humility. The formal introductions required to satisfy these social conventions further ensure a person’s security in a country renowned for sporadic political turmoil, occasional violence and frequent
environmental calamities. This is a very serious matter for local officials and compliance is, therefore, important. Prior to my departure, meetings were consequently arranged with representatives of local government units and professors of the University of the Philippines in the cities of Manila and Baguio (the largest city of the northern Luzon Island, located in the province of Benguet, within the Cordillera Administrative Region). Upon arriving, I held meetings with the mayors of the three concerned municipalities and subsequently spoke to employees of various departments of their respective Local Government Units (LGUs), notably the Municipal Planning and Development Officers (MPDOs), scrutinised public records and reports. I also informally consulted certain representatives of local associations, local leaders and elders as well as the captains (elected government officials) of the barangays located within the ancestral domains chosen for my ethnographic study. The outstanding remarks and observations of my preliminary fieldwork determined the pivotal aspects of my research design; local perceptions, experiences and responses to climate change took centre stage, with livelihood modalities and coping strategies as the means through which a qualitative ethnography would be performed.

2.2 Questions and Objectives

This research primarily asks how the Summacher, Turkaw and Guinaang subtribes of Kalinga qualify, experience, adapt and respond to contemporary threats to safe and sufficient supplies of irrigation water. I then question prevailing water governance systems and practices in the ancestral domains of Summacher, Turkaw and Guinaang, asking how these function, what objectives they serve and whether the indigenous knowledge on which these are founded and through which these operate remains valid/appropriate when considering present climatic changes and variations?

These questions led to the definition and pursuit three objectives:

1) The identification of local perceptions and experiences of actual or potential threats to adequate supplies of irrigation water;

2) The description of prevailing water governance systems and practices, focusing on their constitution, purpose and operation in the allocation/distribution, use and
management of irrigation water within the concerned *ilis* of the three targeted ancestral domains of Kalinga;

3) The explanation of current coping and adapting mechanisms articulated and deployed to counteract present or potential threats to irrigation water.

The first objective consists of documenting indigenous references, terms and qualifications that, I argue, correlate the notion of water insecurity to the uncertainties and relative unpredictability of weather forecasts. Whilst this explicitly addresses the timeframes, periods and patterns underlying local livelihood practices, it also reveals the opportunities, possibilities, conditions and constraints given by natural settings or circumstances. By rendering such terminologies explicit, this research intends offering insights on actual and potential issues that stem from perceived, experienced or anticipated water shortages. Additionally, and perhaps most interestingly, it seeks revealing the disturbances that climatic and environmental changes, fluctuations or variations may either potentially or presently cause on local livelihoods, particularly on the agricultural cycle and productivity of irrigated rice cultivation. The notion of water security, conceptualised here as the factors causing the perceived or experienced incapacity to predict, adequately diminish and circumvent risks to the timely access and use of irrigation water, as well as to strategically and sustainably adapt to these various and overlapping sources of uncertainty, will therefore be associated to these experienced climatic and environmental changes and variations.

The second objective expands on the former, however focusing on individual and collective capacities to respond and adapt to such changes and variations. These abilities will more precisely pertain to the cultivation of irrigated rice paddies, an essential livelihood activity in Kalinga. To this end, I shall produce an elaborate description of the prevailing water governance systems and practices applied in the three selected ancestral domains. However, similar to Perreault (2008: 835), my concern is not to detail the minutiae of indigenous water management systems and practices, but to highlight their influence on local perceptions, experiences and responses to water (in)security in Kalinga.
The study of indigenous water governance systems and practices in Kalinga has never been accomplished to date, making this objective scientifically relevant and useful to policymakers, whose regulations and intervention programs hinge on such data. This will further contribute to the recognition, respect and safeguard of the rights of indigenous cultural communities in the Philippines, to preserve and protect their culture, traditions and institutions, as mandated by the 1997 IPRA law and the 1987 Constitution. Moreover, the definition of the indigenous water governance systems and practices of Kalinga support the need to promote and sustain indigenous science, technologies and cultural manifestations as mandated in Section 34 (RA 8371) of the 1987 Philippine Constitution, whilst further demonstrating the relevance of participatory studies that build on contemporary dilemmas and on issues significant to those with whom we, as researchers, collaborate. By so doing, this research further seeks demonstrating the importance of indigenous knowledge systems and practices (IKSPs) to the sustainable development of the Cordillera Administrative Region. This target directly responds and contributes to the mandate formulated in the 2011-2016 Development Plan of the National Economic Development Authority of the Philippines (2010: 16) by proving the

relevance of Cordillera indigenous culture as a major resource for national development and the need to develop culturally-sensitive plans, policies, programs and projects (…) to advance multiculturalism, accept and promote diversity recognising the important role of IPs/ICCs as distinct groups but equal partners in nation building.

The third objective focuses on the interaction between the indigenous water governance systems and practices of the selected Kalinga communities with those put forth by the Philippine government to ensure water security. This critical appraisal will, therefore, aim to unveil the conceptual framings and valuations of water that underpin certain understandings and representations of water (in)security. Here, I shall focus on the significance of water as a source of unity and potential conflict through exemplary cases that demonstrate the utility of indigenous water governance systems and practices to mitigate water insecurity and reduce the negative repercussions of their occurrence, on one hand, whilst highlighting the objectives served or that should arguably be honoured and upheld by the Philippine State, on the other.
The data gathered for this research shall additionally provide the Mother Tongue-based Multilingual Educational material (MTB-MLE) required for the implementation of the Indigenous Peoples Education Framework (IPEd) crafted by the Department of Education (DepEd) to regenerate and enrich the community’s Indigenous Knowledge Systems and Practices (IKSPs) (DepEd Order No. 32, s. 2015; DepEd Order No. 62, s. 2011 or “DO62”). Once completed, the data and results of this research shall be returned to the concerned subtribes to enhance this educational database. The claim underlying this intent shadows Meganck’s (in Johnston [ed.] 2012: x) assertion that education may simultaneously prevent and resolve environmental problems by explicating the embeddedness of nature and culture, whilst defending the value of academic research for sustainable governance.

Whilst this does not stand as an objective in its own right since it shall only happen once my research has been completed, it remains an essential, if not preeminent facet of this academic endeavour – one closely tied to the underlying beliefs of the form and functions research must take for the betterment of humanity.Returning the words and teachings provided by those who generously participated in this research endeavour is, furthermore, an means of expressing my deepest gratitude and respect towards the people of Kalinga, whilst upholding the moral duty of scientists to offer their knowledge, produced at the confluence of fortunate events, favourable circumstances and personal aptitudes, with those who may not have benefitted from similar chances or suitable opportunities.

2.3 Ethical Requirements and Certifications

2.3.1 Free Prior Informed Consent (FPIC)

Whilst the ethical multi-factorial research committee of Université Laval granted a formal authorisation for the conduct this academic study, in the Philippines, the Republic Act No. 8371, otherwise known as “The Indigenous Peoples’ Rights Act of 1997” (IPRA), declares that “research on indigenous knowledge, systems and practices related to agriculture, forestry, watershed and resource management systems and technologies, medical and

4 Whilst some definitions and characteristics of indigenous seasonal periods, notably, were immediately taken by the professors to this end, once completed, a copy of relevant sections of my memoire shall be provided to the schools of the concerned ancestral domains.
scientific concerns, biodiversity, bio-prospecting and gathering of genetic resources” requires the Free Prior and Consent (FPIC) of the concerned indigenous peoples. As specified by Carino, (2005: 26-27);

[the] Free and Prior Informed Consent - as used in this Act shall mean the consensus of all members of the ICCs/IPs [Indigenous Cultural Communities/Indigenous Peoples] to be determined in accordance with their respective customary laws and practices, free from any external manipulation, interference and coercion, and obtained after fully disclosing the intent and scope of the activity, in a language and process understandable to the community.

The FPIC process requires that communities negotiate fair and enforceable outcomes, and withhold their consent to a project if their needs, priorities and concerns are not adequately addressed (FAO, 2014: 10). Consultations and negotiations that do not tackle and successfully resolve the issues underlying a community’s opposition and, thus, obtain their honest consent will potentially engender disruptive conflicts or exacerbate social tensions. As stated in Section 20 of the 2012 FPIC Guidelines, ICCs or IPs to whom belong an ancestral domain hold the right to give or withhold FPIC of any project or activity in order to protect traditional lands from alienation. The FPIC, in principle, thus “actualises and strengthens the exercise by the ICCs/IPs of their rights to Ancestral Domains, Social Justice and Human Rights, Self-
Governance and Empowerment, and Cultural Integrity” (Section 3).

In 2012, a “Revised Guidelines on Free and Prior Informed Consent and Related Processes” was established to further protect the rights of Indigenous Cultural Communities/Peoples (ICCs/IPs) by providing a revised version of the regulatory framework for Field-Based Investigations (FBI) and FPIC processes (NCIP Administrative Order No. 3, Series 2012, Part 1, Section 2). As explained in Section 4 of the 2012 Guidelines, the FPIC was designed to enable indigenous communities to pursue their economic, social and cultural development through meaningful participation in decision-making processes. This, it suggests, shall protect and revitalise indigenous governance systems and practices, fostering peace, cultural integrity and transparency (Section 4, 2012 FPIC Guidelines).

2.3.2 The Certificate of Precondition

The Certificate of Precondition (CP) constitutes the formal testament issued by the Chairperson of the NCIP declaring that a proponent complied with the required procedures of the 2012 FPIC Guidelines, which authorises the pursuit and conduct of the submitted project within the concerned ancestral domain.

The regional NCIP director awarded me with a CP on March 7 2016, thus declaring that I satisfactorily complied with the requirements prescribed under Sec. 59 of the RA (Republic Act) 8371 otherwise known as Indigenous People's Rights Act as implemented by the NCIP Administrative Order No. 1, Series 2012 for the proposed research the impact of climate change and environmental degradation on the access, use and management of water in the highlands of Kalinga. The authorisation was, however, granted under the following conditions:

1. Data gathered shall be used solely for academic purposes;
2. I must notify in writing the regional NCIP office before proceeding with the conduct of my research;
3. The research outputs and conclusions must be presented and validated by the concerned IPs/ICCs;
4. Copies of the research must be given to the ICCs of the ilis/barangays of Guinaang, Galdang and Bagtayan of the Guinaang subtribe and ancestral domain; of the ilis/barangays of Tulago East and West, as well as Colayo of the Turkaw subtribe and ancestral domain; the ilis/barangays of Sumadel 1, Sumadel 2 and Belong-Manubal of the Sumacher subtribe and ancestral domain.

2.3.3 Theory and Practice: Reflecting on the FPIC Process and Outcomes

Completing a FPIC never appeared optional, but rather compulsory when considering the 1997 IPRA law, or ethically, if taken as a symbol and instrument of indigenous self-governance. The FPIC represented, as such, an honourable commitment to their legacy, as well as to their ongoing struggle for self-determination to me. The process did not therefore seem trivial, but rather as a judicious application of a legal institution, which formally recognises the existence and value of indigenous peoples, thus embodying the success of a laborious political struggle led by indigenous communities across the Philippines (but championed by the peoples of the Cordillera).

The gruelling administrative obligations, unrealistic requirements, fluctuating or elusive timeframes, the unpredictable availability and doubtful competence of NCIP employees, the lack of support and the unreasonable demands (especially financial) typically prevented the accomplishment of FPIC processes\(^5\). These circumstances were tied to greater structural issues related to the enforcement of an existing law (the IPRA) by a sole agency and the significant power they held as arbitrators, negotiators and conciliators – working both on behalf of the government and the indigenous peoples of the Philippines, as well as a representative of a particular tribe, indigenous community and subtribe.

\(^5\) I had myself been confronted to the intricate bureaucratic procedures and impossible tasks requested by the NCIP during my research on the impacts of mining on local livelihoods in the municipality of Narra, located on the island of Palawan (Philippines). Despite submitting the required documents, paying a processing fee at the regional office and frequent visits to the island’s central NCIP office (in the capital city of Puerto Princesa), the NCIP ignored our research proposal until our departure. We left countless unanswered letters to absent employees requesting their support and assistance over a period of three months. My personal pleas for an efficient and timely response were further ignored, in spite of pledges made by administrative assistants and the reigning legal officer that we would be contacted shortly. Until then, the conduct of our research would be considered unlawful and we could face severe punishments. A fellow research team, defying these orders, proceeded regardless and informally obtained the free prior and informed consent of an indigenous elder. Alerted of their research activities, the NCIP threatened the ICC with a lawsuit, ordering them to reject any further contact or co-operation. My experience with the NCIP in Palawan led the subsequent measures taken to obtain a Certificate of Precondition in Kalinga.
A number of NCIP employees with whom I worked simply followed orders, meticulously performing their tasks without prior training or instructions, and within restrictive timeframes. Others, however, blatantly ignored rules and requirements as well as commands; or voluntarily skirted around intricate procedures to minimise effort and hasten the completion of mandatory assignments. This introduced notable oversights and mistakes, either ignored or disqualified as insignificant or trivial, but also conveniently rejected as excessive or unnecessary. The availabilities, preferences or physical capabilities of potential candidates could warrant a transfer of mandatory tasks from an employee to another. These considerations mirrored significant hierarchies amongst project proposals and personnel. The professional ambitions of certain employees as well as the financial burden pushing others to gain additional income or training outside the NCIP also appeared to hinder or potentially compromise the diligent conduct of the FPIC process. The required transcript of the minutes of all consultative meetings in English, Tagalog and in the local dialect, for example, were disregarded until my frequent visits to the provincial NCIP office in Tabuk City and unwavering requests for these records compelled those involved to comply – as ordered by the 2012 FPIC Guidelines of the IPRA law. These proceedings were not, however, complete or accurate since the recordings were either lost or inexistent; nor were they transcribed in the two mandatory languages.

During the FPIC hearings, several indigenous participants criticised the NCIP’s competence and capabilities, accusing their representatives of hindering my research process and preventing their ICC from benefitting from its completion. The IPs, however, significantly contributed to the completion of my FPIC by voluntarily organising the FPIC

6 Some of the personal businesses operated by the provincial NCIP staff somewhat impeded the impartiality required for the effective conduct and accomplishment of their work. Such “conflicts of interest” appeared, however, known yet ignored since they typically involved higher-ranking officials.

7 Unfortunately, this was not uncommon. In the midst and as part of my research, I painstakingly gathered and copied FPIC reports produced by the NCIP office of Kalinga concerning development projects conducted in the three ancestral domains of Turkaw, Sumacher and Guinaang. In Tabuk City, I usually resided with a family from Sumacher, who were very interested in the reports concerning their sub-tribe/community. Upon reading the transcript of an FPIC hearing, I was informed that the information provided was inaccurate – the translation was incorrect and the words were untrue. Words may effectively distort the voices of local communities and dismiss the their claims. It fundamentally violates their rights in the light of the law, as unjust representation, but also disenfranchises the NCIP, as a government institution designed to uphold and protect indigenous rights.
consultations, introducing me at Sunday masses and inviting me to share with those present the purpose of my stay within their communities; knocking door-to-door in order to remind people of the upcoming consultation hearing; shouting from the peak of a terrace or the top of a hill for all to gather at the church for an impeding FPIC assembly; preparing and distributing food and drinks to the attendees; translating the presentations in both English and in the local dialect; passing the attendance sheet and the MOA document for signing, etc. Elected municipal and barangay representatives provided outstanding support throughout the FPIC process by personally communicating with NCIP officers to request their co-operation, physically gathering the required signatures, distributing notifications and articulating their personal endorsement of my research proposal during consultative hearings. Addressing recurrent delays or the frustrating stagnation of my FPIC application’s progress meant carefully threading the internal conflicts within NPIC headquarters, whilst prudently voicing worries and deceptions. It further required the careful identification of appropriate times, places and persons for expressing my concerns and deliberately, yet gently pushing for the resolution of problems by foregoing all others until its accomplishment as well as strategically choosing the arguments and objectives I intended pursuing.

2.3.4 Terminologies and Representations

Before proceeding with a detailed report of my ethnographic fieldwork, I wish to clarify my position and the vocabulary I employ throughout this research. The identification process and outcomes, as we know, constitute and reflect power. Whilst naming may seem banal and inconsequential, the capacity to do so credibly, apposing a label and defining an identity, may potentially empower or contrive those who consciously or unwittingly participate, as subjects or participants, in its realisation.

I purposely adopted an endogenous or “emic” perspective throughout my memoir, including in the designation of persons, peoples and spaces. This posture firstly concerned aspects regarding the identification and representation of research partners or collaborators,

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8 Throughout my FPIC process, the provincial head officer (Sugguiyao) fervently condemned my insistence in all matters related to the FPIC reports, chastising me before her employees on how difficult and pretentious I was in an effort to delegitimise my claims and objections and regain or reassert her authority.
including the descriptive terms retained to qualify their cultural values and beliefs. As previously mentioned, the names of ancestral domains and sub-tribes are typically written and pronounced differently by neighbouring communities (be they subtribes or tribes) due to linguistic particularities, for those who know of the concerned people, or the mere ignorance, by others, of any ethno-linguistic difference whatsoever regarding the internal sociocultural/political fractions and affiliations of tribal membership. The latter typically occurred when discussing such matters with government representatives of the Tagalog community based in Metro Manila. A group’s definition also revolves around the physical demarcation of a collective unity. On one hand, the struggle of indigenous communities for their formal recognition rests upon the strict application of existing legal institutions, but also on the settlement of internal disputes regarding territorial boundaries. These essentially require a consensual decision amongst the indigenous elders and leaders of the concerned communities, but further depend on an accreditation emitted by the NCIP. The first, a Certificate of Ancestral Domain Certificate (CADC) should normally lead to the decisive issuance of a Certificate of Ancestral Domain Title (CADT), which formally grants authority to an indigenous community over a territory recognised as their own.

Moreover, definitions of property, belonging and unity vary according to the principles or regulations endorsed – when complying with government standards, one must embrace formal administrative boundaries and appellations by rejecting the territorial definitions personhood endorsed by the indigenous peoples of Kalinga. This, in a sense, perpetuates historical discriminations embedded in the State’s legislature and legal conventions. For example, when deciding whether to speak of Sumadel or Sumacher, the first referring to the barangay and the latter to a particular indigenous cultural community, subtribe, ancestral domain and ili, one must ideally grasp the significance of the choice by contextualising their origin and significance. Sumacher became “Sumadel” following a linguistic adaptation imposed by administrators of the United States. The English-speaking settlers converted the “ch” sound to “d” for their convenience, an act and process revealing the dominant position they formerly held as ruling administrators. Enshrined in the Nation’s legislature, these appellations became standard labels and their meaning gradually faded with time. Whilst formally designated as such by the State, the ancestral domains of the
indigenous peoples of Kalinga remain, to this day, locally known and identified in, and according to their own terms. For practical reasons, I intend using both terms either simultaneously, to prevent confusion and clarify my representations of a people or place, or individually when explicitly referring to a particular grouping process or criteria.

Academic literature, however, proposes critical studies that may either suit a certain frame over another, depending on the preferred stance of a researcher and the particularities of a research subject, object or terrain. These present arguments supporting, defying and contradicting the notion of indigeneity, which may thus be considered a work of fiction or an elaborate, yet unfounded claim to the existence and authority of prior settlement rights. Such critics may further challenge the legitimacy of such claims or entitlements in relation to those of marginalised groups of society, and might reinforce historical discriminations founded on questionable binary oppositions, irrational preconceptions and consequent expectations.

In spite of critics, I opted for the use of the term “tribe” and “sub-tribes” to represent the people and places concerned by this research; the former when speaking of the Indigenous Cultural Community of Kalinga, and the latter when referring to the ethno-linguistic subgroups associated to distinct ancestral domains within the Kalinga territory. In anthropology, these concepts refer to a civilising mandate tied to colonial regimes and an oppressive discriminating rhetoric exploited to marginalise and repress fragments of pre-invasion societies. However, I purposefully chose these descriptive words as honest references identifying the people and places who represented and considered themselves as such – far from the scientific convictions refuting their appropriateness and the heavy legacies from which these emerged. My words, I continuously argued, would be their own and I stand accordingly behind their choice, which remains indeed arguable or possibly reprehensible. Nevertheless, since it is not my desire nor duty to prompt an ideological debate regarding their collective identity, to convince or “enlighten” those who willingly and patiently shared their time and knowledge with me, I prefer defending their capacity to assign whatever word they like to express their understanding of collective unity without pretending or claiming to know any better about who they “truly” are. In this research, I
deliberately avoided contentious debates on the “authenticity” of indigenous identities, the authority or legitimacy of their claims to ancestral domains, the intricate contours and content of such reclamations, as well as the contrasting visions of the Philippine State and the Kalinga underlying the identity of peoples and localities. The Kalinga tribe encompasses the entire provincial territory and population, whilst subtribes refer to the ancestral lands and people identified as such regardless of official circumscriptions.

2.4 Data Collection and Research Techniques

2.4.1 The Sampling Process

Sampling, also known as the definition of a “target population” refers to the criteria and objectives underlying the choices of people and persons in a scientific research (LeCompte & Schensul 2010). As such, it encompasses the process, including the conditions, constraints and opportunities that enable or disable the definition of an appropriate sample, but also and prominently the circumstances making the respect or fulfilment of these parameters achievable. Whilst a sample should, theoretically, abide to clear inclusive and exclusive criteria, these may, however, remain unsuitable or unrealistic if and when participants refuse to collaborate, or when they unwittingly or purposefully deviate from a predetermined research canvas during qualitative interviews. The sampling process thus reflects the difficulties of connecting theory to practise, where principles may appear unrealistic when confronted to the predicaments, complexity and relative disorder of life.

Notwithstanding these complications, samples emerge from explicit research queries and objectives, which, in other words, translate the relevance and representativeness of a sample, delimited in conjunction with practical boundaries (or capabilities) (LeCompte & Schensul, 2010). Far from an exclusively academic product, the parameters one must take into account when defining a sample should, ideally for some, but decisively in this particular case, consider and respect local conceptions of accurateness, exactitude and truthfulness. Here, this more specifically required cultural sensitivity throughout the definition and conduct of my ethnographic research as well as the compliance with local
jurisdictions on indigenous rights, which entailed the completion of the mandated FPIC process.

The sampling process occurred in conjunction with this research’s design and in collaboration with the indigenous peoples of Kalinga. This, in other words, meant the research subject, location and participants were determined through collaborative processes, some formally embedded in the FPIC procedure as previously explained, others decided upon from informal conversations held throughout my ethnographic fieldwork. Such decisions were purposefully taken to reflect local preoccupations and desires, whilst preserving the academic interests tied to this academic research. The research context rendered the definition of an appropriate and representative sample difficult for several reasons, notably due to the harsh mountainous terrain and distance separating the research terrains, the vast territories of the concerned ancestral domains and the required companionship for any internal and external travels. The frequent and heavy precipitations prevented circulation within and between highland settlements whilst occasional storms complicated movement within Kalinga.

The lack of recently produced (or updated) and available (or accessible) demographic data on the indigenous peoples of Kalinga complicated the sampling process. The limited financial resources and restricted timeframe underlying my ethnographic research; my ignorance of the spoken dialects and unawareness of the persons with whom I needed to speak, officially and informally, to gather the required data increased my uncertainties in regards to the sampling process. The coincidence of unpredicted and unfortunate circumstances, such as a death, landslides or rainstorms, along with administrative hurdles, such as the inadequate assistance of the NCIP for the handling of mandatory FPIC procedures, prevented the consultation of an even number of participants in all the concerned ancestral domains.

In the ancestral domain of Guinaang and the ili of Korayo (Turkaw), the FPIC significantly facilitated the sampling process. During the consultative hearings, the concerned communities were asked to identify local leaders, elders and knowledgeable persons after
the presentation of my research question and objectives. The community would then inform
the people identified during these assemblies of their designated responsibility towards
their sub-tribe, as elected voices, and for the advancement of scientific knowledge on
matters of water governance and security (Figure 5).

The names provided did not merely identify suitable
candidates for the present research enquiry, but
endorsed indigenous definitions of legitimate
representation, through the active participation of
communities in the organisation of focus group
discussions and the election of local experts or “gate
keepers”. The kakailyan (town mates or co-villagers)
would personally inform one another of the dates and
location for focus group discussions. These positive
results only concerned two out of four FPIC
proceedings, since it was only then that I knew, after
reviewing the law, that such measures were a
mandatory component of the FPIC process.

In the ancestral domains of Sumacher and Turkaw, where the participants were not chosen
through the FPIC process, I would consult documents, which disclosed the names of
recognised leaders, and elders, asking local community members to corroborate or propose
alternative research participants. Moreover, in Sumacher, the consecutive deaths of elders
residing in Tabuk City and the unfortunate passing of a youngster living in their ancestral
lands hindered the organisation of focus group discussions. Funerals and the norms
surrounding bereavement introduced unsuitable contexts for the conduct of my research,
whilst meteorological incidents and natural calamities, such as typhoons, earthquakes,
landslides and torrential rains imposed additional restrictions to my ethnographic
timeframe. I further needed to compose with the availabilities and dispositions of the elders
and leaders identified as key informants by the participating subtribes during the FPIC
process. Whilst these factors did, indeed, affect my ethnographic fieldwork, the enthusiastic
support and commitment of local communities successfully resolved problematic situations, as notably demonstrated by their active engagement in the FPIC process (as described above).

A minimum of two focus group discussions were held in every ancestral domain in a circular sequence of alternative order, meaning that a first focus group discussion would be held within all concerned ancestral domains or, sometimes in every ili, before a second would occur. Informal and formal interviews with participants from the concerned ancestral domains preceded and followed these collective gatherings and discussions. There were at least two focus group discussions held in every ancestral domain, usually involving four to fifteen participants at a time (excluding the spectators, but including the translators when they would actively take part in the discussion whilst facilitating the discussion). The conclusions drawn from previous meetings would be carefully scrutinised, verified and ultimately confirmed by those present – then corroborated by those members of a common ancestral domain who had previously defended an alternative or different answer, but also by those who initially agreed to ensure the integrity and conformity of my comprehension of their initial statement.

Consensus was key for answers to be considered representative and integrated to this research as the recognised, established and legitimate customary norms, rules and principles for irrigated water governance of the selected ancestral domains. When irreconcilable divergences or incompatible versions of an explanation or designation occurred, the deviating answers were kept as instructive signs of distinctive traits or characteristics of a relatively similar phenomenon, considered or experienced differently according to particular contexts within an ancestral domain. These were therefore incorporated as significant nuances – or notable specificities coherent with particular contextual (historical and geographic) settings – into the analysis rather than discarded as inadequate representations or accounts in the absence of consensus. Alternative propositions were typically studied by the research participants with respect to the arguments and examples provided to assert the veracity or authority of a version above the
next; the credibility of the information’s source; as well as to the quantity and quality of substantiating evidence.

2.4.2 A Comparative Ethnographic Case Study of Water Governance and Security in Kalinga

The comparative dimension of this ethnographic research provided a significant, if not decisive contribution to the objectives pursued and the reliability of this study. The extension of the anticipated ethnographic case, which pertained to a single indigenous community, to a research design encompassing three ancestral domains, as previously explained, consisted of an attempt to satisfy the desires and expectations of the people I had initially approached during my preliminary fieldwork as potential participants or collaborators, and who had graciously accepted my request. This change, therefore, upheld the participatory angle chosen for this academic project and sought demonstrating my willingness to elaborate and conduct an engaging, useful and stimulating ethnographic research for all those who desired participating in its execution and completion. Such an expansion was made possible by the outstanding commonalities of the selected ancestral domains and *ilis*. This investigative method and perspective appeared relevant considering that the population comprised in these localities form part of physical and sociocultural units, conceived and governed through a provincial circumscription by the State, as well as tribal Kalinga members according to the Bodong. The geographical proximity and the corresponding or similar historical, sociocultural, climatic and environmental conditions of these communities supported the comparative lens put forward in this study.

Moreover, the knowledge and expertise of a greater number of local indigenous leaders and elders within, but also across nine *ilis* distributed amongst two ancestral domains, maximised the breadth and accuracy of the qualitative data gathered for this research. Enlarging the population sample, however, entailed increasing the demographic coverage of this study which, rather than inflating the number of mandatory interviews, offered a larger pool of deliberately chosen participants, from which the concerned *ilis* could select representatives of their customary governance systems and practices. It additionally guaranteed the partaking of sufficient numbers of elders and leaders of the chosen ancestral
domains to ensure the relative legitimacy of the statements mobilised in the analysis and conclusions of this study – in accordance with local visions of truth and authority (conveyed by respected and honourable indigenous persons), as well as the validity, through exhausting the descriptive accounts required to judiciously reflect the multiple, complex and dynamic structures and operations of customary law.

The answers provided by the indigenous peoples of a neighbouring community stimulated further discussions on comparable, somewhat dissimilar or identical water governance systems or practices. It further inspired considerations addressing the origins and significance of various seasonal periods, whilst fostering constructive discussions on the optimal arrangements and strategies deployed by neighbouring communities to increase the productivity of their irrigated rice cultivation. Widening the investigative lens additionally expanded, diversified and enriched the data collected as well as the conclusions drawn from this research. Indeed, the results obtained from a questionnaire presenting identical queries and discussion topics from a population distributed across relatively common yet distinct settings provided a nuanced portrait of the ways in which customary water governance systems and practices are contextually adapted and enacted throughout the Kalinga highlands.

This research also offered an exceptional space for the participating peoples and persons to learn from the experiences of their neighbours in a context where subtribes rarely interact with one another and sometimes entertain misconceptions or derogatory beliefs regarding the reputation or “character” of a particular group founded on inaccurate allegations or exaggerated reports (informally channelled across Kalinga). By purposely emphasising the common heritage shared by the participating Kalinga subtribes, collectively deliberating on the logic and context underlying their critical discriminations and critically assessing the situations or circumstances they condemn, this study provided an opportunity to question, defy and repudiate unsubstantiated judgements, whilst ascertaining the hostilities perturbing Kalinga’s tribal unity. The comparative dimension of this study further contributed to the dissemination of indigenous water governance knowledge and practices amongst the participating subtribes.
2.4.3 Focus Group Discussions and Interviews

My research examined water security and governance through elaborate discussions and specific questions addressing four inter-related topics: 1) water, rights and responsibilities; 2) water management systems and practices; 3) water scarcity and distribution; and 4) terms and references pertaining to climate and time in the Kalinga dialect; usually in the order recited above.

The first topic, which pertains to “water, rights and responsibilities”, proposed a broad introduction to the foundational precepts and practices of indigenous water governance. After reiterating my research subject and objectives, the discussion would either spontaneously begin, propelled by a descriptive account on the state and progress of my study, or by the research questions, exposed as a prelude to focus group discussions. In other cases, I would initiate conversations by asking participants to identify the rice field areas and the source of irrigation water comprised in their ili. This would involve the drawing of a map, which located these lands in association to particular water sources. The process impelled certain participants to name and explain the issues pertaining to various irrigation sources or paths, stressing the probable or definitive causes and required solutions. The latter would typically draw on further questions regarding the notion of rights and entitlements to land and water, as well as the different, sometimes overlapping, or complementary forms of individual and collective property.

The second topic, regarding water management systems and practices, focused on the indigenous definition and application of the rights and responsibilities of individual persons
and communities towards irrigation water, through the naming and subsequent explanation of the terms designating these systems and practices. Asking the participants to elaborate on the definition and implementation of the Kalinga Pochon/Bodong to the cultivation of irrigated rice paddies. This, moreover, initiated the preliminary comparison of the three concerned ancestral domains, whilst enabling the unprecedented documentation of terminologies relative to indigenous water governance pertaining to the cultivation of irrigated rice in highland communities of Kalinga.

The third, on water scarcity and distribution, explored the guidelines of prevailing customary water governance principles and conventions applicable to potential or actual risks to the quality and quantity of irrigation water. This part of the focus group discussion addressed the mechanisms intended to prevent the emergence or exacerbation of conflicts driven by water scarcity, but also those configuring the division of insufficient irrigation water quantities amongst various amounts of rice fields and cultivators.

The fourth, about the terms and references pertaining to climate and time in the Kalinga dialect, typically concluded sometimes lengthy and fastidious conversations on water governance with amusing and colourful anecdotes exemplifying or demonstrating the significance of the local circumscription of seasonal periods in the Kalinga dialect.

These were examined during focus group discussions through a series of open-ended and semi-structured questions. This qualitative data gathering strategy offered significant advantages. Firstly, this optimised the restricted timeframe and financial resources of which I disposed for the accomplishment of my ethnographic fieldwork. These considerations also reflected the situation of those invited to take part – the indigenous leaders and elders appreciated the efficiency of collective assemblies held at convenient times (determined in relation to their scheduled agricultural work) rather than individual meetings, as did the person(s) facilitating such encounters (either translating or accompanying me to such occasions).
During the FPIC consultation hearing, the research questions and discussion topics were written on large black boards positioned in front the audience, with detailed explanations in English and in the local dialect intended to clarify the objectives, in conformity with my research question and objectives. Rather than firm and directive instructions designed to control focus group discussions, these questions and discussion topics offered paths of enquiry, suggesting a means of specifically talking about indigenous water governance and issues relative to water scarcity. The permission unanimously granted by the participants to share the discussions and answers of their interviews from a focus group to the next and with participants from other ancestral domains entailed regular enquiries by local elders, leaders and community present regarding the water governance systems and practices of their fellow tribesmen. This would typically spark animated dialogues on the accuracy or local relevance of an identified seasonal period, the existence of similar water distribution modalities or experiences of water insecurity, for example. Performing this comparative ethnographic study required multiple excursions across the ancestral lands of Kalinga, as well as the necessary resources or capacities to do so. A circular motion guided my physical movement from an ancestral domain to the next, a trajectory designed to enable the continuous verifications and validations of the collected qualitative data.

As previously mentioned, the attendees were either purposely invited by community members for their wisdom and expertise to participate in scheduled focus group discussions or selected through documentary research later corroborated through informal discussions with various community members and representatives. Meetings were typically held at the house of my hosts, located within the boundaries of the indigenous community’s ancestral domain, or at the house of whoever desired hosting such gatherings. Whilst a period of the day would be identified for the conduct of such meetings and the people advised accordingly, no specific time would be set, enabling flexibility and comfortable arrivals. These were typically held in the evenings during the week and weekends.

Translators were appointed during or following the FPIC process. Their names were usually suggested by local elders and leaders or elected State representatives and employees for their linguistic competence, interpersonal aptitudes and disposition to provide the
required assistance. These choices would usually correspond to the persons with whom I was suggested to reside, but also represented those gifted with relevant academic or professional experience. Active and retired schoolteachers, as well as respected elders were primarily identified in all three subtribes, although administrative officers and returning Overseas Foreign Workers (OFWs) often informally contributed to the translation process during focus group discussions. They would unexpectedly act as interlocutors by specifying statements, providing synonyms conveying the meaning of untranslatable words or expressions and corroborating explanations. Elders would, moreover, frequently rely on each other to communicate and explain convoluted ideas, to corroborate, enhance and specify common experiences, whilst validating their claims since interviews were always conducted in groups and attended by numerous persons.

Focus group discussions were vocally announced and all those identified as key informants during the FPIC process were personally invited to join by the persons hosting the gathering, facilitating the translation or fellow tribesmen. Moreover, as I physically crossed the ilis, people would either immediately grasp the purpose of my excursion or directly enquire about the activity I was hosting or attending. People would then voluntarily take part and depart from the occasion whenever they wished, intervening at times or silently listening at others. Moreover, the intentions and purpose of my presence would already be known through of the FPIC consultative process, but also considering that I was typically introduced during Sunday masses and at my temporary residence straightforwardly questioned by those otherwise unaware of my purpose within their community.

2.4.4 Official Reports and Informal Conversations

In addition to the data shared by the indigenous elders and leaders of the three selected ancestral domains, data was gathered from various reports provided by the National Irrigation’s Administration (NIA), the provincial and regional offices of the National Commission for Indigenous Peoples (NCIP), the Department of Environmental and Natural Resources (DENR) and more specifically its division focused on climate change, the Department of Agriculture (DA) and the Department of Agrarian Reform (DAR), the provincial and regional factions of the Cordillera Agricultural Resources Management
Project 2 (CHARMP2) non-government organisation, as well as the municipal division of the Kapit Bisig Laban sa Kahirapan (KALAHI-CIDSS) non-governmental organisation. The scarce existing or available printed and online data on the actual context setting or situation of the selected municipalities, ancestral domains and ilis/barangays rendered this material especially valuable, which I expected would optimise my research and engage indigenous government elected representatives and employees in the research process. Informal and scheduled consultations were thus integrated as significant components to the following study, in addition to the physical and electronic copies of updated reports, as relevant and useful sources of data.
3. Historical Setting

Alike other extra-Formosan Austronesian-speaking people of Southeast Asia, the Philippine people descended from Proto-Malayo-Polynesian ancestors (Tabbada et al., 2009: 21; Hsiao-chun et al., 2011: 922-923). Whilst relatively little is known about the genetic diversity of the archipelago’s population, their mitochondrial DNA (mtDNA) either predominantly matches or somewhat resembles that of indigenous Taiwanese groups, whom consequently share the haplogroups of post-glacial and pre-neolithic origin previously identified in East Asian and Island Southeast Asian populations (Tabbada et al., 2009: 21). The genetic study conducted by Tabbada et al. (2009) thus corroborate theories endorsing the southward dispersal of lineages “Out of Taiwan” via the Philippines to Oceania and Polynesia. They further reveal, however, that a minority of lineages in the Philippines share their origins—possibly dating back to the Paleolithic period—with haplogroups from Indonesia and New Guinea, whilst an even smaller number display “no closely related types yet identified elsewhere” (Ibid.). Later, the significant influence of the Sri Vijaya Hinduized Malay empire upon the Southern Visayas and Sulu islands, and commercial interactions with Indian and Chinese traders shaped the rich ethnolinguistic and geographic landscapes of the archipelago (Guillermo & Win, 2005).

Contemporary issues pertaining to water governance and security in the Kalinga highlands, one must, therefore, consider the explanatory context provided by history in order to both challenge today’s norms and political standards, whilst exposing the roots of the impending anthropogenic crisis threatening the precious substance on which their sociocultural and physical existence depends. This chapter describes the modern historical definition of the Philippine State, beginning with the Spanish conquest of the mid-16th century, followed by the American occupation towards the end of the 19th century, the Japanese invasion during the Second World War, the constitution of the Philippine State in 1946, the Chico hydroelectric development project under Ferdinand Marcos (1965-1986) and the restitution of the democracy after 1986.
3.1 Colonial Invasions and Foreign Occupations

3.1.1 The Spanish Colonialism (1565 - 1898)

In 1521, whilst searching for spices requested by the Spanish king, the Portuguese navigator Ferdinand de Magellan encountered an archipelago unofficially recognised as the “St-Lazarus Islands”, then formally baptised as the Philippines in honour of Phillip II, son of Spain’s ruling emperor (Tarling, 2001: 33; Barrows, 1905). In 1564, Miguel Lopez de Legaspi initiated the establishment of Spanish colonial rule (Guillermo & Win, 2005). In 1572, Juan de Salcedo, grandson of Legaspi, was the first to venture into the Cordillera Mountains of the northern Luzon Island in search of the reputedly abundant deposits of gold and copper (Scott, 1974: 3-4; Acabado, 2015: 24; Magannon, 1984: 251-251). The Spaniards developed extensive road systems throughout Northern Luzon to gain and assert control over the commercial production of agricultural products, such as tobacco as well as access to resources (Lawless, 1937: 44-46). Encomiendas were landed estates given by the Spanish king since 1568 to reward Spanish soldiers, civilians, and religious orders for their services to the Crown. Whilst abolished in 1674, the vassalage to Spain continued as forced labor (Guillermo, 2005: 139). The Spaniards established in the Cordillera highlands by 1591, granted Spanish rulers the right to levy annual tributes and labour services from those forced into these administrative enclaves (Doeppers, 1972; Rafael, 1988; Barrows, 1905).

As explained by Casumbal (2012: 47), the Filipino category emerged during Spanish colonialism as a means of distinguishing Spaniards born in the Philippines from those born in Spain, identified as Peninsulares. The Spaniards categorised the native populations of their American and Philippine colonies as Indios (ibid.). In the author’s words, quoting Scott’s satire of the Spanish biopolitical imaginary, “Indios comprised those populations who, in, were ‘dark-skinned, [wore] pants, attended mass, paid taxes, obeyed Spanish laws, and only went to war when [instructed to]’”. The figure of the indigenous, as explained by Casumbal (2012: 49),

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9 In 1849, the Spanish government notably ordered the construction of a horse trail passing from the Abra province through Guinaang, located in the province of Kalinga, to the Cagayan Valley (Keesing, 1962: 235; Lawless 1977: 21). Parts of this trail remain in use to this day.

10 Encomiendas were landed estates given by the Spanish king since 1568 to reward Spanish soldiers, civilians, and religious orders for their services to the Crown. Whilst abolished in 1674, the vassalage to Spain continued as forced labor (Guillermo, 2005: 139).
bears an aura of exteriority to colonisation and postcolonial modernity, conjures an unconquered and unconquerable condition of independence and self-sufficiency, and marks the authenticity of a living relic connecting contemporary Christianised, Hispanicized Filipinos to their precolonial past.

The Cordillera peoples, whom the Spanish designated as “Igolotes”, “Ygolots”, “Ygorrotes”, “Igorots” or “Igorrotes”, were considered “tribus independientes” and dissociated from imaginaries of the natives Indios. The meaning of the word Igorot, commonly employed to designate the highlanders of Northern Luzon, as explained by Scott (1993: 44), quoting a Dr. Trinidad Pardo de Tavera, may constitute the assemblage of the term golot, meaning “mountain chain”, and the prefix I, meaning “people of” or “dwellers in” 11. Scott further highlights that the Kankanaey or Lapanto Igorot of the Cordillera use the word ginolot, which resembles that of Igorot, to designate “native rice” as opposed to topeng, the name given to rice varieties which originated from the lowlands. The romantic representation of “the Indigenous”, portrayed as “a fierce anti-colonial warrior” of highland territories opposed the Indio, which evoked the subservience of the colonialized inhabitants of Central Luzon (Delmundo 2004: 31 in Casumbal, 2012: 46). Casumbal (2012: 65) further explains that:

uneven subjectification of the Indio occurred through reducción, forced labour, and mandatory tribute, in addition to military terror, from the 16th century through the 19th centuries. (…) Reducción reorganised dispersed, mobile, and territorially fluid settlements into compact, fixed, and clearly-bounded cabaceras or towns. Cabaceras were designed for permanent settlement, so that native populations would be concentrated and thus more easily monitored, controlled, and converted to Christianity. (…) Due to the relative inaccessibility of Cordillera mountain settlements, and the substantial resources required to subdue more geographically accessible areas, Spanish incursions into the Cordillera were few (…) [and] largely unsuccessful.

The Cordillerans of northern Luzon were, moreover, distinguished from their southern lowland counterparts through discriminating contrasts founded on divergent spiritual beliefs and practices: whilst the native Indios were branded as “half-civilised” or “civilised” “Christians”, the highland “Igorot” were categorised as “Non-Christians” – a hierarchical differentiation coherent with the prevalent evolutionary theories exploited as justifying

11 The language was not explicitly stated: Scott speaks of a language “still used in the provinces (…) but not commonly in Manila” and of similar terms written in the 1613 Tagalog dictionary (Scott, 1993: 44-45).

As judiciously argued by Labrador (1997: ix), the “Igorot” designates a highly contentious collective and external ascription referring to those communities inhabiting the areas in “Igorotland”, Mountain Province (during the American colonialism), and the current Cordillera Administrative Region\(^\text{12}\). In 1898, the Spanish occupation ended once the lowland Filipinos fought for a liberty never relinquished by the highlanders (Perez, 2010: 79).

3.1.2 The American Dominion (1898 - 1946)

Spain withdrew from the Philippines with the signing the Treaty of Paris and a $20 million (USD) payment by the United States in 1898 (Tarling, 2001: 61; Prill-Brett, 1994: 691; Hall, 1994: 808; Go and Fosters, ed. 2005). By 1900, the Americans, taking advantage of Spanish land laws, claimed ownership of more than 90% of the Philippines’s territorial surface through the strategic interpretation and implementation of the Regalian Doctrine\(^\text{13}\) (Sugguiyao, 1990: 212-213). They subsequently introduced laws designed to administer public land registrations and surveys, which restricted private ownership through complex provisions and unforgiving timescales, such as the Philippine Bill of 1902, and consequently strengthened the local influence of Illustrados (elites), whilst extending and accentuating patron-client relationships (Keesing & Keesing, 1934: 163 in Prill-Brett, 1994: 691; Tarling, 2001: 400-401). In 1909, the Cariño vs. Insular Government case pertaining to the constitutional rights of “native customs and by long association” held before the Supreme Court of the United States established that ancestral domains overruled

\(^\text{12}\) The author further explains that “[although] contested, this designation has also been reinscribed as a marker of self-defined identification, an internal ascription to acknowledge the region's history of resistances against foreign intrusions (like that against the Chico River Basin Development Project) and the peoples' shared histories of oppression and minoritization, evident in discriminatory state policies, particularly legislation pertaining to land (like the Land Registration Act of 1902 and the Public Land Act of 1905)” (1997: x).

\(^\text{13}\) The Regalian Doctrine (or Jura Regalia) enabled the Spaniards and subsequent governments to seize lands, by converting titles or delegitimizing previous entitlements. This was reinforced by the Royal Decree of February 13th, 1894 known as the Maura Law, which required the registration of all lands within a year following its introduction and, failing to do so meant relinquishing one’s right over land to the State (Capistrano, 2009: 456).
formal consecrations or titling by the Spanish or American authorities¹⁴ - a declaration numerous times reiterated ever since (Lynch, 1983: 19 in Okamura, 1988; Ramazzotti, 2008: 26; Sugguiyao, 1990: 214; Prill-Brett, 2007).

In 1901, under American tutelage, the Philippine Commission established the Bureau of Non-Christian Tribes for the systematic production and consignment of reliable data regarding the “savage” or “half-civilised people” inhabiting the archipelago (Finley, 1913: 327 in Rodriguez, 2010: 5; Okamura, 1988: 22). The southern Moro Province (Mindanao and Sulu) and the northern Mountain Province (the Cordillera Region) were thus subject to direct U.S. rule by the Bureau of Non-Christian Tribes until 1913, whilst Christianised indio populations were given opportunities for limited self-rule (Casumbal, 2012: 66). Mandated to preserve tribal organisations and reinforce the assimilationist principles and practices that underscored Spanish colonialism, the Bureau primarily focused on eradicating indigenous warfare in the northern Philippines (especially head-taking) (Casumbal, 2012: 67). In 1902, Dr. David P. Barrows, chief of the Bureau of Non-Christian Tribes, devised and applied a comprehensive pacification strategy targeting the unsubdued Cordillera highlanders (McCoy, 2009: 217-218). By intentionally mediating and manipulating ethnic conflicts – exploiting the Bodong, the political and judicial peace keeping system or mechanism of Kalinga, for example, as well as customary systems of mutual and co-operative work for the construction of roads¹⁵ (Magannon 1984: 254; Wilson 1956) – the lieutenants successfully counteracted the resistance of the Ifugao and Bontoc people by 1904¹⁶ (Sugguiyao, 1990). The Kalinga, branded as “the most aggressive of highland warriors”, were subsequently invaded and defeated through “punitive expeditions intended to restrain their attacks on other villages” (McCoy, 2009: 220).

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¹⁴ The verdict stated that “when, as far back as testimony of memory goes, the land has been held by individuals under a claim of private ownership, it will be presumed to have been held in the same way before the Spanish conquest and never to have been public land” (Ramazzotti, 2008: 26). This was notably reaffirmed by the Supreme Court of the Philippines in 1972 (Sugguiyao, 1990 : 214).
¹⁵ They also provided iron tools to encourage the development and expansion of the agricultural economy (Ibid.).
¹⁶ Lieutenant Hale remains “poignantly remembered and fondly referred to by the Kalingas as ‘Sapao’”, a nickname explicitly designating the Ifugao village raided by the Bontoc, an ethnolinguistic group of the Cordillera highlands, under Hale’s command (Benedito, 1994: 166; McCoy, 2009: 223; Finin, 2005). Considered a “man of courage and honour that legitimately earned him a lasting place in Kalinga folklore”, he was forced to resign his government position in 1915 (Benedito, 1994: 167).
Dean C. Worcester, a young zoology professor from the University of Michigan together with David Barrows, the first director of the Bureau of Non-Christian Tribes, recognised the rights of “non-foreign inhabitants” to locally informed ways of life (Hirtz, 2003: 895-896). Worcester was elected chief of the Bureau of Non-Christian Tribes in 1903 to oversee “the first American classificatory scheme for the entire archipelago”, identifying the ethnolinguistic populations of the Cordillera highlands as tribal groups (ibid.). The classificatory system refined the dualistic portrayal of Filipinos as Christian “civilised tribes” or Non-Christian “wild tribes”,17 (Hirtz, 2003: 895-896; Rodriguez 2010; Finin, 2005). Published in the Philippine Journal of Science in 1906, this categorisation defined the maps used for the colonial administration of the northern Luzon Island (Lewes, 1987: 274; Finin, 2005: 36). These subsequently formalised ethnolinguistic disparities through territorial circumscriptions and intensified mutual antagonisms by introducing a “hierarchy of differences”, intended to rationalise inequality and legitimated the “benevolent assimilation” pursued by the Americans (Rodriguez, 2010: 22; Kramer, 2006).

The ethnolinguistic categories produced by Worcester did not, however, reflect indigenous conceptions or representations of self, but historical and geophysical contexts. Their names echoed the derogatory, misunderstood or mispronounced terms exploited by the missionaries, colonisers or neighbouring indigenous communities to identify and differentiate those inhabiting the Cordillera highlands (Biliet & Lambrecht 1970: 9-10; Magannon 1980: 34-40). Once enshrined in the Philippines’ legislation, these ethnolinguistic categories crystallised historical disparities and discriminatory classifications along geographical and sociocultural divides18 (Finin, 2005: 36; Hirtz, 2003: 895-896).

17 In 1903, he also designated the city of Baguio, located in the province of Benguet at an altitude of 5,000 feet, as a place of rest and recovery for the American military administration. Known as the summer capital of the Philippines, it became the only urban center and largest city of the Cordillera administrative region (Bacdayan, foreword to Finin, 2005: xiii).
18 As told by Magannon (1984: 240), if these ethnic names have any meaningful sense at all, it is that they reflect the outsiders’ and foreigners’ perceptions of the Cordillera inhabitants and the kind of relation they have had with them. The name Kalinga, for example, meaning enemy in the Ibanag dialect, described the people living in the higher reaches of the Chico River that were once renowned for raiding settlements in Cagayan Valley (Keesing 1962: 221; Biliet and Lambrecht 1970: 35-36; Scott 1974: 158, 172-173).
For Casumbal (2012: 67), the prominent features the United States’ colonial rule included the establishment of an urban enclave for American administrators (Baguio City, declared the “Summer Capital” of the Philippines by the Philippine Commission in 1903), the entry of Catholic and Episcopalian missionaries, attempts to produce a systematic classification instrument to aggregate and differentiate the Cordillera people, as well as the development of infrastructures, such as roads, which significantly facilitated the eradication of head-taking and the rapid growth of extractive industries in the region, particularly commercial mining and logging during the 1930s. The policy of separate governance of the Cordillera was progressively abandoned in favour of assimilation, and emphasis was placed on the provision of health services and education, with English as the medium of instruction (Ibid.).

3.1.3 The Japanese Occupation (1942 - 1945)

Local renditions of the Second World War by Kalinga elders depicted unsettling encounters with Japanese soldiers. During the Japanese Occupation (1942-1945), Kalingas served as guerrilla fighters, either hired or coerced by one of the two conflicting parties (namely, the Americans and Japanese), whilst providing refuge to both or either side. The men proudly displayed the elaborate tattoos covering their arms and chest, which rewarded their bravery for protecting the umili (community) (Sugguiyao 1998 in Salvador-Amores, 2013: 24). Nonetheless, and true to the warmth and generosity cherished amongst their people, hospitality often protected their communities from those scavenging the forests in search of their enemies whilst providing, in some cases, pleasant and enriching encounters19. Japanese soldiers were nonetheless accused of physically assaulting Kalinga persons20, of perpetrating heinous crimes against their ancestral domain and coercing the highlanders into supplying their daily rations of food, which provoked the fierce resistance and strategic defiance.

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19 They notably brought to Korayo (an ili of the ancestral domain of Turkaw, comprised in the municipality of Pasil and otherwise termed, in accordance with the official Philippine administration, barangay Colayo) musical instruments and instructed them to pick the top of certain fern plants, which were said to be edible and medicinal.

20 According to interviews conducted with elders of the selected ancestral domains of Kalinga.
3.2 The Independent Philippine Republic

At a time when emergent nation-states began asserting sovereignty over their territories, the Philippines gained its independence July 4th, 1946. As explained by Stark and Skibo (2007: 98), the Kalinga people considerably suffered from the sudden retraction of the colonial administration of the United States and the systematic negligence of the freshly inaugurated Philippine government; as tribal conflicts flared sporadically and roads deteriorated, commercial mining, logging, and hydroelectrification considerably augmented in scale and number (De Raedt 1991: 363, Dozier 1966: 197–215, Führer-; and Magannon 1984: 258 in Stark & Skibo, 2007: 98).

In 1957, the government introduced the Commission on National Integration (CNI) to “effectuate in a more rapid and complete manner the economic, social, moral and political advancement of the Non-Christian Filipinos [henceforth known as] National Cultural Minorities”, and to “render real, complete and permanent the integration of all said national cultural minorities into the body politic” (Republic Act 1888 in Benedito, 1994: 171). This shift, upheld in the 1973 Constitution of the Philippines, translated a renewed political interest in the socioeconomic development of the people henceforth designated as cultural minorities (Tarling, 2001: 62; Thomas, 2000). As explained by Casumbal (2012: 53), the “ethnic” label replicated the discriminating categories introduced during the Spanish colonialism to define otherness and marginality. This name has never, therefore, qualified the politically dominant Tagalog ethno-linguistic group, or the demographically prevailing Southern group of Cebuano and the Ilokano, which hold the greatest population in the Northern Philippine island of Luzon. In 1968, the CNI gave way to the Office of the Presidential Assistance on National Minorities (PANAMIN), a private non-profit organisation directed by Manuel Elizalde Jr., a wealthy associate of President Ferdinand Marcos, rapidly indicted for violent repressions against cultural minorities in the Southern Philippines, the sexual exploitation of local tribeswomen, corruption and arm trafficking after reaching this prestigious standing (Thomas, 2000).
3.3 The Chico River Hydroelectric Development Project

In 1974, under the presidential regime of Ferdinand Marcos (1965-1986), the National Power Corporation proposed to construct the Chico River Dam Project, a large-scale hydroelectric project intended to produce 1000 MW and counter the escalating energy crisis by 1985, the estimated year of its completion, through four installations in the Cordillera Mountains: Chico I (100 MW) in Bontoc, Mountain Province; Chico II (360 MW) in Sedangga, Mountain Province; Chico III (100 MW) in Besao/Basao, Kalinga-Apayao; and Chico IV (450 MW) in Tumiangan, Kalinga-Apayao (Hirtz, 2003: 896; Finin, 2005: 238; Benedito, 1994:189.) Predicted to counter the escalating energy crisis by 1985, the estimated year of its completion, the Chico River Basin Development Project represented a $800 million hydroelectric dam project insured by a loan package delivered by the World Bank, which was intended to flood residential areas, terraced rice fields and burial grounds encompassing over 341,900 hectares of fertile lands, burial grounds and watersheds of the Ifugao and Kalinga-Apayao province, and displacing over 100 000 individuals, representing approximately 15 000 households (Winnacker, 1979: 23). To this end, Presidential Decrees overruled previous laws hindering the construction of the Chico hydroelectric dam project. These sanctions notably included the 1974 Ancestral Lands Decree (Presidential Decree No. 410), which declared “lands occupied and cultivated by National Cultural Minorities as alienable and disposable”, and consequently permitted the development of agro-industrial projects on native lands, imposing complicated bureaucratic procedures to acquire land occupancy certificates and to preserve the pre-established ownership rights first recognised and sanctioned by the Supreme Court in 1909 (Okamura, 1988: 20; Guyguyon, 1979). The Presidential Decree No. 705, otherwise known as the Forestry Reform Code of the Philippines, which claimed to optimise the benefits of public domain lands and “urgently” maximise their productivity, truly authorised the retitling of ancestral lands as Public Domain, henceforth controlled by and in accordance with State’s tyrannical regime (Prill-Brett, 1994: 693; Benedito, 1994: 177).

Opposition to the project was immediate and overwhelming (Casumbal, 2012: 75). The indigenous peoples of Bontoc (Mountain Province) and Kalinga vigorously opposed the Chico Dam Project during the 1970s to 1980s. The women from Mainit, a Bontok ili
located in central Mountain Province, drove mine surveyors away “to prevent the water source from becoming unclear or dirty [makibol nan danum] and to prevent the trees from being cut down [mapatpat nan kaew]” (Casumbal, 2012: 104-107). The brutal military campaigns and human rights’ violations committed by Philippine government to impose the Chico Dam Project were notably documented by Bongaoen, in presentation entitled “A Lesson in History: Never Again to Martial Law” held at the University of Baguio on 23 April 2016 and published May 1st, 2016 as “A Story of the Kalingas against Chico River Dams Project” in the Northern Dispatch Weekly. Reporting similar testimonies, Caluza (June 15, 2013 in the Inquirer of Northern Luzon) quoted the recollection of William Nagoy of Luluagan (Kalinga) as an exemplary case:

[the military tortured and abused residents (...) who were suspected of protesting the dam project” and Cresencio Ngayaa, 65, who related in Ilocano that “[w]e were made to squat on chairs and we were made to stay in that position. We would be beaten the moment we tried to stand up when the strain of crouching atop the chairs began to overwhelm us. One of the detained men was made to sit on the table. A soldier kicked him so hard he was hurled toward the wall.

In 1976, more than 100 villagers were said to be detained in Camp Olivas in Pampanga for opposing the project (ibid.). Over twenty communities consequently gathered in the Kalinga province to pledge their united resistance, later joined by the neighbouring indigenous people of Bontoc, as well as those of Abra, for the purpose of resisting the large-scale logging industry of Cellophil Resources Corporation. It was decided that the binding principles of the Kalinga Bodong would be invoked to enforce a multilateral peace pact, which previously applied exclusively to bilateral agreements (Finin, 2005: 254). Signed by the leaders of eleven Kalinga and Bontoc villages in Bugnay (Kalinga), the “Ti-Bodong”, inaugurated the multilateral covenant, officiating and expanding the Kalinga alliance system for peace and of reconciliation mechanisms on December 29, 1978.

A number of local people who opposed the Chico Dam project resorted to armed struggle by joining the New Peoples Army (NPA), the military arm of the Communist Party of the Philippines²¹ (CPP) in response to grave government-perpetrated human rights violations

²¹ Militant peasant organizations, such as the Aguman Ding Maldang Talagobra (League of Poor Workers) and its political arm, the Socialist Party gave rise, in 1930, to the Partidong Komunistang Pilipinas (the Communist Party of the Philippines), which became the anti-Japanese guerilla group known as the Hukbo ng
(Guillermo and Win, 2005: 106). Ka Sungar, leader of the New People’s Army faction located in the province of Isabela, joined the struggles fought by the estimated 675 residents of Kalinga against the armed forces the national government had deployed. In so doing, the NPA collaborated with local elders and residents by providing resources needed to resist.

The killing of Macliing Dulag, a prominent Kalinga leader, on the 24th of April 1980 by the Philippines Constabulary and the subsequent legal proceedings against the 44th Infantry Battalion’s lieutenant, Leodegario Adam, who perpetrated the killing, drew important press coverage and significant public dissent, which led to the retraction of the World Bank and the project’s indefinite suspension (Hirtz, 2003: 896; Finin, 2005: 257). Protests, local and international civil disobedience campaigns, and the strategic use of social media by the opponents of the Chico Dam Project led to the inauguration of the Permanent Peoples’ Tribunal in 1981. As Casumbal (2012: 105) quotes, “the Chico River Dam struggle was a triumph of a valiant people – the Kalinga and Bontok women, men, and children.” The dictatorship was subsequently overthrown by the 1986 “People Power Revolution” in February 1986 (Tarling, 2001: 449). For Sugguiyao (1990: 216), “the opposition against the construction of the Chico River Hydroelectric Dam Project clearly epitomised the indigenous Kalinga concept of land ownership and tenure”. Their resistance grew into a political movement that gave way to the Indigenous Peoples’ Rights Act in 1997 (Schippers 2010: 222).

3.4 The New Democratic Regime

In 1987, the revised Constitution of the Philippines asserted the State’s obligation to recognise, respect, protect and support the rights of “Indigenous Cultural Communities” (henceforth ICCs) to their culture, traditions and institutions, as well as their ancestral domains (notably, Article II, Section 22 and Article XV, Section 11 in Okamura, 1988; Hirtz, 2003). However, a provision regarding “national economy and patrimony” (Article

Bayan Laban sa Hapon or Hukbalahap (People’s Army Against the Japanese) or commonly identified as the “Huks” (Guillermo and Win, 2005: 105). Whilst fighting the private armies of landlords, promoting the overthrow of American imperialism and capitalism, the Huks waged an effective harassing battle against the Japanese invaders and became, once the independence of the Philippines was successfully accomplished, a formal political party with an extremist rebel wing (Guillermo and Win, 2005: 105-106).
XII, Section 5) rejected indigenous land claims that contradicted national development policies such as export-oriented agribusiness, logging or mining. The Revised Forestry Code of the Philippines further retracted from the constitutionally guaranteed rights of ICCs by designating lands with a minimal gradient of 18% (and all those above this threshold) as public domain or “forestland” regardless of actual and historical composition or use. Moreover, the exclusion of these lands from the 1987 Comprehensive Agrarian Reform Program (CARP) rendered private and communal ownership unlawful, which portrayed indigenous people as illegal squatters (or “informal settlers”) on their ancestral domains. Consequently, as argued by Casumbal (2012: 56),

if indigeneity is understood somehow to indicate an origin all Filipinos share, there is also no denying the pervasive discourses of indigeneity in the Philippines as exceptional, static, retrograde, and associated with a deep and barbarous, pre-colonial past.

A legacy of intolerance and neglect did not, however, mirror the economic and political salience of indigenous peoples, who occupy the nation’s last frontiers, which include coveted soils and minerals, as well as abundant water notably suited for hydroelectric development. The Cordillera highlands held additional military value to the Philippine government since these lands provided a strategic sanctuary for the New People’s Army, as well as verdant canopies sheltering illegal marijuana plantations from the State’s gaze\(^\text{22}\).

4. Contextual Framework

4.1 The Republic of the Philippines

The Philippines is a mountainous archipelago of 7,107 islands covering an area of 300,000 km² equivalent to a distance of approximately 1,152 miles from North to South (Figure 1). Spread across the northeastern rim of Southeast Asia, between the Pacific Ocean and the South China Sea, the archipelago consists of three island groups split into 17 regions: Region in Muslim Mindanao) (Ramazzotti, 2008: 34). The Philippines feature, as put by Hirtz (2003: 895), a rich ethnic diversity reflected in its extensive linguistic diaspora: 172 languages — of which Pilipino (Filipino)/Tagalog and English are the official languages — of these, 169 are living languages. Indigenous peoples represent 110 ethno-linguistic groups concentrated within Northern Luzon (33%) and Mindanao (61%) (Camacho et al., 2016: 5).

Four major climate types prevail, classified as Types ranging from I to IV (Castro, 2013: 307). The tropical cyclone season in the country typically begins in June until December, with the months of July to September reputed for the most frequent occurrence of cyclones (Castro, 2013: 307). Situated along a typhoon belt on the Pacific rim, known as the Ring of Fire, the Philippines is, furthermore, considered one of the world’s most hazard-prone countries; with earthquakes, volcanic eruptions, tropical cyclones, floods and landslides causing over a thousand deaths per year (Hilhorst, Van der Haar & Leeftink, 2015: 513). Amongst the world’s richest biodiversity, the country holds abundant natural resources.

The freshwater availability per capita of the Philippines stands amongst Asia’s lowest rates, and within the lowest worldwide percentile (Kho & Agsaoay-Saño “undated”; Alamden, 2014). Surface freshwater resources, predominantly found in rivers and lakes, compose the 421 river basins of 119 officially proclaimed watersheds, whilst groundwater, found in subterranean reservoirs represents an estimated 50,000 sq. km. with a storage capacity of 251,100 million cubic metres, equivalent to slightly less than 15% of the Philippines’s total

23 The exact number of indigenous groups within the Philippine, however, remains debated, as highlighted by the author (Camacho, 2016).
freshwater potential (NWRB in Almaden, 2014; Ramazzotti, 2008). Rainfall ranges between 1000 to 4000 mm per year with significant variations from an area to the next (Ambal et al. 2012: 2899).
Figure 6 Map of the Philippines,
http://www.globalsecurity.org/military/world/philippines/maps.htm
4.1.1 Indigenous Rights in the Philippines

As argued by Hirtz (2013: 895), the prominence of indigenous issues in the present-day Philippines is inextricably linked with its long and contested past. The Tripoli Agreement, modelled on the Moro treaty, initially served as a blueprint for the constitutional recognition of ethnic minorities within the 1987 Constitution of the Philippines, which enshrined the establishment of two autonomous regions in the State’s legislatoin, namely the Cordillera Administrative Region of Northern Luzon and the southern Island of Mindanao (Ibid.). The Philippine Constitution of 1987 further introduces the term Indigenous Cultural Communities (ICC), which was thereafter determined by and corroborated with the ‘need to preserve’ the country’s cultural heritage, while insisting upon the incorporation of the vast and diverse population from which it is composed into a single geopolitical unit represented as the Philippine nation, whose boundaries were set by distant imperial European powers some 300 years ago (Ibid.). The rights of ethnocultural minorities were, thus, enshrined in the Philippine Constitution through contemporary, constitutional norms to optimize and assert the ruling post-colonial powers upon the natural habitat and resources set within ‘national’ confines (Hirtz, 2013: 901).

In 1993, the Philippines became one of the first countries in the world to officially recognise the rights of indigenous peoples with regards to their historical ownership and present rights to ‘ancestral domain’, enacted through Certificates of Ancestral Domain Claim (CADC) (Departmental Administrative Order No. 2 in Schippers, 2010).

In 1997, the Indigenous People’s Rights Act (Republic Act 8371 or IPRA) became the key legislation for indigenous people’s rights. In (IPRA, Part I, Rule I, Section 4)

As explained by Hirtz (2013: 901), the IPRA expands the constitutional definitions of indigeneity, essentially understood as pre-invasion societies that developed on Philippine territories. Considered the contemporary manifestations and testaments of cultural diversity, the IPRA asserts and defends customary practices, beliefs and aspirations for the equal and inalienable dignity of indigenous persons and peoples (Hughes, 2000). The law additionally codifies a historically-derived understanding and conceptualization of
minority–majority relationships and the definition of culture(s), and regulates, by so doing, the administrative space inhabited by cultural minorities, and concomitant issues pertaining to local governance (Hirtz, 2013: 901).

A contentious aspect addressed by the Philippine IPRA establishes government rules for natural or environmental resources, including the authority over lands, minerals, forests and water, in addition to the systems or products of knowledge represented as intellectual property (Hirtz, 2003: 901). With respect to such matters, the Certificate of Ancestral Domain Title (CADT) formally recognised the “rights of possession and ownership” of indigenous peoples to their ancestral domains, whilst providing a judicial leverage to claims submitted by individuals or clans for private ownership rights through applications for Certificates of Ancestral Land Claim or Certificates of Ancestral Land Title (CALT) submitted to the Department of Environment and Natural Resources (DENR) (Sections 3c and 3d in Schippers, 2010: 222). Prill-Brett (1987: 8 in Casumbal, 2012: 71-72) further explains:

the concept of ancestral domain includes (1) the indigenous peoples’ right to avail of the direct benefits from the exploitation of resources within its territories and (2) the right to directly decide how land, water, and other resources will be allocated, used, or managed. These are included in indigenous tenurial laws.

Ancestral lands consist of residential lots, rice terraces or paddies, private forests, swidden farms, and tree lots occupied by individuals, families, and clans who are members of indigenous cultural communities/indigenous peoples (ICCs/IPs), which are required to have been “occupied, possessed and utilised since time immemorial, continuously to the present” (IPRA Section 3b). Ancestral domains, conversely, represent territorial units composed of “lands, inland waters, coastal areas, and natural resources therein, held under a claim of ownership, occupied or possessed by ICCs/IPs, by themselves or through their ancestors, communally or individually since time immemorial”, encompassing ancestral forests, pastures, residential and agricultural lands, hunting grounds, as well as worship areas (IPRA 1997, Chapter II, Section 3a in Schippers, 2010: 222). The formal claims sanctioned by the IPRA thus challenge the Spanish Regalian doctrine, which asserts the authority and legitimacy of colonial institutions as well as those established by Philippine State over the
archipelago’s territory, as demonstrated by the 1902 Land Registration Act No. 496, which declared all lands subject to the Torrens system of paper titling; the Mining Law of 1905, which gave Americans the right to acquire public land for mining purposes, amongst others (Casumbal, 2012: 72). The Regalian Doctrine had, moreover, been enshrined in the Philippine Constitution (1987) and current land laws, which deem all lands over 18% slope to be “public forest land” (Republic of the Philippines [RoP], 1987).

The IPRA further requires the mandatory and systematic conduct of Free and Prior Informed Consent (FPIC), defined as a consensual ruling given by the ICCs/IPs through a deliberated verdict unrestricted by manipulation, interference or coercion, which is both conducted and delivered in accordance with their customary laws and practices. The thorough disclosure of an activity’s projected targets, potential impacts and objectives must be delivered in a comprehensible language and an unambiguous manner in order for this process to take shape. The law additionally upholds necessary consensus and peace-building processes in conflict resolutions, whilst stressing the importance of genuine participation of indigenous peoples in decision-making processes.

As the formal expression of indigenous rights, the NCIP are tasked to formulate and enforce policies, plans or programs that recognise, protect and promote the rights of IPs (Section 2, Rule VII; Schippers, 2010: 222). The agency encompasses seven commissioners appointed by the President, which operate from nine offices throughout the country24 (Rule VII, Part IV). As the formal expression of indigenous rights, the NCIP are tasked to formulate and enforce policies, plans or programs that recognise, protect and promote the rights of IPs25 (Section 2, Rule VII). Article 2.22 of the 1987 Philippine Constitution further mandates the State to enact indigenous rights, whilst Article 12.5 extends such obligations to the protection of ancestral lands. Article 13.17 declares, moreover, that “the state shall recognise, respect and protect the rights of indigenous

24 The Ancestral Domains Office; the Office on Policy, the Planning and Research office; the Office on Education, Culture and Health; the Office on Socio-Economic Services and Special Concerns; the Office of Empowerment and Human Rights; the Administrative Office; the Legal Affairs Office; the Office of the Executive Director; as well as the Regional and Field Offices.
25 For further information, see McKay, 2005B; Prill-Brett 2000; Perez 2000; Schippers, 2010: 222 and Hirtz 2013.
cultural communities to preserve and develop their cultures, traditions and institutions” (Ramazzotti, 2008: 24). However, Casumbal (2012: 74), echoing the critics voiced by multiple other scholars and indigenous representatives, judiciously questions this law’s effectiveness and the capacity of those charged of upholding and enacting its provisions to aptly fulfil their mandate.

Moreover, as argued by Schippers (2010), whilst most Filipinos could, in principle, be considered “indigenous” with respect to their ancestry, the formal definition of indigenousness recorded in the IPRA and adopted by the Philippine government associates this appellation to historically differentiated and homogenous societies, whose identities, possessing distinctive ethnocultural traits.

In the case of the Cordillera, McKay (2006) stresses that the sociocultural and geopolitical differences emphasized in prevailing representations of the Igorots, distinguished from the modernized, lowland Philippine inhabitants of Luzon, reiterate the discursive rhetorics produced during the colonial era, which historically sought legitimating the exploitation of the natural resources comprised within these highland territories by foreign or external agents. Tenurial reforms and government-sponsored commercial activities, including agribusiness, logging, and infrastructure programs and projects, have further been proven to intensify demands for local resources, encroaching into ancestral lands and undermining indigenous tenurial rules through Certificates of Ancestral Domain claims and titles, which seek implementing formal demarcations of private and communal property to facilitate the interventions of State and non-State actors, leading observers to conclude that land titling, considered ‘necessary’ for economic development, has engendered and exacerbated disputes rather than fostering sustainable and harmonious local livelihoods.

\[26\] She convincingly argues that: “the state’s constitutional recognition of indigenous rights ‘in the context of national development’ has not fundamentally altered the situation of indigenous peoples. Evidence of this includes ongoing implementation of extractive industries’ expansion and Official Development Assistance (ODA) projects in indigenous ancestral domain, enabled in part by the National Integrated Protected Areas System (NIPAS) Act of 1992 and the Mining Act of 1995. Such enterprises have resulted in the reduction of IPs’ ancestral domain from 15 million hectares in the 1950s to 3 million hectares by 1997 (Manzano 1999:66), and the areas of remaining ancestral domain continue to decrease”.
The discursive framings and interventions that have shaped the meaning of indigeneity in the Philippines expose the State’s incomprehension of prevailing and pre-existing local government systems and processes, as well as its incapacity to suitably adapt its administration to these interlocked, overlapping and competing political and judicial institutions that pre-existed and underscored its own.

4.1.2 Philippine Water Laws

Water laws in the Philippines encompass the legal treatment of distinctive types, sectors and uses. These include property rights, which encompass the permits, licences and franchises required for the collection and distribution of water; the terms and conditions for the allocation, lease, transfer as well as the redefinition of individual and collective water rights by granting authorities; the rights and obligations relative to water quantity and quality as well as those regarding their enforcement; the definition and attainment of intersectoral goals and priorities; the legal requirements for the integrated development of land and surface water, as well as land, forests and all other environmental components; intergovernmental obligations towards water as well as environmental and agrarian development policies (Hall et al. 2015: 250; Rola et al., 2016B: 136).

Noticeable shifts preceded and influenced the current water governance regime of the Philippines. In 1976, the Executive Order No. 1067 commonly termed the Philippine Water Code inaugurated the ruling water governance framework designed to control, protect and sustain national waters and watersheds, as well as to design and enforce coherent legislations through the National Water Resources Council (NWRC) (Rola et al., 2016B: 137). Established in 1974 as the authoritative body charged of coordinating and integrating all water resources development and management activities, the NWRC was mandated to issue water permits and resolve disputes pertaining to development schemes in accordance with “the principles of optimum usage, conservation and protection to meet present and future needs” (Dayrit, 2001). Renamed the National Water Resources Board (NWRB), it was required to conduct river basin and hydrologic appraisals and advise the National
Economic and Development Authority (NEDA) of suitable policies and interventions\(^{27}\) (NWRB, 2016). However, as Ramazzotti (2008: 24) rightfully points out, although the Water Code has been effective for almost three decades, compliance with mandatory permits and taxation encompasses a meek 40 percent of all users.

Since the 1990s, water governance underwent significant neoliberal reforms, which espoused privatisation schemes, reflected mounting environmental critics regarding historical discriminations towards ethnolinguistic minorities (Rola et al., 2016B: 141). The 1991 Local Government Code notably delegated the funding and operations of water supply systems to Local Government Units (LGUs), which included the monitoring of water quantity and quality, the resolution of issues pertaining to waste management, pollution and the environmental deterioration of watershed areas (Rola et al., 2016B: 141). The regulatory rather than interventionist posture imparted on the State propelled the privatisation of water sourcing and distribution (Hall et al., 2015).

The National Irrigation Administration (NIA) similarly delegated administrative and financial charges unto local irrigators’ associations; the Local Water Utilities Administration to water districts, and the Cooperative Development Authority to communal-based water systems (Rola et al., 2016B: 138-141). In 1997, the landmark public–private partnership of the Metro Manila water and sewerage system, which came to be known as the biggest privatisation venture worldwide, reflected a market-driven inclination echoed both globally and throughout the Asian-Pacific region to resolve issues pertaining to water security (Matous, 2013: 219-220; Hale, 2006; Hall, 2015; Wu & Malaluan, 2008). Additionally, in 2007, the Philippine Supreme Court ruling No. 168914 (Metropolitan Cebu Water District vs. Margarita A. Adala, 04 July 2007), favoured market-driven rational over preexisting public ownership and government schemes (Hall et al., 2015: 950).

\(^{27}\) As explained by Ramazzotti (2008: 24): “Permits are not required in the following circumstances: personal use of the owner of the land where water is found; for persons using hand–carried receptacles, or for bathing, washing, watering or dipping of domestic or arm animals, for navigation and for the transport of logs”.

The Republic Act 7586, otherwise known as the National Integrated Protected Area System Act (NIPAS), enacted in 1992, and the Republic Act 8041, identified as the National Water Crisis Act of 1995, concurrently requested the implementation of a more holistic approach to water governance, which emphasised the interactions and interdependence of water and health, as well as surrounding ecosystems and environments (Hall et al., 2015: 952). Additionally, over the course of the same year, the 1997 IPRA formally reasserted in Section 6 (entitled the Rights to Safe and Clean Air and Water) that “the ICCs/IPs have the right to regulate activities that may adversely affect their airspace, bodies of water and lands”, requiring henceforth the government to “adopt effective measures to implement environmental laws that will preserve the quality of freshwater, surface and ground water and minimise air pollution and other forms of pollution that may affect the domains”.

In the early 2000s, the Integrated Water Resources Management (IWRM) framework devised by the Global Water Partnership organisation revitalised local partnerships across Southeast Asia through co-management schemes that reanimated the relevance of the National Water Resources Board, (Hall, 2015; Almaden, 2015: 157). The Philippine Clean Water Act (or Republic Act No. 9275), established in 2004 to protect, preserve and revive the quality of fresh, brackish and marine water, subsequently provided regulatory standards for drinking water and effluents, as well as prohibitive measures for pollution and contamination (Hall et al., 2015: 952). Inaugurated in 2006, the River Basin Control Office (RBCO) unveiled an Integrated River Basin Development and Management Framework Plan intended to rationalise planning, management, rehabilitation and development protocols throughout the Philippines (Almaden, 2015: 156).

The proliferation and juxtaposition of heterogeneous legislations, endorsing ambiguous, disparate or incompatible postures, generated a high level of fragmentation and the absence of a coherent unifying water governance structures. These government rules converged into a complex network of laws and institutions, where overlapping claims, demands and interests competed for the access, use and administration of water. This further reflected the uneven and diverse geophysical and sociocultural landscapes of the Philippines (Almaden, 2015: 161; Rola, 2016C).
Discrepancies and contradictions amongst, as well as between, official and customary laws; rural/urban and upstream/downstream rivalries, as well as the competing interests and objective of multiple actors to access, use and manage diminishing water supplies unevenly distributed, unstable and somewhat contingent to favourable hydro-climatic conditions (Rola et al., 2016B; Hall, 2015). Moreover, the various actors who may potentially partake in decision-making processes (encompassing 30 agencies managing water throughout the Philippines), and the countless mandates, interests and objectives these may serve when negotiating such matters, obstruct effective coordination amongst and between state agencies, as well as non-governmental organisations, communities and civil society (Hall, 2015: 947; Rola et al., 2016B: 138). As asserted by the former President Benigno “Noynoy” Aquino III, these institutions act independently, delicately navigating through interagency politics and mobilising insufficient or inadequate data in their planning process and objectives (Cabreza, 2015). Consequently, water rights and permits significantly deviate from law to practise (Rola et al., 2016C).

4.2 The Cordillera Administrative Region (CAR)

The Cordillera Administrative Region (CAR) is a 20,000 sq. km territory located on the western side of the Northern island of Luzon. The region encompasses three mountain range systems stretching over 200 miles (Banwa, 2011: 212; Lewis, 1992: 30; Acabado & Martin, 2016: 308). In 1987 by virtue of the Executive Order No. 220 issued by then President Corazon C. Aquino, the region was separated into six contiguous provinces, namely Abra, Benguet, Ifugao, Kalinga, Apayao and Mountain Province, which, however, differ both in terms of name and geophysical disposition, from its seven predominant ethno-linguistic groups: Apayao, Kalinga, Bontoc, Ifugao, Ibaloi, Kankanaey and Tinguian. As of 2015, the total population of the CAR was estimated at approximately 1.722 million (PSA, 2016). By sectoral distribution, the agriculture sector provided an economic livelihood to an estimated 55.2% of the total workforce between 2004-2009, whilst the services sector employed 35.1% and the industry sector 9.7% (NEDA, 2010: 3).
Figure 7 Ethnolinguistic groups of the Cordillera Administrative Region (Acabado & Martin, 2016: 309).
The mountain ranges of the Cordillera Administrative Region form Northern Luzon’s watershed cradle, which encompass 27 recognized watersheds and forests, including 13 major river basins as well as the headwaters of eight major river systems, extending over 1.589 million hectares, and representing approximately 85% of the 1.829 million hectares of the region’s total land area including the headwaters of the Chico and the Agno Rivers\(^{28}\) (NEDA, 2010: 25; Abansi et al., 2016). These river systems originate from the Mountain Province and supply the Upper Chico River Irrigation System, the largest of all three national irrigation systems of the Cordillera. They irrigate the plains that surround the Cordillera Mountain range, supplying water for agricultural and hydroelectric power production in Northern as well as Central Luzon (Banwa, 2011: 212).

Considered the “ancestral homeland”\(^{29}\) of the Igorots, a freshly reapropriated\(^{30}\), yet nonetheless contested term designating the “people of the mountains”, the Philippine Cordillera comprises seven predominant, native ethnolinguistic groups: the Kankanaeys, the Bontocs, the Kalingas, the Ifugaos, the Tingguians (alternatively called the Itnegs), the Apayao and the Ibaloy. These additionally coexist with the Iwak and Gaddang people, which first inhabited and still consider these lands as an inherent facet of their collective existence (Acabado, 2015: 24). The Ilokano language, associated to the ethnolinguistic group originally from the Ilocos Region of the Northwestern seaboard of Luzon, serves as the CAR’s “lingua franca” (or vehicular language).

Despite the linguistic and dialectic variations present throughout the Cordillera, or what the locals frequently describe as “intonations” or “accents”, the highlanders of Northern Luzon typically understand each other nevertheless, with rare exceptions (such as with regards to the Gad-dang group) (Perez, 2010: 79). Two plebiscites held in the Cordilleras to legalise the autonomous regional government, however, failed – the first in June 1990, and the second, in March 1998. As explained by Dacanay III (2010: 45), the Congress, which

\(^{28}\) These encompass the Tinglayan River in the South, the Tanudan River in the East, the Pasil River within Central Kalinga, as well as the Mabaca and Saltan Rivers in the North (NEDA, 2016: 29).

\(^{29}\) This definition of territorial space and belonging was employed by my informants to speak of the Cordillera and does not equate to “ancestral domain”. This shall be explained in greater detail.

\(^{30}\) Scott (1993: 58-59) describes the adoption of the name as driven by a desire for distinction from lowlanders, in a context of heightened competitively for appointments in local government offices in the Cordillera highlands. He states that it was “almost with a sense of defiance [that] some adopted the controversial name (Ibid.).
established the Cordillera Regional Consultative Commission through the Republic Act (RA) No. 6658 in 1989, “provided for the creation of an autonomous government headed by a regional governor, with a regional assembly to enact applicable laws, and a supreme court and lower courts”, excluding defence, foreign affairs and monetary functions from their official jurisdiction. The Constitution, however, required the organic act’s ratification by the indigenous peoples of Northern Luzon before its enactment – whereas it was rejected by all except the electorate of the Ifugao province during the first plebiscite in 1990, the second, held after the inauguration of the second organic act known as RA No. 8438 in 1998, gained the exclusive support of the provincial constituents of Apayao (Brillantes and Garming, 1998: 737 in Dacanay III, 2010: 45). The two Cordilleran acts envisioned autonomy as a means of ensuring

the right to secure the right [of the people of the Cordillera] to secure for themselves their ancestral domains, develop their economy, promote their cultural heritage, and establish a system of self-governance within the framework of the Philippine Constitution and national sovereignty, as well as the territorial integrity of the Philippines (Section 2, Article II of both RA Nos. 6766 and 8438 in Dacanay III, 2010: 46).

For Dacanay III (2010: 46), their failures reflected the anticipated devolution of national services to regional administrators; the lack of confidence in the capabilities of elected Cordillerans to assume the region’s government; as well as concerns pertaining to unfair or incompetent subsidisations of LGUs, taxation schemes and policies.

4.3 The Indigenous Peoples and Province of Kalinga

4.3.1 The Kalinga Province

Created in 1995 under Republic Act 7878, the province of Kalinga hosts one of the seven predominant ethnolinguistic groups of the Cordillera Administrative Region. As of 2015, the province comprised 212,680 iKalingas, an identity marker preferred to the generic term Igorote commonly employed to speak of inhabitants of the Cordillera Administrative Region\(^\text{31}\). The province comprises 152 barangays divided amongst seven municipalities:

\(^{31}\) The prefix i is commonly used throughout Kalinga to qualify the affiliation of a person to a particular ethnolinguistic group
Balbalan, Pasil Lubuagan, Pinukpuk, Rizal, Tanudan and Tinglayan. The capital is Tabuk, the only city of the province.

Bound by the provinces of Apayao to the North, Cagayan and Isabela to the East, Abra to the West and Mountain Province to the South, the Kalinga province lies at 121°17’ East Longitude and 17°26’ North Latitude and encompasses a total land area of 3,231.30 km². Kalinga features sharp and interlocked mountain peaks, steep slopes, isolated flatlands, plateaus and valleys to the West, and gradually sloping mounds to the East. The fertile alluvial lowlands of Laya Valley stretch across the municipalities of Tabuk, Pinukpuk and Rizal, thus resting at low altitudes on the North-Eastern flank of the province. They lay at the heart of the northward-flowing drainage area of the Chico River and its tributaries, comprising the eastward-flowing Mabaca, the Saltan, Bananid, and Pasil Rivers, as well as the northward-flowing Tanudan River (Bisht & Bankoti, 2004: 286).

Kalinga’s temperature is characterised by two seasons: dry from November to April and wet from May to October. Warm temperatures particularly affect the low-lying municipalities of Rizal, Tabuk as well as a number of barangays in Pinukpuk adjacent to the Cagayan province, whilst colder temperatures are characteristic climatic features of the highland municipal territories of Balbalan, Tinglayan, Pasil, Lubuagan and Tanudan (NEDA, 2016: 26). The province, moreover, features amongst the 20 provinces with the highest tropical depressions, storms, typhoons and super typhoons of the Philippines associated with the El Niño and La Niña Southern Oscillations phenomena (ENSO) (NEDA, 2016: 2). This notably entails significant temperature increase; changes to the onset, distribution, length and intensity of monsoon rains; the expansion of tropical cyclones and droughts in terms of number, size and duration; the loss or decline of power-generating capacity of hydropower plants; the reduction of potable water reservoirs and irrigation water; prolonged flooding and accelerated soil erosion on highly farmed areas and deforested mountain slopes (Hilario et al., 2009). Consequently, numerous public and privately funded projects or programs have been implemented over the years to protect and
replenish Kalinga’s watershed, and ensure the access of local and lowland communities to water in sufficient quantity and quality\textsuperscript{32}.

Agricultural lands cover the greatest territorial surface of the province, with the remainder consecrated to government buildings and residential allotments, irrigated rice terraces, swidden farms (also known as \textit{kaingin} gardens) as well as uncultivated plots typically used for grazing animals, purposely abandoned for regeneration in certain cases or due to pragmatic socioeconomic motifs, such as insufficient labourers, water or time. The province is the region’s primary rice and coffee producer, contributing respectively 35 percent and 65 percent of the Cordillera’s total production, and standing second to Ifugao in terms of corn production\textsuperscript{33} (NEDA, 2016: 84). Chickens, ducks, native or commercial breeds of swine, and cattle (namely water buffalos or \textit{carabaos}) are reared for household consumption or small-scale commercial exchanges, whilst shielding, to a certain extent, those who invest in such enterprises from economic hardship.

Modest businesses and temporary contracts offer additional sources of income during off-farm periods, including small convenience stores, and the marketing of handcrafted products, such as soft brooms from tiger grass, brass gongs, machetes (locally known as \textit{bolos}), knives, hoes, axes, as well as other farm instruments\textsuperscript{34}. These simultaneously respond to local needs whilst catering to a blossoming tourism industry. Public and private contracts for hauling provisions, guiding tourists and temporary assignments offered by various government agencies may also temporarily increase household incomes. Forests provide medicinal herbs, edible wild plants, honey, fruits and firewood, as well as the raw

\textsuperscript{32} These comprise, amongst others, the National Greening Program (NGP), the 1st and 2nd Cordillera Highland Agricultural Resource Management Project (CHARMP1 and 2), Community-Based Forest Management Agreement (CBFMA), Socialized Industrial Forest Management Agreement (SIFMA), as well as (NEDA, 2016: 35-36).

\textsuperscript{33} Rice terraces located at lower altitude, within valleys or mountain slopes, may produce two crops per year due to favourable climatic conditions, whilst those carved out of steep mountain ridges and located at elevated altitudes may only provide a single crop per year due to the colder climate. Whilst appropriate weather may permit two yearly harvests, insufficient financial capital, time or labour (due to alternative livelihoods, schooling and periodic contractual work), as well as the inadequate physical capabilities of those cultivating such lands may nonetheless prevent this from occurring.

\textsuperscript{34} The development of these industries remains hampered by inadequate financial capital and from skills confined to traditional product design, limited marketing expertise as well as indispensable commercial networks. At the moment, most of the products are manufactured only on a “per order” basis.
materials, such as timber, bamboo and cogon grass required in the fabrication of innumerable objects intended for households or commercial use (Balangcod, 2011). Semitropical and tropical vegetation cover the valleys, alongside characteristic groves, coconut, banana and citrus trees, which provide abundant fruits either locally consumed or sold within the adjacent city markets (Dozier, 1964: 4). Pine trees, ideal for firewood, normally grow along the ridges on either side of the Chico River, whilst tall cogon grasses grow on its steep mountainside slopes. As noted by Casumbal (2012: 95), whilst certain authors highlight “a fluid, non-hierarchically gendered division of labour in their study of Ibaloy and Kankanaey women in the agricultural community of Bineng, La Trinidad, Benguet”, it may, however, be argued that:

Cordillera women face disproportionate poverty and lack of social services; disproportionately poor labour conditions as farm workers, informal sector workers, or factory workers in economic processing zones; and disproportionately limited opportunities for participation in both indigenous and imposed structures of governance (Cariño 2000: 239).

The province additionally contains significant mineral deposits, including gold, copper, sulphur, chalcopyrite and copper zinc (Mines and Geo-Science Bureau – CAR).

Whilst relatively abundant in the Cordillera highlands, water security underscores the problematic situation of legal plurality and accentuates the uncertainties of global climate change. As urban migration and overseas contract work increasingly deprive cultivators of the essential, gratuitous labour to accomplish pressing, seasonal tasks, those who remain must accordingly safeguard their livelihoods and provide, financially or physically, for the children and lands left behind. With limited possibilities and opportunities, unsustainable practices, thus, emerge. Detrimental practices may, otherwise, reflect the unforeseen degenerations of technological advances used in various stages of agricultural production or the negative impacts of economically sound, yet environmentally damaging development projects, such as commercial plantations. Additionally, the water sampling tests performed by the Department of Natural & Environmental Resources (DENR) of Kalinga’s river system in 2015 reveal the presence of cyanide and mercury employed during small-scale mining operations in upstream areas conducted in the municipalities of Pasil and Balbalan.
Moreover, it is widely known throughout provincial LGUs that contaminated wastewater from medical facilities located in the province of Bontoc as well as chemical fertilisers and pesticides compromise water quality throughout the Kalinga province.

4.3.2 The Kalinga Tribe and Ancestral Domain

a. The Bodong and Pagta

The Kalinga Bodong resembles the Lapat system of the Tingguian/Isneg people of the Abra province, those entitled Peden, Pechen or Fiayao that prevails in Mountain Province (L-CAPE, 2014). The Bodong further recalls the customary justice and peace process of the Calanguyans of Nueva Ecija and Nueva Vizcaya (Philippines), notably the cooperative system known as the Og-ogbo, as well as the peace-building processes and conflict resolution mechanisms of the Tongtongan (Gabriel & Mangahas, 2017: 93). The Bodong (also known as the Fochong, Budong, Pochong and Vojong/Vochong in various Kalinga dialects) consists of an indigenous, and thus locally and historically grounded and coherent, political and judicial system or mechanism designed to implement, sustain and restore peaceful, harmonious and respectful relations between the ethno-linguistic groups comprised within a tribe, as well as amongst those which belong and compose neighbouring tribes. Kalinga, for instance, embodies a tribe, as do the neighbouring people of Ifugao and Benguet (adjacent provincial bodies and indigenous peoples of the Cordillera highlands). The Kalinga tribe encompasses subtribes, such as those of Sumacher, Turkaw and Guinaang – people distinguished by their distinct (although relatively similar) dialects (or intonations/accents, as locally termed) as well as kinship and territorial affiliations. The internal demarcations of a tribe from the physical and sociocultural boundaries of ancestral domains, which constitute the territorial foundations of subtribes as autonomous political and judicial government units. Prominent geophysical markers and buildings such as mountains, rivers, creeks, boulders, trees, bridges, rock piles and concrete blocks circumscribe ancestral domains. These demarcations constitute frontiers known as Bugis, Akis, Bogis and Kigad in various Kalinga dialects\(^35\).

\(^35\) Guina-ang’s ancestral domain, for example, extends from Mount Sabangan to the Pasil River, up to Mount Alimungawan to Mt. Nagayahapan, until the ridge of Mt. Pangit to Mt. Carbikab, to the summit of Mt.
The *Bodong*, commonly known as a peace pact or treaty, consists of voluntarily contracted bilateral agreements submitted to common principles and values applicable to all subtribes comprised within the tribal boundaries of Kalinga as well as in accordance with those of tribal partners with whom these may share a covenant. Peace pacts provide specific historically and geographically adapted rules (or provisions, as locally defined), which incorporate contemporary and anticipated risks as pre-emptive measures intended to prevent and facilitate the resolution of conflicts. These rules are consensually determined by the elders and leaders purposefully chosen by for their integrity and expertise by the two concerned communities (sub-tribes) to participate in the ceremonial and ritualistic processes through which peace pacts are formed. These voluntarily renewed whenever necessary, including if or when a breach or minor violation occurs, in response to infractions for which there were no previous clauses or understandings, as well as in response to significant environmental or sociopolitical transformations (be they perceived or experienced as a newly acquired knowledge challenging previous beliefs or practices, but also physical changes requiring careful revision of existing rules to prevent or attenuate their foreseen or actual negative effects).

As a singular term applicable the entire government system and mechanisms of Kalinga, the *Bodong* may appear stagnant or uniform, but in fact refers to something dynamic and proven to withstand the test of time. The *Bodong* constitutes the instructive guidelines founded on prominent aspirations and objectives shared by the Kalinga tribe through a highly decentralised government process, engaging identified leaders and elders. These authority figures are designated by community members as trusted ambassadors of their subtribe – acting as formal and legitimate spokespersons in the development and enforcement of laws. Accordingly, the *Bodong* provides normative codes of conduct, prohibitions and penalties, carefully negotiated and agreed upon by the two parties

Padchalaw, to Mt. Itol (Small), reaching Mt. Itol (Big) and crisscrossing to Mt. Alimungao. The boundaries further comprise Mt Alimunga and continue to Mt. Sinikot, then Mt. Amlikaw towards Banao, to reach Mt. Sucao. At this point, it divides the Tapaw River, reaches Mt. Ugid, continuing to Mt. Magsingit, ascending and finally traversing The Duldalakan Ridge to Mt. Sabangan (NEDA, 2015: 4).

36 The lack of space prevented me from addressing this interesting subject more thoroughly. Many have, however, taken considerable time documenting the creation and renewal processes of the *Bodong*: Benedito (1994) offers one of the most accurate and complete presentations I have encountered to date.
For Sugguiyao (1998: 47), the Bodong thus enhances economic stability and promotes social security, whilst its attendant celebrations contribute to “the development and preservation of a cultural heritage that bespeaks of a distinct ethnic identity”.

The rights and obligations developed through these bilateral agreements constitute the Pagta. The Pagta, as explained by Sugguiyao (1990: 55) more specifically consists of:

[a] solemn agreement which lays down the policies of the Bodong as a peace pact. Paramount in the Pagta are the terms defining the areas of responsibilities of the two peace pact holders, the security, comforts and convenience of the people in both communities. (…) Although there are slight variations from region to region in the minor details, the Pagta provides the same essential binding elements.

The Pagta exhibits remarkable specificity and comprehensive legal rulings from being tailored to the social, historical and geophysical contexts of the two concerned parties, whilst upholding the constitutive values and principles of Kalinga culture. Peace pacts usually contain the definition of an ancestral domain’s territorial boundaries, provisions regarding commercial agreements, environmental governance (pertaining to the access, use and management of all living biological organisms, creatures and natural constituents of these territories), procedures and sociocultural etiquette, as well as an inventory of crimes and their corresponding penalties (Garming, 2009; Magannon, 1984).

Whilst typically elaborated and disclosed through oral tradition amongst those directly concerned by the treaty and known throughout the Kalinga tribe for the principles and values they indubitably enforce, these rules have increasingly become written codes of law scripted once negotiations amongst the leaders and elders representing the concerned subtribes completed and held by those charged of maintaining peace. This innovation simultaneously responds to social and political transformations, since younger generations increasingly leave their birthplace for varying periods or times (as temporary foreign workers or to seek education within cities located beyond the Cordillera highlands, for example), but disturb the oral transmission of traditional knowledge and diminishes the apparent or seemingly pragmatic relevance of such understandings for those who do not consistently engage with these systems, processes and practices. There has, consequently, been mounting interest to produce printed versions of these covenants and offer, by so
doing, an additional means of preserving and sustaining indigenous governance. The thorough documentation of the Bodong system and operations further appears to respond to the growing demands of elected regional administrators of the Philippine government to “formalise” these systems and practices.

However, the transition from oral to written accounts of customary laws in Kalinga entirely depends on the decisions taken by those forging and enforcing the Pagta rather than the Philippine State. Whilst these appear somewhat obvious to the Kalinga people as well as other inhabitants of the Cordillera region who, for centuries, have similarly learned and implemented covenants resembling the Bodong, the regulatory norms and principles established by indigenous government systems remain problematic to those excluded from, and therefore ignorant of their legal codes and conventions, especially if or when foreigners traverse or temporarily reside in ancestral lands where such jurisdictions prevail. All those concerned by the covenant may not, however, be able to read or write. Moreover, oral tradition facilitates amendments to the provisions of bilateral agreements, which prevents their enclosure and immutability, which consequently sustains their relevance and efficacy.

b. The Ancestral Domain and Ili

The ancestral domain, as previously explained (in section 3.1.1), conveys prominent ideological and legal significance: it firstly refers to all that composes the inhabited space of a tribe, including the material and inanimate constituents of a physical environment that human occupants share with all other non-human entities occupying, dwelling or embodying the place in question; and secondly reflects a politico-judicial status that a group affiliated through ethnolinguistic and cultural commonalities recognise as their own, by virtue of prevailing customary laws, and that they may further “officially” acquire through the enactment of the IPRA law as a the communal property of a tribe. The notion of “domain”, therefore, expresses a sense of belonging and unity grounded in a territorial setting akin to the delimitations circumscribing tribal affiliations and alliances. Subtribes, conversely, represent autonomous political and sociocultural units bound by common lineage and shared substances, including soil, water and food. Personal identities emerge at

37 There are no laws, to date, imposing this measure – only persistent demands made by certain government representatives aiming to encourage this trend.
the confluence of these delimitations, primarily defined through one’s clan, then the sub-tribe of affiliated kinfolk that one is born into and, finally, to one’s tribal and regional affiliation.

The term *Binudngan/Binodngan* designates persons belonging to a subtribe through shared substance or alliance. As such, it designates kinship and unity through birth or from the consumption of shared substances (conceived both physically and metaphorically). This appellation, therefore, reveals the foundations of alliances and commonality in accordance with the Bodong rules and principles. Employing this word to describe or identify another person explicitly confirms this system’s standing and function in the sociocultural life of the Kalinga people.

Ancestral domains encompass various numbers of contiguous settlements called *ili*. These somewhat resemble or correspond, by name as well as in terms of scale and composition, to the smallest administrative unit of the Philippines called *barangay* (previously named *barrio* in Spanish) although considered relatively autonomous or sovereign with respect to the ancestral domain of which these are part. The word *ili* translates broadly in various Cordilleran languages as village, hamlet or settlement (Perez, 2010: 59). In Kalinga, the *ili* encompasses clustered houses and communal as well as privately owned agricultural and forested lands, either belonging to the community as a whole, clans, or households. For Magannon (1984: 22), the *ili* corresponds to a “second self”, or the “permanent home of people and spirits embodying both familial and religious affections and loyalty”. “Ili citizenship” is established by birth, marriage, and permanent residence (Prill-Brett, 2004: 5-6 in Casumbal, 2012: 69). The *umili*, a term inspired by these territorial and customary definitions of personhood, consists of loosely or closely affiliated indigenous residents of an *ili*. The notion of *kailian* defines the relationship of Kalinga people from two distinct *ilis*; who, in other words, belong to separate *umilis*. Allegiances remain to a certain extent relative to the gradual and overlapping memberships of every individual, household, family, clan, sub-tribe and tribe.
c. Bodong-Holders and Leadership

The *Bodong* embodies a binding bilateral agreement upheld by an individual acting on behalf of an esteemed clan or family, since kinfolk shoulder this person’s responsibilities, providing financial aid, time, labour or housing when required. This person, called a *Bodong* or peace-pact holder, is “considered the enforcer and implementer of the mandate and provisions in non-aggression agreement between two villages” whose acts and decisions are nonetheless subject to the scrutiny and assent of the community, especially of the local elders (*lakay*) and leaders (*pangat* – singular; *papangat* – plural) (Benedito, 1994: 33). Sugguiyao (1998: 47), a Kalinga elder of the Tanudan subtribe, speaks of the *Bodong* as what symbolically “binds the two peace pact holders together over the collective security of their constituents”. *Bodong* holders must emulate diligence, compassion, generosity and integrity. Leadership in Kalinga relies on such qualities above fame or wealth, although one must nonetheless fulfil costly and timely obligations to honour such a position: it is expected, for instance, that the entitled Bodong holder or his/her kinfolk accommodate visitors from the subtribe whose pact they hold, through food, shelter and by facilitating the duties (be they administrative tasks or sales) they intend fulfilling amongst their people.

The title of *Bodong* holder may either be offered to the sons or daughters of a former peace-pact holder. Eldest sons are, however, favoured considering the perils one may encounter in the accomplishment of these responsibilities, particularly when negotiating the resolution of violent conflicts, and the higher cultural value of women’s lives (Glitz, 2011). Women, like children, must never be harmed. This could, for instance, require the pursuit and execution of a criminal, or if and when a conflict erupted, persistent negotiations within the affected communities and afflicted relatives\(^\text{38}\). If not an intergenerational legacy, the *Bodong* holder’s position is imposed upon the family or clan of a person who committed a criminal offence responsible for the dissolution of preexisting peaceful arrangements, in addition to the mandatory compensation stated in the *Pagta*. By assigning the duty to serve the victim’s clan and subtribe, as well as to participate in the restitution and safeguarding of

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\(^{38}\) Although women are not forbidden from participating in such peace making processes, they seldom speak or actively participate in discussions regarding conflict resolution. It is important to note, however, that women occupy a prestigious place within Kalinga culture and society, protected from violence during conflicts and praised for their ability to create and sustain life.
peace, this intends resolving the hostility that a criminal offence may induce between the affected clans and subtribes. Peace in Kalinga literally translates as the sharing of substance. Amicable settlements abide to the logic of retributive and restorative justice, meaning they simultaneously involve compensation for the losses and suffering experienced by the victim and his or her kin and peace reinstated/re-established.

Peace-pact holders thus ensure the well-being of the subtribe to which they are appointed, working closely with their counterparts to establish and secure peaceful, harmonious relationships. Each guarantee the safety of the co-peace-pact holder’s tribe mates within their subtribe’s territorial frontiers as well as immunity from unlawful behaviour from their tribe mates, regardless of the time and place these infractions’ occurrence (Prill-Brett, 1987: ii). There are Bodong holders in every subtribe of Kalinga assigned to all those comprised within its provincial and tribal boundaries, as well as subtribes of neighbouring communities of Mountain Province, Ifugao, Apayao and Abra, amongst others. Kasupang constitutes the term used by a bodong holder to designate his or her counterpart, meaning the bodong holder from the sub-tribe whose peace-pact the former holds. For instance, the Kasupang of the bodong holder from the Sumadel subtribe assigned to the sub-tribe of Tulgao is the bodong holder from the Tulgao subtribe appointed to the sub-tribe of Sumadel.
5. A Tale of Precautionary and Responsive Governance: Irrigation Water Rights and Responsibilities in Kalinga

Water security and governance take multiple, yet entangled and profoundly interdependent forms in the Philippines, like elsewhere in the world. As water increasingly becomes a central and problematic matter for the production and sustenance of human life, the material, discursive, and symbolic processes, which determine the meanings and values attributed to water, have also gained momentum as potential sources of critical information uncovering the roots and ramifications, or solutions to water insecurity.

5.1 The Ethnographic Field Sites

This research was undertaken over a period of nine months amongst three indigenous communities or sub-tribes who inhabit the equivalent number of ancestral domains within the Kalinga province: Sumacher, Turkaw and Guinaang. Their names, like the ancestral domains to which these refer, overlap and conflict with the formal designations attributed by the Philippine State. Thus, whilst the former may at once reveal emic conceptions of people and place, these names may further, and more precisely refer to an ili located within the frontiers the ancestral domain harbouring the identical name\textsuperscript{39}. In such cases, these represent the first settlement and founding people of a sub-tribe. They subsequently grew into the actual territories and expanded into Tabuk, the capital city of Kalinga, where all subtribes own a parcel of land affiliated to their ancestral domain, as permitted by customary regulations. The research field sites additionally spread across two municipalities of the Kalinga province, namely Tinglayan and Pasil.

\textsuperscript{39} For example, the sub-tribe Guinaang resides within the ancestral domain named Guinaang. There also happens to be an ili called Guinaang, considered as the original settlement of their people. Sumadel or Sumacher (the former in accordance with the definition adopted by the State and the latter in the local dialect) offers a similar case. The sub-tribe’s ancestral domain encompasses two ilis identified as Sumadel 1 and Sumadel 2. The numbers following the sub-tribe’s name reflects administrative divisions, but constitute, nonetheless, the first lands colonized by their people. The same applies to the ancestral domain of the people of Turkaw or Tulgao (official and emic names).
Three *ilis* were selected per ancestral domain, totalising six distributed amongst three ancestral domains. As previously mentioned, the research areas complied with predetermined criteria pertaining to their geophysical location, notably high altitude, as headwaters of major river systems, located within densely forested areas, steep mountain slopes and their relative distance from cemented roads. Whilst providing common grounds for a comparative analysis, these conditions also presented an interesting context for the study of water governance and security as a simultaneous distinct and shared experience amongst these indigenous communities.

In the ancestral domain of Summacher (or Sumadel, according to State registers), my research comprises the *ilis/barangays* of Sumadel 1, Sumadel 2 and Belong-Manubal; in the ancestral domain of Turcaw (Tulgao), the *ilis/barangays* of Tulgao East, Tulgao West and Korayo (Colayo); and within the ancestral domain of Guinaang, the *ilis/barangays* of Guinaang, Galjang (Galdang), and Vagtayan (Bagtayan). As previously mentioned, two terms refer to these peoples and lands: the first pertains to the indigenous definition of the *ili*, a residential area that roughly corresponds to a village and typically matches formal/administrative circumscriptions, whilst the second represents the formal identification of the barangay established by the State (Figure 7). These encompassed the municipalities of Tinglayan, locally known as Tongrayan, and Pasil, whose name remains identical in both formal and local terminologies.

A restricted timeframe required the definition and compliance with a strict schedule to guarantee that an approximately equal number of days were spent with all three subtribes. My residency followed pragmatic considerations, such as the size and the distance separating the chosen *ilis* within and across ancestral domains; the actual or potential occurrence of landslides and monsoon rains, deaths and celebrations, as well as the availabilities of my hosts. Whilst I temporarily resided in all three selected *ilis* of the ancestral domain of Guinaang, a solely lodged in one of the three selected *ilis* in the ancestral domains of Sumacher and Turkaw.
The nine *ilis* of all three selected ancestral domains are all comprised within the Kalinga province and tribe, located at high altitudes, at the headwaters of significant water sources of the Cordillera Region, on vast and thickly forested territories. Their common historical, political, economic and sociocultural features and legacies tighten these geophysical resemblances, increasing the pertinence of such a comparison and the noteworthiness of their peculiarities. In fact, the similar and different expressions of water governance and security within and between these subtribes render this comparative endeavour most interesting.

5.1.1 Ancestral Domains and Ilis

The nine *ilis* of all three selected ancestral domains present similar are all comprised within the Kalinga province and tribe, located at high altitudes, at the headwaters of significant water sources of the Cordillera Region, on vast and thickly forested territories. Their common historical, political, economic and sociocultural features and legacies tighten these geophysical resemblances, increasing the pertinence of such a comparison and the noteworthiness of their specificities. In fact, the similar and different expressions of water governance and security within and between these subtribes render this comparative endeavour most interesting.

The ancestral domain of the Sumacher subtribe comprises four *ilis* entitled Sumadel I, Sumadel II, Belong-Manubal and Malango encompassing 4,408 hectares of land. An extension of Sumacher’s ancestral domain is located in barangay Bulo, within Tabuk City. Sumacher holds a population of 2,768 divided amongst 417 households according to the 2010 National Statistics Office of the Philippines (PSA, 2015). There are no network or telecommunication installations within the ancestral domain, meaning mail or verbal messages must be carried on foot until it reaches the road or until Tinglayan Poblacion, where signal is generally available.

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40 However, whilst the iSumacher initially settled on these lands, they later migrated forming a composed of the ilis/barangays of Upper, Central and Lower Bangad. Whilst formally recognized as the descendants of common ancestors, the latter forms a distinct territorial and collective unity called Fangad/Bagnad. This separation, however, merely reflects an obligation to limit the range of potential conflicts by reducing the number of people engaged or, in other words, of those responsible and punishable in accordance to the Bodong, rather than a resentful divorce sparked by a conflict or resting on fundamental differences.
The data provided by the NCIP asserts that the ancestral domain of Sumacher covers an estimated 10,009 hectares, approximately 95% of which are considered densely forested lands; certain classified as “virgin” or antique forests, which constitute rainforests, notably composed of fruit trees and coffee shrubs. Springs and creeks abound, supplying irrigation and potable water for the iSumchaer, which subsequently serve vaster territories and expansive numbers of people in lower parts of the Kalinga Province and island of Luzon. Their ancestral domain constitutes the headwaters of several dominant water courses of the municipality of Tinglayan. It is bound to the East by the ilis/barangays of Fangad/Bangnad (Sumacher) and Tongrayan/Tinglayan in the municipality of Tinglayan; to the West Faratoc/Balatoc, located in the municipality of Pasil; to the North by Uma, located in the municipality of Lubuagan; and to the South, Chananaw/Dananao. Its territory encompasses Mt. Achamayan/Cadamayan, Mt. Fassog, Mt. Angkutiti, Mt. Iyukan and Mt. Antamok (the latter shared with the sub-tribe of Uma, Lubuagan), and Mt. Finurawan (shared with Chananao/Dananao) (KALAHI-CIDSS Report, 2015).

The ancestral domain of Turkaw comprises a total of three ilis distributed across two municipalities over 10,739 hectares. The Turkaw tribe settled in the ilis of Tulgao East and Tulgao West, located in the municipality of Tinglayan, before migrating to Korayo in 1928, found within the neighbouring municipality of Pasil. Barangay Nambaran, located in Tabuk City, is considered an extension of their subtribe’s ancestral domain. According to the 2010 census led by the NSO, Tulgao East was composed 535 indigenous persons, Tulgao West encompassed 556, and Korayo 367. The watershed of Turkaw’s ancestral domain, located within the municipality of Tinglayan, is demarcated by a drainage system divided by Mount Mauban, which flows to the Northwestern extremities of the Kalinga province into the Pasil River and to the Southeast into the Tinglayan River. Both ultimately join the Chico River, which then drains through the Cagayan Valley, into the Babuyan Channel following a dendritic pattern, circumventing the volcanic peaks of Mount Mosimus and Mount Binulauan (Alangui et al., 2001: 31). The water usage and consumption of Turkaw, including local exploitation of forests and agricultural lands, thus significantly affect the water quantity and quality of a considerable number of people in lower-lying territories, whilst Korayo encompasses 18 watersheds. The ancestral domain of
Turkaw covers a total land area of approximately 22,000 hectares (NCIP in collaboration with CHARMP2, 2010).

The ancestral domain of Guinaang consists of five ilis, namely Galjang, Vagtayan, Guinaang Proper, Pugong and Malucsad, which encompass an area of approximately 7,266 hectares. The ilis of Vagtayan, Galjang and Guinaang Proper, selected for this academic study, comprise respectively 1,523 hectares, 3,829 hectares and 390 hectares of land, according the Ancestral Domain Sustainable Development Plan (ADSDPP) produced by the NCIP in conjunction with the CHARMP2 project in 2015. The Tabia River, which flows through the ilis Vagtayan and Pugong, contains several freshwater varieties of igat (eel) and ugadiw (gobby).

5.2 Indigenous References of Climatic and Environmental Changes or Variations

Temporal markers of seasonal and climatic change embody accumulated historical and experiential knowledge. These references appear somewhat tailored to, or consistent with particular geophysical contexts. Far from definitive truths, however, these present local indicators of climatic and environmental characteristics, designs or motions, which may emphasise interesting correlations, highlight significant ecological moments or ascertain suitable periods for the commencement or closure of particular livelihood activities. Whereas these historically and customarily regarded agricultural production, hunting and gathering, they may further designate opportune times for additional economic activities intended to complete or enhance household incomes. These evoke interactive and co-dependent relations suggesting that individuals and indigenous societies strategically adapt to circumstantial possibilities, through linguistic signals designating relevant timeframes from regular climatic or ecological occurrences.

Indigenous terminologies thus simultaneously identify and qualify the correlation of particular environmental and climatic characteristics with suitable livelihood activities. Such vocabulary translates seasonal phases and climatic conditions, the growth stages and migratory patterns of wild animals, the development of aquatic creatures, birds, insects and
rodents, as well as the evolving and diversified needs of the sociocultural and biological processes inherent to human life (Magannon, 1984). The personal livelihoods and communal activities of the indigenous peoples of Kalinga arise from, and therefore reflect, the known or anticipated opportunities presented by their surrounding environment. As told by Lawless (1937), Kalingas once solely relied on the physical characteristics of land and climatic conditions, as well as the growth of rice, to regulate the local livelihoods; “there was no concept of the week, no names for the days. Traditional months, of which there were 12 or 13, varied in name. Often, the same name meant entirely different months in different [places]” (Lawless, 1937: 76).

The vernacular definitions of seasonal periods and regularities conceived as the structuring conditions and opportunities established through the cycles of meteorological and ecological transformations for human activity, explicitly correlate nature to culture. The dynamics and tensions relative to the occurrence of water, embedded in the defining appellations and emblematic features of these vernacular timeframes, convey the experiential knowledge that historically synchronized communal existence, regulated by an inherently rational and systematic conception of people, time and space.

5.2.1 Vernacular Definitions of Seasonal Periods and Regularities

Two prominent seasonal periods prevail in Kalinga: Akilid and Chakun. The term Akilid refers to what is otherwise known as cold and rainy season, a period renowned for cold temperatures, abundant precipitations, typhoons, swollen brooks, muddy roads, landslides and brisk winds. A time renowned for abundant and frequent precipitations, when water inundates rice terraces, flooding their banks and breaching their embankments, Akilid announces the required divergence of water to prevent the erosion of rice fields. Magannon (1984: 238) additionally conceives this period by the abundant growth of mountain vegetation and decaying wood in the forests, through which mushrooms may blossom and sprout. Chakun refers to the communally termed dry season and defines a period renowned for prolonged sunshine and heat. The short and heavy precipitations that typically occur during this period entail frequent and occasionally enduring water scarcity. Certain trees, shrubs and flora wither, whilst others bloom and bear fruit. In Sumacher, Guinaang and
Turkaw, these two overarching seasonal periods encompass a twelve-month cycle akin to the Gregorian calendar.

In Guinaang, a period that corresponds to January locally known as *Iniling*, refers to *iling*, a descriptive term for the soft dirt or mud which penetrates the skin of a person’s feet and forearms during the conduct of *chos-chos* (a word designating the manual ploughing of the rice fields with one’s feet) as well as from cleaning, clearing and planting rice fields. *Il ing* further refers to the accumulated dirt on the skin ensuing from a reluctance to bathe due to the cold weather and water, whilst inaugurating the manual labour required for planting Unoy rice, a deliciously fragrant and commercially valuable variety of red rice harvested in six months later (during the month of June). In Sumacher, January corresponds to *Lachaw* or *Lachao*, a time when the *Lachaw*, a fruit-bearing tree, blossoms. Similarly known as *Lachaw* or *Lajaw* for the indigenous peoples of Turkaw, this period also corresponds in both cases to the beginning of irrigated rice cultivation. The planting of rice seedlings, scheduled on the last week of this month, may take several days or weeks, depending on the number and size fields one may possess. The Turkaw expression “tumacchang nan achao” further associates this period with the appearance of small edible frogs.

February, in Sumacher, correlates to the term *Manafa*, which literally means, “to become robust”, which speaks of the local vegetation’s growth and strengthening, whilst explicitly designating the time when the Manafa tree flowers. This period additionally marks the commencement of manual rice field weeding, a task usually performed by older women gifted with the experiential knowledge for the careful identifying, picking and plucking the undesired plants and pests from the young recently planted rice seedlings (an activity termed *sakamsam* in the Sumacher dialect). In Turkaw, *Marawha*, means “to become fat”, representing a period when the “pregnant rice” exposes its fruit, when the leaves sheltering the grain unfold. As the density of the rice grains increases, the stem gently curves, which indicates that harvesting shall soon begin. *Marawha* is also a time for *Lichas*, meaning the cleaning and clearing of weeds from the edges and walls of the rice fields. Between the

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41 A soft stone called *ikod* is used to scrub off the dirt, which otherwise causes the skin to crack.

42 This term and definition comes from three focus group discussions conducted by Grail Lawagan Chulsi between the years 2010 and 2017. The results of her study shall appear in a forthcoming publication.
periods of *Lachaw* and *Marawha*, farmers previously weeded their rice fields (*Mantabtawha ran ilag* in the Turkaw dialect). However, the Golden Cohol, a snail locally known as *Taiwan*, reduced the time previously dedicated to this task since these molluscs eliminate weeds as they fed. Their indiscriminate feeding habits, however, threaten the rice seedlings and may therefore compromise a farmer’s harvests. By eliminating potential or actual food sources of other creatures and destroying the natural microhabitats they use as nesting grounds by, these snails have further prevented from thriving in irrigated rice paddies. These creatures are thus manually removed from the rice fields by men, women and children on a regular basis and ingested. In Guinaang, *Eyang*, which means to “step over little water”, represents a common practice of this particular time, known for cold water streams and rivers. It is also the time for men and women to weed their rice fields, or “Sagamsam”.

The praised and valuable aromatic red rice named *Unoy* is typically planted during the months of January or February, and harvested in June or July. For those inclined and appropriately disposed, a second crop of the Oyak variety may additionally be planted in July or August, and harvested in November or December. A glutinous variety known as Day’kot/Chay’kot/Chay’ot\(^{43}\) and cherished for the production of rice cakes, or a fermented alcoholic beverage commonly known as rice wine may at once be planted during the first and second crop, in both wet and dry agricultural fields.

March, in Sumacher, corresponds to *Achawoy*, a term referring to the blooming of the Achawoy tree. Praised for possessing medicinal properties, the *Achawoy* has been used during birth rituals as a symbol and a means of granting good health to a newborn child (Lawagan Chulsi, forthcoming). It further initiates the watering of irrigated rice paddies (termed *idchadchanum* in the Sumacher dialect). For the iTurkaws, the period of *Achagwoy*, which translates as “to grow fast and tall”, reflects a critical development stage of agricultural crops. It further marks the beginning of *kaingin* (swidden farming), initiated through controlled forest fires intended to eliminate weeds and grasses, whilst producing

\(^{43}\) All these terms refer to an identical rice variety in the Kalinga dialects of the subtribes with whom I collaborated throughout this study (namely Sumacher, Guinaang and Turkaw).
ashes later dispersed throughout the uma (kaingin lands) to augment its soil’s fertility. Similarly, in Guinaang, the Lachaw period identifies the beginning of kaingin, through the enactment of *tomolva*, which entails the cutting of selected trees by person who seek obtaining exclusive although temporary rights on a swidden land. This time is also renowned for intermittent showers and drizzling rains, occurring sporadically and for varying durations of time. Lachaw implies warmer climate, offers suitable conditions for gathering rattan and lumber and is considered a convenient time for hunting wild animals.

*Aker* in the Sumacher dialect (associated by participants to the month of April) stands for a seasonal period renowned for climatic variations and instability. The term reproduces the loud “roaring” sound of engorged rivers, recalls the vernacular word for precipitations, umatikerker, the irrigation process known as *fasfasali* (which shall later be discussed at greater lengths) and the swollen eyes from sleep deprivation, known as *futi-kerker*, associated with the performance of *fasfasali*. Known as Aer in Turkaw, the vernacular term for “opening”, this time simultaneously reflects the lack of sleep and water – the former testifying for the open eyes of those who once took turns, day and night, watering their irrigated rice fields, whilst the latter evokes the physical path created from clearing and unblocking the irrigation canals for the water to reach the terraces. The term Aer, thus, refers to a system known as *Whatwhatug* in Tulgao East and West according to which irrigated rice fields are continuously tended to secure the fair access and distribution of scarce irrigation water, infamous during the *Chakun* (dry) season. This period requires substantial weeding to avoid the attack of field rats, which may invade the paddies once the rice grains have ripened. In Guinaang, a period known as *Ititi*, estimated to concur with the month of April, derives from the word iti, meaning “moving” or “to move”, which reveals the considerable work people must accomplish during this period of time; pre-eminently for the harvesting of the Unoy rice variety. Once complete, the women must pound the unhusked rice (*palay*). Men, women and children additionally clean and clear the irrigation canals and terraces of agricultural residues, then plough and plant Oyak rice, a long and slender indigenous variety of white rice suited to cooler climates and rain. Swidden fields

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44 A more detailed account of this shall follow.
must then be prepared for planting. The term *Iti* also mimics the sound produced by the drying leaves on which people step during this period. This association reveals an observable, and thus significant increase in temperature.

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45 These tasks may however begin the following month, depending on weather and environmental conditions (such as damaged irrigation systems and landslides caused by typhoons), particular situations that may impede the farmer’s capacity to tend his fields (such as an illness, death, birth, etc.), the numbers and availability of household members, relatives, community members and laborers, as well as the size, location and disposition of one’s irrigated rice paddy. These elaborate climatic and environmental timeframes resemble the intermingling sociocultural and natural cycles exhibited in the indigenous calendars governing irrigated rice cultivation systems and practices of the neighbouring Ifugao people of the Cordilleran highlands in Northern Luzon (Acabado, 2013; Acabado & Martin, 2016). The Imong also refers to the formally recognized Sustainable Traditional Indigenous Forest Resources Management System and Practice. These elaborate climatic and environmental timeframes resemble the intermingling sociocultural and natural cycles exhibited in the indigenous calendars governing irrigated rice cultivation systems and practices of the neighbouring Ifugao people of the Cordilleran highlands in Northern Luzon (Acabado, 2013; Acabado & Martin, 2016). The Imong also refers to the formally recognized Sustainable Traditional Indigenous Forest Resources Management System and Practice of the indigenous communities of the municipality of Pasil. The indigenous people of Pasil, in fact, pioneered the documentation and official acceptance of its foundations and functions in Kalinga based on extensive research conducted by local indigenous scholars. In a similar manner, the Bontoc Forest Code of Mountain Province (Philippines) declares forests essential to the water conservation and management, notably asserting that tree cutting must exclusively provide essential products for Bontok individuals or families (Manochon, 2010: 124). *Salung* is the local indigenous reference for pine tree in the Kalinga dialect of Guina-ang (Galdang, December 2015). Certain ancestral domains have, however, adopted customary laws preventing the use of certain chemicals such as chemical pesticides and herbicides to prevent pollution, illness and death. This is notably the case of the ancestral domain of Sumacher. These, as previously mentioned, constitute the traits of leadership. As leader, one earns respect and admiration from others. The act of stealing water is called *as’iw-on*. The absence of references for Turkaw does not reflect the inexistence of such practices, but my failure to collect this information when conducting fieldwork. These practices recall the *oblis* system “based on cooperation, fairness, equality, malleability and sharing” performed by the Bontoc of Mountain Province (Philippines) during the yearly dry season in response to the declining irrigation water supply, according to which rice field owners determine a schedule and water their fields in alternate turns, day and night (Manochon, 2010: 126).

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45 The two words represent a single concept. The distinction merely reflects dialectic variations amongst Kalinga sub-tribes. *Lang-as/Lang-kas/Langkat* are identical terms reflecting the particular dialects of Guinaang, Sumacher and Turkaw. Both terms refer to the Kalinga God, but according to the dialects. Similarly, the Isneg/Tingguian people of Abra Province impose taboos within a designated area, which prohibit the access, use and consumption of natural resources such as rattan vines and lumber of targeted forestlands, aquatic creatures or products from designated rivers, as well as swiddening, hunting or fruit gathering in specific locations for various periods of time (from months to years) (Camacho et al., 2016: 5). As expressed by the aforementioned authors (*Ibid.*), “the mechanism and processes through which water grabbing takes shape in practice, such as everyday politics and the role of water technologies, would also deserve further scrutiny and theorisation, but are outside the focus of this current article”. By repeating their
In Sumacher, the term *It’iti*, estimated to concur with the month of May, characterises a seasonal period renowned for water scarcity. Seeing as *It’iti* recalls the word *titi*, referring to water drops or dripping water, the term speaks of the meticulous division of scarce quantities of irrigation water between rice paddies. In Turkaw, like in Sumacher, *It-iti* also designates the chirping sound made by bird known as Tilin, which typically attack rice fields during this period. In Korayo (an ili of the Turkaw), this time consequently requires weeding and erecting scarecrows next to rice terraces. It additionally constitutes an appropriate time for catching aquatic and amphibious creatures such as tadpoles, *ukachiw*, *chalit* (eel), *kagong* (crabs) and frogs. Whilst these species can still be found, their numbers have been declining. Guinaang, conversely, recognised this period as *Upu’*, which identifies the volatile dust produced when stepping on beaten earth pathways, characteristic of the noticeable heat and aridity experienced at this time.

*Waru*, in Sumacher and *Gwarhu* in Turkaw equates to the month of June. Replicating the sound thunder, these designate a seasonal period renowned for rainstorms and hail termed *Charraru* in the Sumacher and Turkaw dialects. *Gwarhu* is further said to derive from the term *waro*, meaning pestle, which is used to pound the harvested *palay* (unthreshed rice

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Cuyop, October 16, 2016 in the Northern Dispatch Weekly; See, 2011 in the Baguio Midland Courier; Sinumlag, April 20, 2014, Kalinga shines in struggle, save the homeland vs corporate plunder - Northern Dispatch Weekly

Minutes of Meeting for the Conduct of Preliminary Consultative and Concensus Building Regarding the Kalinga Geothermal Project held at Colayo, Pasil, Kalinga on February 28, 2007: 2

Executive Summary of the Free and Prior Informed Consent Process for the Proposed GMC-APEC Geothermal Project in PAsil and Tinglayan, NCIP Kalinga, pages 14-15

Minutes of Meeting for the Conduct of Preliminary Consultative and Consensus Building Regarding the Kalinga Geothermal Project held at Colayo, Pasil, Kalinga on February 28, 2007: 33

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Preliminary Consultative Meeting, August 1, 2016, pages 17-18.

Executive Summary of the Free Prior and Informed Consent Process for the proposed GMC-APEC Geothermal Project in Pasil and Tinglayan, page 27


The NPA wishes to overthrow imperialism, feudalism and bureaucrat-capitalism for the establishment of a people’s democratic state (Casambre, 2005 in Glatz, 2011: 64).

grains, called *pacoyn* in the Turkaw dialect). In Guinaang, this period is known as *Achawoy/Achag’woy* in honour of the blossoming Achawoy tree. It is also considered the time for harvesting planted vegetables, legumes and seed stocks, alike in the ancestral domain of Turkaw, and for the preparation of the *payotok* (dry seed bed area) for the second cropping of the Oyak rice in the irrigated rice fields.

In Turkaw, *Whiswhis* or *Whiswhis’ay Luya/Luja* refers to a seasonal period akin to the month of July. The words *Whiswhis* and *Whiswhis’ay* define the strong winds, intense labour as well as the relentless thirst characteristic of the harvesting period, which occurs at this time. When two crops were planted in Tulgao, the preparatory works for the second crop would begin once the rain had fallen, planting once the fields were ploughed. A pearly, elongated, and slender rice variety known as Oyak was traditionally cultivated and harvested in November or December. In Guinaang, *Alla’jog/Alla’chug* was the reference previously coined to define a “very busy period” associated with weeding, ploughing, transplanting the rice varieties of Payyotok and Uyak, harvesting as well as a pounding the unthreshed rice required to feed the people working in the fields. The terms *Allajog/Allachug*, further identifies a time when the water “leaps” from engorged rivers and creeks, reaching spectacular, if not frightening heights for whoever may venture too close. Otherwise known as *Alachug* in Sumacher, this period indicates the appearance of a black bird, which marks the end of agricultural harvests.

August, in Sumacher, corresponds to *Luya*, which evokes arduous works, powerful winds and stringent work, as conveyed by the saying “*Kumiya kiyang nan wain tan chinaker***” for the “loud roaring sound of the water in rivers”. In Turkaw, this time is called *Whiswhisay whiyag*, meaning to grow in abundance. It also announces the continued harvesting of rice as well as the onset of the legume harvest. In Guinaang, this period at once refers to *Waloy* and *Fis-fis*. The latter speaks of the distinctive winds described by others above, whilst the former, *Waloy*, meaning 8, designates the rows (*sapad*) of banana bunches harvested at this time of the year.
*Fisfis* in Sumacher, refers to the strong winds and occasional showers of a seasonal period appropriate for vegetable planting through *kaingin*, which corresponds to the month of September. In Turkaw, *Arachug Piranchay*, or *Arachug* identifies a blue bird with a recognisable chirp, which previously initiated ploughing duties, whilst identifying a convenient time for firewood gathering due to the cooling weather and imminent rains. Once the rain fell, vegetable planting in swidden farms typically began. Known as *Akal* in Guinaang, this time means flowering plants start withering.

*Kiniling or Il-iling*, in Sumacher and *Iriling*, in Turkaw, refers to a seasonal period akin to October when people gather around a bonfire in response to the increasingly cold weather. The name specifically identifies the skin (dis)colouration which occurs when exposed to an open fire. This period is additionally known as the transition from the summer/dry season to the winter/wet season. Fruits usually ripen from *Iriling* (October) to *Oppuc* (November), or during *Eyang* (December) in Turkaw. In Guinaang, this period refers to *Chang-chang*, a time for people to clean the irrigation dikes of their rice fields, and harvest beans or vegetables from the *Uma*. *Chang-chang* describes the ripening of the *palay* from the sun as the yellowing effect produced by the heating flames of a fire. The *palay* is *machan’chang*, meaning “ripened from the heating rays of the sun”. *Chang-chang* otherwise consists of a drying process conducted through the heat generated by fire, as you may, for example, *chang-chang* wet clothes.

In Guinaang, the month of November roughly corresponds to a period entitled *Manafia*, meaning “to become fat”, for the bountiful and plump game observed at this time. Wild pigs and dears usually gain weight during this period, whilst fruits typically ripen and expand in size. This term is akin to *tafia*, meaning robust, fat or healthy. It is also the moment for harvesting *palay*, later dried by using the *Aloy*, a structure made from sturdy bamboo sticks (*Vulo*) tied to poles. Moreover, the term *Ajaw* or *Achaw* consists of the indigenous definition of toad in Guinaang, which marks the appearance of a forest-dwelling amphibian. Termed *Upú* in Sumacher, this period refers to the gathering of people around a bonfire, as reflected by the saying “pukupuk nan man-anichu” (“to gather around a bonfire”), whilst in Turkaw, *Upú* designates a time for sowing rice seedlings. *Upú*
translates, for the latter, as the straight lines formed by the planted rice grains. This period further refers to the commencement of tilling the irrigated rice fields manually (by men or women), with hand tractors, or Carabaos.

December, in Sumacher, is termed Kiyang (pronounced kijang) and known in Turkaw as Ejang or Eyang, translates as “to step over” in both dialects. This more specifically reflects the compulsion of traversing rivers and creeks by carefully stepping over stones or branches to avoid touching the water. This time is renowned for being particularly cold. Temperatures typically drop at sunset and progressively increase at sunrise. People of Turkaw continue ploughing and clearing their rice fields. Although planting usually began towards the end of Ejang/Eyang (December), or at the beginning of Lachaw/Lajaw (January), it now starts in February. Gathering of fire wood, and rattan in the forests. It is also a suitable time for hunting wild birds. In Guinaang, this period was previously entitled Luya in reference to the mud created by the rain, named as such. It, moreover, announces the preparation of seedbeds for the cultivation of Unoy rice, followed by the necessary undertakings for the planting of vegetables and legumes in the Uma (swidden lands).

5.2.2 Inapplicable Knowledge in Unpredictable Times

Seasonal calendars embody sociocultural definitions of climatic and environmental change, highlighting standards or contexts of normality. They further constitute the product of historically informed and locally grounded experiences, enshrined in a collective body of knowledge, which underlie subsistence rationales, strategies and practices. As demonstrated above, their terms uncover the interactions whilst qualifying the coalescence of nature and culture (Cochran et al., 2016). The associations these identifications, signals or markers unveil shed light on an indispensable relationship to the production and sustenance of indigenous livelihoods.

The vernacular definition of time in the Kalinga dialect indeed reveals the interwoven and dynamic constitution of indigenous livelihoods with their surrounding environment. These mark periods of seasonal change, stressing the potential livelihood activities favoured by certain meteorological conditions or in accordance with the development cycle of the
surrounding fauna and flora, particularly when contemplating how such references influence agricultural practices, considering the favourable circumstances, adequate water and clement weather required for prosperous harvests. These expose the subtle or unapparent livelihood constraints generated by climatic perturbations, as well as the adjustments or compensations required to mitigate the misfortunes such occurrences may entail (Anik & Arfin Khan, 2012: 893). Whilst contextually specific, this calendar resembles those crafted by multiple other indigenous peoples around the globe (Sánchez-Cortés & Lazos Chavero, 2011).

The indicators announcing compatibility of sociocultural practices with particular climatic and environmental cycles, like the indigenous seasonal timeframes investing these linguistic references with practical significance, have progressively faded or disappeared from common discourses in Kalinga. As explained by Crate (2011: 180), studies in ethno-climatology clearly demonstrate that climatic and environmental changes increasingly skew the predictive capacities of indigenous peoples. Substantiating these claims, Mapfumo, Mtambanengwe & Chikowo (2016: 75-77) contend that the climatic and biological indicators upon which indigenous climatic references hinge no longer reflect current meteorological and environmental conditions as exemplified by a case study conducted in southern Africa:

major rainfall regimes that had traditionally been given names, because of their distinctive times of occurrence as well as their significance to the communities’ livelihood activity calendars (primarily agricultural), were perceived to have significantly changed (Ibid.).

As unpredictable and erratic weather undermines the correlations that indigenous climatic forecasts mobilise, particularly with respect to precipitations, existing knowledge has become deficient or impractical, which concurrently disrupts planting schedules, and jeopardise the viability of preselected plant species or varieties, and prevent the development of appropriate adaptive strategies (Valdivia et al., 2010). The loss of such vernacular definitions exposes the profound sociocultural, climatic and environmental transformations, which appear radically different, in terms of time and scale, from those
encountered by the forefathers of the indigenous Kalinga people. Such discrepancies underlie water insecurity, experienced as the mounting uncertainties enabling indigenous persons and people to anticipate and strategically adapt to circumstantial, periodic and irregular environmental and climatic changes. The loss of such predictive capabilities, consequentially, compromises their ability to secure appropriate quantities of water in sufficient quality at convenient times to produce and sustain their physical and sociocultural existence (as persons and people). As precipitations occur at increasingly unpredictable rates, in unusual frequencies, patterns and intensity, the traditional Kalinga calendar, which coordinated the umili’s livelihood activities with sanctioned climatic and environmental forecasts, seems increasingly untenable. By hampering a structured, although dynamic collective timeframe articulated around the meteorological data accumulated for centuries on the specific environmental and climatic conditions of a given locality, these erratic or relatively unpredictable changes prevent the coordinated efforts that previously sustained productive agricultural activities, and which could otherwise reduce current risks. Moreover, the absence of efficient and reliable cellular networks throughout the Kalinga highlands, particularly in remote barangays located beyond the range of the telecommunication towers stationed at lower altitudes, hampers the broadcast of information providing detailed explanations of climatic conditions and projections.

Unpredictable forecasts, moreover, heighten the vulnerability of small-scale irrigated rice farmers, since these simultaneously persuade tenants of irrigated rice paddies considered susceptible to drought or households incapable of withstanding potential agricultural losses to abandon their fields, thus relinquishing their obligations to maintain, repair and sustain the communal irrigation canal. When unattended, these usually attract pests and rodents that may prey on neighbouring lands. These risks multiply if a person farms alone, since these predators shall exclusively feast on their crops rather than on those of all other farmers, which therefore increases the necessary labour required to protect individual fields, whilst compromising agricultural production.

Warmer weather additionally increases evaporation, which augments irrigation needs, whilst diminishing the available sources of water. Swidden agriculture, exclusively reliant
on rain, significantly suffers from the mounting temperatures experienced in Kalinga. Although certain root crops, such as *camote* (sweet potato), may endure water shortages, legumes and vegetables may perish in times of scarcity. The loss of agricultural products translates as a significant income deficit and irrecoverable time invested towards financial gain, jeopardising the ability of parents to support their children’s education, the purchase of medicine or food. Whilst these atmospheric conditions accelerate irrigated rice production, they nonetheless reduce the supply water. As rain supplements the rivers, creeks and springs that nourish the terraces, their disparity and increasingly unpredictable occurrence trouble customary patterns. Climatic and environmental changes have thus been proven to hamper adaptive livelihood strategies and threaten subsistence activities by compromising the multi-scalar coping or adaptation mechanisms or strategies deployed to cope with such changes and fluctuations.

### 5.3 The Irrigation Water Governance Systems and Practices of Sumacher, Turkaw and Guinaang (Kalinga)

The customary water governance systems and practices of Kalinga provide an eloquent demonstration of the decisive functions served by indigenous knowledge as well as the pertinence or utility of contextually fitted sociocultural and environmental management schemes for water security. The investigative lens adopted in this qualitative work further sheds light on the vision of continuity, rather than opposition, that shapes their understanding and interactions with nature – a concept encompassing all non-human, living and inanimate entities that compose their ancestral domain – whilst exposing the sources, local expressions and experiences of water insecurity. In order to demonstrate and insist upon the value of such understandings, four components of the indigenous water governance of Kalinga are explained: the protection of watershed areas; the distribution rules, principles and modalities of water for irrigated rice cultivation; the definition and enactment of water rights; as well as the coping and adaptation strategies in times of water scarcity.

#### 5.3.1 The Protection of Watershed Areas

the indigenous Kalinga concept of land is built on a complex but coherent body of customs, traditions and practices (…) [according to which] nobody can claim absolute ownership. Only Apo [grand-father] Kabuniyan – the Supreme Deity – owns the land, including water and mineral resources. The Kalinga, therefore, see themselves not as owners, but as caretakers of divine lands. To the Kalinga, land is not only sacred; it is also the basis of their existence. (…) Land is their source of life; the basis of their material production and economic sustenance.

The Imong and Pinawa constitute the prevailing indigenous systems protecting forested lands and watersheds in the ancestral lands of Kalinga, establish the individual and communal rights and obligations of indigenous peoples towards their ancestral domain. These, moreover, expose the holistic conceptions of environmental governance and water security of Kalinga, which further demonstrate the value and pertinence of customary law.

a. The Imong System

The Imong is a term designating the land and environmental management system determined by the prevailing customary rules and governing principles of the Kalinga Bodong. It simultaneously reflects a right and obligation to use the land and its resources prudently in order for these to sustain the lives of present and future generations, whilst abiding to the possibilities, potentials and constraints determined by the geophysical, biological and climatic conditions of their ancestral domain47.

Lands, which are categorised according to their geophysical disposition, location and composition, may be private or communal properties owned by individuals, households, families/clans or subtribes. This classification system recognises seven categories, distinguished and designated in accordance with the prevailing dialects of the participating Kalinga subtribes: Kinufat/Guinuvat/Kiruhuat (forests); Uma/Uva (swidden lands); Torfa/Torwha; Purag (grazing lands); Payao/Payaw/Pajaw and Papayaol/Papayaw/Papajaw (respectively the singular and plural term for rice terraces); and Saad/Ha-ad (residential lots).

These definitions translate the interactive and interdependent relationship of people and place. It further underpins the very meaning and performance of development in a context
of human settlement. Rather than a dualistic conception of nature hinged on a contrast or competitive opposition in which humans would consider the domestication of their surroundings as an indispensable prerequisite to civilisation, the Kalinga people endorse a symbiotic definition of humanity with all non-human, living and inanimate entities with whom they coexist. This conception of the inherently amalgamated and interdependent constitution of life is, in other words, depicted as an elaborate network of interactive and dynamic relationships that simultaneously impose, through structures and limitations, conditions to harmonious coexistence whilst offering opportunities presented by circumstantial events or situations for respectful or mutually beneficial development.

Emblematic of the indigenous values promoted by the Kalinga bodong, the Imong endorses greater consideration of the far-reaching implications, effects and repercussions of human activity, exceeding those immediately visible, or specific to a particular land or practice. Sustainability, therefore, requires a comprehensive assessment of the process and expected outcomes of human-nature interactions. This must accordingly be founded upon the potential impacts of provisional or permanent modifications to ancestral domains. When contemplating these possible effects, one must look beyond the present, by considering the conclusions drawn from previous misfortunes or mistakes, as well as forthcoming generations. The dwelling spirits (anitos) and immaterial beings that inhabit the ancestral domain of Kalinga must feature amongst such deliberations as well.

This overarching indigenous government framework notably transpires from swidden agriculture. Otherwise known as shifting cultivation or kaingin, this practice essentially consists of clearing and clearing lands in order to farm commercial vegetables, legumes, root crops and upland varieties of dry rice on lands titled uma in Guinaang and Sumacher, o-or-atan, in Korayo (Turkaw), and uva in Tulgao East and West (Turkaw). Occupation and use typically substantiate property claims in accordance with a “first come first serve” principle. Once abandoned (when harvests are complete), these become communal pasture lands for grazing cattle. Whilst temporarily entrusted to the tiller, these lands, however, remain the public property of the umili. The umili remains, therefore, responsible for any accidental damages caused during private tenure, such as from a fire ignited during the
performance of such agricultural activities when privately cultivated or any damages incurred to surrounding landed properties by grazing animals when public. They shall collectively submit to the penalties imposed to the perpetrator – including the payment of fines and the restitution of damaged properties, regardless of their direct involvement. The *Imong* further prohibits shifting cultivation within watershed areas and near water sources, for the potential damages unfortunate accidents might cause, a restriction collectively enforced for the umili’s safety.

The definition and use of lands in Kalinga thus comply with a strict set of boundaries, circumscribed by virtue of their geographical situation, their physical content and in correlation with the humans and non-humans with whom these lands are shared. Kalinga forbids absolute judicial autonomy over private allotments beyond restrictive conditions selectively restricting their access, use and management by stressing the inherently communal definition of all that comprises their ancestral domain.

**b. The Kinufat (Sumacher), Kirhuwhat (Turkaw), or Guinuvat (Guinaang)**

The *Kinufat* (Sumacher), *Kirhuwhat* (Turkaw) or *Guinuvat* (Guinaang) represents communal forestlands located at the headwaters of the rivers, brooks and creeks supplying potable as well as irrigation water to the ancestral lands of Sumacher, Turkaw and Guinaang. The *Kinufat/Kirhuwat/Ginuvat*, considered integral to an ili, belongs to, and must therefore be protected and sustained by the umili. As the formal custodian of communal forested lands, the umili must, accordingly, enforce the *pagta* of the Kalinga *Bodong*, for the failure to do so may compel interventions by neighbouring communities. These regulations include definitive prohibitions applied throughout the ancestral domain of Kalinga as well as specific requirements tailored to the particularities of an umili’s geophysical, historical, socioeconomic and demographic composition.

The *Imong* prohibits tree cutting near creeks and within watershed areas, on steep slopes, in densely populated forested areas and designated resting areas. The regulation further prohibits giving, selling or exchanging forest products (timber and non-timber resources). The forests must exclusively serve the umili, subtribe or ancestral domain of Kalinga - in
the aforementioned order of priority and in accordance with the purposes these extractive activities intended serving. Selected tree species of a particular condition (including age, width and size) may only be cut for the construction, development and repair of local infrastructures (such as houses and rice granaries), as well as the fabrication of necessary domestic and agricultural products within authorised lands. Whilst one may perform such activities within the delimited boundaries of privately owned woodlots, forest products must necessarily serve the immediate and practical needs of local residents, thus restricting the access, use and consumption to the exclusive, personal or collective property rights of the *umili*.

Exceptions may occur if the community agrees that a person or household is in dire need of income, provided that the timber or forest products extracted remains minimal and unearthed from private woodlots, sold within a delimited area (typically restricted to provincial or regional boundaries), approved by the council of elders representing the concerned indigenous peoples, performed in a respectful and sustainable manner, overseen and supervised by the community. Infractions to these rules entail proportional fines and compensations.48

c. The Sasalung (Guina-ang), Whur-whur-li-hur (Colayo), and Pirawha (Turkaw)

The *Sasalung* (Guinaang), *Whur-whur-li-hur* (Korayo), *Pinawa* (Sumacher) and *Pirawha* (Turkaw) refer to lower-laying forested lands dominated by naturally grown and planted pine tree species which may either belong to individuals, families or clans. These appellations further determine the necessary conditions and procedures for converting communally owned forested lands into private property, as with the ancestral domain of Turkaw. As such, the *Pirawha* (Turkaw) and *Whur-whur-li-hur* (Korayo) identify the exclusive ownership rights of the persons who plant pine or fruit-bearing trees. This designation restricts the access, use and consumption of potential forest products belonging, by virtue of this rule, to a single person or household. *Kailians* (*umili* members) and *binudongan/binodongan* (persons belonging to the same ancestral domain) must consequently request the authorisation of the recognised *pinawa* owner (*sinpanawa*). Whilst previously
reserved to lands located near a person’s dwelling, the pinawa system currently applies to any lands found within a person’s ili.

The Sasalung (Guinaang) and Pinawa (Sumacher), otherwise designate the exclusive property rights of households, families or clans who cultivate, nurture and sustain these lands. As is the case with Papayao/Papayaw/Papajaw (rice paddies) and Umal/Uva (swidden lands), the appropriation of such woodlots may only occur if the modifications entailed abide to prevailing administrative regulations, and upon the acceptance of the umili. Neighbouring umilis or subtribes may additionally require consultation and approval if the concerned land is located next to their boundary, or potentially threaten the ecosystems or resources of their domain. Land conversions must therefore simultaneously abide to customary and constitutional laws. Acceptance hinges on the applicant's personal situation, the coverage and amount of required work, as well as the requested land’s constitution, actual or potential use and location. These titles reflect the holistic conception of territorial development in Kalinga, as property rights emerge from the contractual agreement that declares one merely tends to a land beheld by the umili, whilst complying with prospects determined by its geophysical situation and composition.

d. Integrated, Flexible and Adapted Indigenous Watershed Management Systems

Indigenous knowledge has been recognised to contribute to sustainability of production systems (Camacho et al., 2016: 3). Far from unique or distinctive amongst other indigenous peoples of the Cordillera highlands, the Imong significantly resembles the natural resource governance systems of Abra (the Lapat), Ifugao (the Muyung) and Mountain Province (the Lampiu). The Imong further recalls the Ifugao muyong system, which literally designates “forests” or “woodlots”, through designated protected areas, composed of the muyong (forest) and the wangwang (river), as well as production areas, encompassing the habal (garden) and the payoh (rice terraces) (Tayaban in Patnugutan, January 1, 2017, in the Northern Weekly Dispatch). The muyong constitutes an integrated farming method, conceived as a “natural regeneration” strategy for efficient watershed rehabilitation and forest conservation (Camacho et al., 2016: 4). The dwelling place of gods and spirits capable of influencing the fate of the people who benefit from its bounties, the muyong
form the watersheds of the extensive irrigation systems of Ifugao, thus invaluable symbolic and physical component for wet rice cultivation (Patnugutan, January 1, 2017, in the Northern Weekly Dispatch; Acabado & Martin, 2016: 312). The prevalent agricultural strategies of Kalinga notably reminds those applied by the Bayyo people of Mountain Province, where irrigated rice fields (payew) incorporated to steep mountainsides through fortified stonewalls, permanent swidden farming (katualle), and shifting cultivation (uma) offer diversified cropping arrangements and patterns that sustain relatively autonomous local livelihoods (Magcale-Macandog and Ocampo, 2005: 118).

As with the indigenous peoples of Bontoc (Mountain Province), the terraced rice fields of Kalinga constitute water reservoirs maintaining relatively constant irrigation supplies throughout the wet and dry seasons, with drainage canals and grasses planted along the dikes of these infrastructures preventing or attenuating soil erosion (Manochon, 2010: 125). Rice terraces have additionally been proven to help regulate and sustain local waters by storing the rainwater and controlling the flows of springs, rivers, lakes and creeks into the surrounding rice terraces (Basco, 2009 in Manochon, 2010: 125). Riprap (as officially termed) or toping (in the vernacular language) designates a traditional stone walling technique integral to local indigenous water governance practices, which consists of building terraces using earth, water and carefully chosen stones from the Chico River, with respect to the pegnad (foundation) of the stonewall, as well as the texture and consistency of the stones, to prevent or diminish erosion (Manochon, 2010: 125).

Alike the Imong and Pinawa systems of Kalinga, the muyong system protects low-lying fields from runoffs and erosion, preserves irrigation and surface water supplies through cloud-interception, stabilizes relative humidity, and improving soil’s nutrients and physical and chemical properties (Acabado & Martin, 2016: 313; Acabado, 2013; Eder, 1982). It further encompasses customary laws pertaining to highland communal forests (inalahan/hinuob), drained terraced fields devoted to the cultivation of vegetables and legumes (na-ilid), swidden cultivation (uma), irrigated rice production (payo) (Acabado & Martin, 2016: 312-313). The Ifugao ala-a, moreover, designates communal forestlands intended for fuel, construction materials, food and medicine administered through
customary laws resembling those governing such territories in Kalinga (Camacho et al., 2016: 5).

5.3.2 *The Access, Use and Distribution of Irrigation Water*

The access, use and distribution modalities of irrigation water encompass several predetermined, consecutive and interwoven steps inspired from historical arrangements, yet moulded to reflect and fit contextual settings and variations. Embedded in the prevailing customary laws and principles regulating communal existence throughout Kalinga, these simultaneously enact sociocultural beliefs or ideals, whilst exposing the finely articulated and proficiently crafted networks unifying and sustaining communal life underpinning water security. These, I argue, form the configurations underscore the resilience of indigenous livelihoods in the wake of the unprecedented meteorological and environmental changes, heightened risks and mounting vulnerabilities unfolding as a result of climatic changes. Six principal customary water governance systems and practices are examined here: the elaborate timeframes and scheduling procedures underlying the allocation of irrigation water in the ancestral domains of Turkaw and Guinnang; the moral obligations upheld in the prevailing distribution modalities of Sumacher; the allocation modalities, procedures and practices used to optimise the watering process and to irrigate the farthest rice fields, as well as the surveillance techniques and enforcement modalities of customary water governance applicable to wet rice cultivation.

*a. Timeframes and Scheduling*

The allocation and distribution of water are decided according to a timeframe or schedule called *Vantu* in Guina-ang or *Whatug* for the iTurkaws of Tulgao East and West, which follows a historically determined order thoroughly applied and respected to this day. The order translates the geographic disposition of the rice terraces with respect the altitude at which it was carved and where it currently sits, as well as their relative proximity or distance with the source and circulation system conveying the required irrigation water. This sequence prevails regardless of ownership and heedless of exceptional circumstances, conditions or constraints that could, otherwise, justify occasional preferential adjustments and disrupt the fundamental equality principle that underpins and legitimises this water government system.
Lands located in close proximity to one another are grouped into divisions. These typically represent a mountain flank, composed of several clustered rice terraces grouped as areas. Areas represent contiguous rice paddies, which access a common irrigation water source through a joint canal made of soil, dirt and rocks or cement, distinguished and identified by the names of the indigenous community’s forefathers. These, thus, recall the ancestral ownership and honour the labour invested in the physical erection of the irrigated rice fields within the divisions and areas. Irrigation canals transports groundwater from highland springs and surface water from rivers, brooks or creeks, supplemented by rain, through a circuitous route across skilfully crafted rice terraces, strategically built to optimize and secure the access to water in sufficient quality and quantity from various sources.

An area’s physical dimension and composition vary in relation to the quantity of water dispensed by the irrigation source, which informed its preliminary design and construction, the water’s path, as well as the size and geophysical arrangement of the rice fields it contains. Irrigated rice fields additionally inherited the names of the forefathers of the clans or families to whom they once belonged. These appellations remain the prevailing identification markers for the irrigated rice areas and fields of Kalinga. Whilst paddies may potentially be given, inherited or sold, they remain within a subtribe’s ancestral domain and collective ownership. Their names, just like the customary rules and principles governing their use or exploitation, transcend the provisional rights of individuals, households and clans. These, consequently, embody the collective and physical memory of the Kalinga people.

The scheduling system involves two consecutive steps. The first regards the distribution of water between the areas comprised within a given division through a prearranged schedule, which determines the exact number of days or weeks for the allocation of irrigated water to all fields comprised within an area. The second establishes the distribution order and timeframe of irrigation water between the rice fields comprised within an area. In this case, the schedule depends on the number, disposition and size of irrigated rice paddies comprised in a given area. All rice paddies must be watered during the time allotted for the
area to which they belong. The geophysical disposition, the particular needs of irrigated lands and preferences of their owners will determine the appropriate watering periods and schedules. Men, women and children may water the fields during the day, but adults typically perform this task at night. In case of absentees, a member of the same area may voluntarily water the paddy as a favour to the rice field owner, since such services may be reciprocated when required.

The cycle according to which irrigation water is distributed amongst the areas of a division as well as the rice fields contained within an area may either follow an hourly timeframe or another synchronised to the motions of the sun or daily subsistence activities. Additional time may, however, be requested by the owners of an area to all those with whom they share the irrigation source in response, for instance, to restricted water supplies occasioned by meteorological abnormalities (such as droughts) to prevent the rapid evaporation of water in critical growth stages, or during dry seasons. Modifications to prearranged water distribution timeframes aim increasing the volume of water allotted to the irrigated paddies of all those accessing a common water source. Whilst the problematic situation of water scarcity may potentially involve a limited number of cultivators, whose fields, for example, could be located at high altitudes or which may require greater volumes of water, this allowance requires the concensual decision of all those sharing the sollicited water source and shall permit the equivalent time allotment to all other areas of the concerned division. Whilst such allowances may ensure a bountiful harvest to some, the extended time lapse may negatively impact the agricultural process of another by depriving rice crops of water at periods or during lengths of time that could jeopardise their productivity. Although this schedule may potentially be negotiated at a later stage, when water is distributed amongst the rice fields comprised within an area, the timeframe which establishes the access rights of a common water source for all areas contained within a division does not allow exceptionnal treatments.

When referring to water distribution amongst the irrigated rice paddies of a unit, the Vanvantu and Whatwhat-tug systems provide prescriptive guidelines for the sequence of water distribution, adjusted to the physical disposition of the rice fields in relation to the
irrigation source. Water is first allocated to the rice fields closest to the irrigation source. Proximity, in this case, simultaneously refers to the physical location of rice paddies in terms of altitude and latitude. Since the headwaters are located on higher grounds, the highest rice fields are watered first. Once the irrigation water reaches an area or unit, the closest rice fields, those immediately next too or directly traversed by the watercourse, are irrigated before those farthest from its outlet, since the former represent the easiest lands to water. The allocation of water then follows a circular motion, serving all rice fields located nearer the water source first and those farthest last.

Several points are noteworthy. Firstly, whilst areas share the water source for equal amounts of time, the rice fields contained in every area vary in size and number. These variations reflect the historical development as well as a location’s environmental and geographic composition. Secondly, a rice field’s location in relation to the source of irrigation plays a critical role in water distribution. This implies that those located farthest from the irrigation source are more vulnerable to water scarcity during dry seasons, whilst those nearer the water source significantly benefit from their advantageous geographical situation. Since the closest area has priority accessing the source of irrigation, they may strategically opt for a night schedule to prevent water lost due to evaporation and to stand clear from the heat of the sun as well as maximise daylight in performing other agricultural activities. Location therefore affects their financial value for it not only influences the price at which these lands could be sold, but also their productivity.

Private and collective agreements are continuously reached as pre-emptive and responsive means of coping with unforeseen meteorological calamities (such as extensive droughts, floods or epidemics) and personal tragedies (such as illness or death) or preferences. These informal contracts demonstrate the flexibility and resilience of customary laws. Such variations must, however, adhere to, and be coordinated with the established timeframe for the access and use of water of all other areas comprised in a unit. Though the order and timeframe may somewhat vary, the alternating principle is maintained nonetheless, as it underlies and determine rights to irrigation water. The irrigation schedule applied to the distribution of water between areas does not, therefore, necessarily guarantee the equal
distribution of water amongst the fields in contains, nor sufficient quantities of water at a
time fitting the needs of the irrigated rice crops, which ensure their prosperous growth.

i. A Case in Point: The Ricefield Divisions and Areas of Bagtayan (Guinaang)

The ili of Bagtayan comprises three divisions. The first encompasses eight areas: Alaongyas, Lisong, Patoklaw, Pa’i-long, Ulok, Tab-bayan, Mang-gal and Amyajao. Malop’lopan Creek supplies irrigation water to the Lisong area, as well as those of Patoklaw and Pa’i-long, separated by Lisong Creek. The Malop’lopan Creek once irrigated the Alaongyas area, now abandoned. The Alangyas Creek supplies additional, yet finite quantities of water to the Lisong area, the lower portion of which encompasses the rice fields of the neighbouring areas of Ulok and Tab-bayan. The Dul-Dul-po-lanas Creek (typically called Duldulpo) supplies additional irrigation water to the areas of Tab-bayan and Ulok. The Pa’i-long area is watered by the Pa’i-long Creek, whilst the Amyajao Creek irrigates the Amyajao area.

The Mang-gal area, which holds the greatest amount of rice fields, is predominantly watered by the Duldulpo Creek. Although abundant considering the size and number of fields contained within the area, the water decreases in volume during the summer. Whilst arrangements must typically prevent conflicts to access, use and manage the water required for irrigated rice paddies, in this particular case, the majority of fields comprised within the Mang-al area belong to a restricted number of people (estimated at three), who may then sacrifice certain fields located the furthest from the irrigation source or outlets in order to guarantee the survival of fewer crops, rather than potentially lose the considerable time, effort and money otherwise required to cultivate the total surface of their rice paddies due to water shortage.

The second division encompasses five areas: Banat, Dap-pay, Iking, Mabulagi and Sachog. The Dul-dul-po Creek waters the areas of Banat, Dap-pay and Iking, whilst the Mabulagi Spring water the Mabulagi area. During the summer, however, this spring no longer exists
and irrigation water is taken from Dudulpo Creek. Sachog Creek supplies irrigation water to the Sachog area.

The third division comprises eight areas: Mabulon, Bagtayan, Jalipoys, Lusob, Pappayao, Jallog, Saloy and Angga-an. The Mabulon area is partly watered by Duldulpo Creek and Mabulon Creek. Mabulon Creek supplies irrigation water to the areas of Saloy and Angga-an. The water source, however, depends on the gradual accumulation of water from different sources before reaching the concerned areas. The areas of Bagtayan and Jalipoy are watered by Sachog Creek, whilst the Amyajaw/Amyachaw Creek waters those of Lusob and Pappayao, located beneath the Bagtayan. The Jalloog Creek provides irrigation water to the Jallog area.

It must further be noted that the potable water of the Bagtayan ili/barangay comes from eleven sources: Mangay-ay Creek, Sangi Creek, Malop’lopan Creek, Pa-i’long Creek, Mang-gal Creek, Mafulaki Creek, Amyajaw/Amyachaw Creek (which, during rainy season, significantly increases), Iking Spring, Mavulon Spring, Longpa Spring and Ang-ga-an Spring. As mentioned above, the Malop’lopan Creek, Pa-i’long Creek, Mang-gal Creek and Amyajaw/Amyachaw Creek also supply irrigation water. Their sources of potable water are, thus, also utilised in certain cases as irrigation sources as well as domestic needs, including for washing clothes and dishes, which poses questions relative to the quality of the used water considering the absence of water treatment and monitoring facilities, regular and systematic water appraisals or State and customary regulations prohibiting the use of certain chemical products.

b. Irrigated Water Allocation

In the absence of such predetermined schedules, the ancestral domain of Sumacher applies the Fas’fasa-li system. Meaning one after the other, Fas’fasa-li consists of alternating the access and use of water granting an even amount of time to contiguous areas and rice fields sharing a common irrigation source. It is understood that one must fas’fasa-li (termed mam-fas’fasa-li) the water once a field or area has been sufficiently irrigated by physically tending to their fields – a task rice field owners must, therefore, accomplish regularly to
prevent water deficiencies. The term, thus, denotes the physical redirection of a water stream into a paddy it has provided the required water quantities for the irrigated crops to subsist and thrive. The quantity varies in accordance to contextual, meteorological and environmental settings, but abides to the principles of equity. The frequency and the time required for irrigating a rice field notably depends on the size and on the volume (or quantity) of water supplied by the source as well as speed at which the water circulates through the channels, although the moment of the day and the time of the year further affect these variables. *Fas’fasa-li* therefore speaks of the duty, responsibility and obligation to consider the needs of others when temporarily gaining or being granted the exclusive rights to access irrigation water.

**c. To “Equally Divide”**

Whilst a schedule regulates the allocation of water to the areas in which these fields are found, *God’god-wa*, meaning to “equally divide” in Guinaang, refers to the equal division of a single source of water into smaller, but proportional and sufficient shares for the simultaneous irrigation of multiple contiguous rice paddies. Although a water source may be divided several times over amongst bordering fields that share a common irrigation outlet, the schedule set by the *Vanvantu*, which determines allocation period for the irrigation, prevails nonetheless. The allotted irrigation time may potentially, however, be extended. Once all the fields irrigated, the irrigation must be redirected to the next field – a practice entitled *Pas’pasa-li*. The *Pas’pasa-li*, in Guinaang, endorses the same egalitarian principles as the *Fas’fasa-li* system employed for the distribution of irrigation water in the ancestral domain of Sumacher.

Whilst *God’god-wa* constitutes a rational and economic decision when water abundantly flows during rainy seasons, for example, or if a particular water source dispenses considerable amounts capable of irrigating several fields at once, it may, however, become impractical during particular seasonal periods due to drought. This must consequently be negotiated and consensually accepted by all rice field owners concerned.
d. For Water to Reach the Farthest Paddies

In Guinaang, the Po’oy system constitutes an additional water division and distribution practice enacted for paddies located farthest from the irrigation source to access to water. Po’oy pertains to a system according to which water shall cross one to several irrigated rice fields before reaching an irrigated rice paddy. This practice, however, may only be implemented when the water source is abundant, thus suitable for the irrigation of multiple fields at once. Whilst this may, to some, restrict this sharing modality to certain seasonal periods, it may, for others, constitute a somewhat permanent arrangement, when irrigation water originates from springs relatively unaffected by seasonal heat or untapped for other consumption purposes, for example. In Guinnang, the fields located closest to the channel through which the irrigation water infiltrates a field are called Pu’nga-lan; those located in the middle are named Mang-kawa and the farthest ones are called Wa’way. These generic terms designate a field’s geographic situation as well as the potential value of an irrigated rice field. Those located farthest are typically considered most vulnerable to droughts, since they may lack water if or when their share relies on the benevolence or righteousness of the rice field owners possessing plots nearest the irrigation canal. Arid weather, insufficient rainfall, natural calamities or disasters (due to the damaging or destruction of irrigation canals for example) may prove to be fatal for certain crops reliant on rainfall or rain-fed irrigation. These can in some instance be counterbalanced by consensual decision-making processes enabling the owners of rice fields disadvantaged by their distance to the irrigation source to request from support of all others from their area, but abandoning dry fields, far away lands and areas that chronically suffer from water shortage is common. Adjacent paddies may, however, belong to a single owner, which consequently eliminates such potential issues.

Sacrifices must, at times, be made to maximise the productivity of certain lands by abandoning those presenting greater risks or lesser advantages. The decision-making process relies on prevailing water management systems, inherited or acquired rights and obligations, as well as personal opportunities, possibilities and preferences. Choices importantly hinge on the capacity of a household to cope with the anticipated negative outcomes, meaning to assume the material and sociocultural costs related to their decisions.
Although these may, to some, appear irrational if calculated in terms of expenditures, profits or if assessed in terms of financial gain or return; sacrificing one’s rice field in times of water scarcity for the source to provide sufficient water for the irrigation of another’s paddy may offer considerable advantages when considering the cultural significance of altruism and compassion in Kalinga.

e. The Obligation to Watch

In Guinaaang, *man-an’chog*, from the verb *an’cho-gan*, meaning “to watch”, refers to the act of guarding, watching and protecting the access, distribution and consumption of irrigation water amongst their rice fields from theft, locally known as *as’siw*, meaning to take away or deprive another from water by wholly or partially redirecting the source from a field to another. Water guardianship (*anchog*) is also integral to the irrigation process in the ancestral domain of Sumacher. It is required for whoever irrigates a field to stay within the vicinities of their lands to *man-an’chog* the water source until the level of water is sufficient to sustain the growth of the cultivated rice. This may require frequent physical inspections of the channels through which the irrigation water could potentially be redirected. Once irrigated, they may leave, signifying to the next person that he or she is permitted to access and use the water source.

f. The Elected Water Guardian

In Tulgao East and West (Turkaw), *Pic-tur* designates the system according to which irrigated rice field owners of an area elect a man or woman to guard and proportionally distribute the irrigation water of all terraced rice fields comprised within the designated area. Similarly known as *pik-tur* in Sumacher, this assignment requires a consensual agreement amongst the rice field owners and the chosen candidate and is not, therefore, compulsory. This person, entitled *man’pik-tur* (Turkaw and Sumacher), may potentially be chosen from the household or extended family of a rice field owner of the area requiring such services or, conversely, selected from a different area, division or *ili* altogether to prevent conflicts or to ensure impartiality.

This choice may reflect preferences or circumstantial obligations, such as the incapacity of
local rice field owners as well as their kin to fulfil such duties, as they may suffer from physical conditions, deteriorating health or due to alternative employment opportunities, education or conflicting responsibilities that may prevent them from dedicating the necessary time to safeguard their fields. The pik-tur may, conversely, appeal to those possessing small plots of irrigated rice fields or requiring additional revenue. Moreover, areas particularly afflicted by water scarcity, troubled by competing demands, or presenting complex geographic dispositions, or vast rugged terrains (thus difficult to guard), as well as those comprising greedy or unruly rice field owners may require an authoritative figure, commanding respect and upholding the customary laws embodied by the pic-tur, to safeguard the fair access and use of a precious irrigation water.

The man’pic-tur and man’pik-tur must be fairly compensated in cash or kind through payments proportional to the size and harvest of catered the fields, collected once his or her job is complete. These arrangements may, however, be personally discussed and negotiated to accommodate the precarious situation of the person chosen to fulfil such tasks, or the rice field owner. Unhusked rice grains (known palay in Sumacher, and pacoy in Turkaw) typically substitute money in such commercial interactions, which usually represents a ten percent share in both Sumacher and Turkaw.

_in the examined cases, the pik-tur appeared to positively contribute to the local agricultural economy by providing an occasion for those with limited irrigated terraces to increase their annual share of rice, a cherished and vital nutritional aliment in Kalinga, whilst liberating farmers from the laborious watering process, thus enabling them to accomplish additional (re)productive activities. By so doing, it reinvigorates and maximises the economic potential of these localities, whilst strengthening the sociocultural and judicial systems safeguarding indigenous livelihoods. These further insure the fair access, use and distribution of water amongst the rice field owners comprised within an area by preventing conflicts generated from selfish or abusive behaviours._

The institution of pik-tur normally precedes planting seasons and finishes once harvests are complete. In accordance with a predetermined schedule (explicitly described above), the
*man’pik-tur* must physically open the irrigation channels, through the compacted dirt and soil shaping the corridor, which controls the course of water, for the irrigation water to enter the paddy. Once the water has partially flooded the rice terrace (depending on the available quantities of water), the channel through which the water has penetrated the field is closed.

The selection process and democratic principles underlying *pikt-tur* (Turkaw and Sumacher) correspond to those defining the *mato-chiran* in Korayo (Turkaw) and the *mato-chinan* in the ancestral domain of Guinaang. The role and functions assigned to the designated to the *man’pik-tur* diverge from those established by the two former. The latter identifies the process and representatives selected in this manner, according to a consensual agreement. Although it is an essentially democratic process, a consensual agreement must be reached when designating a *mato-chiran*. It therefore exceeds the rational put forth and objectives pursued in conventional/prevailing democratic elections. In principle far more sensitive and truthful, it does not ultimately guarantee an honest representation, potentially corrupted or compromised by coercive actions. The principles and practices on which rests the *mato-chiran* process do, however, demonstrate existing alternative political systems. These responsibilities were no longer assigned in Korayo since the cementing of the Communal Irrigation System (CIS) for this development significantly facilitated and simplified the watering process.

In Guinaang, *mato-chinan* refers to an elected representative or a person chosen by consensus to act (either speak or perform a given task) on behalf of a particular group. A *mato-chinan* is democratically elected for his or her knowledge, capabilities and aptitudes to fulfil the specific needs associated to a given position. Although this designation technically corresponds to the nomination process of government representatives, this term may only, however, reflect or be used to identify persons fitting customary definitions of representativeness and may potentially, at any time, be retracted if the position has not conveniently been filled. This title, in other words, attributes a conditional, yet legitimate authority to act or speak on behalf of the *umili*. The appointment process of a *mato-chinan* also differs, to a certain extent, from the outlines and general practices of political
campaigns preceding elections in the Philippines, although they may at times rest on similar grounds. For example, whilst payments are typically distributed by politicians to gain and secure votes during national campaigns in spite of statutory prohibitions, such dealings are morally and pragmatically ineffective when applied to customary laws and definitions of leadership in Kalinga. Representatives, such as the Pict-tur, accomplish tasks pertaining to a significant, yet facultative role, assigned and performed in accordance to modalities consensually determined by those benefiting from such services. Moreover, their work is constantly scrutinised and validated, for democratic participation transcends the mere delegation of a position or the assignment of particular functions as people embrace the shared interests and responsibilities of water governance, taking upon themselves the need to uphold customary laws and principles. Water rights, as previously mentioned, hinge on individual and collective obligations or responsibilities.

5.3.2 Water Rights as Individual and Collective Responsibilities

Water rights hinge on individual and collective responsibilities. As explained by Sugguiyao (1998: 41):

Although the Kalingas are a freedom-loving people, each man desiring to carve an independent life of his own, there are affairs and incidents in the community to which every man and woman is obligated in conscience to render an individual participation (...) either in form of material aids or services given and rendered respectively on the basic concept of reciprocity.

The customary laws and principles underpinning individual and collective support systems and practices constitute the foundation of sustainable indigenous livelihoods in Kalinga. Whilst their exists a considerable number and variety of such collaborative partnerships and mutual aid conventions, only those explicitly or directly relating to irrigated rice cultivation shall be addressed here. These have been categorised in accordance with the objectives served and beneficiaries of the performed task as either communal and individual assistance modalities. After presenting these categories, I provide an example of the construction and maintenance of Tulgao’s irrigation canals to illustrate how sociocultural norms and customary governance systems and practises foster water security in Kalinga.
a. Communal Tasks

All those who draw water from an irrigation source and system must participate in its construction, maintenance and repair without any form of financial or material compensation. In Guinaang, these mandatory duties are known as *ang-as*. For people of Turkaw and Sumacher, these are called *kakat*. *Ang-as* (Guinaang) and *kakat* (Turkaw and Sumacher) first involve the regular and collective cleaning and clearing irrigation canals. This entails manually extracting weeds growing in or alongside the canals to prevent them from absorbing the water intended for rice fields, as well as removing whatever could potentially obstruct the watercourse. These secondly include the restoration, rebuilding or strengthening of canal walls made of dirt, sand and rocks to prevent leakages. These activities intend securing the fluid circulation of irrigation water. Damages to the canal must additionally be repaired and weaker areas fortified as soon as these weaknesses are identified.

Communal tasks are typically performed on pre-established dates determined by the rice field owners of a particular area. These may at once be decided in response to environmental calamities, such as floods and typhoons, or correspond to a standard practice inaugurating the beginning or conclusion of irrigated rice production. The required work, therefore, matches the context or situation according to which this activity is held. People are convened to the performance of these collective chores through the shouted word designating this practice, employed as a rallying cry, which is subsequently spread from a person to another, until it reaches all those concerned. When requested by a person from a respected clan or family, the instigator of the call acts as a representative of a particular social position and cultural standing. This, consequently, adds to the prevailing customary laws and principles enforcing the *ang-as* (Guinaang), *kakat* (Turkaw and Sumacher) systems, the pressure of complying with those of honouring appropriate and commendable behaviours of fellow kinsmen. Those mandated to spread the word are typically esteemed persons potentially capable of persuading those possibly reluctant of joining to participate. Masculine voices are further believed to be louder and deeper than those of women, thus better suited to transport the message across greater distances.
The purpose and location of these tasks are explicitly stated as well as the names of those targeted, in some instances. People usually repeat the word, which acts as a command, once it has been shouted, choosing strategic, far-reaching areas for their voice to echo to the farthest locations of their ili. Some participants may directly channel this request to the invitees as a means of compelling or further insisting on the activity’s importance. Every household, represented by a man or woman, is expected to join. When families or clans are unable to take part in this mandatory practice, a person will be paid as a replacement. Absentees who fail to pay for their substitution will be penalised or fined through the butchering of a pig, piglet, dog or chicken, depending on their financial capabilities, as well as the causes underlying their non-attendance. Whilst the food served as compensation is primarily offered to local elders and those who performed the collective chores, anyone is welcome to join, including guests and visitors.

b. Individual Assistance

The term Gaga, in Guinaang and Sumacher, and otherwise known as Ang-as in Turkaw, identifies voluntary labour serving the private interests of a person or group. It applies to services rendered when carrying construction materials for the construction of houses, schools, churches and rice granaries. This form of individual assistance includes gathering and carrying the raw material (thatch, cogon grasses, cement and wood), then crafting the physical structures, solidifying the foundations on which this establishment shall ultimately stand, assembling the building and disposing of the waste. The work usually starts at dawn and finishes at dusk. The person(s) requesting these services must prepare a meal to acknowledge the service and demonstrate gratitude to those participating. Providing food informally compensates the labour, whilst celebrating the infrastructure’s erection. There also exists a local version of the customary Filipino practice known as bayanihan, a descriptive term for the provision of free and voluntary aid or assistance.

In Guinaang, pango and in Sumacher, pangu designate the system according to which a farmer requests the help from relatives or community members to perform agricultural tasks, such as planting or harvesting. Participants shall be compensated in money or in kind once their labour is complete, typically at the end of a day, whilst also depending on the
time and effort required in the task’s completion, as well as the economic disposition of whoever asked for assistance. Another Guinaang practice known as Vachang (pronounced Viachang), known as fachang in Sumacher, identifies the voluntary assistance provided by an individual or group for the planting of rice seedlings, or for the harvesting of palay (unhusked rice grains) for an entire day, without any desired or anticipated compensation in money or kind\(^5\). In the case, help is offered rather than requested and performed without expected returns.

c. The Construction and Maintenance of Irrigation Canals in Tulgao East and West

The timely and dependable access to sufficient quantities of irrigation water represents a leading concern in the ancestral domain of Turkaw, alike in those of Sumacher and Guinaang. To safeguard the influx of adequate and reliable quantities of water requires, however, meticulous and strategic calculations of potential risks and gains from the required cleaning, maintenance and repair work for every irrigation source.

The Ma’om-o’mor River supplies the greatest quantities of irrigation water to the Turkaw subtribe of the Tulgao East and West ilis/barangays located in the municipality of Tinglayan. Conveyed by the Communal Irrigation System (CIS) constructed during the 1980s through the Roman Catholic Church, this irrigation network channels water supplied by the Ankiyao, Ma’om-o’mor, Lutut and Sailud rivers, irrigating hundreds of rice terraces encompassing 107 km\(^2\).

By cementing the irrigation canals, the CIS enhanced their resilience, thus protecting the watercourse from superficial damages, enhancing its functionality as a conveyor belt, and diminishing the physical labour required to sustain its operation. The CIS eradicated the use of pic-tur throughout the Turkaw domain of the Tinglayan municipality, except within the areas of Binutan and Litob, located in the ili/barangay of Tulgao West, where such infrastructures have yet to be installed, and where fluctuating water volumes consequently legitimate this government system.
The cemented canals of the Whurog River and the Tuyob Creek transport irrigation water from the Pin-it River to the rice fields composing the Havang, Balay, Pi-ao and Palutan areas. Although the quantity of water provided by the Pin-it River usually decreases during dry season, it has nonetheless provided sufficient quantities to sustain the rice fields throughout the year.

The Pin-it River, built from dirt, sand and stone, additionally supplies the extensive irrigation system of the Lurud’chu’ River, which provides for the rice fields contained in the Litob area. Since the water source is geographically remote and the irrigation network is extended over several kilometres, its infrastructure has not, to date, been cemented. This has consequently perpetuated the hefty maintenance work assumed by the cultivators depending on this water source, additionally burdened by the growing number and strength of natural disasters striking the Cordillera highlands, and the shrinking pool of available workers.

Strengthening these irrigation channels requires hauling the needed material, including rocks and sand purchased from lowland retailers, to the irrigation source, through densely forested mountains, across kilometres of rugged, mountainous terrain. Monetary compensation has, however, prevented this from occurring since labour has increasingly been perceived and marketed as a commercial product. In addition to the laborious and costly nature of such development schemes, the growing discouragement voiced by indigenous elders and cultivators with respect to the escalating hardship of their living conditions – as harvests diminish due to abnormal climatic occurrences and livelihood opportunities, with expenses depriving indigenous communities of their relative autonomy and the mounting demands, needs or desires stimulated by alternative existential models – has incited numerous sacrifices by parents eager to improve their children’s future. As the available local workforce no longer consists of every able-bodied person comprised within an ili, as it once did, due to migration, but also from the growing disinterest of younger generations to partake in such agricultural practices, the individual and collective responsibilities that, for centuries, sustained the agricultural landscapes and livelihoods of Kalinga seem increasingly vulnerable.
5.3.4 Water Scarcity: Coping Mechanisms, Strategies and Techniques

There exists, throughout the ancestral domain of Kalinga, numerous coping mechanisms, strategies and techniques to prevent conflicts when deciding the rights or entitlements to access, use and distribute irrigation water\textsuperscript{54}. In Guinaang, water scarcity experienced during dry season requires the strategic application of water governance techniques entitled \textit{Vanvantu} and \textit{Linap}, which further entails the dissolution of previous \textit{Godgodwa} arrangements. \textit{Linap} pertains to the fair division of scarce irrigation water between all terraces comprised within an area. The process begins with the fields located nearest the water’s entry point, until reaching to those farthest the water source. Each will be allocated fair amounts of water measured in terms of time. It is implemented following a consensual, verbal agreement reached between the owners of rice fields located within a particular area for the alternate use of irrigation water in times of scarcity (typically during dry season). The irrigation schedule ensuring the equal distribution of water for all rice fields comprised within a given area may, therefore, be temporarily suspended for the implementation of \textit{Linap}, although the irrigation schedule established by the \textit{Vanvantu} determines the distribution of water for all areas comprised within a unit, meaning all areas that depend on a single source of irrigation water, shall remain the same. Negotiations between the rice field owners of an area with those from another may, however, alter this regulated water distribution system if required or requested.

In Guina-ang, this system additionally involves the enactment of \textit{Paspasali}, a system enabling a common water source to fully irrigate a lesser number of individual rice fields, rather than evenly supply insufficient amounts and distributed to all those comprised within an area. Once a rice field has been watered, the source will be deviated to another and so forth until the time allocated to an area has ended. When all other areas have accessed and used the water source, the cycle shall repeat itself. Water will primarily be allotted to the rice fields that were not previously watered in full or that were first irrigated (and which are, consequently, the most water deprived), then passed from a paddy to the next, intentionally distributed to those suffering the most from water scarcity, until every field of the area has been watered.
When implemented, this typically entails water shortage for rice fields located at the farthest distance from the irrigation source, since these typically suffer the greatest deprivations due to their unfortunate geophysical disposition. Irrigated rice cultivation may, accordingly, be abandoned as preemptive or responsive livelihood strategy, converted into vegetable farms or forsaken entirely due to inadequate or inexistential irrigation supplies.

In the Turkaw dialect, ma-hirap, meaning half-full, refers to the irrigation practice, which consists of strictly allowing the minimal quantity of irrigation water to infiltrate one’s field. When experiencing water scarcity, it is common to “just to wet” irrigated rice fields, or nabur (Turkaw) in the local dialect, so others may also access the water to sustain their irrigated crops. Narwhong (Turkaw), on the other hand, refers to irrigated fields overflowing with water.

5.4 Ownership and Belonging: the Concept of Ul’li-gong/Ul’li-kong

Water governance in Kalinga abides to definitions of rights attached to those of ownership and belonging. The notion of Ul’li-gong/Ul’li-kong embodies the judicial, ethical and sociocultural conception of Kalinga personhood. Akin to the concept of entitlement or property, Ul’li-gong/Ul’li-kong, designates private and communal property rights in relation to the geophysical situation, the occupancy and use of particular territories. The notion reveals the extension of indigenous government to lands physically removed from a subtribe’s domain, whilst designating the physical presence of a temporary, foreign entity within the geographical boundaries of the Kalinga domain, such as a mining company, as possessing exclusive, but conditional rights to the occupied land and exploited resources.

Ul’likong/Ul’ligong delineates privately owned and operated settlements within ancestral domains from those belonging to the umili. By so doing, it highlights the application of an exceptional customary law provision that maintains and upholds the control of indigenous government, whilst conceding access, use and consumption of requested lands and natural resources, so long as the proponent abides to the overarching regulatory norms and
principles of the Kalinga Bodong. Adding to the requirements imposed by the State, such as those required by the Indigenous People’s Rights Act, the environmental policies and ownership rights established in the Bodong put forth unwavering conditions for such contractual agreements to occur, such as the prohibition to give or sell lands to any other than recognised Kalinga persons. If and when such infractions occur, by virtue of the prevailing statutory and customary laws, the recognised offenders must surrender their temporary rights or privileges, in compliance with traditional rules or face the reprisals of the State, as well as of local indigenous authorities.

The Ul’likong/Ul’ligong concept associates property rights with the notion of “belonging”, through inclusive and exclusive membership rules, evoking shared substance, such as water and blood, as foundational to one’s affiliation. When Ul’likong/Ul’ligong designates the private or communal ownership of lands occupied and developed by community members located outside the physical boundaries of their subtribe’s ancestral domain, it designates the continuing authority of indigenous laws, extended beyond the geographic situation of one of its members. A spring adjacent and exclusively used for the irrigation of a privately owned rice field may, however, be considered “ul’li-kong/ul’ligong” to the lot’s owner. This assertion may, however, be contested if such rights potentially deprive the constituents of an umili from a potentially significant irrigation source. Although located within the premise of privately owned houses, the potable water dispensed by household taps is not considered an exclusive property, since it is believed to channel an inherently communal water source. Water bodies within an ancestral domain, in other words, may, under no circumstances, constitute ul’likong/ul’ligong.

The term, therefore, voices a distinction between communal and private ownership rights coherent with the customary laws defining indigenous personhood, which submits individual property and privilege to “communal belonging”. In other words, the representations of individual and collective entitlements hinge on a set of beliefs and practices that subordinate personal autonomy to the well-being and prosperity of a community, which is accordingly perceived as extending further than the physical boundaries and membership of an existing group, reaching the realms of non-living entities.
and future generations. To the contrary of such holistic and interlocked conceptions of personal existence, Western visions and experiences of ownership, belonging and responsibility tend to deny overarching temporal and metaphysical connections, as well as the humbling perspective attached to such realities (Roa-García, Urteaga-Crovetto & Bustamante-Zenteno, 2015).

5.5 Respect, Autonomy and Harmony – The Embedded Definition of People and Place

Water governance in Kalinga complies with a code of conduct and indigenous laws conveyed by sociocultural norms, spiritual beliefs, taboos and prohibitions. Water sources and bodies (such as springs, brooks and rivers), as well as their vicinities are considered sacred. As with burial grounds, certain mountains, cliffs and caves, these are revered for their symbolic and pragmatic significance, for they embody, animate and compose the ancestral domains embedded in the communal identity of indigenous Kalinga persons.

5.5.1 Fa-in/Va-in – Shame, (Dis)Honor and Respect

Fa-in, Ba-in or Va-in, identical terms in the dialects of the three concerned Kalinga subtribes for what may translate as the feelings of shame and respect, as well as those of timidity, awe, obedience and embarrassment when one witnesses or experiences immoral, unethical, disrespectful or ill-mannered conducts, which deviate from prevailing sociocultural norms. As explained by Lawagan Chulsi of Sumacher:

“Ba-in refers to [the] respect (…) an attitude of [an] individual to his fellow mankind. When one says kaba-ba-in, it means disgraceful. When one is set to make an action that does not respect sa person, an elder may say, ‘ma-id pun fa-in nu’ [meaning] ‘you have no shame’. The action is [accordingly designated shameless] ‘kaba-ba-in’”.

Fa-in/Ba-in/Va-in resembles the notion of betang, a descriptive concept belonging to the Ilongot, a neighbouring indigenous people of the Cordillera highlands, that designates the “moral affects” stimulated by a complex ensemble of innate reactions to discomfort or anger, as well as rational, variously cognisant and ethically grounded emotional responses,
feelings or sentiments, which differ from the passive or inflicted states of existence akin to the Western notion of shame (Rosaldo, 1983). Fa-in/Ba-in/Va-in further echoes the Kanuri nungu, a Nigerian term designating shame, avoidance and respect, as well as the Australian Pintupi term kunta and the Javanese word isin, which similarly connote shame, embarrassment, shyness and respect (Fessler, 2004: 235 quoting Myers, 1979; Al Jallad, 2002; Geertz, 1959).

Fa-in/Ba-in/Va-in further encompasses the Kalinga terms of Lang-as/Lang-kas/Langkat, which identifies vandalism, as well as damages or the destruction of another’s property. This may simultaneously speak of infractions against privately owned estates or properties, such as an irrigated rice paddy, woodlots or residential units, as well as to communal domains belonging to an umili. In Guinaang, the concept of Fa-in/Ba-in/Va-in, moreover, designates the experiential state associated with Lakatit and Langsit. Lakatit refers to harmful, disrespectful and injurious behaviours that either voluntarily or unwittingly cause immaterial damages or intangible harm. Langsit pertains to malicious acts committed by persons against sources of life, considered the physical extensions of Kabunyan/Ahunyan (Kalinga God), associated to lands and water. It notably pertains to defecating or urinating in sources of drinking water, destroying agricultural crops, harvests and nutritional products, giving children spoiled or contaminated foods, as well as any actions or activities that may compromise the health or hygiene of persons and communities.

Fa-in/Ba-in/Va-in constitute sensorial and emotional reactions to unconscious, accidental or intentional behaviours judged, in accordance to prevailing customary laws, as disgraceful, reprehensible or shameful to the integrity of the offender. The notion of shame does not, however, evoke the feeling of remorse or repentance, but signifies the acknowledgment and experiential response to the delimitations of personal capacities and autonomy established by customary laws, yet embedded in sociocultural norms, to protect and sustain the harmonious coexistence amongst the human and non-human constituents of ancestral domains. These sentiments primarily emerge from the intimate confrontation to and conscious recognition of sociocultural disparities amongst human and non-human living entities, as well as the transcendent communal definition of Kalinga identity. Whilst Fa-
in/Ba-in/Va-in may constitute the discomforting feelings stimulated by participation in or witnessing of individual or collective misconducts, the persons sharing a common lineage or affiliated through marriage, as well as those who form a subtribe (ili), otherwise designated as an umili (community), are submitted to a similar sense of liability or consternation by virtue of their sociocultural or biological affiliation to the offender. In Kalinga, these feelings uncover the embracing definition of personhood. A person’s conduct reflects collective upbringing and may, as such, constitute a source of pride or shame for those to whom a one belongs. The extent of such feelings varies in correlation to the relative influence or noteworthiness of the infraction, for its severity or magnitude shall amplify or intensify its effects – when extremely bad, the sense of shame aggravates a greater number of persons for an extended period of time, since the shameful conduct may involuntarily draw widespread negative attention upon the umili, which, consequently, exacerbates the sense of responsibility. This feeling does not merely translate a sense of liability, but evokes the unsettling, emotional and reactive experiences associated to the disavowal or repudiation of the submissive conditions for peaceful coexistence, which deprive individuals from their ability and egocentric desires to impose their will unto their surroundings.

For the Kalingas, like the Ilongots, shame underscores sociocultural dynamics and interactions with all human and non-human beings. The notion embodies the “intimate, even physical experience, and a more or less conscious apprehension of, or ‘judgement’ concerning, self-and-situation” (Rosaldo, 1983: 136). As such, shame emulates the intimate awareness of a conflicting individual and collective self, represented by Rosaldo (1983: 143) as the tensions experienced from the overlapping “ideals of ‘sameness’ and autonomy” that permeate traditional sociocultural hierarchies. Fa-in/Ba-in/Va-in embodies the contingent sense of subservience or belittlement, which an indigenous person at once experiences and inflicts upon others, which results from the strenghts and weaknesses that simultaneously ranks a person’s capabilities and potentials as inferior or superior to others, as well as the unyielding bond and commitment amongst kinfolk. Relatedness is typically represented through the sharing of substance, of which blood marks the most enduring bond, but also water and food. As such, togertherness or collective unity encompasses
persons residing within the geophysical confines of the *ili* and ancestral domain, whilst including, at a greater scale, all non-human living components of one’s ancestral domain. It therefore emanates from the intimate recognition of inherent dissimilarities amongst human as well as non-human entities, considered, nonetheless equal by virtue of sociocultural and biological affiliations.

*Fa-in/Ba-in/Va-in* thus mediates personal feelings of injustice, preventing anger from disrupting the cooperative bonds and synergetic relations, rather than banishing or ignoring the angst and resistance triggered from the realisation and experience of subservience, when personal autonomy is contrived by higher or greater interests. As such, the term discloses emotions “threatening sociality and threatening boundaries of the self”, which consequently sanction the experience of a person’s sentiment of injustice, frustration and envy with respect to constraining situations or circumstances, which reveal the limitations of personal autonomy (*Ibid.*). Shame exposes the conscious, voluntary or undesired subordination of an individual’s capacities to superior competence, values or principles. As beautifully stated by the Rosaldo (1983: 143):

> At times, ‘shame’ is a thing that leads to striving and the shows of ‘anger’ through which unacceptable imbalances are eventually overcome. At others, ‘shame’ names the stasis born in the acknowledgment of asymmetry, and recognition that one’s challenges, in everyday relations among kin, are apt to yield defeat, tense isolation, or destructive violence.

*Fa-in/Ba-in/Va-in*, I argue, extends to the rapports built and sustained by the Kalinga people with their natural surroundings, embracing the sense of humility or inferiority indigenous persons and people feel towards the spirits (*anitos*) and ancestors investing the sacred natural constituents (geophysical spaces, water, fauna and flora) of their ancestral domain. By upholding humility and respect as fundamental characteristics shared amongst and between living beings of all physical and (im)material constitution found within the boundaries of an ancestral domain, shame preserves and promotes social harmony and cohesion.

The sentiments associated with *Fa-in/Ba-in/Va-in* emerge from transgressions to the cooperative relationships that bind indigenous communities with the natural and spiritual
worlds their ancestral domains contain. The sense of shame reflects, as such, the conscious
and purposeful subordination of the Kalingas to what physically and immaterial determines
their communal identity, one which at once embodies a sociocultural unit conceived as the
umili, circumscribed by the contours of the ili, as inscribed in the Kalinga Bodong, as well
as the physical and natural surroundings, but also of the unseen beings, spirits and deities
that dwell and which are incorporated within these surroundings, alike the beliefs of the
Calanguyan (Philippines) (Gabriel and Mangahas, 2017: 91).

As explained by Billiet and Lambrecht (1970: 10) Kalinga traditionally identified as tágu,
meaning “men” and iLúta, or “people of the earth”, which suggests an opposition between
their living conditions and state to those of the roaming spirits with whom they shared the
land. Comparably, the Orang Asli (Malaysian Aborigines) designate people as mere
custodians and stewards rather than proprietors of ancestral lands, believed to be possessed
or inhabited by spirits (Gomez, 2012). As with the indigenous people of Kalinga, the
Orang Asli uphold the existence of deities, spirits, immaterial beings and souls (Gomez,
2012: 1068). Myths and lyrical narratives in Bontok, Mountain Province (Philippines),
suggest that water is an animated being in possession of cognitive and affective faculties,
locally known as nakinbaey (Manochon, 2010: 119). A number of these epic tales and
stories beautifully convey the emotions of water, which may, when hurt, disappear or
purposefully leave the people and place where such feelings may have originated
(Manochon, 2010: 127). It is said that rice also experiences such emotions and the capacity
of reacting to painful situations. These further recount how the snakes and mermaids that
dwell in springs, rivers, lakes, and wet lands materialise these entities (Ibid.). The agentic
character of nature speaks of the intricate relationship humans develop and entertain with
their surroundings.

This holistic vision is also shared by Carse (2012), who interestingly depicts nature as a
form of infrastructure “built by and for people” through “organisational techniques”. Whilst
this seemingly portrays development as the objectification and strategic physical
modification of nature, invested with sociocultural, economic and political meaning, value
and purpose, the concept of infrastructure speaks of building on, or physically rearranging,
what lays “below, beneath, or within” (the proposed definition for “infra”) to somewhat relatively manipulate, alter or purposefully transform the shapes, forms or conditions of what determines human possibilities to one’s advantage (Carse, 2012). It appears that nature, rather than labour, underpins the potential upon which one must comply when proceeding with structural developments. In other words, it is the availability of water in adequate quality and quantity, not the inclination of a mountain ridge or capabilities that determines the construction of irrigation canals and rice terraces, as one may obtain the required resources through sociocultural trade networks, but also the indulgence or lenience of those with whom humans coexist that underscore productive and sustainable relationships (Acabado, 2013; Acabado & Martin, 2016; Lawless, 1937).

Cultural taboos and prohibitions corroborate this statement, through illustrations of strategies or techniques developed and enacted to support the subordinate position one must simultaneously endure and withhold for harmonious and sustainable coexistence.

5.5.2 Ngilin and Paniyaw – Taboos and Prohibitions

Customary water governance in Kalinga complies with restrictions established by sociocultural taboos and prohibitions. Spirits, embodying the deceased or non-human incorporeal agents, are integral to the umili. They embody or inhabit the components of an ancestral domain’s natural environment such as trees, mountains, rivers, springs, rocks and caves. Capable of healing and inflicting sickness, these are revered, yet feared when disturbed or unsettled. Taboos, restrictions, prescriptions and prohibitions protect persons and communities from the misfortunes these may inflict as punishments for improper and disrespectful human behaviours. As explained by Corazon Aggalao of Turkaw (1994: 15): “the spirit of deceased family members can either protect or cause sickness or even death to family members, [which is the] reason behind several prohibitions they observe”.

The concept of Ngilin refers both to the agentive force as well as the unfortunate, unfitting or incongruent circumstances causing a person of a particular disposition to face reactive and relatively deleterious or inconvenient effects resulting from a transgression to the unwritten rules or restrictions attached to the place embodied or inhabited by the Ngilin.
The *Ngilin* exclusively targets people of a particular type (chosen for personal characteristics, traits or physical states) or to whom the *Ngilin* is “attracted”. *Ngilin* establish prohibitive conditions for the synergetic cohabitation of human and non-human beings. Whilst these may resemble interdictions or bans, they more accurately correspond to the dominant volition of such entities, embodied in natural constituents of the environmental landscape, and demonstrate the superiority of their abilities to regulate human activity. *Mangngilin ka*, a common advice given by Kalinga elders meaning to “do no evil”, reflects the cultural expressions of respect and obedience towards spiritual beings (*anito*) and the Kalinga deity, Kabunian/Awhunyan/Awhonyan 57.

Similarly, the watersheds, lakes and springs of Bontoc (Mountain Province) are considered sacred sites, where spirits and non-humans entities dwell (Manochon, 2010: 125). Hence, there are *lawa* (prescribed taboos) that should be observed in the vicinity (Ibid.). Similarly, for the Calanguya people, *Kulpi* enforces fishing limitations during the significant reproductive and development cycles of fish, whilst *Latang* applies these rules for hunting (Gabriel & Mangahas, 2017: 94). In Kalinga, throwing any pointed objects in rivers and creeks is believed to cause harm to the spirits (*anitos*) dwelling in those water sources.

*Paniyaw* may simultaneously refer to a taboo, thus identifying reprehensible behaviours, or constitute a warning sign of potential or impending dangers, which consequently predict and seek preventing a tragedy’s unfolding 58. Like the Orang Asli (Malaysian Aborigines) of Semai (Malay Peninsula), wrongdoings intentionally or inadvertently jeopardize the vitality and sustainability of human and non-human beings are believed to antagonise the spiritual custodians of the concerned ancestral domain, which consequently bestow misfortune upon the perpetrators in the form of crop failure and personal injury (Gomez, 2012: 1064). Punishments may simultaneously be dispensed by bodong-holders, when regarding criminial offences or violations to the Pagta, or inflicted by non-human actors, at degrees and extents, from physical to sociocultural retributions (such as ostracisation), which vary in accordance with the misconduct’s severity. *Paniyaw* include theft, envy, excessive and harmful jealousy, physical and psychological assaults, the conspirations, assistance and
conduct of a criminal offence, as well as the reprehensive behaviours designated as *Lakatit* and *Langsit. Paniyaw*, thus, prohibits unsustainable or abusive practices.

Observing prescriptions of the different *ngilin* and *paniyaw*, as explicated by Magannon, (1984: 244):

> Enables both spirits and men not only to avoid conflictual relations among and between themselves, but also the waste of precious time and productive labour: situations which bring their wake illness, misfortune, and death on the side of man, especially so when such conflictual relations and waste of time and labour are deliberate.

5.5.3 *Water – the Embodiment of Kabunian/Awhunyan/Awhonyan and Vitality*

The foundation myth recounting the origin of Turkaw and the subsequent naissance of the people and ancestral domain of Kalinga, demonstrates that water constitutes a “generative and agentive co-constituent of relationships and meanings in society”, rather than a mere object of social and cultural production (Krause and Strang, 2016: 633). Water embodies Kabunian/Awhunyan/Awhonyan, the supreme Kalinga deity, and absolute source of life. According to the legend, once known as the iVaikhawhan, their ancestors inhabited a land called Maikawhan.

Heavy rains began one day as a man named Thor went hunting with his dog for deer by Mount Suvangchil/Sumangchil, and a woman named Ka-aw proceeded to her swidden farm at the Whirhurhawan/Binulawan Mountain. Thor quickly sought refuge in a cave whilst Ka-aw took shelter in a hut by her field. The water began to rise, rapidly submerging the lands. Both Ka-aw and Thor thus climbed their respective mountains to escape the nascent flood, until they reached the peak. Using an *among*, a thread extracted from an indigenous plant, flint-stone and metal, Ka-aw made a fire. Upon seeing the smoke and without the required tools to make his own, Thor sent his dog with a *gusi* (an empty wine jar) tied neck across the flooded lands to fetch the vital supplies, which later returned with burning pieces of wood.
After downpours lasting 40 days and 40 nights, the water gently subsided, unveiling a spectacular landscape: valleys, mountains and creeks had replaced the plains, forests were thick and the vegetation luscious. As Thor and Ka-aw descended from their respective mountains, Thor’s hound ran into the woods, barking loudly. As Thor followed the animal, Ka-aw set out searching for the canine’s owner until they at once reached a spring. Long white hairs appeared to grow from the water source, swaying to the current’s movement and penetrating the soil. These filaments appeared to crawl out of the water source, pulsating as they incorporated the earth, were believed to have fallen from Kabunian/Awhunyan/Awhonyan’s head, after he drank from the source. Thor and Ka-aw later married, settled by the spring named Dagsi Ivarupan Awhonyan meaning “spring hunted by Awhonyan”, and bore many children.

5.6 Water Security, Indigenous Laws and National Development

Whilst the water governance systems and practices of Kalinga present affirmative declarations of indigenous knowledge and rights, these proclamations also appear in the subtle and explicit rejection of activities potentially or unquestionably endangering their sociocultural and environmental integrity. The indigenous peoples of Kalinga effectively mobilise customary and statutory establishments to promote and sustain peace – meaning, the harmonious coexistence between, as well as amongst human and non-human beings. Their beliefs and customary institutions animate local oppositions to development schemes; especially when asked or required to violate their historical commitment to peace for material gain or to comply with national policies. Thus, indigenous movements aiming to assert and enact rights over water comprised within their ancestral domains constitute, at once, a process and objective in the safeguard of their sociocultural and physical subsistence.

In this section, water security is correlated to and explicated through governance, as a construct shaped by the political, judicial, sociocultural, economic and administrative systems, processes and practices that underlie, yet also determine water access, use and management rights and responsibilities. Water security, here, appears indisputably embedded in the food, climate and energy nexus. The tensions and disputes pertaining to
the definition and enactment of the development plan of the Cordillera Administrative Region and geothermal energy production demonstrate how water laws are a crucial site of contestation between prior customary laws and nationalist reforms. These are proven to encompass the interplay of a complex network of multi-scalar and overlapping institutions attached to indigenous laws and national development, which disclose the interests and objectives underlying the ways in which water is valued and governed.

5.6.1 The Regional Development Plan (2011-2016)

Water insecurity appears a product of statutory and international law, sponsoring conceptions and valuations of water coherent with the predominant capitalist rational. The vision of the Philippine National Development Plan for the 21st century (Plan 21), originally published in 1998 by the National Economic Development Authority (NEDA) notably argues that “water has an economic value in all its competing uses” and must, accordingly, “be treated as a commodity with an economic value” (Ibid.). Water, as such, represents a complex, yet commensurable object that one may commercialise, possess, consume and exploit. By discursively identifying water through frameworks erected in accordance with these considerations, the Philippine government, alike those of other nation-states, circumscribes water (in)security as a designated state or condition shaped by political ideologies, judicial structures, scientific norms, sociocultural beliefs and economic standards. Through explicit criteria, which determine vulnerability, risks, health and welfare, organisational solutions may then be prescribed or provided through development programs, reforms or structural adjustments.

The Regional Development Plan (2011-2016) produced by the National Economic and Development Agency (NEDA, 2010) provides an explanatory portrait of the fragmented and inconsistent government frameworks that determine water (in)security in the Kalinga province. Institutions, laws and jurisdictions effectively disclose particular visions, properties or potentials of water to claim preeminent rights for the safeguard of agricultural production, hydroelectric power generation, as well as ecotourism and mining activities throughout the Cordillera Administrative Region. Whilst the report insists that carrying capacity, as well as the heritage and ecological value of watersheds and forestlands must determine and restrict development, it nevertheless summons the “dramatic increase” of
financial contributions towards national growth by increasing commercial agrarian production and promoting renewable energies from hydroelectric and geothermal sources through “reasonable tax incentives”, as well as condensed and simplified assessment procedures to facilitate Public-Private Partnerships (PPPs) (NEDA, 2010: 34). By emphasizing economic growth, however, the report disqualifies the politico-economic framework ascertaining the contributions made by provinces and regions in terms of profit or financial gain, as well as the capitalist rationale imposed through these requirements (NEDA, 2010).

The proliferation of political narratives on “unexploited and under-utilised land and water resources”, which seek amplifying and justifying the need for novel, large-scale investments to “unlock” their potential and promote a blue revolution, throughout the agricultural, energy, climatic and mineral domains, constitutes what Franco, Mehta and Veldwisch (2013: 1652) name water grabbing\(^59\). This phenomenon essentially consists of seizing control or enforcing the strategic reallocation of water, as a right or resource, which deprives local communities or ecosystems of this life-sustaining (re)sourse through varied forms of state–capital alliances, occurring at multiple scales and frequencies, in diverse agro-ecological contexts and unfolding across numerous property rights regimes (Franco, Mehta & Veldwisch, 2013: 1654-1655). Water grabbing may notably weaken the quality and available quantities of ground- and downstream water supplies, as well as diminish or provoke precarious fluctuations to the physical occurrence, distribution and circulation of water.

The NEDA report (2010: 34) further portrays security as ownership rights to ancestral domains, a formal entitlement considered paramount to the resolution of disputes pertaining to the access, use and management of potentially lucrative (re)sources such territories, achievable through the enforcement of Republic Act 8371, otherwise known as the Indigenous People's Rights Act of 1997. Depicted as the emblem of security, property embodies the ultimate remedy for unceasing disagreements regarding water governance and security according to the prevailing neoliberal philosophy (Hirsch, 2010). However, by enforcing the strict adherence to Republic Act No. 7076, otherwise known as the People’s
Small-Scale Mining Act of 1991, as well as Republic Act No. 7942, commonly designated as the Philippine Mining Act of 1995, the report conversely sanctions political and judicial institutions that simultaneously threaten the physical integrity of the bio-cultural landscapes and ecosystems producing and sustaining water, whilst controverting the authority of the IPRA law.

Notwithstanding these contradictions, as well as in continuity with prior endorsements of indigenous rights, the report advocates for regional autonomy, considered “a major regional goal and development strategy”, through the enactment of Article 10, sections 15-21 of the 1987 Philippine Constitution, signed into law through the Executive Order 220, which would require strengthening the institutional and resource capabilities of the National Commission on Indigenous Peoples (NCIP), the appointed representatives of ethnic minorities within national bureaucracy, as well as elucidating the foundations, structures and implementing modalities of indigenous government laws and institutions (NEDA, 2010: 80). Although, theoretically, coherent with the formal legislative capacities as well as the expected proficiency and aptitudes of the NCIP, the indigenous peoples of Kalinga, similarly to other indigenous Cordillera subtribes, have recurrently contested, the foundations and operations of this institution.

In fact, the NCIP has been accused of manipulating the FPIC process by skewing the debates in favour of corporations when these would present alluring economic incentives; withholding controversial facts, by notably highlighting certain aspects whilst attenuating others, failing to present exhaustive descriptions of the proponent and the submitted development venture; exploiting attendance sheets as unauthorised evidence to manufacture consent, or merely failing to render the information presented intelligible to those participating in the consultation process (Cuyop, 2016; CWEARC, 2013). Whilst debatable if one skillfully negotiates the legal frameworks of the 2012 FPIC Guidelines, or purposefully discards the submitted evidence by indigenous peoples as irrelevant, illegitimate or unsubstantiated, these admonitions nevertheless denounce the moral violations committed by the educated elite of indigenous societies to the intrinsic values of the Kalinga Bodong.
5.6.2 The Case of Geothermal Energy Production

Geothermal energy production further demonstrates the political and economic underpinnings of water security. The Cordillera Administrative Region, considered a promising geothermal development area, has been promoted by the Department of Energy as potential sources of sustainable energy for Northern Luzon (Pastor et al., 2005: 1). In Kalinga, the “impressive thermal manifestations, faults, and evident Quaternary volcanism” of Batong Buhay, an ili and barangay located in the municipality of Pasil, has been explored since the late 1970’s by government agencies, including the Philippines Commission on Volcanology, and the Philippines Bureau of Energy Development, as well as corporate entities, comprising Philippine Geothermal Inc., Aragorn Power and Energy Corporation (APEC) and Guidance Management Corporation (GMC) (Crisostomo et al., 2013). The controversial geothermal development proposal submitted by Chevron Philippines Inc. – a venture pursuing 26,000 hectares of fertile ancestral lands over nine ancestral domains, including those of Turkaw Guina-ang and Sumacher, located in municipalities the Tinglayan, Pasil and Lubuagan – precisely demonstrates the political constitution of water insecurity.

In 2011, significant violations were noted during the FPIC process of the aforementioned project conducted by the NCIP in the ancestral domain of Sumacher (Kalinga). Indicted for drafting a Memorandum of Agreement authorising the geothermal exploration of Chevron Philippines Inc. by the Sumacher people of the Mallango ili, the NCIP disregarded the refusal of the Sumacher people from Sumadel I, Sumadel II and Belong-Manubal, enabling the corporation to pursue negotiations with the marginal number of assertors in spite of the sub-tribe’s overwhelming disapproval. Similarly, the conflicting positions adopted by the Turkaw people of the Tulgao East and West ilis with respect to the geothermal development application prompted the same differentiated approach – one contravening the indigenous principles and practices of the Kalinga Bodong, founded upon consensual rulings obtained through deliberative and participatory approaches, intended to safeguard peace within as well as amongst ancestral domains (Sinumlag, September 11, 2011, in the Northern Dispatch Weekly). In breaking with this tradition, the NCIP at once implies, asserts and enacts the subordination of indigenous knowledge, as well as governance.
systems and practices to those represented by the State. The joint geothermal development
proposal of the Guidance Management Corporation (GMC) and the Aragorn Power Energy
Corporations (APEC) offers a similar tale. The Executive Summary of the Free Prior and
Informed Consent Process conducted by the NCIP office of Kalinga comprised 27
*ilis/barangays*, encompassing ten subtribes including Turkaw (Korayo, Tulgao East and
Tulgao West), Sumacher and Guinaang. As explained by “mam Naty [Natividad
Sugguiyao, provincial NCIP officer], the queen of the mountains”:

> The iColayo [indigenous inhabitants of Korayo/Colayo, an ili of the Turkaw ancestral
domain] are very lucky because if Kalinga is a body, Colayo is the heart and intestines
of Kalinga, you are always being serenaded by investors. Thus, you are the hope of the
Kalinga. The betterment of Kalinga depends on you⁶¹.

During the open forum of a public consultation held in Korayo (part of the ancestral
domain of Turkaw and located in the municipality of Pasil) on August 1ˢᵗ 2006, GMC-
APEC representatives were publicly interrogated for bribery, corruption and violations to
the FPIC protocol, notably from entering their domain without permission to conduct
geological surveys – all of which were criticised and negated through oral justifications,
appeals and guarantees by government and corporate representatives, without further
substantiating proof⁶². These questions highlight the deceitful, yet arguably lawful activities
conducted in the pursuit of “sustainable development”, as well as the complicit stance taken
by the NCIP from challenging local sentiments and experiences of deception, treachery or
misinformation, and with respect to such proposals. Robert Kitongan, the barangay captain,
explained to this effect that:

> [w]hen the GMC people came, I asked them; ‘who brought you here and what is your
purpose? And you answered, we are going to sample and do mapping for sulphur. (…) But I
heard later that sulphur is not their purpose, but to prospect for Gold… it was then that I
heard words that I was the one who sent those people to sample for Gold, because the
company gave me a big amount of money. (…) Your application with the NCIP is geo-
thermal, but why is it that your activity is related to mining (…) that should not be the case.

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Quotes of interventions by the indigenous participants of Korayo in the report produced by the NCIP of the consensus-building process required Memorandum of Agreement, following the proposal’s acceptance, further unveil significant apprehension, skepticism and distrust, as well as misconceptions of the proposal’s content and definition. These mirrored of geothermal energy production, including the potential dangers or hazards comprised at various scales and development stages. Aligao states: “I am boycotting because I have so many questions (…) we still have to settle ourselves in the community”, whilst Benita Ya-o admits: “I can’t understand what is geothermal. I am afraid because I don’t know anything about mining”.

Water represented a prominent concern throughout the campaign. During the “Preliminary Consultative Meeting” held on August 1st, 2006, an unidentified indigenous participant of Korayo asserted that “we [the umili] are afraid that the geothermal might suck all our water sources and [that] our irrigation canals will dry up”. Additionally, as pronounced in the Open Forum discussions, “several queries were made on the effects [of geothermal energy production] on the water sources and supplies. Apprehensions were raised that their irrigation water might be affected”. During the Consensus Building Process, the report discloses conditional terms of acceptance, founded upon water security matters as explicated by literal citations of a number of participants: “Yes, as long as it does not dry up our water” (Lawad, 2006); “Yes, as long as it will not dry up our water” (Basilio, 2006). Refusal also hinged on this preoccupation, as stated by Wayaway: “No, it will dry up our rivers”. Ernesto San Jose, executive vice-president of GMC, responded that “it will not in any way affect the water sources [since] water will have to return back”, especially considering that geothermal energy production is renewable, he continued, and that:

There will be a seal between the surface water and the reservoir”. He concluded by speaking of “the first geothermal project that was established in Italy. This operated for several generations and the project is still functioning nowadays, it even expanded. The water supply was not affected.

Sugguiyao further assured in the formal “Recommendations” of NCIP that “there were no vehement objections from those who were not in favour”, which meant “the end result
showed that [a] majority of the representatives were in favour of the project”, with only “more conformation and clarifications as to the effect of the geothermal plant on the source of water” needed\(^66\). Whilst corporate and State agents persuasively denied the potency of these risks, however, the Executive Summary report produced by the NCIP issued a warning in the “Disadvantage/Adverse Effects” segment of the “Community Benefits from the Power Plant” section of the “possible contamination of water resources, lakes and rivers, with geothermal effluents containing natural chemicals leached out from rocks by geothermal hot water as it is drawn up to the surface” (page 3).

The FPIC report produced by the NCIP regarding the issuance of a Certificate of Precondition authorising the geothermal exploration and energy production by GMC-APEC in the ilis/barangays of Bagtayan, Malucsad, Pugon and Galdang, comprised within the ancestral domain of Guinaang, located in the municipality of Pasil (Kalinga), reveal comparable issues. Sentiments of “fear that the water source from the forest will be dried up” were communicated during the Open Forum of the consultative hearing, whilst explanations provided by the DOE declared ambiguous and unintelligible (“not so clear”) by indigenous participants, unable to comprehend the effects, implications and impacts of geothermal exploration and extraction activities (p.10-11).

In the “Predicted Disadvantages/Adverse Effects and Mitigation Measures” of the NCIP designated and categorised geothermal development risks in an elusive and undetailed manner. These encompassed “surface disturbances”, referring to deforestation (“tree cutting in forested areas”), soil erosion and the “possible impact on biodiversity”; the “possible contamination of water resources (...) [from] the chemicals leached out of rocks by the water drawn to the surface”; the “emission of Carbon Dioxide, Hydrogen Sulphide and other non-condensable gases harmful at certain concentrated levels”; as well as “noise pollution during well discharge, testing” and during “small” power-plant operations (pp. 3-4). Elaborate promises voiced in an excessively technical and profuse, or conversely, in an imprecise and ambiguous language (highlighting “minimal cutting” and clearing as well as technical “systems” that “also contribute to compact development”, for example) suggested that geothermal exploration and extraction presented minimal risks (p. 3). Moreover, the
report fails to qualify and quantify losses, from predicted costs (both material and
intangible, such as natural resources essential to the ecosystem’s vitality – crucially, clean
air and water as well as fertile soils – and for the subsistence of local communities), the
absence of details and characteristics specifying the “chemicals” to which the
“contamination” risks refer, nor the extent and severity of damages these might engender
on human, environmental and geophysical scales.

In 2013, the council of elders of the Guinaang ancestral domain requested the suspension of
the FPIC process, including the exploration permit attributed to Makilala Mining Corp. due
to the NCIP’s failure to respond and appropriately act upon the petition submitted by
Guinaang Indigenous Peoples Organization rejecting the positive conclusions drawn by the
Commission. This written objection questioned the elders designated as the formal
representatives of the four chosen *ilis* by the NCIP considering the preexistence of such a
council, as well as the exclusion of the *ili* of Dangtalan from the consultation process
intended for the Guinaang sub-tribe. Sentiments of betrayal led additional protests by the
indigenous peoples of the six Cordillera provinces campaigning for the abolition of NCIP
in 2014 (Ngabit-Quitasol, October 26, 2014, the Northern Dispatch Weekly).

Moreover, as pointed out by a news outlet, Chevron was claimed to use the government’s
historical neglect of social services “to lure” the communities, promising scholarships,
roads and pathways, amongst others: “The absence of such basic services was used to
cripple united resistance of communities” (Sinumlag, April 20, 2014, the Northern Dispatch
Weekly).

5.6.3 Security, Conflict and Resistance

The historical resistance of the Kalinga people to foreign or imperial regimes has countless
times proven the significance and potency of indigenous knowledge and government
systems. From the mining ventures of the Spanish conquistadors during the 16th century,
throughout the exploitative American regime and the aggressive nation-building process of
the Philippines State, these indigenous institutions endured through dynamic reinventions
arise for the construction of dams and strip mining, the conflict between written law and traditional custom becomes a very serious problem”. This was notably demonstrated by the rejection of the proposed 33-megawatt Run-off River Dam from Hedcor, a subsidiary of the Aboitiz Power Corporation, by the Tanudan sub-tribe (Kalinga) in 2015, who denounced infractions to the FPIC process (Wanagon, August 16, 2015, the Northern Dispatch Weekly).

When contradictions pose a threat to the development or prosperity of the Philippine State, however, resisting the political agendas of foreign administration may provoke military responses, as demonstrated by the Chico Dam Project during Martial Law, as well as the recent deployment of the 50th Infantry Battalion of the Philippine Army in Western Uma (Lubuagan, Kalinga), and the Alpha Company of the 21st Infantry Battalion of the 501st Infantry Brigade in Tanglag (Lubuagan, Kalinga).

These reactions unveil the implicit, although fundamental purpose of national governments, whilst stimulating answers by the indigenous peoples affected by such oppressive intrusions, as well as the New People’s Army (NPA), the armed wing of the Communist Party of the Philippines (CPP), which was established in 1969 as the radical Maoist alternative to the pro-Soviet Partido Komunista ng Pilipinas (Santos et al., 2010: 261 in Glatz, 2011: 64). Critical of the exploitative policies and practices either perpetrated or condoned by the Philippine State, the NPA has been engaged in conflict with the Armed Forces of the Philippines (AFP), performing occasional “punitive actions” (Quimpo 2008 in Holden, 2014: 74; Mhar Larua, March 13, 2017, the Northern Dispatch Weekly). Aside from the overt military and counterinsurgency operations stimulated by ideological convictions, which aim to confiscate and secure control over resource government in the Cordillera highlands through violent physical encounters, these conflicts engage with local dynamics. The intermingling with indigenous politics has, effectively, proven susceptible of renewing or exacerbating tensions, or stimulating new quarrels. The official endorsement of the 52 MW Chico River hydroelectric development project by the NCIP in May 2017 notably prompted members of the Naneng, Dallak and Minanga subtribes to unanimously highlight the potential violence the dam’s erection could trigger as the mounting discontent
builds on historical antagonisms and threaten ancestral lands (Catajan, May 4 2017, Sun Star Baguio; Catajan, May 2 2017, Sun Star Baguio).

The recruitment of indigenous peoples in the Philippine army raises additional questions regarding the dual political, judicial and sociocultural traditions they may at once embody, enact, perform and enforce. By representing a people through the indigenous conception of self and the collective definition of individuality, whilst impersonating the State by upholding national laws and policies, indigenous soldiers may inadvertently trigger, reignite or magnify conflicts within or amongst (sub)tribes by conflating the significance of criminality, simultaneously bound to statutory and indigenous ethical codes and conventions, as well as the nature and extent of responsibility for the criminal offence. Wrongdoings may, as such, invest professional duties with obligations attached to the communal identity one personifies; establish the collective responsibility of amending the faults committed by a kailian or binodngan; or, when dealing with physical assaults, injuries and death, sever a peace pact, provoke the retaliation of the victim’s clan towards the clan of the accused person, according to judicial foundation indifferent to the functions or causes one may additionally serve or represent. Where bilateral peace pacts bind indigenous communities throughout the Cordillera highlands, allegiances with the Cordillera Peoples Liberation Army (CPLA), the New People’s Army (NPA) or the Philippine Armed Forces (PAF) may effectively challenge or disrupt social cohesion, unity and peace amongst and between people.69

Conflicts in Kalinga, alike the Bontok of Mountain Province, may trigger retaliatory acts of violence in an effort to balance the harm done, or to assert the strength and defensive capacity of an umili when negotiations conducted through the bodong system fail (Prill-Brett, 1987 in Glatz, 2011: 41). Lui-Aos (in Glatz, 2011: 73), a Lutheran Pastor of Kalinga, correlates revenge to honour – as something one must uphold, recover and demonstrate on behalf and for the sake of the umili. Moreover, the contested historical belief in the propensity of upper Kalinga subtribes to violently retaliate during conflicts, as opposed to lower Kalinga subtribes, reputed for endorsing peaceful negotiations, intensify apprehensions of imposing development proposals (Sinumlag, 2014 in CWEARC). This
presumption conveys the notorious analogy relating upper Kalinga subtribes, comprising those within the municipalities of Lubuagan, Tinglayan, Tanudan as well as certain from Pasil, with the kawitan (rooster) and lower Kalinga subtribes, comprising those located within the vicinities of Pinukpuk, Rizal, Tabuk City and Pasil, with the lipa (hen). Since the subtribes approached for geothermal development by APEC-GMC and Chevron Inc. personify the former, but also considering the enticing promises, and deceptive strategies historically mobilised to manufacture consent and stifle dissent by government bodies as well as corporations, the risk appeared credible and meaningful.
6. Conclusion

6.1 Summary and Discussion

This comparative ethnographic case study of water governance and security conducted amongst three Kalinga subtribes interrogated the conceptions, experiences and responses of the Summacher, Turkaw and Guinaang subtribes of Kalinga to contemporary threats to safe and sufficient supplies of irrigation water. It, furthermore, questioned the prevailing water governance systems and practices in their ancestral domains, asking how these function, what objectives they serve and whether the indigenous knowledge on which these are founded and through which these operate remains valid or appropriate when considering present climatic changes and variations.

These led to the definition and pursuit of three central objectives:

1) The identification of local perceptions and experiences of actual or potential threats to adequate supplies of irrigation water;

2) The description of prevailing water governance systems and practices, focusing on their constitution, purpose and operations in the allocation/distribution, use and management of irrigation water within the concerned ilis of the three targeted ancestral domains of Kalinga.

3) The explanation of current coping and adapting mechanisms articulated and deployed to counteract present or potential threats to irrigation water;

Six conceptual tools provided the theoretical foundations to this work. Worldwide, critical and qualitative studies conducted the anthropology of water were primarily explored for the valuable insights these provided on water’s significance. The rich body of literature highlighted recurrent and transversal descriptive accounts of water’s significance, including accounts representing water as a “total social fact” (Orlove & Caton, 2010; Linton and Budds, 2014; Boelens et al. 2016), as a lubricant of “social functions” (Perreault, 2014; Wilson, 2014) and a universal prerequisite to life, simultaneously to social, economic and
cultural practices, whilst indispensable to the sustenance and enhancement of the ecosystem functions on which human beings vitally depend (de Loë et al., 2007: 1). The interplay of complex networks of formal and informal institutions acting at multiple scales and levels were examined through the concepts of water governance and security.

The water security concept was proven to reflect multiple terms and conditions, which echo competing interests, as well uneven historical, geophysical and sociocultural inequalities. The security concept unveils the challenging interconnected definitions of risk and vulnerability, whilst unfolding the inherent socio-political constitution of uncertainty. The contentious problems these encompass are further propelled outside and beyond the typical disciplinary, political, judicial and sociocultural boundaries designed to reduce or simplify a phenomenon to a commensurable size (see for a more detailed account Cook & Bakker, 2012). Water’s intrinsically dynamic physical constitution, in addition to the innumerable variations of the sociocultural values and beliefs underlying the substance’s immaterial worth, render such targeted reflections ineffective, proposing grander considerations instead – a comprehensive and detailed investigation of the contextual and circumstantial impacts and experiences of water (in)security. When applied to water, the security concept therefore expands analytical considerations farther than mere scalar and spatial delimitations, for it promotes interdisciplinary discussions, highlights the significant role played by structural constraints and agency. It further calls on experts to collaborate, for the methodological strengths and capabilities of a discipline are inevitably deficient if not combined and supplemented by those of others.

The water governance concept similarly provides a stimulating framework enabling the formulation of constructive criticisms towards the reductive correlation of water insecurity with standardised quality and quantity measurements, associated to intricate calculations, associating costs and profits to value; possibilities and opportunities to financial capacities; and resilience to appropriate infrastructure and resources. In adopting this seemingly pragmatic equation, where risks become quantifiable data and vulnerability may conveniently be ranked in accordance to predetermined factors or variables, physical technology and policies offer expedient solutions, with money as the central and prominent
component. This rational, however, endorses procedures and objectives inherently disconnected from the situations it seeks addressing and the problems it attempts to redress.

The Integrated Water Resources Management (IWRM) framework provided a contemporary example of ineffective water government regimes led by State agents and international development organisations. Looking towards indigenous water government revealed the dynamic and cumulative body of knowledge, practices and beliefs that underscore the people’s perceptions, definitions and experiences of water. As proven by an extensive and diversified array of studies, these ways of knowing water (Gerlak & Mukhtarov, 2015) were proven to forge and determine indigenous coping and adaptive strategies, or shape, in other words, their appraisals, understandings and experiences of, as well as their (re)actions to water insecurity. The livelihood concept displayed the invaluable significance and pragmatic functions of such capabilities. It was further demonstrated that, as argued by Bakker and Cook (2011: 286), the competing conceptual definitions of indigeneity, water, rights and justice enmeshed in the concept of water security are not easily reconcilable especially, as argued by Babidge (2016: 98), when asserting or reviving traditional practices and claiming indigenous rights to waters contradict the recognition, enactment and implementation of competing rights by Nation-states. The livelihood concept further insisted on the significance and utility of such capabilities. As explained by Forsyth and Evans (2013: 56 quoting Christoplos et al., 2009), the investigation of adaptive strategies amongst vulnerable populations thus requires the consideration of “the social, economic, cultural, and political factors that frame their actions, incentives, opportunities, and limitations for action”.

The analysis featured five interconnected components providing critical insights of water governance and security in Kalinga. These comprised the vernacular references of climatic and environmental change of the Sumacher, Turkaw and Guinaang subtribes; a descriptive account of the prevailing indigenous water governance systems and practices for irrigation water; the prevailing indigenous definition of ownership and belonging, as well as the central indigenous values of respect, autonomy and harmony of Kalinga; and the relationship between water security, indigenous laws and national development.
The indigenous definition of seasonal periods and regularities exposed the local, traditional, or ecological knowledge systems mobilised, as referential tools and strategic instruments, for the definition and subsequent performance of suitable livelihood activities. Climatic and environmental conditions proved essential to the historical indigenous renditions of time, whilst presently signifying the unprecedented climatic changes defying local definitions of meteorological patterns and characteristics, as well as corresponding agrarian practices. Markers inspired by meaningful climatic or environmental attributes once stood for the beginning and ending of periods. These, at present, reveal the gradual shifts and transformations induced by global warming onto the development stages of local fauna and flora, as well as the fading of the predictive and descriptive analogies underscoring indigenous expressions for the coalescence of sociocultural and natural cycles of life. The physical and meteorological transformations stimulated by global warming were thus proven to hinder and potentially compromise the access to safe and sufficient quantities of water required for irrigated rice cultivation – an essential subsistence crop for the indigenous peoples of Kalinga. In light of this presentation, it was argued that indigenous knowledge presents an extensive and detailed account of environmental change and which could, in continuity with assertions made by Wilson, Walter and Waterhouse (2015) substantially contribute to risk reduction schemes, as well as effective climate change monitoring and mitigation programs by identifying precarious seasonal periods, such as the critical growth stages of cultivated crops, the gestational periods of endemic insects, animals and plants.

The vaster transformations experienced by the indigenous peoples inhabiting the ancestral lands of the Cordillera highlands evoke the gradual disappearance of cultural and biological diversity afflicting ethnic minorities worldwide (Posa et al., 2008). Indigenous ecological knowledge may, consequently, provide incising evidence and metrics for monitoring the impacts of such perturbations (Woodwards et al. 2012; Anik & Arfin Khan, 2012; Manochon, 2010). As convincingly argued by Alessa et al. (2016: 100):

bridging biophysical, ecological, and socioeconomic information at appropriate scales for management, decision-making and adaptation for a cross-scale analysis is
paramount for sustainable Indigenous communities in the face of these environmental changes.

The mechanisms regulating the access, use and consumption rights for irrigation water in times of abundance and scarcity were then proven to demonstrate the correlation between the security and governance of water in Kalinga. The Imong and Pinawa systems expand commonly held definitions of water governance by incorporating those pertaining to the ecosystems and lands – as with the prohibitions imposed upon the watershed lands identified as Kinufat, Kirhuwhat and Guinuvat.

The indigenous government systems and practices of Kalinga comprise several, interwoven and compatible mechanisms, periodically enacted for the fair distribution of irrigation water. These expose an inclusive conception of water governance, as well as an understanding of water security challenging what could broadly consist of “human rights”. Indigenous systems of irrigated rice cultivation appear embedded in sociocultural networks, sustained by habits of trust and reciprocity, as well as rules lubricated by various political, judicial and ethical rules or principles (Abansi et al., 2016: 281-282). The governance processes that underscore their functions present effective and sustainable solutions to local needs and constraints (Groenfeldt, 2004: 2). As put by Groenfeldt (2004: 6):

[a]t a higher level of national policy, the indigenous irrigation sector can be viewed as a national resource that contains the accumulated labour and engineering skills of many centuries. One does not have to advocate ancestor worship to suggest that a resource of this magnitude should not be ignored. One only needs to view that resource from an economic and environmental perspective to begin to appreciate the potential of the indigenous irrigation legacy for meeting future development goals.

The irrigated water distribution provided by the vanvantu and whatwhat-tug scheduling principles, alike those conveyed by the pas’pasa-li, the god’god-wa, the Po’oy, the pictur/pit-tor, and the man-an’chog systems or practices have been shown to compose what Wilson, Walter and Waterhouse (2015: 94) term “ethnohydrology”, or what one could otherwise depict as resilient indigenous hydraulic governance and engineering systems. Whilst definitions for such remarkably elaborate irrigation arrangements abound, these consistently attempt to translate the complex connectivity attaching indigenous peoples to
the sacred, non-human entity water embodies or evokes (Williams, 2014; Boelens, 2003; Boelens et al., 2006). The significant upkeep and manouevring required for the access, distribution, use and consumption of irrigation water has been proven to rely on additional indigenous practices, namely the practices ang-as, khakat, gaga and ang-ay. Water has additionally been proven to circulate differently throughout the ancestral domains of Turkaw, Sumacher and Guinaang in times of water scarcity, as demonstrated by the systems or practices entitled linap, paspasali and ma-hirap, solely applied when irrigators are confronted with restricted water supplies.

Corroborating the aforementioned statement, the water governance systems and practices of Kalinga display efficiency and resilience comparable to those applied or enacted by indigenous peoples worldwide (Acabado & Martin, 2016; Trawick, 2001; Perreault, 2008). Intended to safeguard the access to safe and sufficient irrigation water supplies, the indigenous water governance systems and practices of Kalinga enact preventive and counteractive measures for current or anticipated threats to communal livelihoods. The thorough and intimate knowledge of irrigated rice cultivation, which simultaneously conveys a refined historical, sociocultural and environmental sensitivity, puts forth adaptive strategies tailored to specific circumstances and contexts, including the fluctuations experienced amongst canal systems, as well as those dictated by the quantities and periodicity of available water, topography, development phases of native rice varieties, and climatic conditions (Perreault, 2008: 839).

The notion of ul’li-gong/ul’li-kong (akin to “ownership” and “belonging”) were shown to formulate water’s significant material and spiritual importance to the indigenous peoples of Kalinga, considered an integral component of their collective identity. Their interactions with non-human beings, such as water, were shown to enforce the governing principles of autonomy, harmony and respect in Kalinga – concepts proven to underlie indigenous conceptions and experiences of security. The collective, yet inherently personal sentiments of shame, termed fa-in or va-in, the foundation myth of Kalinga, as well as the ngilin and paniyaw (“taboos” and “prohibitions”) highlight the conceptions, experiences and responses of the Summacher, Turkaw and Guinaang subtribes to contemporary threats to
safe and sufficient supplies of water, whilst exposing the sociocultural beliefs, values and principles shaping their conceptions of, and interactions with water.

The Regional Development Plan (2011-2016) produced by the National Economic and Development Agency (NEDA, 2010) was then used to provide insightful evidence on the previously stated problems of the IWRM framework adopted in the Philippines by exposing the reductive conceptions and valuations of water underscoring local insecurities. The unsettling climatic fluctuations and warming temperatures hampering predictive capacities, curtailing adaptation strategies and instilling a growing sense of uncertainty with regards to the availability of water in adequate quantities and quality at appropriate times to sustain irrigated rice cultivation in Kalinga were, thus, connected to the overarching political context of the Philippines, which engendered, perpetuates and exacerbates, through formal rulings and laws, water insecurity. The case of geothermal energy production in Kalinga, thus, provided an insightful example of the inherently political foundations of insecurity, whilst conclusive remarks regarding the conflict and resistance triggered by conflicting definitions of water’s significance, value and functions reiterated the conflicting foundations of neoliberal capitalism with those underscoring indigenous governance systems and practices. Strang (2005: 367), recalling this remark, asserts that the control of water depends on the ability to realise particular visions of social, moral and environmental order through material action.

Indigenous water governance systems and practices, alike those pertaining to land, reflect the holistic and interdependent conception of indigenous life, one which considers autonomy a finely crafted and dynamic product of relationships developed and sustained by humans with non-humans since time immemorial. Whilst the judicial and political bodong system indigenous peoples of the Kalinga people, which encompasses the irrigation water governance system and practices, the Philippine State further imposes laws and policies sanctifying values and interests that may complement, contest or radically diverge from those asserted through indigenous government institutions. Governance was proven to embody the principles, rules and guidelines stipulated in the Kalinga bodong, embedded in the sociocultural conceptions of indigenous persons. These accordingly stand as legitimate
rules and guiding principles intended to secure peace, a notion defined as a harmonious state of communal existence and security. Peace for the indigenous peoples of Kalinga appears contingent to the respectful, obliging and considerate behaviour of humans towards their own kind as well as non-humans beings, including nature and spirits. This obligation applies within, but also amongst ancestral domains comprised in Kalinga as well as those of adjacent tribes who engaged in the bodong through bilateral peace pacts. As such, the prevailing indigenous government system and practices of Kalinga define security as the enactment of preventive and curative measures for peace, order and harmony.

Embracing security as peace means safeguarding the collective notion and definition of personhood as one of harmonious and respectful coexistence above the neoliberal veneration of individual rights and liberties. The indigenous peoples of Kalinga, thus, promote an attitude foregrounding humility, respect and caution towards the non-human beings enabling sociocultural and biophysical life to flourish and thrive. Founded upon respectful coexistence, the Kalinga culture restrains human activities to conditions, possibilities, opportunities and constraints determined by transcending rules and principles, both communal and non-human. Incorporating this philosophy into water governance could ultimately contribute to an epistemological shift, from a dualistic conception of worldwide society to a focus on the interconnected existence of human and non-human beings (Escalona Victoria, 2016: 255).

Hence, when considering the water governance systems and practices of the indigenous Kalinga people, water security appears contingent to responsive and assertive interactions amongst and between human and non-human beings. The description of indigenous governance systems applied to irrigation water throughout the ancestral domains of Sumacher, Turkaw and Guinnang unveil what de Haan (2000 in Perreault, 2008: 846) calls the “day-to-day practices employed by individuals, households, and communities to secure the material basis of life”. It additionally proved, as defended by Crate (2011: 186), that “adaptation, vulnerability, and resilience in humans are dependent on much more than the physical system and much more than can be captured using predictive models”. It therefore appears paramount to consider the complexity and constraints of adaptation through its
differential outcomes, including the loss of livelihoods, cultures, and identities when addressing water governance and insecurity (Nelson et al., 2009 in Crate, 2011: 187). As told by Linton (2010: 3), quoting a Mircea Eliade, a philosopher and historian of religion, water is “the source of all possible existence”. As put by Sunita Narain, head of the Centre for Science and Environment, when accepting the 2005 Stockholm Water Prize (in Linton, 2010: 223): “[water] is not about water. Water is about building people’s institutions and power to take control over decisions”. As put by Swyngedouw “in the light of the real or perceived risks of water crises, a review of the way in which the hydrosocial cycle, water management, water politics, and water economics are understood and theorised is long overdue”.

6.2 Research Limits and Possibilities

As a closing remark, I wish to critically reflect and discuss the limit of this academic research, whilst highlighting potential avenues of enquiry. Countless mistakes were committed throughout this process, but I would rather, here, focus on certain choices I made, or that I neglected to consider, study or scrutinise. One central critic this research may face pertains to its coverage and scale: I embarked upon an extensive comparative study without appreciating the considerable work required to rigorously depict and adequately represent the specificities and commonalities of nine ilis, encompassing three subtribes straddling over two municipalities. As mentioned in the methodology, I underestimated the physically demanding component of this decision, as well as the geographical and meteorological complications in the realisation of this study. Moreover, in selecting three rather than a single ili or ancestral domain, I was unable to learn the local dialect – a shortcoming for which I felt sincerely guilty and disappointed. The analysis presents similar flaws and lacunas resulting from the ambitious (and somewhat unrealistic) stride I sought taking: I, indeed, chose a multi-scalar approach, mobilising several indigenous and theoretical concepts in an exploratory fashion to examine the water governance and security in Kalinga. What I felt provided, on one hand, significant insights on the unquestionably multidimensional and embedded definition of water (in)security, I believed, on the other, occasionally lacked depth or substance. I generally agree with
esteemed colleagues and friends (including my advisor) who saw this venture fitting more
the format of a doctoral research rather than that of a master’s.

Multiple research topics may, consequently, be gathered from elements superficially
examined or intentionally left out of this research, if one wishes to pursue academic
research amongst the indigenous peoples of Kalinga. These include writing a meticulous
account of all water divisions and areas comprised within a subtribe’s ancestral domain,
including qualitative and quantitative descriptions of their irrigation water sources; a
cartographic illustration of their emplacements and their intersections with the formal
administrative boundaries determined by the Philippine State; a finely articulated exhibition
of all prohibitions and taboos of a particular subtribe; a detailed recollection of
Ahunyan/Kabunyan’s journey through and amongst the indigenous subtribes of Kalinga, or
even across the Cordillera Administrative Region; as well as the critical appraisal of the
innumerable interactions, disputes and cooperative relationships embedded in water
governance and security performed at local, municipal, provincial and regional scales. If
interested in water governance, one could consider performing an ethnographic research
amongst indigenous communities elsewhere within the Cordillera highlands, where
irrigated rice cultivation abounds, or in other Southeast Asian countries in search for
similarities and differences in their customary water governance systems and practices.
Annex

1. Interview Questions and Discussion Topics

a. Water, rights and responsibilities
   - Names of sources/bodies supplying potable and irrigation water to the community;
     • Ullikong (Sumacher and Turkaw)/Ulligong (Guina-ang): the concept of individual and collective property rights and responsibility
     • Gaga (Sumacher)/Kakat (Turkaw)/Ang-as (Guina-ang): collective rights and responsibilities towards the maintenance

b. Water management systems and practices
   - Fallali/Fatfatug (Tinglayan)/Fasfasali (Sumacher)/Whatwhatug (Turkaw)/V anvantu (Guina-ang): schedule for the distribution of irrigation water shared between several rice fields
   - Paspasali (Guina-ang)
   - Kokogwa (Sumacher)/Godgodwa (Guina-ang): voluntary agreement reached for the equal division of water between the owners of contiguous rice fields within an area
   - Pa-oy (Guina-ang):
     i. Pungalan (closest to the irrigation source)
     ii. Mankawa (middle – through which the water shall pass)
     iii. Waway (farthest – typically suffering the most from water shortage)
   - Access, use and distribution of irrigation:
     i. Who established such systems and regulates their operation?
     ii. How are these enforced?

c. Water scarcity and distribution
   - Inong-nong-er (Sumacher)/Linap [the practice/noun] – Malinap [enacted by a person/verb] (Guina-ang): the fair or even distribution of scarce water in times of scarcity
   - Anchog [the noun] – An’chogan [persons]– Man’anchog [verb] (Guina-ang): the guardian as the owner or a delegate from the area
   - Asiew-won [a verb] – water “grabbing” otherwise described as stealing, unlawfully or illegitimately taking, irrigation water

d. Terms and references pertaining to climate and time in the Kalinga dialect
   - Periods/times of a day
   - Names given to months or seasonal periods in the Kalinga dialect, characteristics and explanation of their meaning
## 2. Times of the Day

<table>
<thead>
<tr>
<th>MOMENT OF THE DAY</th>
<th>SUMACHER</th>
<th>TURKAW</th>
<th>GUINAANG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earliest time of the day, still dark, 1st crow, heard at approximately 3:00 AM,</td>
<td>Machama’an</td>
<td>Matshari</td>
<td>Choka</td>
</tr>
<tr>
<td>time to cook.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Represents dawn, between 4:00 and 5:00 AM, when people typically wake up.</td>
<td>Wisnit</td>
<td>Akun-kurap’pa</td>
<td>Wis’wisnit</td>
</tr>
<tr>
<td>Before sunrise.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sunrise, the ideal moment for disposing the rice on large, flat surfaces to be</td>
<td>Fig’fikat</td>
<td>Chu-whu-ngit</td>
<td>Fig’fikat</td>
</tr>
<tr>
<td>dried by the sun. Also commonly refers to the morning, pertaining to a timeframe</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>that extends before and after breakfast.</td>
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<tr>
<td>Around 7:00 AM</td>
<td>Suvirer</td>
<td></td>
<td></td>
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<tr>
<td>Time for breakfast, between 8:00 and 9:00 AM</td>
<td>Mang’ma-ngan/Chikas</td>
<td>Mang’ma-ngan/Chikas (more commonly known as</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>“Chikas”)</td>
<td></td>
</tr>
<tr>
<td>After sunrise until the sun has reached its highest point.</td>
<td>Mang’mang-an</td>
<td></td>
<td>Mang’mang-an</td>
</tr>
<tr>
<td>The time when people go to their farms.</td>
<td>Whakut</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time Description</td>
<td>Language</td>
<td>Notes</td>
<td></td>
</tr>
<tr>
<td>---------------------------------------------------------------------------------</td>
<td>----------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Turn, achik as likuson; turn the part of rice too dry (last 3 days).</td>
<td>Chikas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>At a slight distance from the center.</td>
<td>Mantal-li’ing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mid-day, high noon.</td>
<td>Mamaa’to’</td>
<td>Er’er-kaw</td>
<td></td>
</tr>
<tr>
<td>1pm to 3pm</td>
<td>Er-er kaw</td>
<td>Matcha-ma</td>
<td></td>
</tr>
<tr>
<td>Approximately from 4:00 PM until sunset, time when the temperature, like the sun’s intensity, decreases.</td>
<td>Uvaproy/Uvaruvavoy and Kisfot – no difference exists between these terms, interchangeable to qualify this particular time of the day without negative or positive connotations.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evening, approximately from 5:00 to 6:00 PM, sunset or when the light becomes dim.</td>
<td>Mas’chum</td>
<td>Mas’chum</td>
<td></td>
</tr>
<tr>
<td>Night-time</td>
<td>Rafi</td>
<td>Lawhi</td>
<td></td>
</tr>
<tr>
<td>Night-time</td>
<td>Rafi</td>
<td>Another common term: Tipro, meaning “very dark and quiet”, qualifies the time when people sleep.</td>
<td></td>
</tr>
<tr>
<td>Midnight</td>
<td>Kawan’na lawhi</td>
<td>Ga-wan lap’fi</td>
<td></td>
</tr>
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</table>
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