



Norwegian University  
of Life Sciences

**Master's Thesis 2022, 30 ECTS**

Faculty of Landscape and Society  
Noragric

# **Traditional Ecological Knowledge in the Peruvian Andes: practice, synergies, and sustainability**

Alessandra Tempini

MSc Global Development Studies

The Department of International Environment and Development Studies, Noragric, is the international gateway for the Norwegian University of Life Sciences (NMBU). Established in 1986, Noragric's contribution to international development lies in the interface between research, education (Bachelor, Master and PhD programmes) and assignments.

The Noragric Master theses are the final theses submitted by students in order to fulfil the requirements under the Noragric Master programme "International Environmental Studies", "Global Development Studies" and "International Relations".

The findings in this thesis do not necessarily reflect the views of Noragric. Extracts from this publication may only be reproduced after prior consultation with the author and on condition that the source is indicated. For rights of reproduction or translation contact Noragric.

© Alessandra Tempini, March 2022

[Alessandra.tempini@gmail.com](mailto:Alessandra.tempini@gmail.com)

Noragric

Department of International Environment and Development Studies

The Faculty of Landscape and Society

P.O. Box 5003

N-1432 Ås

Norway

Tel.: +47 67 23 00 00

Internet: <https://www.nmbu.no/fakultet/landsam/institut/noragric>

## Declaration

I, Alessandra Tempini, declare that this thesis is a result of my research investigation and findings. Sources of information other than my own have been acknowledged and a reference list has been appended. This work has not been previously submitted to any other university for award of any type of academic degree.

Signature: 

Date: March 15, 2022

## Acknowledgements

This thesis would not have been possible without the help, support and guidance of my supervisor. Thank you, professor McNeish for your patience, your honest feedbacks and for politely challenging my assumptions throughout this long and bumpy process. I really appreciated our discussions, which have been extremely enlightening and have helped me see more nuances than I ever could on my own.

I would also like to thank all the people who have let me “pick their brains” when I felt lost and stuck in my theoretical confusion. Thank you Are, dear partner in crime and partner in life, for our discussions late at night, at the breakfast table, during dinner and whenever I needed a fresh pair of ears and eyes to detangle the mess in my head and on paper. Thank you my dear colleague and friend Pablo, for giving me hope and tiny “breadcrumbs” to follow when I felt most hopeless. Thank you Armando from Regnskogsfondet for answering my way too open and way too vague questions with spot-on input on the incredible stories of the Indigenous peoples of the Peruvian Amazon. Thank you María for our coffee breaks at Schous plass, which cleared my foggy brain and gave me a much-needed break from reading and writing. Thank you Johanne for sharing part of this thesis-writing journey with me, and gifting me with your company and contagious positivity in this otherwise very lonely process.

Thank you to my family – mom, dad and Michi – for supporting me and encouraging me all along, even from afar. Thank you also to my acquired family – Sonja, José María and Are – for giving me that extra push when I was inches away from giving up.

Finally, thank you to all of my friends, friends’ girlfriends and boyfriends, colleagues, neighbors, acquaintances, strangers, and most of all my husband, who had to put up with my rants, mood swings and nervousness in these difficult months. I’ll be normal again now, I promise.

Last but not least, thank you Guapi for taking care of me, feeding me, supporting me, consoling me and for being your usual loving *tullete* self even when I was down. Eres la luz de mi vida y te quiero mogollón.

*«Muchas palabras se caminan en el mundo.  
Muchos mundos se hacen. Muchos mundos nos hacen.  
Hay palabras y mundos que son mentiras e injusticias.  
Hay palabras y mundos que son verdades y verdaderos.  
[...]*

*En el mundo del poderoso no caben más que los grandes y sus servidores.  
En el mundo que queremos nosotros caben todos.  
El mundo que queremos es uno donde quepan muchos mundos [...]   
donde quepan todos los pueblos y sus lenguas,  
que todos los pasos la caminen,  
que todos la rían,  
que la amanezcan todos.»*

Cuarta declaración de la selva Lacandona,  
Ejército Zapatista de Liberación Nacional  
(EZLN, 1997 p. 89)

## Abstract

This thesis presents a theoretical discussion on the role of Traditional Ecological Knowledge (TEK) in livelihood activities and resilience strategies of the Indigenous peoples of the Peruvian Andes and the possibility of creating synergies with Western science. Using two case studies, from the Potato Park in Písaq and the Chalakuy Maize Park in Lares, Cusco Region, it reviews how this ancestral knowledge is converted into practice by its holders to cultivate and protect the potato and maize varieties of the Andean highlands. The Quechua values of community, reciprocity, complementarity and solidarity are also considered, as they play an important role in the governance structures and the redistributive mechanisms of the parks. The study then examines how the collaboration with civil society and science practitioners has sparked innovation, improved the resilience of these communities to climate change and established the parks as Biocultural Heritage Territories for the protection of the Andean biodiversity. The analysis of the case studies demonstrates that TEK is a living, highly adaptable and valid source of information and practices of ecosystem management and climate-change adaptation for its holders. It may, however, be unsuitable to solve global sustainability problems due to its local and context-specific nature. The thesis concludes that TEK can, however, offer much-needed reflections on how to reconsider the anthropocentric view of Western science and capitalism, and rediscover a long-lost connection with our roots and a renewed respect for the natural world.

## Table of Contents

1.	<i>Introduction</i> .....	1
2.	<i>Methodology</i> .....	3
	i. Presentation of the research design, study limitations and reflections.....	3
	ii. Ethical considerations.....	4
3.	<i>Theoretical and conceptual framework</i> .....	6
	i. Defining Indigenous peoples.....	6
	ii. Defining Indigenous Ecological Knowledge and Traditional Ecological Knowledge.....	8
	iii. Theoretical framework: Post development and decolonial thought.....	9
	iv. The question of Indigeneity.....	11
	v. Andean Indigenous worldviews and values.....	14
	vi. Indigenous peoples' view of wellbeing: <i>Buen vivir/Sumak kawsay</i> .....	16
4.	<i>Historical and political background</i> .....	20
	i. Indigenous struggles in Peru from the <i>conquista</i> to the Agrarian Reform.....	21
	ii. Indigenous struggles in the times of neoliberal extractivism in Peru.....	23
5.	<i>Traditional Ecological Knowledge (TEK): overview and reflections</i> .....	26
	i. TEK in academia and knowledge production.....	26
	ii. TEK in the international arena and policymaking.....	29
	iii. The implications of TEK for Indigenous self-determination and governance.....	33
6.	<i>TEK in practice: the Potato Park and the Maize Park</i> .....	35
	i. The Potato Park ( <i>Parque de la papa</i> ) in Písaq, Peru.....	35
	ii. The Maize Park ( <i>Parque Chalakuy</i> ) in Lares, Peru.....	41
7.	<i>TEK for biodiversity conservation: a local solution to a global problem?</i> .....	43
8.	<i>Conclusion</i> .....	48
9.	<i>Appendixes</i> .....	51
	i. Appendix 1: International Frameworks for Indigenous development.....	51
10.	<i>References</i> .....	53

## List of acronyms

BCH = Bio-Cultural Heritage

BCHI = Bio-Cultural Heritage Innovation

BCHT = Bio-Cultural Heritage Territory

CIP = Centro Internacional de la Papa (International Potato Center)

EbA = Ecosystems-based Adaptation

FAO = Food and Agriculture Organization

FPIC = Free Prior and Informed Consent

IEK = Indigenous Ecological Knowledge

IK = Indigenous Knowledge

IIED = International Institute for Environment and Development

ILO = International Labor Organization

ILEK = Indigenous and Local Ecological Knowledge

IPBES = The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem

Services

IPCC = Intergovernmental Panel on Climate Change

IPLCs = Indigenous Peoples and Local Communities

PAR = Participatory action-research

TEK = Traditional Ecological Knowledge

TK = Traditional Knowledge

UN = United Nations

UNCED = United Nations Conference on Environment and Development

UNDRIP = United Nations Declarations on the Rights of Indigenous Peoples



## 1. Introduction

Globally, we are seeing a growing focus and preoccupation for the worsening of the climate crisis and its impacts, which are becoming increasingly severe and dangerous to the Earth's ecosystems and biodiversity, as well as for the well-being and livelihood of the world's population. The rising global temperatures, growing CO<sub>2</sub> levels in the atmosphere, unpredictable and extreme weather patterns and irregular seasonal shifts have already caused substantial (and in many cases irreversible) damage to both land and water ecosystems (IPCC, 2022). There is now a strong scientific consensus that these changes are primarily caused by human activities (Powell, 2017). These changes are especially driven by greenhouse gas emissions (IPCC, 2013), and are strong symptoms of the dependence on natural resource extraction and fossil-fuel utilization of the now-dominating capitalist market-driven economy (Barry, 2012; Klein, 2014). Traditional Ecological Knowledge (TEK) (also known as Indigenous Ecological Knowledge) has emerged in this context as an alternative knowledge system that can provide sustainable pathways to wellbeing while protecting the Earth's ecosystems and biodiversity (Gagdil et al. 1993). Most of the world's Indigenous cultures, in fact, still maintain "tight links to ecosystem dynamics [and] have developed knowledge, practices and institutions to accommodate disturbances to secure their livelihood" (Gómez-Baggethun et al, 2013). Because of its holistic and eco-centric nature, TEK is now increasingly recognized in both academia and policymaking as a source of information for more sustainable environmental policies related to biodiversity and ecosystem conservation (IPBES, 2017; FAO 2020; IIED, 2021; Nelson & Shilling, 2018; Gómez-Baggethun et al., 2013). As a result, and more and more environmental projects are undertaken with the help of Indigenous and local communities.

Given these premises, this research aims to look at the ways in which Traditional Ecological Knowledge (TEK) is translated into practice by the communities of the Southern Peruvian Andes. Arguing for the importance of creating safe spaces for the preservation of the traditional knowledge and practices of Indigenous and local communities, it proposes to examine the value and relevance of TEK for ensuring the livelihood and resilience of the Indigenous peoples of the Peruvian Andes. It will, additionally, examine the kind of relationships that can arise from equitable and reciprocal dialogue with Western science. By

way of two case studies – the Potato Park (*Parque de la Papa*) and the Chalakuy Maize Park (*Parque Chalakuy de Maíz*) – it will review some of the ways in which TEK is used to create the foundation of community governance and food security, with the help of local scientists and Asociación ANDES. This research will, then, be guided by the following questions:

*How may the collaboration between Traditional Ecological Knowledge (TEK) and Western science support and improve the livelihood and resilience of the Indigenous communities in the Potato Park and the Chalakuy Maize Park?*

*And how can Traditional Ecological Knowledge (TEK) and its values contribute to the mainstream discourses of sustainable development and biodiversity protection?*

Theoretically situated within the framework of post-development (Ferguson, 1995; Escobar, 1995) and decolonial theory (Quijano, 2007; Mignolo 2007), and in the light of the current discussions on the delicate question of indigeneity (Postero, 2013; Garrouette, 2018; Ludlow et al., 2016), this thesis will first consider the position of TEK in academia and policymaking and reflect on the implications of its recognition for Indigenous self-determination. After providing an overview of some of the major traits of Andean Indigenous worldviews and values, as well as the history and political struggles of Indigenous peoples in Peru since colonial times, it will review and analyze the aforementioned case studies. These will be used to demonstrate how TEK translates into practice in the Potato Park and the Maize Park, and how reciprocal collaboration with Western science may stimulate innovation. The lessons learned from these empirical examples will provide the basis for the discussion on the position of TEK within the global efforts towards sustainable development. The choice of limiting the research on the study of the cosmologies of the Peruvian Indigenous peoples of the Andes is mainly a personal one: my fascination for Latin America started when I was very young, and has grown even stronger during my studies. Moreover, my linguistic interests naturally lead me towards Spanish-speaking countries, and even though doing fieldwork in Peru was not possible due to the Covid-19 pandemic, it has helped me greatly in finding relevant literature also in Spanish. However, it is also an ontological one. The principles of relationality, complementarity and reciprocity at the base of Andean Indigenous worldviews represent a powerful alternative to the *divide et impera* (divide and govern) motto of the Western andro- and ethnocentrism. The

interconnectedness of the Andean *cosmovisión* also challenges the supposed superiority of humankind and the subalternity of all other living and non-living beings typical of our modern, westernized world. Since sustainability is first and foremost an ethical and moral question (Nelson & Shilling, 2018 p. 4), this research will investigate how the abovementioned aspects can offer useful insights towards the reconsideration of our role as the single most transformative force on Planet Earth, based on the restoration of a more symbiotic bond between humans and Nature.

## 2. Methodology

### 2.1. Presentation of the research design, study limitations and reflections

This thesis is a strictly theoretical endeavor. Therefore, to address the research question, a literature review of existing research and information has been carried out about TEK, Indigenous peoples and their struggle to exercise governance on their land and preserve their natural environment. Moreover, policy documents have also been reviewed, to outline an overview of Indigenous representation in local and international organs of power. The original design idea was to combine this theoretical aspect with semi-structured interviews with Indigenous leaders and experts in the field of Indigenous governance in the Andes. The variation in both methods of data collection (literature review and interviews) and data source (Indigenous leaders, academics, and experts) would have undoubtedly provided a more complete analysis of the issue, more interesting findings and a richer representation of the people involved and the struggles they face. However, the ongoing Covid-19 pandemic, and the restrictions that have been put in place to limit the spread, required a change of direction in my initial research design. Since many countries had closed their borders, or made it very hard to enter, and it was no longer possible to travel to remote regions, the acquisition of primary data through in-person interviews became unfeasible, and even unethical, in the face of the aforementioned situation. Conducting online interviews also proved itself difficult, due to the limited availability of strategic contacts and accessibility to a stable internet connection in the remote places that Indigenous communities often inhabit.

For this research I have, then, only used secondary sources produced through research articles, policy documents and media coverage by and on Indigenous peoples, associations and international organizations that focus on Indigenous peoples and TEK. Moreover, due to the impossibility to conduct field work and acquire raw research data myself, the empirical basis for this thesis has been constructed solely on case studies. Although this has provided many useful insights, I do recognize that, since the findings have already been filtered by another person's interpretation, standpoint and/or cultural mediation, they may undermine the trustworthiness of the acquired data, as it is harder to establish the confirmability of the research, or the assurance that the author has not allowed "personal values or theoretical inclinations manifestly to sway the conduct of the research and the findings deriving from it" (Bryman, 2012 p. 292). Moreover, since TEK is mostly transmitted through oral storytelling and traditional practices where physical, active participation is required, a considerable amount of critical information may have been missed in the analysis of existing literature on the subject. To try to remedy the lack of a more diversified and all-round base for my research, I have tried to consider different perspectives, by selecting a wider range of research data and studies by both Indigenous and non-indigenous scholars and intellectuals in an attempt to paint as nuanced a picture as possible of the case at hand. Despite the good intentions, I do recognize that the latter greatly surpass the former in representation both in the academic world in general, and in this thesis in particular, which means that it is unknown whether some of the positionings presented in this thesis are interpreted from a Western standpoint or not. This last issue may be, however, unavoidable since my own personal background, upbringing and academic training are almost exclusively situated within Western science and culture. However, the Covid-19 pandemic has also given me the change to dive more deeply (at least through theory) into the philosophies and the worldviews of the Indigenous peoples of the Peruvian Andes, which has only increased my interest and fascination for the subject. I hope one day to be able to travel to Peru and visit the locations of the case studies analyzed in this thesis to learn more about these people and their stories.

## 2.2. Ethical considerations

In the interest of "[ensuring] the protection of the participants' health and welfare" (Locke et al., 2007 p. 28) a few ethical considerations had to be made when choosing the research and

data-collection process. First of all, as mentioned above, the current global pandemic of Covid-19 made traveling to remote regions not only difficult, but also, and most importantly, unethical, since small Indigenous communities would probably not have the same capacity to withstand a viral infection without immediate access to medical facilities. Therefore, in-person visits were not considered a feasible data collection method for this thesis, and secondary sources of information were then employed. Another ethical issue to be reckoned with is that of fair representation. In the meeting with “groups of people who have endured long histories of colonialism, slavery, racism or neocolonial development interventions”, as noted by (Cupples & Kindon 2003, p. 239), it is crucial to keep in mind that most of our assumptions towards them have most likely been influenced by previous representations of their realities. So, when writing about Indigenous peoples, it is important to “[acknowledge] their marginalization but [...] not exacerbate it” by perpetuating such assumptions. As Madge (1997, cited in Banks & Scheyvens, 2014 p. 160) rightfully said, “ethical research should not only ‘do no harm’, but also have potential to ‘do good’, to involve empowerment”, should “recognize [the dignity of the researched] and contribute to their empowerment” (Cupples & Kindon 2003, p. 239) In the context of this research, the portrayal of Andean Indigenous peoples will have to be wary of the accounts given by previous research, as well as the local government and other political and social actors. In particular, the use of written record and media coverage the added challenge of ensuring contextual integrity, defined by McLennan & Prinsen (2014) as “being aware of the political purpose of the repository and of the values, etiquette and choice of words at the time in which the records were created.” (p. 83). At the same time, the researchers themselves have to be aware of their own assumptions and values when endeavoring to write on any topic, especially one that has to do with marginalized peoples and their philosophies and traditions, as it is the case with this research, because “producing a long-lasting written record of those participants and the place in which they live [...] if done badly could have negative consequences.” (Cupples & Kindon 2003 p. 239). Similarly, this research is based on a set ontological and epistemological positions with the related set of assumptions, which must be recognized. The very choice of this topic was dictated by the conviction, rooted in the post-development tradition, on the part of the researcher that several alternatives to “development”, and even to the term “development” itself, are not only possible, but even desirable. Consequently, since the theoretical positioning of this thesis is within the post-development effort of “moving beyond development as a dominant discursive frame” (ibid. p.

240), the guiding ontological position will be constructionism, which implies the assumption that “social phenomena and categories are not only produced through social interaction but that they are in a constant state of revision” (Bryman 2012, p. 33). When it comes to the epistemological considerations, which are typically concerned with “whether the social world can and should be studied according to the same principles, procedures, and ethos as the natural sciences” (ibid, p. 27), this investigation has taken on a more interpretivist perspective, which believes that “multiple realities exist which are intangible, local and specific in nature” (Sumner & Tribe, 2008 p. 61) and is critical as to the idea of applying fixed scientific models to the study of the human reality, being more concerned with understanding human behavior, rather than explaining it (Bryman 2012, p. 28). My hope is that, thanks to these ontological and epistemological guiding principles, this research has been able to give the research subjects as fair and balanced a representation as possible.

### 3. Theoretical and conceptual framework

#### 3.1. Defining Indigenous peoples

Due to the limited scope of this research, I will not dwell in lengthy discussions on the different meanings and connotations, either anthropological or political, of the terms Indigenous, local, and traditional. While recognizing that these concepts are all but univocal and uncontroversial, this section will only mention some of the issues and controversy that each term carries and will try only to delimitate and operationalize them for the sole purpose they are meant to serve in this thesis.

Currently, there is no single and universally recognized definition of the term Indigenous, since the great diversity that characterizes Indigenous peoples worldwide makes it hard to outline a term that encompasses all its manifestations without leaving out any group or oversimplifying the concept. While the United Nations Declaration on the Rights of Indigenous Peoples (UNPFII, 2006) purposely abstains from delimiting both the term and the conditions for being defined as such, some attempts have been made at circumscribing some of the distinctive characteristics of Indigenous populations. The dictionary definition describes Indigenous peoples as: “of or relating to the earliest known inhabitants of a place and especially of a place

that was colonized by a now-dominant group” (Merriam-Webster, n.d.). Further, it emphasizes a special connotation of the term, applicable to that which “is not only native but which, as far as can be determined, has never been introduced or brought from elsewhere” (ibid.). The text of the fifth session of the United Nations Permanent Forum on Indigenous Issues, provides a similar description, defining Indigenous peoples as “the descendants [...] of those who inhabited a country or a geographical region at the time when people of different cultures or ethnic origins arrived” (UNPFII, 2006). Another interpretation can be found in the text of the ILO Convention concerning Indigenous and Tribal Peoples in Independent Countries (ILO, 1989). Article 1.1b delineates the term in a similar way to the other sources mentioned above, adding that Indigenous people are also those who “retain some or all of their own social, economic, cultural and political institutions” (ibid). Moreover, and more importantly, Article 1.2 recognizes “self-identification as Indigenous or tribal [...] as a fundamental criterion” (ibid.) for determining the belonging (or otherwise) of a population to the Indigenous category. Finally, FAO recognizes the following criteria when defining Indigenous peoples:

“Priority in time, with respect to occupation and use of a specific territory; The voluntary perpetuation of cultural distinctiveness, which may include aspects of language, social organization, religion and spiritual values, modes of production, laws and institutions; Self-identification, as well as recognition by other groups, or by State authorities, as a distinct collectivity; and an experience of subjugation, marginalization, dispossession, exclusion or discrimination, whether or not these conditions persist.”  
(FAO, 2020 p. 6).

More generally, in international fora, the term Indigenous Peoples and Local Communities (IPLCs) is largely used to refer to “individuals and communities who are, on the one hand, self-identified as Indigenous and, on the other hand, are members of local communities that maintain inter-generational connection to place and nature through livelihood, cultural identity and worldviews, institutions and ecological knowledge.” (IPBES, 2019 pp. 26-27). Given these considerations, I will, in this thesis understand Indigenous people as the descendants of “the earliest known inhabitants of a place” (Merriam-Webster, n.d.) who self-identify as Indigenous (ILO, 1989; FAO, 2020) and who maintain a certain connection to their native land through “livelihood, cultural identity and worldviews, institutions and ecological knowledge”

(IPBES, 2019). The term Indigenous will then be used when referring generally to groups that fit the aforementioned criteria, while an overview on the debates around the question of Indigeneity will be given in [section 3.4](#).

### 3.2. Defining Indigenous Ecological Knowledge and Traditional Ecological Knowledge

Closely related are the terms Indigenous Ecological Knowledge (IEK) – or Indigenous and Local Ecological Knowledge (ILEK) – and Traditional Ecological Knowledge (TEK). Before taking a closer look at these concepts, a delimitation of the meaning given to “ecological knowledge” in the context of this thesis is due. The term ecological knowledge will be used here to refer to “the knowledge, however acquired, of the relationships of living beings with one another and with their environment” (Berkes, 2018 p. 5) or, more specifically, in the context of this thesis, the knowledge held by a certain group of people of the land and the living environment that surrounds them. Berkes (ibid.), for example, identifies a few main components of ecological knowledge. The first is the local and empirical insight, based on observation and transmission, of plant and animal species and the environmental phenomena that shape their relationship. The other component is that of practice, also passed down through generations, of the way people carry out their livelihood activities. The third and last component, and the one that most characterizes Indigenous knowledge, is that of belief, especially “concerning people’s perceptions of their ethical relationship within ecosystems” (ibid., p. 6) which is connected to the specific worldviews that frame how they observe the broader environment. Many Indigenous groups have, for instance, maintained totally or partially animistic beliefs and worldviews, and these elements still affect their relations with their natural environments (Gómez-Baggethun et al., 2013). Particularly interesting in this context are the recent debates about the principle of *Buen vivir* (living well) which will be discussed in [section 3.6](#).

In light of this specification, the term Indigenous Ecological Knowledge (IEK) is here used and understood as the “worldviews, knowledge, practices, and innovations embedded in the relationship between people and nature, as expressed in local knowledge about the natural world, techniques and technologies of resource management, as well as in local institutions



governing social relations and relationship to nature.” (IPBES, 2019). Similarly, Traditional Ecological Knowledge (TEK), in the definition given by Gómez-Baggethun et al. (2013) and Berkes (2018), refers to “the body of knowledge, beliefs, traditions, practices, institutions, and worldviews developed and sustained by Indigenous, peasant, and local communities in interaction with their biophysical environment” (Gómez-Baggethun et al., 2013) which is “evolving by adaptive processes and handed down through generations by cultural transmission” (Berkes, 2018 p. 8). IEK and TEK represent a constantly evolving type of knowledge that is both context- and culture-specific. It has an “holistic but at the same time open and hybrid” (IPBES, 2019) approach to knowledge about the natural environment which is attained and maintained through “the combination of written, oral, tacit, practical, and scientific knowledge” and “validated by experimentation and in practice of direct interaction with nature” (ibid.). Although the two terms are often used synonymously, there is (at least in some of the literature) a slightly different connotation in each of them, with each their own criticism. According to Berkes (2018), for example, since IEK contains explicit reference to Indigenous communities, it may imply that it is possible to clearly establish that such knowledge uniquely belongs to those groups. For other academics, like Warren (2015) the term TEK is too misleading and much less representative of the type of knowledge that IPLCs hold. For him, the term “traditional” is also a problem, as it “denoted the 19<sup>th</sup>-century attitudes of simple, savage and static” (p. 13). Warren preferred the term “Indigenous” as it “represented the dynamic contributions of any community to problem-solving, based on their own perceptions and conceptions” (ibid.). Since I recognize the lacks and merits of each term, and that neither is, in itself, a perfect description of the kind of dynamic, time-tested, and holistic knowledge of the natural environment that Indigenous people possess, I will in this thesis, use both TEK (or traditional knowledge) and IEK (or Indigenous knowledge), as synonyms, and leave the discussion around their specific uses, connotations and differences to a more thorough study.

### 3.3. Theoretical framework: Post development and decolonial thought

This research finds its theoretical positioning in the post-development and de-colonial theories and especially their critique of the hegemony of the West in both development discourse and

practice (Ferguson, 1995; Escobar, 1995) and knowledge production (Quijano, 2007; Mignolo 2007; Santos, 2014). Post-development theories not only challenge the traditional notion of a single, straight path to development, namely the growth-development model, but also critique the concept of development in itself, which is considered as a political construct (Esteva, 1992). Famously born with US President Harry Truman's inaugural speech address in 1949 (ibid. p. 1), the distinction between "developed" countries with their "scientific advances and industrial progress" and "underdeveloped" countries, whose "primitive and stagnant" economies "[are] a handicap and a threat" (ibid.), has brought further marginalization and stigmatization of the most vulnerable, and created a strong resistance towards other forms of wellbeing that were not based on economic growth and accumulation of wealth and resources. To some scholars, like Sachs (1992) this kind of polarizing discourse was nothing but a "tool for the Westernization of the world" (p. 19), or a sort of "colonialism in disguise" (Escobar et al., 2019). These skewed power relations, in the Foucauldian framework of power generating knowledge and knowledge being legitimized by power (Foucault, 1980), are made evident in the relationship between the Western (and European) ideas of rational and "exact" science, and everything else that does not fall into that category, a notable example being Indigenous and traditional knowledge and practices, which have persistently being left out the development discourse on account on their perceived lack of epistemic authority and scientific foundation (Escobar, 1995; Santos, 2014). Hence, the need for an "epistemological decolonization" (Quijano, 2007), or a renewed openness towards new forms of understanding the world and its natural processes, "to clear the way for new intercultural communication, for an interchange of experiences and meanings, as the basis of another rationality which may legitimately pretend to some universality» (ibid, p. 177). To counteract this uni-versal notion of knowledge and development, post-development and decolonial theorists propose a pluri-versal one, where a plurality of different voices and perspectives fit (Escobar, 2018; Kothari et al, 2019). "Nothing is less rational," in fact, "than the pretension that the specific cosmic vision of a particular ethnies should be taken as universal rationality, even if such an ethnies is called Western Europe because this is actually pretend to impose a provincialism as universalism» (Quijano, 2007 p. 177).

This thesis is conceptually situated within these debates, and takes a social constructionist approach to knowledge creation, embracing the theory that all knowledge is socially,

historically, and culturally situated, and built upon internalized notions of what is to be considered objectively true (Berger & Luckmann, 1966), and that such notions are influenced by latent power structures (Foucault, 1979).

### 3.4. The question of Indigeneity

The question of what indigeneity ultimately is, is a long-contested one, and the debate is still ongoing on who can rightfully make a claim to “authentic” indigenous identity and on what premises. Therefore, addressing such a complicated and sensitive topic in a thesis this short and with the limited expertise on the topic in my possession, will undoubtedly result in a rather superficial analysis of the multifaceted issue of what, when and how is indigeneity. In this section I will therefore only present some of the discussions on the different articulations of indigeneity that I find most interesting and telling for the case at hand.

First, it is important to emphasize that what is now considered “indigenous” is the result of several historical and political processes, many of them still unfolding. Also, indigeneity is not defined the same way everywhere. In former colonial contexts, as in Latin America for example, the demarcation between indigenous and non-indigenous is much stronger than in countries where “indigenous refers to the enclaves of minorities who pre-date the formation of the nation state” (Friedman, 2008 p. 32), like for the Sami in Norway, Sweden and Finland. More often than not, as de la Cadena & Starn point out, indigenous identities “become such in articulation with what is not considered indigenous within the particular social formation in which they exist” (2007, p. 4). In other words, they are defined by what they are not. In many contexts, the boundaries between what it means to be Indigenous and “just” being rural can be quite unclear. In some regions of Latin America, for instance, the terms *campesino* (Spanish for “peasant”) and *indígena* are, in fact, often used interchangeably, while in some other parts, one term is preferred over the other. In the case of Peru, the Andean populations of Quechua or Aymara heritage do not always define themselves as Indigenous, but rather as part of the *comunidades campesinas* (peasant communities) thus leaving their claim to indigeneity to the more “pristine” peoples of the Amazon (Gros, 2013). This phenomenon has surely ethnic and historical reasons but also political underpinnings. In Peru, the Agrarian Reform implemented by the military government of Velasco Alvarado in 1969 (as we will see in [section 4.1](#)),

effectively increased the traditional separation between the peoples of the high and the lowlands, thus making it more difficult than in other places (like Ecuador or Bolivia) for the “peasants” from the Andes and “natives” of the Amazonian Forest to come together in a single group (ibid.). As rightfully noted by Postero (2013), “who counts as ‘indigenous’ is a fundamentally political question, since such representations emerge from struggles over particular social, cultural, and economic matters during particular moments” (p. 108).

The biggest issue with indigeneity, however, especially for indigenous people themselves, is that it is often paired with the concept of authenticity, or “prior identity” (Barcham, 2000 p. 137). For Smith (1999) this is problematic because “what counts as ‘authentic’ is used by the West as one of the criteria to determine who really is indigenous, who is worth saving, who is still innocent and free from Western contamination” (p. 74). This translates into a tendency to see indigeneity as something crystallized in space and time, “effectively excluding any chance of recognizing notions of social transformation and change” (Barcham, 2000 p. 138), or the possibility of indigenous cultures ever being “complicated, internally diverse or contradictory” (Smith, 1999, p. 74). That is a privilege, says Smith (ibid.), only reserved to Western culture. Another unfortunate correlation of the principle of authenticity to indigeneity is the “implicit belief [...] that the adaptation of an indigenous minority to social change necessarily lessens the indigenous character of that minority” (Barcham, 2000 p. 140). In her book “Decolonizing Methodologies”, Smith (1999) recalls an event in which, while attending a conference on indigenous cultural property rights in New Zealand, the photographers that had arrived at the location to take photos of the Indigenous delegates were so “visibly disappointed at the motley display of track suits, jeans, and other items of ‘modern’ dress, that they decided not to take a photograph” (ibid. p. 72). This is interesting also since, in some cases, what is now considered a “typical indigenous attire” is, in fact, the result of colonial impositions. A typical example is the one given by Eduardo Galeano (1971) in his famous book “Las venas abiertas de América Latina” (The Open Veins of Latin America):

“Los turistas adoran fotografiar a los indígenas del altiplano vestidos con sus ropas típicas. Pero ignoran que la actual vestimenta indígena fue impuesta por Carlos III a fines del siglo XVIII. Los trajes femeninos que los españoles obligaron a usar a las indígenas eran calcados de los vestidos regionales de las labradoras extremeñas,

andaluzas y vascas, y otro tanto ocurre con el peinado de las indias, raya al medio, impuesto por el virrey Toledo<sup>1</sup>” (p. 68).

It then appears as though indigeneity is, in some cases, still defined by Western (or at least non-indigenous) standards of what is considered “a ‘real indigenous’ person, what counts as a ‘real indigenous leader’, which person displays ‘real cultural values’” (ibid.). However, questions of whom is to be considered a “real Indian” are present also within the Indigenous academic community. An example of this is the discussion around what Garroutte (2018) has christened “Radical Indigenism”, or the “reassertion and rebuilding of knowledge” (ibid. p. 170) and the redefinition of indigenous identities from their roots, especially in the realm of research. At its most basic level, Garroutte’s concept of Radical Indigenism means to go back to the roots (from the Latin, *radix*) of Indigenous knowledge and free it from Western assumptions. In order to be able to establish what Indigenous knowledge ultimately is or, more precisely, whom its rightful owner is, Garroutte attempts to define Indigenous identity through *kinship*, based on the principles of relationship of ancestry (actually *being* Indigenous through bloodlines) and responsibility to reciprocity (really *behaving* in accordance with tribal values). So, essentialist approaches are present both within and without the Indigenous community. Ultimately, ever since the very first Western man laid eyes on an “Indian”, the very meaning of being indigenous has been an ever-changing process of negotiating with what is not and, as such, constantly evolving. All in all, I find Barcham’s position on Indigenous identity most productive when he says that:

“As the world continues to change at an exponential rate, there is an ever greater need for the theorising of indigenous culture and society to catch up with the events of the ‘real’ world, a world in which the dynamic character of [indigenous] cultures, has never been lost. For only when the realisation is made that identity is not a state but a dynamic process can [Indigenous peoples] be said to have been truly decolonised.” (2000 p. 151)

---

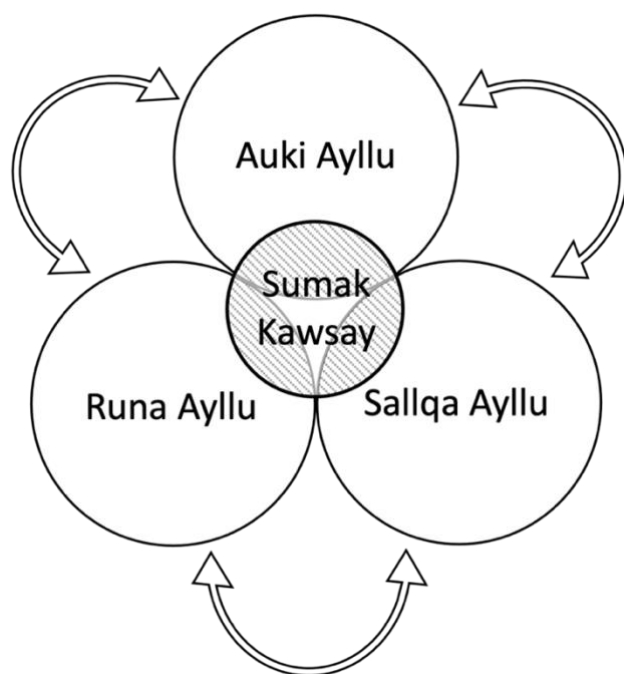
<sup>1</sup> “Tourists love to photograph the indigenous people of the highlands dressed in their typical clothes. But they ignore that the current indigenous dress was imposed by Carlos III at the end of the 18th century. The female costumes that the Spaniards forced the indigenous women to wear were modeled on the regional dresses of the Extremaduran, Andalusian and Basque farmers, and the same occurs with the hairstyle of the indigenous women, parted in the middle, imposed by the Viceroy Toledo.” (Galeano, 1971 p. 68. My translation.)

### 3.5. Andean Indigenous worldviews and values

In the space of such a short academic work as this one, trying to properly describe Andean Indigenous worldviews and values in their entirety would most likely prove impossible without degenerating into a rather superficial and faulty representation of the rich and complex nature of Andean Indigenous ontology and *cosmovisión*. Therefore, I will only report here some of the traits of the *cosmovisión* of the Indigenous peoples of the Andes that I find most useful and fitting for the purpose of this thesis, specifically the Indigenous visions of cosmocentrism and interconnectedness, and the values of community, reciprocity, and equilibrium. The reader who would like to delve into the subject in more detail can consult for example Blithz Lozada (2006) and Gordon (2014).

The first feature that should be emphasized is the so-called *concepción cosmocéntrica* (cosmocentric view) or eco-centric vision of humankind's position within the cosmos. According to Andean cosmovision, the cosmos is in a constant cyclical flux and in symbiotic interaction with the ecological-natural world, including the human community and the divine forces. Unlike the Western, anthropocentric vision of the world and its processes, which sees the natural realm and the environment through the consciousness and needs of humans, this cosmocentric view sees the human being as simply one element – among many others – of these natural cycles. Another important aspect of Andean indigenous ontologies is the interwovenness and dynamism that characterizes both animate and inanimate beings (Ingold, 2006 p. 13). This means that animals, plants, rivers, mountains, and other entities are deeply interconnected, not only as part of the same ecosystem – as modern ecology would also maintain – but, most importantly, interwoven as a kind of “meshwork” (ibid.), like that of a rhizome (Deleuze & Guattari, 1987) or a fungal mycelium (Ingold, 2003). This interconnectedness between the living, the inert and the spiritual world in this cosmic web implies that the wellbeing of one node essentially depends on the wellbeing of every other node. In this view, it then becomes apparent that any harm done to other living (and unliving) beings will ultimately cause harm to every element of this tightly woven system. “Everything lives and everything is important for the equilibrium and harmony of life;” Huanacuni-Mamani

explains “the disappearance or deterioration of one species is the deterioration of life itself<sup>2</sup>” (2021 p. 54). At the base of this vital web are the two main sources of all that exists: *Pachakama* or *Pachatata* – Father Cosmos, or cosmic energy; the spiritual and the invisible – and *Pachamama* – Mother Earth, Mother Nature, or terrestrial energy; the practical and the visible (Huanacuni-Mamani, 2010 p. 30). *Pacha* is an important word for the Andean people, made up of *paya*, two, and *chama*, force, and representing the two governing forces: the telluric (from within the Earth) and the cosmic (from beyond the Earth). The duality (*yanantin*) and complementarity of these forces is essential in Andean ontology, as it provides the balance and equilibrium on which all life is created and sustained (ibid. p. 109). From this *cosmovisión* originate some of the foundational values of Andean Indigenous culture: the value of community (*ayllu*), the value of reciprocity (*ayni*), and the value of harmony and equilibrium (*chaninchay*) (ibid. p. 53-54; Argumedo et al., 2021 p. 16). The concept of *ayllu* is one of particular significance for Andean *cosmovisión*. As a consequence of the cosmocentric view presented above, when Andean people talk about *ayllu*, they do not just mean the community of people living in the same village, or even the global community, as a form of social structure. In the Andean world, in fact, there are three complementary *ayllus*: *runa ayllu*, which represent



the humans and their domesticated animals and plant species, *sallqa ayllu*, the wild and semi-domesticated world, and *auki ayllu*, the sacred (like the *Apus*, the mountain gods) and the ancestors. In their vision, harmonious living (*sumak kawsay*) comes from the balance between these, provided that none of them tries to prevail onto the others (ANDES, 2015 p. 5). The figure on the left provides a visual representation of the *ayllu* structure according to Argumedo et al. (2021).

Figure 1: Visual interpretation of the Andean ayllu system. Adapted from Argumedo et al. (2021).

<sup>2</sup> “Todo vive y todo es importante para el equilibrio y la armonía de la vida; la desaparición o el deterioro de una especie es el deterioro de la vida.” (Huanacuni-Mamani, 2010 p. 54. My translation.)

It is clear, then, that for Andean people, what is good for the community of humans (the way the West understands it), cannot come at the expenses of the broader community of other living and non-living beings, since the two are not separated in their cosmovision. From this concept stem two important corollaries. First, that the human being is not above all forms of existence, he is at the same level as them. Second, that the natural world is not a resource, or something that can be exploited, but a living and life-creating organism in its own right, not in function of the wellbeing and development of the human species. Everything is in a complementary relationship and in perfect equilibrium: living beings breathe in oxygen and exhale carbon dioxide, while plants, in turn, absorb carbon dioxide and produce oxygen. This reciprocity (*ayni*) is another important aspect of Andean culture, indicating, in very rough terms, that “what is received must be paid back in equal measure” (Agromedo et al, 2021 p. 15). This principle can be observed for example in the barter market (*chalay*) where Indigenous communities exchange their knowledge and produce among themselves (see case study in [section 6.2](#)) as well as in the offerings that farmers make to *Pachamama* before the harvest, for example, as a way to “repay” the Earth for what was taken. All these aspects contribute to maintaining a state of equilibrium (*chaninchay*) and harmony among Indigenous communities, with the natural environment and with the spiritual world, in which benefits, rights and responsibilities are equally shared among all members of the *ayllu*. In other accounts, *chaninchay* (or *chanincha*) has been also interpreted as a form of solidarity, of fellowship among *ayllu* members based on “common interests, needs and responsibilities” (Walshe & Argumedo, 2016 p. 168). This is the foundation of what has become known as *sumac kawsay* (life in plenitude) or “buen vivir” in its Spanish translation, which will be discussed in the next section.

### 3.6. Indigenous peoples’ view of wellbeing: Buen vivir/Sumak kawsay

Andean Indigenous worldviews and values have received increasing attention in the last decades, especially thanks to the work of post-development scholars like Acosta (2009) and Gudynas (2011) and several Indigenous leaders and intellectuals, who brought the concept of *Buen vivir* to the development spotlight. A loose translation of the Quechua expression *Sumak*



*kawsay*, *Buen vivir*<sup>3</sup> refers to a state of *ayllu* (community), or harmony between human and non-human beings in which everything is connected to the *Pachamama* (Mother Earth) and her rhythms. Luis Macas Ambuludi, Kichwa Indigenous leader, defines *Sumak kawsay* as:

“una construcción colectiva a partir de las formas de convivencia de los seres humanos, pero ante todo, en coexistencia con otros elementos vitales, donde se constituyen las condiciones armónicas entre los seres humanos, la comunidad humana y las otras formas de existencia en el seno de la Madre Naturaleza. Desde nuestra comprensión, la vida es posible, en tanto existe la relación y la interacción de todos los elementos vitales. Esto es, visto de manera integral, la comunidad humana entre sí, y ésta con otros elementos de la comunidad natural. Sin embargo, todo está condicionado a la vida de la Madre Naturaleza (la Pachamama). Dentro de ella, se generan las condiciones de armonía y equilibrio para lograr la plenitud en toda la comunidad ampliada<sup>4</sup>.”  
(Macas, 2010 p. 20)

In that, *Sumak kawsay* is in stark contrast with the anthropocentric view of modern Western thought that sees the natural world as a commodity, as well as the very notion of capitalist development, seen as a trajectory of linear and upward nature based on individual success and the accumulation of wealth in the pursue of material wellbeing. The capitalist wellbeing, in fact, has nothing to do with the well-living of *buen vivir*. According to Fernando Huanacuni-Mamani, a Bolivian researcher and politician, the well-being promoted by capitalism and Western thought in general can be better described as a form of “better-living”, “vivir mejor”, understood as “[una] forma de vivir [que] implica ganar más dinero, tener más poder, más fama [...] que el otro<sup>5</sup>.” (Huanacuni-Mamani, 2010 p. 50). Better-living only benefits the few at

---

<sup>3</sup> Some, for example Cuestas-Caza (2018), have emphasized that *buen vivir* and *sumak kawsay* are not exactly interchangeable concepts, the former being just the political, post-modern interpretation of the latter, still operating within Western discourse and ideas of development. In this thesis I will, however, use them as synonyms, as I find their commonalities to be more telling for the purpose of this research than their differences.

<sup>4</sup> “A collective construction based on the forms of coexistence of human beings, but above all, in coexistence with other vital elements, where harmonious conditions are constituted between human beings, the human community and the other forms of existence in the bosom of Mother Nature. From our understanding, life is possible, as long as there is the relationship and interaction of all vital elements. In a more holistic view, this means the human community with each other, and with other elements of the natural community. However, everything is conditioned to the life of Mother Nature (*Pachamama*). Within it, the conditions of harmony and balance are generated to achieve fullness in the entire extended community.” (Macas, 2010 p. 20. My translation.)

<sup>5</sup> “[a] way of living [that] involves earning more money, having more power, more fame [...] than the other.”

the expenses of the many, and leads to unlimited progress and reckless consumerism, encouraging material accumulation and ruthless competition (ibid.). This is, Huanacuni-Mamani continues, the contradiction of capitalism, “la contradicción capitalista” (ibid.): that to allow for some people to live better – and become increasingly happier, wealthier, more powerful – many others have to suffer (ibid.). This is reflected in the current level of global wealth inequality, with the richest 10% of the world holding 76% of all wealth, while only 2% of the total is shared among the poorest half of the global population (Changel et al., 2022). This view is shared, in a variety of different manifestations and connotations, by many indigenous and native communities worldwide, with *Suma qamaña* for the Aymara in Bolivia, *Ubuntu* (“I am because you are”) in Africa and the Indian *Prakritik swaraj* (“natural self-rule”) as some of the most prominent and cited examples (Kothari et al., 2019). *Sumak kawsay* is often used as an example of an “alternative to development” (Chassagne, 2018; Forero, 2021), and in many ways it can, indeed, offer some new pathways, away from the Western growth-oriented model that has dominated the international development agenda for decades.

Since its appearance in the development and policymaking scene, *Buen vivir* has attracted much praise, but also criticism. In 2008, *Sumac Kawsay* was included in the Constitution of Ecuador (Const. 2008) followed a year later by Bolivia (Const. 2009), with the promise of “a new form of public coexistence, in diversity and in harmony with nature, to achieve *el buen vivir, sumak kawsay*” (ibid. *Preámbulo*). The 2008 Constitution was also the first to grant legal personhood to Nature, as outlined in Chapter 7 titled “*Derechos de la naturaleza*”, Rights of Nature. (ibid.). Bolivia followed suit in 2010 (Ley N° 071, 2010). Unfortunately, this progressive new political and ecological contract was destined to only look good in paper. In practice, the Ecuadorian government led by the newly elected and allegedly pro-Indigenous President Rafael Correa, did not hesitate to pursue the old “extractivist path” that they had sworn to leave behind (*Plan Nacional para el Buen Vivir*, 2009 p. 31). The Correa government opened up for increasingly new hydrocarbon exploitation by foreign companies, especially Chinese (Báez & Sacher, 2014), and approved a new Mining Law (DSN N° 014-92) in 2009, even invoking *Buen vivir* as the main justification for these measures, claiming the extraction of oil and

---

(Huanacuni-Mamani, 2010 p. 50. My translation)

<sup>6</sup> “Una nueva forma de convivencia ciudadana, en diversidad y armonía con la naturaleza, para alcanzar el buen vivir, el sumak kawsay” (Const., 2008, *Preámbulo*. My translation)

minerals to be a necessary means to end poverty and increasing people's "good living" (Gudynas, 2014; Goeury, 2021). One of the most-cited cases of political wrongdoings associated with the use of *buen vivir* rhetoric of the Correa administration is the Yasuní-ITT case. Presented in 2007 to the UN General Assembly, and acclaimed by Indigenous groups and NGOs nationwide, the Yasuní-ITT initiative was an attempt to operationalize the philosophy of *sumak kawsay* and turn it into policy. The objective of the initiative was to spare the Ishpingo-Tambococha-Tiputini region of the Yasuní National Park (hence "ITT") from oil extraction, in the name of *sumak kawsay*, thus leaving about 20% of Ecuador oil reserves underground (Goeury, 2021). Since such endeavor meant considerable economic loss for the country, Correa asked for funding from the international community, amounting to roughly half the estimated market value of the oil reserves left unexploited. However, when the funding the international community had contributed with six years later revealed itself insufficient (not even 1% of the demanded sum), Correa declared the failure of the initiative and the resuming of the extractive activities in the area. From then on, his political strategy took a U-turn. No longer would his vision for Ecuador be one of "living in harmony, with nature [and] with other human beings" (Correa, 2012), but one in which the country retakes the old "extractivist path", this time in new clothes: those of "neo-extractivism" (Gudynas, 2009; 2012) with *buen vivir* as supposed justification.

In Peru, the discourses of *buen vivir* have mostly been left out of governmental development policies and have so far remained within the Indigenous and activist communities as a means to advocate for IPLCs territorial rights and self-determination and (Merino, 2021). As a concrete example of this, the Wampís Indigenous peoples of the Amazon (together with eight other Indigenous communities) used *buen vivir*, in its Wampís/Awajún version *tarimat/tajimat pujut* ("living well as an individual, as a member of a community, and with the natural environment." Merino, 2021 p. 139), as a political tool to achieve self-determination in 2015, and included it in their statute (Estatuto del Gobierno Territorial Autónomo de la Nación Wampís). In Art 46g: *Bienestar colectivo*, for example, *tarimat pujut* is cited as way of life in which the individual and the community share the same natural resources under equal conditions, while having their own homes and *chacras* (plots of land), and equally assume the same obligations, rights, and responsibilities. Further, article 47 invokes the right of the Wampís to exercise their own ways of conceiving their *Tarimat Pujut* within the framework of

the national legal system and international law, while *Título VI: Tarimat Pujut - Economía Y Desarrollo Productivo*, includes this Wampís-Awajún concept of wellbeing as one of the pillars of the economic system of the Nación Wampís.

To be sure, *buen vivir*, *sumac kawsay* and *tarimat pujut* reflect important aspects of Andean Indigenous peoples' worldviews, and can be powerful political tools for Indigenous self-determination, as demonstrated by the Wampís-Awajún communities, but they should not be used as populist means of manipulating Indigenous consent and/or international favor as the Ecuadorian case illustrated.

#### 4. Historical and political background

Throughout their history after the Spanish invasion, the Indigenous peoples of *Abya Yala*, the South American continent, have endured centuries of discrimination, expropriation, and violence, which in many instances still endure to this day. There are currently more than 4 million Indigenous people living in Peru, of which 83% are Quechua, 11% Aymara and the remaining 6% belong to a variety of Amazonian Indigenous groups, like the Asháninka, Wampís and Awajún to name a few (Zanelli, 2021 p. 459). These communities live mostly in the rural mountain areas, of which almost 50% are covered by mining concessions, and in the Amazon, where 75% has been sold to national and international extractive industries in the form of hydrocarbon concessions (ibid.) The land expropriations and violence by the hands of the old *hacendados* before, and the new agribusiness tycoons now, the lack of a proper land titling system for Indigenous peoples and the ineffective (or even absent) implementation of the right of FPIC (free, prior and informed consent), coupled with overlapping economic interests have caused considerable friction between Indigenous communities and the Peruvian ruling elite. These tensions have often turned the areas inhabited and protected by Indigenous communities into metaphorical, and literal, battlefields. To try and provide some background for these conflicts, the following section will provide a brief overview of Indigenous people's struggles for rights, recognition and self-determination in Peru, from the Spanish *conquista* until the present day.

#### 4.1. Indigenous struggles in Peru from the conquista to the Agrarian Reform

To fully recount the rich history of the Indigenous peoples of Peru and give it proper justice would take a master's thesis by itself, and surely even more. So, what follows is but a concise, and rather superficial, overview of some of the most salient events in the long history of Indigenous struggles in Peru from the *conquista* to the present day. For a more comprehensive account, the reader may consult Contrera & Zuloaga, 2014.

When the Spanish arrived in South America in the 1500, the Inca Empire, *Tawantinsuyu*, was at its point of maximum expansion and development, ruling over the areas of what we today call Peru, Bolivia and Ecuador, including parts of Colombia and Chile, the Northern part of Argentina and part of the Brazilian Amazon (Galeano, 1971). Despite not knowing the horse, nor the wheel, the Inca had reached impressive technical knowledge and advances in both medicine and surgery, had developed complex irrigation systems and agricultural practices (some of them, the *terrazas*, are still visible today) to grow corn, potatoes, and several other crops even in times of draught and at high altitudes. The empire had a thriving barter economy based on reciprocity (*ayni*), collective property rights over land and natural resources divided between *ayllu* (groups of related families) and what we may call a socialist type of management and redistribution of products (Lone, 1982), or *comunismo agrario* (Mariátegui, 1928). Even so, it did not take more than a few decades for the Spanish colonial army to defeat the Inca Empire through bloodbaths and infectious diseases brought from the West. The conquered people then became slaves of the *Virreinato*, the new colonial rule, and were forced to work (*mita*<sup>7</sup>) in silver mines or in large *latifundios* (agricultural estates) owned by Spanish colonists (Galeano, 1971). Despite various Indigenous insurgences, including the legendary revolutionary attempt of the last Sapa Inca (emperor) Túpac Amaru under the rule of Viceroy Toledo in 1781, the *despojo* (dispossession) of Indigenous territories by the hands of the ruling elites and the subjugation of Indigenous peoples in feudal agricultural systems, continued for

---

<sup>7</sup> Originally a form of compulsory work in Inca society used as a form of taxation, *mit'a* or *mita* was later adopted by Spanish colonists (sometimes under the Spanish term *faena*) to force Indigenous communities to send their workforce to work in mines and *haciendas* (Dell, 2010). This is of course different from *minka*, *min'ka*, or *minga* another quechua word used to refer to voluntary community work (Cunningham, 2010).

centuries under the name *gamonalismo*. A term originally stemming from *gamonal*, the rich landowner, usually of European descent (Caballero, 1981), ruler of the *haciendas* where Indigenous peoples were forced to work, the term has later come to represent the Peruvian economic and political system as a whole, where owners of large pieces of agricultural land become so powerful that they effectively control the local political-administrative apparatus (Vargas, 2019). As observed by José Carlos Mariátegui, a famous Peruvian intellectual, in his “Seven Interpretative Essays on Peruvian Reality” (Mariátegui, 1928):

“El ‘gamonalismo’ invalida inevitablemente toda ley u ordenanza de protección indígena. El hacendado, el latifundista, es un señor feudal. Contra su autoridad, sufragada por el ambiente y el hábito, es impotente la ley escrita. El trabajo gratuito está prohibido por la ley y, sin embargo, el trabajo gratuito, y aun el trabajo forzado, sobreviven en el latifundio. El juez, el subprefecto, el comisario, el maestro, el recaudador, están enfeudados a la gran propiedad. La ley no puede prevalecer contra los gamonales. El funcionario que se obstinase en imponerla, sería abandonado y sacrificado por el poder central, cerca del cual son siempre omnipotentes las influencias del gamonalismo, que actúan directamente o a través del parlamento, por una y otra vía con la misma eficacia.”<sup>8</sup> (p. 19)

There were several Indigenous insurgences (Remy, 2013), and a few formal victories, like the recognition of the “legal existence” of the Indigenous communities under the 1920 Constitution (Belaude, 1993. Art. 58) and the creation of a national Registry for Indigenous communities under the 1933 Constitution, with the purpose granting them legal personhood, protection, and “the property titles that they request” (Ibid. Art 193). This formally opened the way of dialogue for Indigenous peoples and gave them some more leverage in negotiations and cases about land-related issues (Remy, 2013). However, their marginalization and discrimination persisted both in the *hacienda* and in the political and legislative sphere. As

---

<sup>8</sup> “*Gamonalismo* inevitably invalidates any indigenous protection law or ordinance. The *hacendado*, the *latifundista*, is a feudal lord. Against his authority, supported by environment and habit, the written law is powerless. Free labor is prohibited by law, and yet free labor, and even forced labor, survive on the latifundium. The judge, the subprefect, the commissioner, the teacher, the collector, are bound to the great estate. The law cannot prevail against the *gamonales*. Any official who persisted in imposing it would be abandoned and sacrificed by the central power, where the influences of *gamonalismo* are all-powerful, acting directly or through parliament with equal efficiency.” (Mariátegui, 1929 p. 19. My translation)

observed by Remy (ibid.), what usually happened is that, even when formally existing, “indigenous rights are not recognized, or when they are recognized, the content of those rights is extremely curtailed, or it is questioned whether they are indigenous<sup>9</sup>” (p. 7. My translation). Moreover, it has been debated whether, in effect, this “legalization” of Indigenous issues really proved beneficial for Indigenous peoples. Drzewieniecki (1995) observed, for example, how “[even] the laws that were helpful to indigenous people, including such as those that legalized communities and limited permissible abuses of indigenous people, created institutions to deal with indigenous complaints, gave indigenous people ways to deal with conflicts legally and under the control of the state” (p. 30). Later, the Agrarian Reform pushed by the military regime of Juan Velasco Alvarado in 1969 de facto criminalized the feudal system of the *haciendas* (Contreras, 1981) and incorporated Indigenous communities under the umbrella of rural communities (*comunidades campesinas*), but did not completely end the despotic exploitation of the indigenous population and the dispossession of their land by the hands of the *gamonales*, still present in the form of the modern agribusiness tycoons, who still control large portions of land and hold considerable political power, especially in the more rural regions.

#### 4.2. Indigenous struggles in the times of neoliberal extractivism in Peru

In modern-day Peru, one of the most serious challenges for Indigenous rights and governance is the increasing impact of neoliberal policies of resource extraction, especially involving the agricultural, logging, and extractive sectors, both national and international. The issue that Indigenous communities striving to safeguard their people and territories against these powerful interests is twofold. On the one hand, the complexity, corruption, and lengthy processes involved in the land-titling system in Peru make it extremely difficult for indigenous communities to rightfully claim ownership of their ancestral territories, which are often occupied and expropriated to make room for large-scale agriculture, logging, mining, and infrastructure projects (Global Witness, 2014). On the other hand, oil and gas companies usually have a relatively easy access to concessions in Peru as for the Peruvian constitution,

---

<sup>9</sup> “No se les reconocen derechos a los indígenas, o cuando se les reconocen, el contenido de esos derechos es extremadamente recortado, o se pone en duda si son indígenas...” (Remy, 2013 p. 7.)

like in most Latin American countries, land rights extend only to surface land, when subsoil resources are for the State to manage (Vasquez, 2010). This in practice gives the State “the prerogative for deciding who will develop the subsoil resources and when” (ibid. p. 5). Despite there being legislative mechanisms for ensuring prior consultation of local communities, as stipulated by the ILO Convention 169 (outlined in [section 5.2](#)), which Peru ratified in 1994, in the government’s interpretation of what “consultation “ and “consent” really entail is not always aligned with what local communities ultimately demand (Agurto & Hurtado Mariño, 2016; Doyle, 2019), especially due to the absence of a veto right for Indigenous peoples (DPLF, 2011). This has been the cause of many disputes, often violent, that almost never ended in favor of the Indigenous side.

However, at the turn of the millennium, some important advances were made. First is Law N° 27811 on the protection of the “Collective Knowledge of Indigenous Peoples Derived from Biological Resources” (Ley N° 27811, 2002), which formally introduced the right to “Prior informed consent” for the use of the collective knowledge of Indigenous peoples “for the purpose of scientific, commercial and industrial application” (Art 6.). Subsequently, a new Law on the Right of Consultation of Indigenous Peoples (Ley 29785, 2011) was passed, the first in Latin America and in the Caribbean, requiring Indigenous peoples to be consulted on and give their consent to any legislative or administrative measures affecting them (UN Women, 2011). A few years later, in November 2015, the representatives of 27 Indigenous communities of the Peruvian Amazon agreed to form the Autonomous Territorial Government of the Wampis Nation, el *Gobierno Territorial Autónomo de la nación Wampís* (GTANW), the first Indigenous autonomous state in Peru (IPDRS, 2016). Thanks to these formal recognitions, the Awajún and Wampis peoples of the Peruvian Amazon won an historical battle for the protection of *lote 116* (block 116) against the Ministry of Energy and Mines (MINEM), the state oil company Perupetro, and two international companies (IDL, 2019). Block 116 covers an extensive forest area (over 600 hectares of jungle) in Northeastern Peru and is the home of 73 indigenous communities and two protected natural areas, the Tuntanain Communal Reserve, and the Santiago-Comaina Reserved Zone (ibid.). In 2006, the Government had given permission to initiate extractive activities in the area without consulting the Indigenous communities residing there (this was before Ley 29785). The Awajún and Wampis peoples appealed to the decision and filed a lawsuit demanding that the prior consultation procedure be carried out. The case



was finally upheld in 2019, causing the immediate stop of all extractive activities in block 116, the revoking of all exploration and exploitation licenses in the area and the withdrawal of the two oil and gas companies in charge of the block, the Canadian Pacific Stratus Energy and the French Maurel et Promthe (ibid.). This case sets an important precedent in Peru, as it is the first case where the country's oil and gas concessions have been revoked due to a formal consultation process with its indigenous peoples.

However, Indigenous victories of this kind are unfortunately not common, with killings of land and environmental defenders on the rise globally, and especially in Latin America. According to Global Witness (2021), as many as 227 people were killed in 2020, a third of them Indigenous. The Amazon region is undoubtedly a place of increasing conflict, due to its attractiveness for the logging and hydrocarbon industries, while in the Andean region, illegal and/or invasive mining is the most common battleground. In the Peruvian Amazon, over 70% of the land has been leased to oil and gas companies (Zanelli, 2021). Deforestation and oil spills – the latest reported in the Urarinas district in Loreto this January (AIDSEEP, 2022) – are still causing incredible damage to the forest ecosystem and to its people, who have no other way of defending themselves and their territories but to resort to peaceful protest which is often suppressed with violence. Among the most shocking cases in Peru is the brutal repression of the Indigenous protests in 2009 in Bagua against the Government's aggressive mining policies (The Guardian, 2009) and the killing of Ashénika leaders Edwin Chota Valera, Leoncio Quicima Meléndez, Jorge Río Pérez and Francisco Pinedo in 2014 (Global Witness, 2014) due to their engagement to stop illegal logging in the Amazon. It is clear, then, that despite there being a legislative framework that should be able to guarantee Indigenous people crucial rights over their land and resources, as well as protection from exploitation and violence, in reality “Peru's consistent prioritization of extractive industry investments over the rights of local communities” (Global Witness, 2014 p. 11) constitutes a serious impediment to Indigenous development in the country. In 2018, however, the Peruvian Government passed the Framework Law on Climate Change (Ley N° 30754, 2018), marking an important step forward in the process of acknowledging Indigenous peoples' contribution to the fight against climate change. The law, indeed, promises to “recover, value, and use the traditional knowledge of indigenous or native peoples and their vision of development in harmony with nature, in the design of mitigation measures and adaptation to climate change, guaranteeing the fair and

equitable distribution of the benefits derived from the use of them<sup>10</sup>” (Art 3.1. My translation). The following year, the Indigenous Peoples' Platform for Climate Change (*Plataforma de los Pueblos Indígenas para enfrentar el Cambio Climático* or PPICC) was born, with the aim of “increasing the participation and inclusion of indigenous peoples and local communities with a focus on facilitating the sharing of experiences, best practices and lessons learned on mitigation and adaptation in a holistic and integrated manner<sup>11</sup>” (RM 197-2020-MINAM, p. 12. My translation) by considering “[Indigenous people’s] knowledge, practices, and traditional and ancestral knowledge [...] that contribute to the comprehensive management of climate change<sup>12</sup>” (Ibid. p. 13. My translation.). These, together with a newly published report by FAO and FILAC (Fund for the Development of the Indigenous Peoples of Latin America and the Caribbean) on Indigenous peoples’ successful stewardship of the Latin American forest territories<sup>13</sup> (FAO & FILAC, 2021) are important milestones for the national and international recognition of the work of Indigenous Peoples and their ancestral knowledge in the conservation of biodiversity.

## 5. Traditional Ecological Knowledge (TEK): overview and reflections

### 5.1. TEK in academia and knowledge production

One of the early signs of the growing attention for Indigenous worldviews and traditional knowledge is an article by Eugene Linden featured on Time Magazine in 1991 titled “Lost Tribes, Lost Knowledge” (Linden, 1991). Comparing the loss of Indigenous knowledge with the burning of the great library of Alexandria, Egypt, Linden makes the case for the re-evaluation

---

<sup>10</sup> “Recupera, valoriza y utiliza los conocimientos tradicionales de los pueblos indígenas u originarios y su visión de desarrollo armónico con la naturaleza, en el diseño de las medidas de mitigación y adaptación al cambio climático, garantizando la distribución justa y equitativa de los beneficios derivados de la utilización de los mismos.” (Ley N° 30754, Art 3.1.)

<sup>11</sup> “Aumentar la participación y la inclusión de los pueblos indígenas y comunidades locales con miras a facilitar el intercambio de experiencias, mejores prácticas y enseñanzas extraídas en materia de mitigación y adaptación de una manera holística e integrada” (RM 197-2020-MINAM, p. 12.)

<sup>12</sup> “Sus conocimientos, prácticas y saberes tradicionales y ancestrales [...] que contribuyen a la gestión integral del cambio climático” (RM 197-2020-MINAM, p. 13)

<sup>13</sup> “Indigenous and tribal peoples’ traditional knowledge about fauna and flora and their uses, pests and diseases, fire, climate, and soils, and how these elements respond to human practices, contribute greatly to forest management, use, restoration, and monitoring, and to adaptation to new situations [...]. This traditional knowledge allows indigenous and tribal peoples to understand forests better and benefit more from them, which is an incentive to maintain the forests in good condition.” (FAO & FILAC, 2021 p. 37)

and protection of the “largely undocumented knowledge base [that] is humanity’s lifeline to a time when people accepted nature’s authority and learned through trial, error and observation” (p. 46). Through a series of examples, the article laments the amount of knowledge that is irremediably lost with every disappearing indigenous civilization, swallowed by modern culture, capitalism, and globalization. The trickiest part of this “cultural holocaust”, however, is that it is mostly self-inflicted and, most importantly, voluntary. While the elders do still hold some of this ancient knowledge and try to pass it on to future generation, the Indigenous youth now tend to shun their ancestral culture in favor of a more Western-like lifestyle that pursues profit and values material comfort and individualism. This is, according to the author, yet another example of what the globalizing and hegemonic force of capitalism can do to the world’s native and local realities if left unchecked.

In academia, with the rise of the post-development and decolonial movements, thanks to the work of scholars like Esteva (1992), Ferguson (1994), Escobar (1995) and Quijano (2007), TEK went from being considered the relic of a backward and primitive civilization to symbolizing the last living memory of a time free of capitalist rationalization and imperial exploitation (Gómez-Baggethun, 2021). These epistemological changes were sparked also by the emerging of eco-centric philosophies like Arne Næss’ “Deep Ecology”, with their rejection of the traditional Cartesian anthropocentric view of nature as being at the service of mankind. Næss’ first manifesto of the Deep Ecology movement (Næss, 1973) talks, in fact, of “biospherical egalitarianism”, defined as “the equal right to live and blossom” of all forms of life, and condemns the anthropocentric attempt to “ignore our dependence” to nature in favor of the “master-slave role [that] has contributed to the alienation of man from himself” (ibid. p. 96). As the misuse of the Earth’s natural resources and ill treatment of the environment of the so-called “developed” world came under growing scrutiny, the hegemony of Western science and the development-growth paradigm also started to be challenged. This shift from the global to the local, and from the individual to the community, brought increasing attention towards alternative ways of understanding development and well-being, especially Indigenous philosophies such as that of *Buen vivir*, as we saw earlier. These new impulses are important, because they helped open the way for a re-evaluation of the all-encompassing Western know-how, and welcome more participatory types of knowledge creation. According to Garrouette (2018), however, Indigenous knowledges in academia are still regarded “merely as objects of

curiosity (unusual things that people have believed) [rather than] tools for discovery and for the generation of knowledge (p. 171). To counteract this tendency, Garroutte urges for the creation of spaces for Indigenous scholars to really participating in academic discourses without “[stripping their] intellectual traditions of their spiritual and sacred elements” (2018, p. 172).

Not marginal is, in fact, the discrimination created by the existing power differentials between knowledge systems (Escobar, 2008) and the enduring subordination of traditional and Indigenous knowledge by the dominant knowledge paradigms, which often dismissed it as too primitive, anecdotal, and unsubstantiated to compete with Western science and thus relegated to the lowest ranks of knowledge production (Johannes, 1993). One important point of rupture is the spiritual and devotional dimensions that many systems of indigenous and local knowledge include, and that Western science has repudiated since the Age of Enlightenment. Indigenous worldviews often “consider that not only plants and animals, but also rivers, mountains and glaciers as are alive and have agency” (Bekret, 2018 p. 11), thus essentially bestowing human attributes upon parts of the environment that Western science considers unequivocally inert. By contrast, the divide between nature and humanity and the subordination of the former to the latter for profit, which form the basis of, respectively, scientific rationalism and economic liberalism (Gomez-Bagghetun, 2021), has divided the living and inert world into siloed categories and has made Western science rather impermeable towards alternative ontologies. Leaving aside the debate on where the truth ultimately lies, it can still be argued that reinjecting some of these “sacred” dimensions into ecology could help mitigate the “machine-like scientific conceptualizations” (ibid p. 12) of nature and its processes that has been dominant in the past centuries. It has also been observed that, by virtue of its “finer spatial scale [and] considerable temporal depth” (Whyte, 2018. p. 63) TEK can very effectively help “fill the gaps in certain scientific methods, such as lack of local or historical data” (ibid.). Moreover, TEK often appears in discussions about environmental sustainability as of late, as an example of “knowledges that mimic sustainable environmental processes” (ibid. p. 66), which are seen as useful not only at the local but also at the global scale. There can undoubtedly be very fruitful collaborations and exchanges between scientific and indigenous/traditional knowledges, and there is much to be gained by acquiring a more nuanced representation of all the aspects of life on Earth, including both the material and the

spiritual. For many scholars, however, the dichotomy between Indigenous and Western science is an artificial one. Not only because, as maintained by Agrawal (1995), “what is today known and classified as Indigenous knowledge has been in intimate interaction with Western knowledge since at least the fifteenth century” (p. 427) and it is hard to believe that the former has not, at least marginally, been influenced by the latter, but also because, and most importantly, Indigenous knowledge is also based on the very same empirical processes of observation and experiment that make Western science reliable (Goodenough, 2011). As observed by Scott (2011 p. 175), practitioners of TEK “draw deductive inferences from first premises [which] are deliberately and systematically verified in relation to experience, and [...] models of the world are reflexively adjusted to conform to observed regularities in the course of events” (Scott 2011, p. 175). It appears, then, that Indigenous and Western sciences share more similarities than differences and that a more productive approach would be to avoid sterile characterizations and rather engage them in a positive dialogue.

## 5.2. TEK in the international arena and policymaking

While these academic discussions are taking place, several Indigenous and pro-Indigenous movements have been flourishing and gaining international attention, prompting growing legal recognition for indigenous rights to land, culture, and self-determination, especially in the international arena<sup>14</sup>. The first step in this process was taken in 1982, when the UN Working Group on Indigenous Population established to elaborate standards on Indigenous protection. A few years later, in 1989, the International Labor Organization ratified the ILO Convention 169 on Indigenous and Tribal Peoples (ILO 69). The ILO Convention 169 consists of 10 parts and 44 articles, in which it lists the rights of Indigenous and tribal peoples “recognizing the aspirations of these peoples to exercise control over their own institutions, ways of life and economic development and to maintain and develop their identities, languages and religions” (ILO, 1989, Preamble). In 1992, the United Nations Environmental Program (UNEP) redacted the text of the Convention on Biological Diversity (CBD), which was opened for signatures at the United Nations Conference on Environment and Development (UNCED), known as the “Earth Summit”, in Rio de Janeiro and entered into force at the end of the following year. All UN

---

<sup>14</sup> For the sake of reference, I have included some more milestones of Indigenous rights recognition in *Appendix 1: International frameworks for indigenous development*.

member states, with the sole exception of the United States, have ratified the treaty (CBD, n.d.). While making the case for “the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources” (UN, 1992, Article 1. Objectives), the treaty also recognizes for the first time “the significant contribution of Indigenous peoples to environmental conservation.” (ibid. Article 8. In-situ conservation) and pleads the Parties to “respect, preserve and maintain the knowledge, innovations and practices of Indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity” (ibid). Most notably, it supports the “wider application [of such knowledge and practices], with the approval and involvement of [its] holders” while encouraging “the equitable sharing of the benefits arising from [its] utilization” (ibid.) Further, Article 18 on Technical and scientific cooperation calls on all Contracting parties to facilitate “cooperation for the development and use of technologies, including indigenous and traditional technologies” (ibid. Article 18: Technical and scientific cooperation) for the pursuit of the aforementioned objectives of the treaty.

Later, on September 13, 2007, the United Nations General Assembly approved the United Nations Declaration on the Rights of Indigenous Peoples (hereafter UNDRIP), which, along with affirming the “right of all peoples” including Indigenous peoples, “to be different, to consider themselves different, and to be respected as such” (UN, 2007 p. 1), also stresses the importance of acknowledging the value of “indigenous knowledge, cultures and traditional practices” as contributors of “sustainable and equitable development and proper management of the environment” as well as the “right to self-determination of all peoples, by virtue of which they freely determine their political status and freely pursue their economic, social and cultural development”. From then on, indigenous and local knowledge has taken up increasing space in the global efforts to adapt to climate change and preserve the Earth’s biodiversity and has spurred the creation of several working groups and committees for and with indigenous peoples that focus on issues relevant to them and increase their participation in international fora. Within the UN, these are the United Nations Permanent Forum on Indigenous Issues (UNPFII) and the Expert Mechanism on the Rights of Indigenous Peoples (EMRIP), which, together with the Special Rapporteur on the rights of indigenous peoples, work to “[promote] the United Nations Declaration on the Rights of Indigenous Peoples, [and] the enhanced

participation of indigenous peoples' representatives and institutions within the United Nations on issues affecting them" (UN, 2017 p. 2). The Task Force on Indigenous and Local Knowledge Systems (ILK-TF) of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), represents another important arena of collaboration between IPLCs and policymakers. Over the years since its foundation in 2012, IPBES has been an important driver of research and knowledge mobilization on ILK through its commitment to promote the enhanced recognition of and work with indigenous and local knowledge systems through participatory mechanisms (Decision IPBES-2/5).

Another important advocate for the recognition of the value of traditional knowledge is the Food and Agricultural Organization (FAO), thanks to its work on the inclusion of traditional and local knowledge and activities "in policies, programmes and projects related to [...] farmers' rights, poverty alleviation, nutrition and health, [...] gender equity [as well as] the emerging problems of soaring food prices and climate change." (FAO, 2009a, Introduction). In 2017, the Global Indigenous Youth Caucus (GIYC) drafted a new pillar, to be added to FAO's six pillars of work<sup>15</sup>, "related to intergenerational exchange and traditional knowledge within climate change and resilience" (FAO, 2017 p. 2). More recently, the Glasgow Climate Pact, redacted at the UN Climate Change Conference COP26 in Glasgow in November 2021, once again "emphasizes the important role of Indigenous peoples' and local communities' culture and knowledge in effective action on climate change, and urges Parties to actively involve Indigenous peoples and local communities in designing and implementing climate action" (UNFCCC 2021a, p. 10). Moreover, the newly founded Adaptation Research Alliance (ARA), a global network of organizations looking to find solutions to increase the resilience of vulnerable countries to climate change, pledged to "place indigenous knowledge and solutions at the core of its work" (UNFCCC, 2021b p. 16)

Despite these formal recognitions, indigenous knowledge systems are still largely discredited and marginalized, with governments and institutions often only paying lip service to their pledges to protect and value indigenous beliefs and practices while granting Indigenous and local communities only a peripheral position in the decision-making processes affecting them.

---

<sup>15</sup> The six pillars are: Advocacy and capacity development; Coordination; Free Prior and Informed Consent; Voluntary Guidelines on Land and Fisheries; Indigenous Food systems; and Food Security Indicators (FAO, n.d.)

At the COP26 in Glasgow, which was hailed as the “most inclusive COP ever” (UK Parliament, 2021), Indigenous peoples still found themselves sidelined and excluded from important meetings (Lakhani, 2021). The right to Free, Prior and Informed Consent (FPIC) was established in the ILO 169 and UNDRIP, and even included in the Peruvian Constitution, to officially sanction the requirement “to consult – [and] obtain the consent of – Indigenous peoples before large development projects and legal reforms that would affect them can proceed” (Fontana & Grugel, 2016 p. 1). In reality, it has been observed that such participatory processes “are often unrepresentative, subject to conscious manipulation and unconscious bias, and disconnected from actual decision-making” (ibid. p. 5), and that they may even constitute a new, legitimized, form of tyranny who mainly “reinforce[s] the interests of the already powerful (Cooke & Kothari, 2001 p. 8). When it comes to indigenous and local knowledge, the risk is that effective and inclusive participation in the decision-making processes may become affected by power relations and pre-existing patterns of oppression and produce a type of hybridized, stereotyped knowledge that still reflects top-down approaches to local development and is heavily shaped by political and economic interests. (Mosse, 2001).

There is now growing recognition of the value of TEK in local and global policymaking, as well as an increasing consensus on the need to integrate the traditional ecological knowledge and practices of local communities if any attempt to manage and preserve the natural ecosystems and biodiversity of a region is to be successful (Pohle & Gerique, 2006). However, over-romanticizing TEK can have almost the same detrimental effects of ignoring it altogether. Not all indigenous peoples are, in fact, as directly and inherently connected with their natural environment as they are often portrayed, and not all traditional practices are intrinsically as environmentally friendly as we can be inclined to believe. Some, like Doolittle, 2010), have even pointed out that TEK might simply be one of the “rhetorical strategies indigenous leaders from around the world use to gain political recognition and legitimacy in climate change negotiations» (p. 286) by appointing themselves, by virtue of their close relationship to nature, as stewards of the Earth’s ecosystems against capitalist over-exploitation. As noted by Johannes (1993), “the truth lies somewhere in between. Wise and unwise environmental practices and valid and invalid environmental beliefs coexist in many cultures.” (p. 37). No single knowledge system can rightfully claim total infallibility and “to assume differently is to assume that with respect to natural resource management Indigenous peoples are either



inherently superior or inherently inferior” (ibid.) to other cultures. Neither of these extremes are productive, and they rarely prove useful in delineating pathways to sustainable and inclusive development.

### 5.3. The implications of TEK for Indigenous self-determination and governance

Closely related to the issue regarding the value and place of Traditional and Indigenous Ecological Knowledge within the dominating development paradigm, is the struggle for indigenous self-determination. The subordinate position occupied by TEK in scientific knowledge production and policymaking contributes, in fact, to weakening the agency and territorial governance of local indigenous populations by stripping them of the power of exercising their own rights to the land they occupy (Whyte, 2018). Indigenous knowledge does not, in fact, only have supplemental value, meaning as “input for adding data that scientific methods do not normally track” (ibid. p. 62), as mentioned above, but it also, and most importantly, has governance value. Indeed, Indigenous knowledges and practices also serve as important “sources of guidance for indigenous resurgence and nation building” (ibid. p. 63). The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) defines the right of self-determination of Indigenous peoples as the right to “freely determine their political status and freely pursue their economic, social, and cultural development” (UN, 2007, *Article 3*), and states that improved governance, meaning the “control by indigenous peoples over developments affecting them and their lands, territories and resources will enable them to maintain and strengthen their institutions, cultures and traditions, and to promote their development in accordance with their aspirations and needs (ibid. *Preamble*). A crucial factor involved in the self-determination of Indigenous communities is the authority and right to exercise sovereignty over their land and their future using their particular knowledge and belief systems to guide their own development. These knowledges represent valuable sources of information that are both operative and legitimate because “they contain insights, conservation and environmental governance strategies, methods of analysis, and decision-making processes that arise from hundreds of years of collective memories, experiences, and trial-and-error in adapting to metascale forces” (ibid. p. 59). Recognizing this, UNDRIP states that “respect for indigenous knowledge, cultures and traditional practices” (ibid. *Preamble*) is crucial for sustainable development and that indigenous peoples have the “right to maintain

control, protect, and develop their intellectual property over such cultural heritage, traditional knowledge, and traditional cultural expressions.” (ibid. Article 31). Translating these principles into reality, however, is not always simple as Indigenous peoples do not always have the necessary protection to safely use these rights (Whyte, 2018 p. 74). This is often the case when Indigenous governance clashes with national governance, for example in the management of territories and resources or vis-a-vis the imposed legal boundaries of the jurisdiction of the “settlers states”, even when these are put in place to allegedly protect indigenous rights. One typical point of conflict lies in the dissonance between traditional Indigenous practices of seasonal subsistence (i.e. hunting-gathering and herding) that involve nomadic or semi-nomadic lifestyles, and the legal and political frameworks surrounding transnational borders, land property rights and land demarcation schemes. These regulations pose problems to nomadic and semi-nomadic tribes whose ancestral territories encompass several nation states (Koivurova, 2013) and whose seasonal activities force them to periodically move outside of their legally allocated territories (Gilbert, 2007). These communities are thus forced to change their ways of life and find alternative sources of sustenance if they do not want to find themselves as illegal trespassers of a territory that was once theirs or that was never anybody’s, especially since, for many Indigenous communities, land is a collective good. In this case, where the traditional knowledge of the land, the seasonal shift of crops, and the migration patterns of specific animals possessed by these indigenous communities is not legitimized as it falls outside of the legally recognized legal frameworks of the main institutions governing the region, the governance structures of Indigenous peoples are threatened and sometimes effectively overthrown. The same goes for the constant struggle between Indigenous peoples and the extractive industries, as we discussed in [section 4.2.](#), where state legislation does not recognize the subsoil as part of the territorial rights at the surface, while for Indigenous peoples there is no difference between the two. Moreover, the globalizing, fixed and positivist nature of state governance does not always communicate well with the local, fluid and spiritual type of governance that Indigenous peoples practice and recognize. Hence, the importance of recognizing the significance of Indigenous knowledges, values and worldviews, not just as a “folklorist” element of Indigenous cultures, but also and most importantly, as “capacities [that] Indigenous peoples can use to facilitate their own governance” (Whyte, 2018 p. 70), as an “integral part of how [Indigenous] nations and

communities plan for the future, [and as] a key component of collective self-determination” (ibid. p. 77)

## 6. TEK in practice: the Potato Park and the Maize Park

As empirical basis of this research, I have selected two case studies from the Cusco Region in the Southern Peruvian Andes: one is the Potato Park (*Parque de la papa*) in Písaq, and the other is the Maize Park (*Parque Chalakuy de Maíz*) in Lares. Both are considered Biocultural Heritage Territories (BCHTs), meaning territories that are collectively governed and managed by IPLCs<sup>16</sup> according to their customary laws, values and worldviews that foster reciprocity and holistic wellbeing (*sumac kawsay*) both within society and in harmony with nature (Swiderska et al., 2020). In the governance of BHTs, traditional knowledge is highly regarded and prioritized, and participatory processes based on FPIC are utilized when seeking synergies with the scientific community and the outside world in general (Swiderska & Stenner, 2020). The first case study is meant to illustrate some of the ways in which TEK is used in practice by the Indigenous peoples of the Potato Park to cultivate and protect the Andean potato, also combined with other types of knowledge and ecological practices based on Western science. The second, more brief, case study is an example of how the revival of TEK and the Quechua value of *ayni* (reciprocity) contribute to the sustenance and autonomy of the Indigenous communities of Lares thanks to *chalay*, the barter market. Additionally, both projects can also serve as examples of how TEK can contribute to the sustainable and autonomous management of Indigenous territories.

### 6.1. The Potato Park (*Parque de la papa*) in Písaq, Peru

Located in the Písaq district of the Urubamba Valley, the Sacred Valley of the Incas, in the Cusco region, the Potato Park (*Parque de la papa*) includes a territory of over 9000 ha and altitudes of 3400-4600 msl (ANDES, 2015 p. 7). It was established in 2000 (and formally registered as a community association in 2002) with the help of Asociación ANDES (*Asociación para la Naturaleza y el Desarrollo Sostenible*)<sup>17</sup> with the purpose of protecting and preserving the

---

<sup>16</sup> Indigenous Peoples and Local Communities.

<sup>17</sup> Asociación ANDES is a non-governmental organization (NGO) based in Cusco, Peru. Since its foundation in 1995, it has been working on participatory action research supporting the rights of indigenous peoples and the

biocultural heritage<sup>18</sup> of the Indigenous communities of the region, including not only native Andean crops like the potato or the quinoa, but also the traditional knowledge and practices connected to the management of the agrobiodiversity (Reid et al., 2018). The park is inhabited and managed by six Quechua communities who govern themselves and their territory according to traditional Andean values and customary law, while entertaining relationships of mutual benefit-sharing with the neighboring Indigenous communities, for example those of the Maize Park in Lares (see [next section](#)). Because of these characteristics, the Potato Park is considered a Biocultural Heritage Territory (BCHT), defined by ANDES (2015) as “a mosaic of land uses, especially ritual uses, which are the backbone of local economies and critical repositories of genetic resources for food and agriculture” (p. 26). In that, the Potato Park fits within the global and multilateral frameworks for the protection of traditional knowledge and biodiversity, including the Nagoya Protocol on Access and Benefit-Sharing of the Convention of Biological Biodiversity (CBD, 2011) and the FAO Plant Treaty (FAO, 2009b). The communities of the Potato Park have also their own governance body, the Association of Communities of the Potato Park and a technical consultative body (ibid.). The *Papa Arariwa*, the Potato Guardians, are also an important body, functioning as “experts in traditional knowledge related to potato farming” (ANDES 2015, p. 22) and protectors of the many potato varieties cultivated in the Park. The area in which the Park is located is home to more than half of the world’s potato varieties – more than 1300 according to Indigenous classification, 650 according to western classification (Reid et al., 2018) – and is considered one of the centers of origin of the potato (ANDES, 2015). The Indigenous peoples of the Andes have a deep-rooted relationship with the Andean potato. For Lino Mamani, traditional Curator of Potato Park Gene Bank, “the potato embodies the very roots of existence of Andean indigenous peoples’ and is one of [the] most precious expressions of indigenous biocultural heritage” (ANDES, 2013). It is not surprising, then, that the values and TEK practices of these communities are closely related to the cultivation and care of the Andean potato.

Traditional knowledge on the ecosystem and biodiversity of the *altipiano* (highlands) is used actively to inform management strategies in the Park. The communities’ knowledge of rainfall

---

promotion of diverse and comprehensive food systems.

<sup>18</sup> “Biocultural heritage refers to the knowledge and practices of indigenous people and their biological resources, from the genetic varieties of crops they develop, to the landscapes they create.” (Reid et al., 2018 note 1 p. 9)

cycles, wildlife roaming and grazing patterns, as well as strategies to “spread risk across time” (Reid et al. p. 11) are only some of the many uses of TEK in the Potato Park. For instance, unlike other intensive agricultural systems where one single variety of the same crop is planted in each plot (monoculture), the Potato Park employs the ancestral practice of crop diversification, in which a high number of potato varieties are planted together to help mitigate risks of crop failure. These practices, combined with the use of traditional terraces and ancestral irrigation systems to prevent soil erosion, have helped Indigenous communities increase their livelihood resilience over the centuries, and are still successfully used in the Park. In a study conducted in the Potato Park in 2014, Walshe & Argumedo (2016) found that not only TEK, but also Andean values played an important role in the management of the Park. The values of *ayllu*, *ayni*, *yanantin* and *chanincha* (discussed in [section 3.5](#)) were, in fact, considered important by the Indigenous communities in the Park not only as a manifestation of their culture and ancestral roots, but “were shown to permeate a number of existing adaptations used in response to climate change in the Park, from the conservation of agrobiodiversity, altering cultivation patterns, social organisation and the diversification of livelihoods” (p. 172). At the very basis of the structure of the Park, we find the system of the *ayllu* (community). In order to achieve harmony and well-being (understood as the Quechua principle of *sumac kawsay* discussed in [section 3.6](#)), there must be equilibrium between all dimensions of the *ayllu* (see Figure 1 in [Section 3.5](#)), both the human, the natural, and the sacred. The traditional practice of crop rotation, for example, which applies the principle of *yanantin* (complementarity) between cropping and fallow period to restore the balance between what is taken and what is given (*ayni*) and let the soil replenish its nutrients, is still practiced by the Indigenous communities of the Potato Park (ibid.) The fallow lands are then used in rotation for livestock grazing or for growing different crops that do not deplete the soil of the same nutrients. Finally, the principle of *ayni* (reciprocity), is what guides the redistribution of the produce from these different rotation stages among the communities. Based on the Andean concept of *chanincha* (solidarity), the social and governance structures of the Potato Park reflect a type of collaborative system where all roles and tasks are orientated towards achieving unity through reciprocal exchange within the *ayllu*, with the other communities and with the natural and spiritual world (ibid.). The holistic and eco-centric nature of the Quechua *cosmovisión* does not, then, only have spiritual value for the Andean people, but it translates to their agricultural strategies and social structures as well. However, as we have discussed in [section 3.4](#),

Indigenous knowledge is not a static, fossilized, monolith of values and practices, but a fluid set of practical and ethical guidelines in constant adaptation with the surrounding environment, and are highly permeable to new ideas and innovations. Due to climate change, many of the conditions that underpinned some of the traditional agricultural practices of the Indigenous communities of the Andean region of Cusco are now becoming increasingly difficult to maintain (Reid et al., 2018; ANDES, 2015). Erratic weather patterns and unpredictable rainfalls have shortened the potatoes growing season considerably. What's more, as a consequence of the rise in global temperatures, the optimal habitat for the growing of the local potato has moved higher up in the mountains and the incidence of soil pests has become higher. This has forced the local communities to start growing potatoes at altitudes as high as 4500 meters ("the highest in the world", Reid et al. 2018). So, the TEK and practices of these communities has also had to change and adapt to this new reality.

In the Potato Park, a number of Biocultural Heritage Innovations<sup>19</sup> (BCHIs), meaning new knowledge and practices based on the adaptation of traditional ones, have been observed, listed and described in their entirety in the 2015 report by Asociación ANDES titled "Biocultural Heritage Innovation in the Potato Park" (ANDES, 2015). These innovations are originated both by endogenous adaptation, i.e. the improvement of practices by their original practitioners, and by a method called *diálogo de saberes* (wisdom dialog). Salas (2013) describes wisdom dialogues as a type of participatory action-research (PAR) in which peasants and scientists facilitate reciprocal learning through the exchange of ideas, feelings, beliefs, concepts, practices and stories, without pre-made notions of who knows and who does not (p. 135). Through these wisdom dialogues, a few innovations were introduced in the Potato Park. For the sake of conciseness, I will only provide a selection of what I consider the most interesting innovations, referring the reader to the aforementioned report for more information. The first BCHI I would like to highlight is the creation, in collaboration with CIP (the International Potato Center, or *Centro Internacional de la Papa*), of a community seed bank as a collective approach

---

<sup>19</sup> "Biocultural Heritage Innovations (BCHIs) are new knowledge, resources, skills and practices, or new combinations of these, which serve to: (a) strengthen and sustain the agro-biodiversity, particularly local seed systems, livelihoods and material and spiritual well-being of communities; (b) adapt to and mitigate risks due to global impacts, especially those of climate change. They are practical, sustainable, and are locally and globally relevant [...] They integrate daily practices with traditional knowledge, spiritual values and customary norms. As such, they are dynamic, continuous, open, adaptive, and gender-sensitive, integrating the creativity of people and nature". (IIED and ANDES, SIFOR methodology workshop, 2013. Cited in ANDES 2015 p. 17-18)

to the maintenance of the native Andean potato varieties cultivated in the Park. The seeds are stored in a facility designed through the collaboration between the *Papa Arariwa* (the Potato Guardians) and CIP scientists, i.e., between traditional knowledge and scientific knowledge. It has, for example, a cooling system that does not require electricity, inspired by the Andean use of water canals for irrigation and the scientific knowledge of air flow patterns (ibid. p. 20). As well as being crucial for the preservation of the genetic diversity of the Andean potato, the community seed bank is an important asset for securing the long-term livelihood of the Andean communities of the Park and the neighboring areas. The collaboration between the Potato Park and CIP has also been important in the process of reintroducing some of the lost potato varieties into farmers' fields. This was done thanks to the "Agreement on the Repatriation, Restoration and Monitoring of Agrobiodiversity of Native Potatoes and Associated Community Knowledge Systems", signed in 2004 with the International Potato Center (CIP) in order to "ensure that genetic resources and knowledge [of the Andean potato] remain under the custody of the communities and do not become subject to intellectual property rights in any form" (GRAIN, 2005). This was an important victory for the Indigenous communities of the Park, as it led not only to a "revival of the traditional knowledge, beliefs and practices associated with the repatriated potatoes" but it also "promoted traditional agriculture by diversifying the native varieties available" (Stenner et al., 2016). In 2015, a delegation from the Potato Park travelled to Svalbard, Norway, to deposit potato seeds from their supply into the Global Seed Vault (Regjeringen, 2015). Besides being a major symbolic act of solidarity, this transfer is also significant for establishing the Potato Park as key actor in the global effort to guarantee food security for future generations and for the "safeguard of the valuable genetic potato diversity" (Government.no). Another interesting example of collaboration between Indigenous and science-based knowledge, sparking innovation in the Potato Park is the construction of net houses for in-vitro propagation of potato varieties, equipped with phytosanitary cleaning tools, critical for preventing infection by pests and viruses during the cultivation of mini-tuber seeds (ANDES, 2015; Westengen et al., 2017). Complementary traditional and scientific knowledge is also employed to improve the overall understanding of the climatic impact on potato production, combining the ancestral knowledge of the Quechua communities of the Park on climate of climate and weather patterns, with information from NASA satellite images (Reid et al., 2018). Through these exchanges, the *Papa Arariwa* received botanical training in seed production and multiplication, while scientists working in the Park

learned valuable lessons on the way the traditional knowledge and climate mitigation strategies of the Indigenous communities of the highlands may contribute to climate-change adaptation on a global scale (Reid et al., 2018; ANDES, 2015).

To sustain the communities in periods of scarcity and facilitate the autonomy of the Park, small income-generating activities have also been initiated, in the form of the economic collective, in collaboration with local NGOs. These economic collectives produce a number of “biocultural products” sold under the collective trademark of the Park. These products include, for example traditional textile products, health treatments and personal care products like natural creams, ointments, shampoos and soaps, and food products like the *chocopapa* (*potato chocolate*) and other potato-based dishes served in the “culinary sanctuary” (i.e., the restaurant and gastronomy center) of the Park. The establishment of these micro-enterprises are a valuable example of how Indigenous ways of living can be combined with more market-oriented strategies and how the bridge thus created can be crucial for sustainability, as they provide the communities with an economic safety net to prevent them from having to sell their land to mining companies (Swiderska & Stenner, 2020). These innovations are not only an important source of sustenance for the Indigenous communities and critical tools for building community resilience in the face of the escalating loss of natural habitat and crop yields due to climate change. They also constitute critical venues for creating synergies and developing equal and reciprocal collaboration between these communities and the scientific community, while earning the Potato Park the recognition of the international community. Sure enough, the Potato Park has been showcased at several international events, attracting increasing global attention. It was, for example, presented by some community members and by Krystyna Swiderska, researcher at IIED<sup>20</sup> and author of several papers used in this thesis, at the Farm to Fork Dialogue at COP26, together with a similar project from the Rabai Communities in Kenya (IIED, 2021). It was also included in a webinar series organized by the Global Tapestry of Alternatives (GTA) initiative, curated by a group of activists and researchers including Arturo Escobar, Ashish Kothari, and Gustavo Esteva, all known names in the post-development field (GTA, 2020). These external recognitions are important for the self-determination of the communities of the Park, also in the face of a largely unsupportive national government,

---

<sup>20</sup> International Institute for Environment and Development



historically more interested in pleasing multinational mining industries than protecting Indigenous territories (as highlighted in [section 4.2](#)).

## 6.2. The Maize Park (Parque Chalakuy) in Lares, Peru

After the success of the Potato Park, a similar project was conducted in Lares, a small market town of the Calca Province, where four Quechua communities established the Chalakuy Maize Park in 2014 (Swiderska & Stenner, 2020). Like the Potato Park, the Chalakuy Maize Park (*Parque Chalakuy de Maíz*) is also considered a Biocultural Heritage Territory. Situated at altitudes ranging from 2000 to 4500msl, the Chalakuy Park has an estimate of 95 different maize varieties (the highest diversity in Peru) and more than 400 potato varieties (Swiderska & Stenner, 2020; Swiderska et al, 2020). While preserving some of the same elements of the Potato Park, like the focus on Indigenous territorial governance and the preservation of native crops, with the related traditional knowledge, the Maize Park brings another important ancient Andean practice: that of the barter market, hence the name *chalakuy* (Quechua word for barter, according to Argumedo et al., 2021). As we saw in [section 4.1](#), the practice of *chalakuy* dates back to the Inca empire, where goods and knowledge were exchanged to guarantee food supplies and strengthen bonds among communities. Based on the ideas of reciprocity (*ayni*) and complementarity (*yanantin*), the Andean barter market is an interesting example of a non-monetary economy that does not revolve around capitalistic market systems. Indeed, the barter markets in Lares are important tools for the redistribution of produce among villages situated at different altitudes, both within and outside the Park, connecting and strengthening bonds of solidarity between communities located between 1000 and 5000 meters above sea level between the communities and ensuring a rich and balanced diet. In that sense, *chalay* manages to integrate the “altitudinal specialization” of the Andean agricultural produce with values of “nutritional complementarity” and social reciprocity (ibid. p. 20), allowing for the conservation of the local biodiversity and the traditional knowledge systems related to agricultural production and plant classification. Moreover, unlike the capitalist market, where profit, competition and wealth accumulation are the guiding principles of economic transactions, the barter market relies on the exchange of goods of the same value, where each party takes exactly as much as they give (ibid.). This also means that products are not made in excess in order to sell more, and therefore increase gains, but are first distributed horizontally

among the members of the community and the excess exchanged for a different produce. Moreover, since the production is not governed by the capitalist rules of supply and demand, which usually creates monocultures according to market trends, more variety, including the so-called NUS<sup>21</sup>, are cultivated and therefore preserved. This ensures the sustainability of the food production, together with the traditional agricultural practices mentioned in the [section above](#). It may be argued that barter markets have no place in the global capitalist system, and that, by still pursuing such practices, Indigenous communities remain cut out of important opportunities to improve their economic and social status. In the case of the Chalaky Maize Park, while modern micro-businesses (quite similar to the ones initiated in the Potato Park) are being started by the community members, especially women, the *chalay* is still deeply rooted in their cultural and social identity and remains an important institution linking Indigenous communities throughout the Andes region, and a critical source of sustenance for them, ensuring food sovereignty and social reciprocity through exchange. More inclusive notions of sustainable development should also incorporate Indigenous and local notions of wealth, based on non-monetary forms of capital and reciprocal exchanges rather than profit. In addition to the aforementioned activities, participatory action-research in the form of the aforementioned *diálogo de saberes*, is also being conducted in the Maize Park. The community researchers, holders of TEK recognized by the community, and scientists from the ANDES Association have been working together to build a database of Andean wild plants, including the traditional knowledge connected to their use (medical or otherwise). They have also engaged in participatory mapping, where modern tools like GPS and 3D modelling are combined with the collective knowledge of the communities, to draw a map of the biocultural landscapes they have inhabited and looked after for generations. Finally, to make maize more resistant to climate change and diseases, participatory plant breeding has also been conducted. Each community would provide a sample of their maize variety, which would then be collected, and the seeds planted together at the beginning of the planting season, making sure to alternate females and males from different varieties. With the technical support of scientists and botany experts, the grown maize plants will then be cross-pollinated to make more resilient varieties (Swiderska & Stenner, 2020).

---

<sup>21</sup> Neglected and Underutilized Species. See Padulosi et al. (2013) for reference.

The experiments from the Potato Park and the Chalakuy Maize Park have proven highly replicable in analogous contexts where IPLCs share similar social, political and ecological backgrounds. Parallel projects have, for instance, been undertaken in Tajikistan (Swiderska et al. 2019) China (Song et al., 2021), India (Lepcha et al, 2021) and Kenya (Wekesa et al., 2021), all with the purpose of promoting the understanding of the value of Indigenous and local knowledge for the sustainable management of BCHTs. It is now widely recognized that Indigenous peoples and local communities are key actors in the preservation of the Earth's biodiversity (FAO & FILAC, 2021; Bates & Trakansuphakon, 2021; Raygorodetsky, 2018) but there is still a consistent gap to be filled between rhetoric and action when it comes to Indigenous land rights and sovereignty. Community-led projects like the Potato Park and the Chalakuy Maize Park, where different values and knowledge systems meet and cooperate to find alternative ways of development, represent a big step in the right direction, but they still need to be recognized at national level and backed up by ad-hoc government policies that protect Indigenous territories, especially from the threat of expropriation and pollution by national and international extractive companies, to really be sustainable in the long run (Swiderska & Stenner, 2020).

## 7. TEK for biodiversity conservation: a local solution to a global problem?

The two case studies presented in this thesis are examples of how the Traditional Knowledge (TEK) (as defined in [section 3.2](#) and analyzed in [chapter 5](#)), values and worldviews of the Indigenous people (as defined and delimited in [section 3.1](#)) of the Peruvian Andes is not only to guide biodiversity preservation projects, but also to ensure the sustenance of the communities, and to lay the foundation for the autonomous governance of Indigenous territories. In the Potato Park and the Chalakuy Maize Park, TEK marks the rhythm of the sowing and harvesting of the native potato and maize varieties, and is at the basis of many agricultural practices and technologies, like the alternating fallow and cropping periods and the ancient Andean terraces and irrigation systems. These patterns are also rooted in the Andean cosmovision, especially the values of *ayni*, reciprocity and *yanantin*, complementarity,

and a deep reverence for *Pachamama*, Mother Earth. These values, together with *chanincha* (equilibrium, solidarity), another important principle for Andean Indigenous cultures, are evident also in the governance structures within the Parks, guided by the Andean system of the *ayllu* (community), including both the human community with the natural and the spiritual dimensions. As discussed in [section 5.3](#), Indigenous knowledge and values do also matter for the autonomy and self-governance of these communities, as the guiding principles of Indigenous community life. These values also play an important role in uniting the communities in the Parks and especially in the barter market in Lares, an ancient tradition revived in the Maize Park to guarantee the redistribution of vital produce among the different altitudes and exchange knowledge. We can see then, that in the Potato and the Maize Park, these knowledges and values are still practiced and observed, and therefore preserved. Not only do they keep their cultural value, but they still contribute to building and nurturing strong relationships among the different Indigenous communities, maintaining the local market, strengthening food sovereignty and creating solid and resilient food systems. As the knowledge, values and natural world are closely interconnected in Indigenous cultures, preserving these knowledges and values is directly connected with the preservation of their native ecosystems, and vice versa. However, as discussed in [section 3.4](#), all too often we are inclined to consider TEK and Indigenous knowledge in general as impenetrable to outside influences, and as such still pristine and immutable sources of wisdom at best, retrograde and anachronistic forms of folklore at worst. In reality, Indigenous knowledge is, like any other knowledge system, in constant evolution, able to adapt both to a changing climate and ever-shifting political and cultural environments. More importantly, the experiments of the Potato Park and the Chalakuy Maize Park have shown that Indigenous peoples are, indeed, open to input from other knowledge sources, like Western science, if that cooperation is reciprocal and voluntary, not imposed. The wisdom dialogues (*diálogos de saberes*) in the Potato and Maize Parks have sparked many interesting innovations, originated from the exchange and even merging of knowledge between TEK holders, local NGOs and scientists (see sections above). These collaborations have proven critical not only for the successful management of the Parks, but also, and most importantly for the creation of new and improved agricultural technologies and practices, that have contributed to improved crop yields and community resilience, as well as reciprocal learning in climate-change mitigation strategies and botany among other things. However, pressures from the “outside world” can also be a threat to Indigenous livelihoods.

These do not only come in the form of multinational extractive companies searching for new sources of revenue, but also from the “inside”. As discussed in [section 5.1](#), Indigenous cultures are in decline not only because of marginalization, land dispossession and persecution, but also because their very members, especially the new generations, are increasingly less interested in maintaining their ancestral roots. While this may be a completely normal process, and an example of inter-generational tensions, it may also be, I would argue, another symptom of the poor consideration of Indigenous knowledge and philosophies in international stages. This is, as this thesis has illustrated, an unfortunate development, as traditional knowledge and practices have proven effective and resilient vis-a-vis the ecosystem changes caused by the climate crisis, at least in the framework of the case studies presented. That is why the recognition of the value and importance of Indigenous knowledge is of vital importance to preserve at least some of its teachings for the generations to come.

Additionally, by recognizing the value of Indigenous knowledge and practices, Indigenous peoples are given voice and leverage in national and international fora. As mentioned above, Indigenous peoples have increased their presence in discussions about climate-change and biodiversity loss and are represented at several negotiation tables (at the United Nations, for example), but their participation has often more of a symbolic rather than programmatic value, and their opinions often used more as consultancy rather than actual guidelines for action. In many countries, like in Peru, the “C” in FPIC is often interpreted as “consultation” rather than “consent”. Although some state’s governments have already incorporated the Andean concept of *sumac kawsay* and included the Rights of Nature in their constitution ([section 3.4](#)), extractivist and capitalist interests are still powerful obstacles for the actual implementation of such rights. After all, our Western market-oriented and fossil-fuel addicted economy is deeply dependent on extractive activities to function and maintain its drift, and many countries’ economies have become dependent on that very demand. This is definitely true in Peru, where resource extraction constitutes a considerable portion of the country’s economic activities without actually contributing much to overall economic development<sup>22</sup>. Likewise, one

---

<sup>22</sup> This is the so-called “resource curse”, in which economies with abundant natural resources tend to be consistently poorer than the resource-poor economies to which they sell their resources (Sachs & Warner, 1995), thus ending up in a vicious circle that makes them dependent on resource extraction. In the case of Peru, this phenomenon has been called “Cholo Disease” (Natural Resource Governance Institute, 2015).

must be wary of blindly falling for Indigenous philosophies and theories of wellbeing, especially when one seeks to apply them to a larger national, or even global, context. For, although the Potato Park and the Maize Park are truly inspiring examples of sustainable, eco-centric and holistic ways of living that are *grosso modo* self-sufficient, they proved successful because they were already embedded in a small, local, rural context and nurtured by cultures that live in close contact with nature. The urban, globalized lifestyles of Western societies are most likely not suitable to support such projects, at least not in a big scale, although some attempts have been made. Notable examples of initiatives aimed at transitioning from the global to the local scale are the Reti di Economia Solidale<sup>23</sup> (RES) in Italy and the Transition Town Totnes (TTT) in the UK. The RES were started in 2002 with the scope of connecting big and small communities and complementary enterprises all over Italy to allow them to be self-sufficient and live by “il benvivere di tutti”, the wellbeing (*buen vivir*) of all (Economia Solidale, 2010). The Transition Town initiative started in 2006 as a bottom-up “community-led response to the challenges the world faces” (Transition Network, 2021). TTT has its own system of food production, business and local economy, and even its own currency: the Totnes Pound (ibid.). These initiatives aim to shift the focus from the global to the local, proving that de-scaling the economy not only is possible, but also desirable to build resilient, self-sustained and sustainable local economies with a low(er) environmental impact<sup>24</sup>. However, it has been argued that these initiatives are only viable and sustainable within the pre-established network of services provided by the very system they seek to overturn (Rodriguez-Labajos et al., 2019). In other words, experiments of self-sustaining communities like the Potato Park and Maize Park initiatives are of extreme relevance for the Indigenous communities in their particular rural contexts (see [previous section](#)), but they may not prove as valuable ex-situ.

Likewise, Bebbington (1993) points out, the hype about what Indigenous knowledge can do for Indigenous peoples and the global sustainability efforts has diverted attention from what it actually cannot do, specifically of “[the] world beyond the farm gate” (p. 277). Although quite harsh, Bebbington’s remark does hold some truth. For the Indigenous communities who choose to live in complete voluntary isolation (like the so-called uncontacted peoples of the

---

<sup>23</sup> Solidarity Economy Networks.

<sup>24</sup> These initiatives are part of a bigger movement originated in Europe called Degrowth, which is not the subject of this thesis. For more information, consult Demaria et al. (2013).

Amazon<sup>25</sup>), in fact, their own traditional knowledge may actually suffice. All the others, like the communities of the Potato and the Maize Park in our case studies, do need the additional knowledge on market logic, politics and national legislation if they wish to participate, as it appears they do, in the “machinations” of the outside world (ibid.). As illustrated above, however, Indigenous peoples do tend to welcome inputs from outside knowledge. They just do not want to be swiped away by it. It appears as though, as noted by Briggs (2005) the dichotomy between Indigenous and non-indigenous knowledge is felt much more strongly outside of the day-to-day lives of Indigenous peoples. The problematization of the differences between Indigenous and Western science is a debate going on mostly in academia (see section...), while Indigenous peoples usually see it in a much more utilitarian and pragmatic way: if it is useful, we use it, if it is not useful, we leave it (Ibid. p. 110). Besides being based on different epistemologies, a major obstacle for the integration of Indigenous and Western science is the fact that the former is a highly specific, context-related kind of knowledge, while the latter strives to achieve universality and generalization in knowledge (ibid.). In this sense, Western knowledge might then be more useful to Indigenous knowledge than vice versa. It is apparent that neither of these knowledge systems is ultimately the one and only suitable for informing strategies for mitigating the consequences of climate change and reversing the damage done by humans to the Earth’s ecosystem. Indigenous knowledge is, indeed, inadequate to capture the bigger-picture implications of its principles, like the inability of subsistence agriculture to feed an increasingly larger world population, and Western science is too unempathetic to recognize the socio-cultural consequences of large-scale top-down environmental practices.

Despite these differences, I believe than a more fruitful discussion on how to tackle problems of global sustainability can be had by establishing synergies between these two knowledge systems and worldviews. By bridging the Indigenous/traditional values and the more “mainstream” knowledge and development paradigms closer together, in fact, we open new ways for more inclusive and participatory processes, more equitable dialogues and sure enough, more knowledge overall. In order to be able to create and maintain these dialogues, however, Indigenous knowledge must be protected. The Potato Park and the Chalakuy Maize

---

<sup>25</sup> For more information on the uncontacted peoples of the Amazon, see Wallace (2011).

Park are great examples of how that can be achieved, by establishing Bio-Cultural Heritage Territories (BCHTs) managed by Indigenous communities and guided by their traditional worldviews and values. Not only have BCHTs proven critical for the safeguard of Indigenous territories and Indigenous knowledge, but also for biodiversity preservation and stewardship of the environment (Swiderska et al., 2020). Additionally, I would argue that there is a need for a more respectful and “caring” relationship between us and the ecosystem in which we are embedded. Such sacred dimension is still present in the eco-centric Indigenous philosophies presented in this thesis (and in many other Indigenous worldviews), and can offer alternative pathways also at national and global level. This could take the form of a new way of understanding our place in the world – no longer at the center of it, but within it – guided by the concept of the *ayllu* (or a similar one) binding together both the human and the natural world. In sum, I believe that Indigenous knowledge, worldviews and values, although incapable of providing readymade, easily transferable and one-size-fits-all solutions to the climate crisis and biodiversity loss, can, however, be a source of inspiration for the “modern”, urban and technological human to reconnect with their roots and (re)establish the long-lost relationship of interconnectedness, reciprocity and complementarity with *Pachamama*, Mother Nature.

## 8. Concluding remarks

This thesis has analyzed the role of Traditional Ecological Knowledge (TEK) and Andean Indigenous values of community, reciprocity, and solidarity in the context of the Potato Park and the Chalakuy Maize Park in the highlands of Peru. These two case studies showed how TEK is used in practice by the Indigenous peoples of these parks to dictate the rhythms of their livelihood activities and how the aforementioned values guide governance mechanisms within and between the Parks. It has also highlighted the importance of the recognition of these set of ancestral knowledges and values for the preservation of the biocultural heritage (see note 18 in [section 6.1](#)) of these communities. Unfortunately, the gradual and progressive loss of Indigenous territories due to ecosystem degradation and expropriation, is threatening the survival of both Indigenous peoples and their traditional knowledge connected to land and nature stewardship (FAO, 2021). In the context of Peru, specifically, Indigenous communities have struggled to maintain their land for centuries. First, against the Spanish invaders and the



expropriation by the *latifundistas* during colonial times, and, in modern times, against the interests of national governments driven by neoliberal motivations and a resource-hungry global market economy. *Vis-à-vis* these threats, the establishment of Biocultural Heritage Territories (BCHTs) like the Potato Park and the Maize Park, is of critical importance for the protection of these Indigenous enclaves. Likewise, by embedding these BCHTs within the multilateral frameworks for biodiversity protection such as the FAO Plant Treaty (FAO, 2009b), the autonomy and self-determination of these communities is also safeguarded. Through the analysis of the two case studies mentioned above, the thesis found that productive and reciprocal collaboration between TEK and Western science can have beneficial effects on the livelihood activities of the Parks and improve the resilience of the communities in the face of climate change and other threats, such as increasing pressure from extractive industries. By establishing “wisdom dialogues” (*diálogos de saberes*), traditional practices of the biodiversity of the region have been merged with innovative methods of cross-pollination, to create more disease-resilient maize varieties in the Maize Park, and traditional knowledge of weather patterns has been combined with data from meteorological satellites to improve the community’s preparedness against the shifting climate affecting the potato crops in the Potato Park. These collaborations are crucial not only to the sustenance of the communities of the Parks but also to bring these initiatives to the attention of the international community. The Potato Park has, indeed, received much praise and international attention in the last years and has often been used as an example of best practice in the management of Indigenous territories (IIED, 2021). Such international recognitions are also crucial for the protection of these territories, as they can constitute powerful defense mechanisms against extractivism and expropriation. Finally, the thesis has also discussed the position of TEK within the bigger framework of sustainability. In so doing, it has argued that the local and context-specific character of traditional knowledge makes it unsuitable to offer big-scale solutions to the climate crisis and global biodiversity loss. Nevertheless, I have argued that it does provide some powerful ideas that can inspire a reevaluation of our anthropocentric views of ecology and development, reestablish a harmonious, respectful and reciprocal relationship with the environment and reconnect us with our “natural” roots. In our globalized world, where the “monoculture” of capitalism is absorbing more and more of the world’s cultural diversity, the resistance of Indigenous cultures is an act of rebellion that celebrates the unique value and plurality of Indigenous traditions fighting for a world where “many worlds fit”, as envisioned

by the Zapatistas of Chiapas, Mexico (EZLN, 1997 p. 89). The thesis has demonstrated, and the author is convinced, that Indigenous knowledge and practices should not be seen as “local curiosa” but as valid, sustainable and resilient sources of livelihood generation and land management systems – and something to seriously consider in local biodiversity conservation and climate change adaptations strategies. In essence, Indigenous knowledge and worldviews can teach us how to go back to the roots in terms of how we view agricultural practices, our relationship with nature and its processes and human’s position in the world.

As I am writing this, sitting in my local Library, a girl just came in with a small envelope full of seeds she harvested from her plants, to exchange it with a different one from the “seed library”, an initiative of the Oslo Public Library (Deichman, n.d). Examples of *ayni* and other Indigenous values are present even here, and are flourishing, as the world slowly realizes that we need more local (and global) solidarity and less capitalist individualism.

## 9. Appendixes

### i. Appendix 1: International Frameworks for Indigenous development

<i>Organization</i>	<i>Framework</i>	<i>Date</i>	<i>Type of Development</i>
United Nations (UN)	Universal Declaration of Human Rights	1948	“Article I: All human beings are born free and equal in dignity and rights. They are endowed with reason and conscience and should act towards one another in a spirit of brotherhood.”
UN Working Group on Indigenous Population	Established to elaborate standards for Indigenous rights’ protection	1982	Uses of term <i>Indigenous peoples</i> beginning in 1988.
UNESCO World Decade for Cultural Development	To acknowledge cultural dimensions of development; to affirm cultural identities	1988-1997	Intercultural dialogues; culture’s increasing importance in development; rights
International Labor Organization (ILO)	ILO Convention 169 on Indigenous rights	1989	Special projects; indigenous control over own economic, social & cultural development
World Bank	Operational Directive 4.20 on Indigenous participation in development	1991	Culturally appropriate development with beneficiary consultation
Asian Development Bank	Guidelines on Indigenous populations	1991	Need for economic advancement and social, cultural, and community development
European Commission (EU)	Increase in pro-indigenous projects and programs	1991–	Human rights and environmental concerns in development
Council of European Union	Regulation #443/92 on development with respect for cultural identity.	1992	“Ethnic minorities warrant special attention...while respecting their cultural identity”
Amnesty International	Program on Indigenous Peoples of the Americas	1992	Collective social rights and economic rights
Conference on Security and Cooperation in Europe (CSE)	Provision 29 on Indigenous development in Helsinki II	1992	Focus on European ethnic minorities
Ibero-American Summit	Establishes Fund for the Development of	1992	Rights and entitlements; Indigenous self-

	the Indigenous Peoples of Latin America and the Caribbean		development, strengthening Indigenous culture.
Dutch government	Policy on Indigenous rights and representation	1993	Cultural Identity protection, pluralism, rights
United Nations (UN)	Durban Declaration	2001	Acknowledges the basic human rights and fundamental freedoms of indigenous peoples.
Organization of American States	Draft Declaration on Indigenous rights	2002	Indigenous rights and development “in accordance with their own traditions, needs and interests [&] values, objectives, priorities and strategies”
United Nations (UN)	Declaration on Indigenous Rights	2007	<p>“Recognition of Indigenous peoples’ values, traditional knowledge, and resource practices [for] sustainable development.”</p> <p>”States shall consult and cooperate in good faith with the Indigenous Peoples concerned through their own representative institutions in order to obtain their free, prior and informed consent before adopting and implementing legislative or administrative measures that may affect them.”</p>

Adapted from Andolina et al., 2009 p. 38-39.

## 10. References

- Acosta, A. (2009). "El Buen Vivir, una oportunidad por Construir." *Ecuador Debate*, 75: 33–48.
- AIDSESEP (2022). Loreto: Comunidad Nativa Nueva Alianza denuncia contaminación del río a pesar de trabajos de limpieza. AIDSESEP. Available online at: <https://www.aidesepe.org.pe/noticias/loreto-comunidad-nativa-nueva-alianza-denuncia-contaminacion-del-rio-pesar-de-trabajos-de> [Accessed 20 February 2022].
- Agrawal, A. (1997). Dismantling the Divide Between Indigenous and Scientific Knowledge. *Development and Change*, 26(3): 413-439.
- Agurto, J. & Hurtaño Mariño, J. (2016). Peru. *The Indigenous World – 2016*. International Workgroup for Indigenous Affairs (IWGIA): 156-166.
- ANDES (2013). Patent-like claims on native potatoes spark protest by Peru's indigenous farmers. ANDES Communiqué – September 2013.
- ANDES (2015). Biocultural Heritage innovations in the Potato Park – SIFOR qualitative baseline study, Peru. Asociación ANDES and the Potato Park. Published by the International Institute for Environment and Development (IIED), March 2015.
- ANDES (2018). Indigenous Peoples and Climate Change in the Andes, An Indigenous Perspective on a Global Problem. Asociación ANDES. Available online at: <http://andes.center/wp-content/uploads/2018/07/Indigenous-peoples-and-climate-change-in-andes.pdf> [Accessed 1 March 2021]
- Andolina, R., Laurie, N. & Ratcliffe S. A. (2009). *Indigenous Development in the Andes: Culture, Power, and Transnationalism*. Duke University Press.
- Argumedo, A. & Wong, B Y. L.. (2010). The ayllu system of the Potato Park (Peru). In Belair C. & Ichikawa, K. (eds.) *Sustainable use of biological diversity in socio-ecological production landscapes*. Montreal: Convention on Biological Diversity (CBD): 84 –100.
- Argumedo, A., Stenner, T. & Swiderska, K. (2021). Sumaq Kausay and Ayllu: Quechua values and worldviews for conservation and sustainable development in the Chalakuy Maize

- Park, Lares, Peru – Case study for the project ‘Indigenous biocultural heritage for sustainable development’. Published by the International Institute for Environment and Development (IIED).
- Báez, M., & Sacher, W. (2014). Los discursos del Buen Vivir y el sumak kawsay, y la minería metálica a gran escala en Ecuador: rupturas y continuidades con el modelo de desarrollo. In G. D. Ramos (Coord.), *Buena vida, buen vivir: imaginarios alternativos para el bien común de la humanidad*: 233–276.
- Banks, G., & Scheyvens R. (2014). Ethical Issues. Schevyens, R. & Storey, D. (eds.) *Development fieldwork. A practical guide*. London: Sage Publications Ltd. 2nd ed.
- Barry, J. (2012). Climate change, the “cancer state of capitalism” and the return to the limits of growth: Towards a Political Economy of Sustainability. In (eds) Pelling, M. Manuel-Navarrete, D. & Redclift M., *Climate Change and the Crisis of Capitalism: A change to reclaim self, society and nature*. Routledge.
- Bates, P. & Trakansuphakon, P. (2021). Indigenous peoples: Informed custodians of biodiversity. *UNESCO Courier* 2021(3): 10-13.
- Bebbington, A. (1993). Modernization from below: An Alternative Indigenous Development? *Economic Geography* 69(3): 274-292.
- Berg, B.L. & Lune, H. (2017). *Qualitative research methods for the social sciences*. USA: Pearson. 9th edition.
- Berger, M. T. (2001). Romancing the Zapatistas: International Intellectuals and the Chiapas Rebellion. *Latin American Perspectives*, 28(2): 149–170.
- Berger. P., L., & Luckmann, T. (1966). *The social construction of reality. A Treatise in the Sociology of Knowledge*.
- Berkes, F. & Berkes, M. K. (2008). Ecological complexity, fuzzy logic, and holism in indigenous knowledge. *Futures* 41: 6–12.
- Bryman, A. (2012). *Social Research Methods*. Oxford University Press. 4th edition.

CBD (n.d.). List of Parties. Available online at: <https://www.cbd.int/information/parties.shtml>  
[Accessed 9 December 2021]

CBD (2011). Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity. Secretariat of the Convention on Biological Diversity Montreal. Montreal.

Caballero, J. M. (1981). Economía agraria de la sierra peruana antes de la reforma agraria de 1969. Lima, Instituto de Estudios Peruanos.

Chancel, L., Piketty, T., Saez, E., Zucman, G. (2022). World Inequality Report 2022, World Inequality Lab.

Chassagne, N. (2018). Sustaining the 'Good Life': Buen Vivir as an alternative to sustainable development. *Community Development Journal*.

Chuji M., Rengifo G. & Acosta P. (2019). Buen Vivir. Kothari A., Salleh A., Escobar A., Demaria F., Acosta A. (eds.), Pluriverse, A Post-Development Dictionary. India: Tulika books.

Const. 2008. Constitución de la República del Ecuador 2008. Registro Oficial 449. Quito, Ecuador, 20 de octubre de 2008.

Const. 2009. Constitución Política del Estado. La Paz, Bolivia. 7 de febrero de 2009.

Contreras, C. & Zuloaga, M. (2014). Historia mínima de Perú. El Colegio de México, A.C.

Contreras, J. (1981). El gamonalismo local y la reforma agraria: el caso de Chinchero (Perú), 1940-1979. *Boletín americanista* N°31: 15-39.

Correa, R. (2012). La iniciativa Yasuní-ITT: Cambiando paradigmas para un futuro sostenible. Quito: Presidencia República del Ecuador.

Cuestas-Caza, J. (2018). Sumak Kawsay is not Buen Vivir. *Alternautas* 5(1): 51-66.

Cunningham, M. (2010). Laman Laka: Our Indigenous Path to Self-Determined Development. *Towards an Alternative Development Paradigm: Indigenous Peoples' Self-Determined Development*. Tebtebba Foundation: 89-116.

- Cupples, J. & Kindon, S. (2003). *Returning to University and Writing the Field*. Scheyvens R. & Storey D. (eds.) (2003), *Development fieldwork. A practical guide*. London: Sage Publications Ltd.
- Deichman (n.d). Oslo frøbibliotek. Available online at: [https://deichman.no/vi-tilbyr/oslo%20fr%C3%B8bibliotek\\_ef16b234-4369-41e3-bade-5f67c33cc38d](https://deichman.no/vi-tilbyr/oslo%20fr%C3%B8bibliotek_ef16b234-4369-41e3-bade-5f67c33cc38d) [Accessed 13 March 2022].
- Dell, M. (2010). The Persistent Effects of Peru's Mining Mita. *Econometrica* 78(6): 1863–1903
- De la Cadena, M., & Starn, O. (2007). *Indigenous Experience Today*. Oxford: Berg.
- Deleuze, G. & Guattari, F. (1987), *A Thousand Plateaus: Capitalism and Schizophrenia*. University of Minnesota Press.
- Demaria, F., Schneider, F., Sekulova, F. and Martinez-Alier, J. (2013), What is Degrowth? From an Activist Slogan to a Social Movement, *Environmental Values* 22, The White House Press.
- Doyle, C. M. (2019). Indigenous Peoples' experiences of resistance, participation, and autonomy. The Prior Consultation of Indigenous Peoples in Latin America. In Wright, C. & Tomaselli A. (eds). *The Prior Consultation of Indigenous Peoples in Latin America: Inside the Implementation Gap*. Routledge.
- DPLF (2011). *The Right of Indigenous Peoples to Prior Consultation: The Situation in Bolivia, Colombia, Ecuador, and Peru*. Due Process Law Foundation (DPLF). Executive Summary prepared by María Clara Galvis and requested by Oxfam.
- Drzewieniecki, J. (1995). *Indigenous People, Law, and Politics in Peru*. Paper prepared for delivery at the Meeting of the Latin American Studies Association. State University of New York at Buffalo.
- DSN Nº 014 (1992). *Texto Unico Ordenado de la Ley General de Minería*. Sistema Peruano de Información Jurídica.



- Economia Sociale (2010), Rete di Economia Solidale (RES). Available online at:  
<http://www.economiasolidale.net/content/rete-di-economia-solidale-res> [Accessed 8 March 2022]
- Escobar, A. (1995). *Encountering Development: The Making and Unmaking of the Third World*. Princeton University Press.
- Escobar, A. (2008). *Territories of Difference: Place, Movements, Life, Redes*. Duke University Press.
- Escobar, A. (2016). Thinking-feeling with the Earth: territorial struggles and the ontological dimension of the epistemologies of the South. *AIBR. Revista de Antropología Iberoamericana* 11(1): 11-32.
- Escobar, A. (2018). *Designs for the Pluriverse. Radical Interdependence, Autonomy and the Making of Worlds*. Durham and London: Duke University Press.
- Escobar, A., Kothari, A., Salleh A., Demaria, F. & Acosta, A. (2019). 'Development' is colonialism in disguise. *Open Democracy*. Available online at:  
<https://www.opendemocracy.net/en/oureconomy/development-colonialism-disguise/?fbclid=IwAR3Ade152MDSCyjBRoflGoXcXGIPvLzhqgRVeGxrnF0148BWrgFZKIpdK2c> [Accessed 13 January 2022]
- Estermann, J. (2008). Andean Philosophy as a Questioning Alterity: An Intercultural Criticism of Western Andro- and Ethnocentrism. Note N., Fornet-Betancourt R., Estermann J., & Aerts D. (eds.), *Worldviews and Cultures: Philosophical Reflections from an Intercultural Perspective*. Dordrecht: Springer
- Esteva, G. (1992). Development, in Sachs W. (ed), *The Development Dictionary: a guide to knowledge as power*, Zed Books Ltd, New York and London. Second edition 2010.
- EZLN (1997). EZLN – Documentos y comunicados 3. Colección Problemas de México. 2 de octubre de 1995 / 24 de enero 1997. Ediciones Era.

- Finer, M. & Orta-Martinez. (2010). A second hydrocarbon boom threatens the Peruvian Amazon: Trends, projections, and policy implications. *Environmental Research Letters*. 5. 14012-10.
- FAO (n.d.). Pillars. The Food and Agricultural Organization (FAO). Available online at <https://www.fao.org/Indigenous-peoples/our-pillars/en/> [Accessed 10 December 2021]
- FAO (2009a). FAO and Traditional Knowledge: the linkages with sustainability, food security and climate change impacts. The Food and Agriculture Organization of the United Nations. Rome, Italy.
- FAO (2009b). International Treaty on Plant Genetic Resources for Food and Agriculture. The Food and Agriculture Organization of the United Nations. Rome, Italy.
- FAO (2015). FAO Policy on Indigenous and Tribal Peoples. Second Edition: March 2015. The Food and Agriculture Organization of the United Nations. Rome, Italy.
- FAO (2017). Report on the work of the FAO Indigenous Peoples Team – 2017. Partnerships and South-South Cooperation Division, Advocacy Unit (DPSA). The Food and Agriculture Organization of the United Nations. Rome, Italy.
- FAO (2020). Indigenous Peoples and FAO. Allies for Sustainable Development in the Context of Climate Change. The Food and Agriculture Organization of the United Nations. Rome, Italy.
- FAO & FILAC (2021). Forest Governance by Indigenous and Tribal People. An Opportunity for Climate Action in Latin America and the Caribbean. The Food and Agriculture Organization of the United Nations. Rome, Italy.
- Ferguson, J. (1994). *The Anti-Politics Machine: Development, Depoliticization, and Bureaucratic Power in Lesotho*. University of Minnesota Press.
- Fontana, L. B., & Grugel, J. (2016). The Politics of Indigenous Participation Through “Free Prior Informed Consent”: Reflections from the Bolivian Case. *World Development*, 77, 249- 261.

- Forero, J. E. (2021). Buen vivir as an Alternative Development Model: Ecuador's Bumpy Road toward a Postextractivist Society. *Latin American Perspectives*, 48(3): 227–244.
- Foucault, M. (1980). *Power/Knowledge: Selected Interviews and Other Writings 1972-1977*. The Harvester Press.
- Foucault, M. 1979. *Discipline and Punish. The Birth of the Prison*. New York: Vintage Books.
- Gadgil, M., Berkes, F. & Folke, C. (1993). Indigenous Knowledge for Biodiversity Conservation. *AMBIO A Journal of the Human Environment* 22:(2): 151-156.
- Galeano, E. (1971). *Las venas abierdas de América Latina*. Siglo Veintiuno editores, 76th edition 2004.
- Garrouette, E. M. (2018). *Defining "Radical Indigenism" and Creating an American Indian Scholarship. Culture, power, and history: Studies in critical sociology*. Brill Academic Publishers.
- Gilbert, J. (2007). *Nomadic Territories: A Human Rights Approach to Nomadic Peoples' Land Rights*. Human Rights Law Review. Oxford University Press.
- Global Witness (2014). *Peru's Deadly Environment: The Rise in Killing of Environmental and Land Defenders*. Global Witness, November 2014.
- Global Witness (2021). *Last Line of Defense: The Industries Causing the Climate Crisis and Attacks Against Land and Environmental Defenders*. Global Witness, September 2021.
- Goeury, H. (2021). Rafael Correa's Decade in Power (2007–2017): Citizens' Revolution, Sumak Kawsay, and Neo-Extractivism in Ecuador. *Latin American Perspectives*, Issue 238, Vol. 48(3):206–226
- Goodenough, W. (2011). *Navigation in the Western Carolines: a Traditional Science. The Postcolonial Science and Technology Studies: 175-197*. Durham: Duke University Press Books.

- Gómez-Baggethun, E., Corbera E. & Reyes-García, V. (2013). Traditional ecological knowledge and global environmental change: research findings and policy implications. *Ecology and Society* 18(4): 72.
- Gómez-Baggethun, E. (2021). Is there a future for Indigenous and local knowledge? *The Journal of Peasant Studies*. Available online at <https://www.tandfonline.com/doi/full/10.1080/03066150.2021.1926994> [Accessed 10 October 2021]
- Gordon, O. E. (2014). *The Andean Cosmivision: A Path for Exploring Profound Aspects of Ourselves, Nature, and the Cosmos*. Oakley Gordon.
- GRAIN (2015). ANDES - Potato Park - CIP agreement. GRAIN. Available online at: <https://grain.org/article/entries/2165-andes-potato-park-cip-agreement> [Accessed 6 March 2022]
- Green, L. (ed.) (2013). *Contested Ontologies: Dialogues in the South on Nature and Knowledge*. Cape Town: Natural Science Resource Council.
- Gros, C. (2013). ¿Indígenas o campesinos, pueblos de la selva o de la montaña? Viejos debates, nuevas perspectivas. *Revista Colombiana de Antropología* Nº 49: 45-69.
- GTA (2020). Dialogue 8: Covid 19 - Potato Park: Defending the past to envision the future. Recording and transcript of the session held on 31 July 2020 as part of the Webinar "Dialogue on Alternatives in the Time of Global Crises" by the Global Tapestry of Alternatives (GTA) Initiative. Available online at: <https://globaltapestryofalternatives.org/webinars:2020:08?redirect=1> [Accessed 8 March, 2022]
- Guardian, The (2009). Peru protest violence kills 22 police. *The Guardian*. Available online at: <https://www.theguardian.com/world/2009/jun/07/peru-violence> [Accessed 25 February 2022]
- Gudynas, E. (2011). Buen vivir: Germinando alternativas al desarrollo, in *América Latina en Movimiento*, ALAI, No 462: 1-20; February 2011, Quito. Ecuador.

- Gudynas, E. (2014). Sustentación, aceptación y legitimación de los extractivismos: múltiples expresiones, pero un mismo basamento. *OPERA*, 14: 137-159.
- Gudynas, E. (2012). Estado compensador y nuevos extractivismos: las ambivalencias del progresismo sudamericano. *Nueva Sociedad* 237: 128–146.
- Gudynas, E. (2009). Diez tesis urgentes sobre el nuevo extractivismo: contextos y demandas bajo el progresismo sudamericano actual. In Schuldt et al. (eds.), *Extractivismo, política y sociedad*. Quito: CAAP/CLAES: 187–225.
- Huanacuni-Mamani, F. (2010). Buen Vivir/Vivir Bien: Filosofía, políticas, estrategias y experiencias regionales editado por el Instituto Internacional de Integración (III-CAB), Coordinadora Andina de Organizaciones Indígenas (CAOI).
- Ideele Revista (2018). Lote 116: una sentencia histórica para los pueblos indígenas peruanos. Ideele Revista Nº 281. Available online at: <https://revistaideele.com/ideele/content/lote-116-una-sentencia-hist%C3%B3rica-para-los-pueblos-ind%C3%ADgenas-peruanos> [Accessed 25 February 2022]
- IDL (2019). Sentencia definitiva ordena suspensión de actividad petrolera en el lote 116. Instituto de Defensa Legal (IDL). Available online at: <https://www.idl.org.pe/sentencia-definitiva-ordena-suspension-de-actividad-petrolera-en-el-lote-116/> [Accessed 25 February 2022]
- IIED (2021), Building resilience through Indigenous food systems. Biocultural Heritage – IIED. Available online at: <https://biocultural.iied.org/building-resilience-through-indigenous-food-systems> [Accessed 8 March 2022]
- ILO (1989). ILO Convention No. 169 Concerning Indigenous and Tribal Peoples in Independent Countries, (adopted 27 June 1989), 1650 UNTS 28383. International Labor Organization (ILO).
- Ingold, T. (2003). Two Reflections on Ecological Knowledge. In G. Sanga & G. Ortalli (eds.), *Nature Knowledge: Ethnoscience, Cognition, Identity*: 301–311.
- Ingold, T. (2006). Rethinking the animate, re-animating thought. *Ethnos*, 71(1): 9-20.

- IPBES (2017). Approach to recognizing and working with indigenous and local knowledge in the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. In: Report of the Plenary of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services on the work of its fifth session (Annex II to decision IPBES-5/1). IPBES secretariat, Bonn, Germany.
- IPBES (2019). Global assessment report of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, Brondízio, E. S., Settele, J., Díaz, S., Ngo, H. T. (eds). IPBES secretariat, Bonn, Germany.
- IPCC (2013). Climate Change 2013: The Physical Science Basis. Summary for Policymakers. IPCC WGI Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC).
- IPCC (2022). Climate Change 2022: Impacts, Adaptation and Vulnerability. Summary for policymakers. IPCC WGII Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC).
- IPDRS (2017). Autonomía de la Nación Wampís: Tarimat Pujut y la construcción del futuro común. Instituto para el desarrollo rural de Sudamérica (IPDRS) & Movimiento Regional por la Tierra y el Territorio. September 2017.
- Johannes, R.E. (1993). Integrating Traditional Ecological Knowledge and Management with Environmental Impact Assessment. In: Inglis, J.T. (ed), *Traditional Ecological Knowledge: Concepts and Cases. International Program on Traditional Ecological Knowledge and International Development Research Centre*. Ottawa, Canada.
- Klein, N. (2014). *This Changes Everything: Capitalism vs. the Climate*. Simon & Schuster
- Koivurova, T. (2013). Can Saami Transnational Indigenous Peoples Exercise Their Self-Determination in a World of Sovereign States? In Banks, N. & Koivurova, T. (eds). *The Proposed Nordic Saami Convention: national and International Dimensions of Indigenous Property Rights*. Hart Publishing: 105-122.

- Kothari, A., Salleh, A., Escobar, A., Demaria, F. & Acosta, A. (eds) (2019). *Pluriverse, A Post-Development Dictionary*, Tulika books, New Delhi, India.
- Lakhani, N. (2021). Cop26 legitimacy questioned as groups excluded from crucial talks. *The Guardian*. Available online at: <https://www.theguardian.com/environment/2021/nov/08/cop26-legitimacy-questioned-as-groups-excluded-from-crucial-talks> [Accessed 13 December 2021]
- Lepcha, E., Gurung, N., Rastogi, A. & Swiderska, K. (2021). *Safeguarding Lepcha and Limbu cultural values and worldviews for conservation and sustainable development in the Eastern Himalayas, India*. IIED, London.
- Ley Nº 27811. Ley que establece el régimen de protección de los conocimientos colectivos de los Pueblos Indígenas vinculados a los Recursos Biológicos. *Diario Oficial el Peruano*, Lima, Perú, 10 de agosto de 2002.
- Ley Nº 071. Ley de Derechos de la Madre Tierra. *Gaceta Oficial del Estado Plurinacional de Bolivia*, 21 de diciembre de 2010.
- Ley Nº 29785. Ley del Derecho a la consulta previa a los pueblos indígenas u originarios, reconocido en el Convenio 169 de la Organización Internacional del Trabajo (OIT). *Diario Oficial el Peruano*, Lima, Perú, 7 de septiembre de 2011.
- Ley Nº 30754. Ley Marco sobre Cambio Climático. *Diario Oficial el Peruano*, Lima, Perú, 18 de abril de 2018.
- Linden, E. (1991). Lost Tribes, Lost Knowledge, *Time Magazine (September 23)*, 138: 46-54.
- Locke, L.F., Spirduso, W. W. & Silverman, A. J. (2007). Doing the Right Thing: the “Habit of Truth”. *Proposals that Work: A Guide for Planning Dissertations and Grant Proposals*.
- Lone, D. E. L. (1982). The Inca as a Nonmarket Economy: Supply on Command versus Supply and Demand. *Contexts for Prehistoric Exchange*, 291–316.

- Lozada Pereira, B. (2006). Cosmovisión, historia y política en los Andes. *Volumen 8 de la Colección de la Maestría en Historias Andinas y Amazónicas*. Colegio de Historiadores de Bolivia. Comp. Producciones CIMA, La Paz - Bolivia.
- Ludlow, F., Baker, L., Brock, S., Hebdon, C. & Dove, M. (2016). The Double Binds of Indigeneity and Indigenous Resistance. *Humanities*, 5(3):53. MDPI AG.
- Macas, L. A. (2010). El Sumak Kawsay. *Revista Yachaykuna - Saberes*, Nº 13: 13-39.
- Mariátegui, J. C. (1928). 7 ensayos de Interpretación de la Realidad Peruana. Biblioteca Amauta, Lima - Perú.
- McLennan, S. & Prinsen G. (2014). Something old, something new: research using archives, texts and virtual data. Schevyens R. & Storey D. (eds.) 2nd ed. *Development fieldwork. A practical guide*. London: Sage Publications Ltd.
- Merino, R. (2021). Buen vivir and the Making of Indigenous Territories in the Peruvian Amazon. *Latin American Perspectives*, Issue 238, 48(3): 136–151
- Merriam-Webster. (n.d.). Indigenous. The Merriam-Webster dictionary. Available online at: <https://www.merriam-webster.com/dictionary/Indigenous> [Accessed 27 September 2021]
- Mignolo, W. D. (2007). Delinking. *Cultural Studies*, 21(2): 449-514. Routledge, Taylor & Francis Group
- Mosse, David (2001) 'People's knowledge', participation and patronage: operations and representations in rural development. In: Cook, B and Kothari, U, (eds.), *Participation - the new tyranny?* London: Zed Press: 16-35
- Nelson, M. & Shilling, D. (Eds.). (2018). *Traditional Ecological Knowledge: Learning from Indigenous Practices for Environmental Sustainability (New Directions in Sustainability and Society)*. Cambridge: Cambridge University Press.
- Naess, A. (1973). The shallow and the deep, long-range ecology movement. A summary, *Inquiry*, 16:1, 95 — 100



- Natural Resource Governance Institute (2015). Local level resource curse: The “Cholo” disease in Peru. Revenue Watch Institute.
- Padulosi, S., Thompson, J. & Rudebjer, P. (2013). Fighting poverty, hunger and malnutrition with neglected and underutilized species (NUS): needs, challenges and the way forward. Bioversity International, Rome.
- Pohle, P. & Gerique, A. (2006). Traditional ecological knowledge and biodiversity management in the Andes of southern Ecuador. *Geographica Helvetica*. 61: 275-285.
- Postero, N. (2013) Introduction: Negotiating Indigeneity. *Latin American and Caribbean Ethnic Studies*, 8(2): 107-121.
- Powell, J. (2017). Scientists Reach 100% Consensus on Anthropogenic Global Warming. *Bulletin of Science, Technology & Society*, 37(4), 183–184.
- Quijano, A. (2007) Coloniality and Modernity/Rationality, *Cultural Studies*, 21 (2-3): 168-178
- Raftopoulos, M. (2017). Contemporary debates on social-environmental conflicts, extractivism and human rights in Latin America, *The International Journal of Human Rights*, 21(4): 387-404
- Raygorodetsky, G. (2018). Indigenous peoples defend Earth’s biodiversity – but they’re in danger. National Geographic. Available online at: <https://www.nationalgeographic.com/environment/article/can-indigenous-land-stewardship-protect-biodiversity-> [Accessed 6 March 2022]
- Regjeringen (2015). Potato seed deposit at Svalbard Global Seed Vault. Regjeringen.no. Available online at: <https://www.regjeringen.no/en/historical-archive/solbergs-government/Ministries/lmd/news/2015/aug-15/potetfro-til-svalbard-globale-frohvelv/id2436064/> [Accessed 6 March 2022]
- Reid, H., Argumedo, A. & Swiderska, K. (2018). Ecosystem-based approaches to adaptation: strengthening the evidence and informing policy – Research results from the Potato Park and the Indigenous Peoples Biocultural Climate Change Assessment, Peru. Published by the International Institute for Environment and Development (IIED).

- Remy, M. I. (2013). Historia de las comunidades indígenas y campesinas del Perú. Documento de Trabajo, 202. Serie Sociología y Política, 48. Instituto de Estudios Peruanos, IEP.
- RM 197-2020-MINAM. Resolución Ministerial Nº 197-2020-MINAM. Aprueban conformación y funciones de la Plataforma de Pueblos Indígenas para enfrentar el Cambio Climático. Diario Oficial El Peruano. Lima, Peru, 29 de septiembre de 2020.
- Rodriguez-Labajos, B., Yáñez, I., Bond, P., Greyl, L., Munguti, S., Ojo, G., Overbeek, W. (2019) Not So Natural an Alliance? Degrowth and Environmental Justice Movements in the Global South. *Ecological Economics* 157: 175-184.
- Sachs, J. D. & Warner, A. M. (1995). Natural Resource Abundance and Economic Growth. Working Paper 5398. National Bureau of Economic Research.
- Sachs, W. (1992). The Development Dictionary: a guide to knowledge as power, Zed Books Ltd, New York and London. Second edition 2010.
- Salas, M. (2013). Voices and Flavours from the Earth: Visualising Food Sovereignty in the Andes. Wide Andean People's Network. Published by The International Institute for Environment and Development (IIED).
- Santos, B. (2014), Epistemologies of the South: Justice against Epistemicide. Paradigm Publishers.
- Scott, Gregory (2011). Plants, People, and the Conservation of Biodiversity of Potatoes in Peru. *Natureza & Conservação*, 9(1):21-38.
- Smith, L. T. (1999). Decolonizing Methodologies: Research and Indigenous Peoples. New York: Zed Books Ltd.
- Song, Y., Li, G., Zhang, Y., Song, X. & Swiderska, K. (2021). Indigenous Naxi-Moso cultural values and worldviews for sustainable development: Four Village Biocultural Heritage Coalition, Yunnan, China. IIED
- Stenner, T., Argumedo, A., Ellis, D. & Swiderska, K. (2016). Potato Park – International Potato Center – ANDES Agreement: Climate Change Social Learning (CCSL) case study on the

repatriation of native potatoes. *Solving 'Wicked' Problems: a compendium of case studies*. International Institute for Environment and Development (IIED), Asociación ANDES, Centro Internacional de la Papa (CIP) & Parque de la Papa. Published by IIED.

Swiderska, K., Otambekov, A. & Argumedo, A. (2019). The Apple Park and Wheat Park, Tajikistan. Case study guidance on biocultural heritage territories. The International Network of Mountain Indigenous Peoples (INMIP). IIED, London.

Swiderska, K., Argumedo, A. & Pimbert, M. (2020). Biocultural heritage territories: key to halting biodiversity loss. *IIED Briefing Papers*. July 2020.

Swiderska, K. & Stenner, T. (2020). The Maize Park Biocultural Heritage Territory in Lares, Peru. Case study guidance on biocultural heritage territories. International Network of Mountain Indigenous Peoples (INMIP).

Transition Network (2021). History: Looking back in order to look forwards (video). Available online at: <https://transitionnetwork.org/about-the-movement/what-is-transition/history/> [Accessed 8 March 2022]

UK Parliament (2021), The President of COP26 was asked— Climate Change: International Engagement. COP26 Volume 929: debated on Wednesday 9 June 2021. Hansard. UK Parliament. Available online at: <https://hansard.parliament.uk/Commons/2021-06-09/debates/73F675C1-5498-4054-87EE-526FB9A3781D/COP26> [Accessed 13 December 2021]

UN (2007). United Nations Declaration on the Rights of Indigenous Peoples. Resolution adopted by the General Assembly on 2 October 2007 (A/RES/61/295).

UN (2017). Enhancing the participation of indigenous peoples' representatives and institutions in meetings of relevant United Nations bodies on issues affecting them. Resolution adopted by the General Assembly on 8 September 2017 (A/RES/71/321).

UN (1992). 8. Convention on Biological Biodiversity. Rio de Janeiro, 5 June 1992. Chapter XXVII. Environment. VOL-2

- UNFCCC (2021a). Glasgow Climate Pact. Decision -/CMA.3. Advance unedited version. United Nations Framework Convention on Climate Change. Available online at: [https://unfccc.int/sites/default/files/resource/cma3\\_auv\\_2\\_cover%2520decision.pdf](https://unfccc.int/sites/default/files/resource/cma3_auv_2_cover%2520decision.pdf) [Accessed 10 December 2021]
- UNFCCC (2021b). COP26: The Glasgow Climate Pact. United Nations Framework Convention on Climate Change. UN Climate Change Conference UK 2021. Available online at <https://ukcop26.org/wp-content/uploads/2021/11/COP26-Presidency-Outcomes-The-Climate-Pact.pdf> [Accessed 10 December 2021]
- UNDP, UNEP, IUCN & IM (2016). El futuro ancestral: la adaptación basada en ecosistemas. Programa de las Naciones Unidas para el Desarrollo. Lima, Perú.
- UNPFII (2006). United Nations Declaration on the Rights of Indigenous Peoples. A/RES/61/295.
- UN Women (2011). Peru Passes Historic Law on Indigenous Peoples. UN Women. Available online at: <https://www.unwomen.org/en/news/stories/2011/10/peru-passes-historic-law-on-indigenous-peoples> [Accessed 20 February 2022]
- Vargas, D. R. (2019). Los movimientos indígenas y la educación del siglo XX en el sur andino puneño peruano. *Revista historia de la educación latinoamericana* 21(33): 61-85.
- Vasquez, I. (2010). Extractive Industries and Conflicts in Peru: An Agenda for Action. UN. Available online at: <https://www.un.org/es/land-natural-resources-conflict/pdfs/Peru%20background%20paper%20UN%20EU%20partnership%20october%202010.pdf> [Accessed 22 February 2022]
- Zanelli, J. C. D. (2021). Peru. *The Indigenous World – 2016*. International Workgroup for Indigenous Affairs (IWGIA): 458-469.
- Wallace, S. (2011). *The Unconquered: In Search of the Amazon's Last Uncontacted Tribes*. Crown Publishers.

- Walshe, R. & Argumedo, A. (2016). Ayni, Ayllu, Yanantin and Chanincha: The Cultural Values Enabling Adaptation to Climate Change in Communities of the Potato Park, in the Peruvian Andes. *GAIA* 25(3): 166 – 173.
- Warren, D. M., Slikkerveer, J. & Brokensha, D. eds. (2015). *The Cultural Dimension of Development: Indigenous Knowledge Systems*. London: Intermediate Technology
- Warren, D. M. (2015). Comments on Article by Arun Agrawal. *Indigenous Knowledge and Development Monitor* 4(1), p. 13.
- Watson, J. (2020). *Lo-TEK Design by Radical Indigenism*. Köln: Taschen.
- Wekesa, C., Ndalilo, L. & Swiderska, K. (2021). *Towards a Biocultural Heritage Territory in Rabai Cultural Landscape: exploring Mijikenda cultural values and practices for sustainable development*. IIED, London.
- Westengen, O. , Hunduma, T. & Skarbø, K. (2017), *From Genebanks to Farmers. A study of approaches to introduce genebank material to farmers' seed systems*. *Noragric Report No. 80*. Department of International Environment and Development Studies, Noragric of the Norwegian University of Life Sciences (NMBU). Ås, Norway.
- Whyte, K. (2018). What Do Indigenous Knowledges Do for Indigenous Peoples? In Nelson M.K. & Shilling, D. (eds), *Traditional Ecological Knowledge: Learning from Indigenous Practices for Environmental Sustainability*. Cambridge University Press.



**Norges miljø- og biovitenskapelige universitet**  
Noregs miljø- og biovitenskapelige universitet  
Norwegian University of Life Sciences

Postboks 5003  
NO-1432 Ås  
Norway