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Master thesis International Development Studies

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Oktober 11 2023

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Abstract

Grassroots organizations have increasingly contributed to pathways towards more sustainable energy systems by shedding light to the human cost of unsustainable resource uses. In light of a global boom of 3700 major dams underway in predominantly developing and emergent countries due to growing renewable energy demand, this research set out to examine how social actors rationalize and interact with the social impacts of hydroelectric dam projects in Colombia, specifically the Quimbo and HidroItuango. The data was collected through observational research and in-depth interviews with affected communities, a social movement and government-led entities including a dam operator. The analysis of collected data contributes to the literature by providing a bottom-up understanding on the social impacts caused by hydroelectric dams in rural Colombia, across Upstream, Reservoir and Downstream areas. The study furthermore identified how social mobilization has taken shape in Colombia, its achievements in pursuit of social change and the constraints that have prevailed to the communities' aspired sovereignty over natural and cultural assets. It argues that the voices of the Quimbo and HidroItuango communities have been overwritten and repressed by a notion of 'development' as part of an extractivist and neoliberal model that aimed at 'integration of the territories'.

Acknowledgements

I would like to show my appreciation to those that helped shape this study. First and foremost, the expertise, soberness and trust of Dr. Kei Otsuki has proven instrumental in conducting this research. Thank you for you guidance throughout the fieldwork that resulted in the thesis that now lies ahead.

Then, the fieldwork could not have been conducted without the support of Jennifer Chavarro from ASOQUIMBO, that took me into her home and brought me into contact with people in the communities to discuss their experiences and resistance against the Quimbo dam. All of whom took the time to speak with me, allow me to join their mobilization on March 14th and tell about their ongoing struggles. An enormous respect and appreciation I wish to extend to you, without you this research would have little meaning.

Furthermore, my roommates Ana and Jeronimo deserve a special thanks for welcoming me not only to Colombia and navigating the intricacies the country holds, but also their support with transcribing of the interview audios.

All in all, I'd like to express my gratitude to everyone that supported along the way. Thanks for your generosity and encouragement!

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1. Introduction

Hydropower is a clean and economically competitive source renewable energy, which yields 16% of the world's generated electricity and about 78% of renewable electricity generation (Berga, 2016). The last IRENA REMAP 2030 scenario, in line with the UN Secretary-General "Sustainable Energy for All" (SE4ALL) scenario, aims at doubling the global share of renewable energy, which requires 2200 GW of global hydropower capacity to achieve its targets. Mainly in developing countries and emergent economies a great expansion of hydropower is expected, since hydropower development has a crucial role In climate change mitigation scenarios. As a matter of fact, the projection of the number of hydropower plants with a capacity greater than 1 MW shows a total of 3700 hydro projects in 102 countries around the world by 2030. Of these, 629 (17%) are under construction and 3071 (83%) are planned, mainly in developing countries and emergent economies. With 2200 large dams planned or under construction in South America (Richter et al., 2010)

1.1. Problem statement

Clearly, renewable energy is essential for curbing climate change. While this is an imperative technical response to the climate crisis, scholars argue that greater attention must be attributed to climate change not only displacing people from direct climate-related impacts, but climate change adaptation and mitigation programs themselves resulting in displacement and resettlement (Sherbinin et al. 2011). Infrastructure development needed for the sustainable energy require commonly large infrastructures or large amounts of land area (Scheidel and Sorman 2012), which displace an enormous number of people and cause significant indirect social impacts for affected communities. Current estimates are that for the decade 2011–2020, the number of people displaced through infrastructure projects exceeds 20 million a year, or 200 million over the decade (Cernea and Maldonado, 2018). Dams displace more people than any other development project worldwide, with an estimated 80 million people displaced between 1997-2017 by large dams alone (IDMC 2017). When indirect social impacts are considered, experts estimate that by the 7,000 largest dams as many as 472 million people have been affected, together with more than half of the world's largest river systems (Richter et al. 2010). The majority of these dams will be located in developing countries or emergent economies, where economic growth and poverty alleviation are considered top policy priorities, but displacement and often forgotten up- and downstream impacts (Cernea, 2004) tend to leave people impoverished and marginalized, contrary to the very goals of development' (IDMC, 2017). As Cernea (2000) argued, *'the outcome is an unjustifiable repartition of development's costs and benefits; some people enjoy the gains of development, while others bear its pains'.* Grassroots activists have increasingly contributed

to pathways towards more sustainable energy provision by shedding light to the human cost of unsustainable resource uses (Scheidel et al. 2018). They represent what Martinez-Alier and Elguea (2005) call the 'Environmentalism of the Poor'. Opposition to dams have not only arisen to denounce the social and environmental impacts, but also to question the techno-economic rationality that has shaped development policy and sustainability politics for decades (Goldman, 2001)

1.2. Research objective and relevance

Where research and advocacy has had a skewed focus on the impacts of dam-induced displacement and resettlement, and with a global boom in dam construction under way, significant gaps remain within this increasingly critical field on the sustainable development agenda. As the next chapter will establish, literature on the social impacts of dams is scattered, lacking in a systemic approach (or even operational definition), with extremely little attention for downstream and upstream impacts. Furthermore, social impacts such as food insecurity, health affectations and cultural change, especially from the experience of women or other 'vulnerable' groups have remained largely understudied. Herein neoliberal and top-down approaches have remained dominant in research and practice. Herein affected communities are often perceived to be the inevitable 'losers' and passive recipients of development interventions such as hydroelectric dams. Whilst social movements are considered by political ecologists as the main subject to lead the change of status quo.

With this in mind, the overarching objectives of this study is to examine how human agency shapes or mediates the social impacts of hydroelectric dam projects through an actor-oriented approach. Such an actor-oriented approach is highly relevant as it will deepen our bottom-up understanding of how social actors define, rationalize and give meaning to the social impacts caused by hydroelectric dams. As well as how affected communities (in its spatial dimensions) and other social actors strategize in their dealings with these renewable energy projects, as they shape or mediate mitigation mechanisms through social organizing practices. Furthermore, shedding light on the potentially constraining dynamics for equitable development in rural areas of Colombia when it comes to the transition to renewable energies. Key in order for Dams' social impacts to be effectively addressed by practitioners and policy makers.

Specifically, two hydroelectric dams have been selected as the study area, the HidroItuango dam located in the Río Cauca basin in the North of the Department of Antioquia and the El Quimbo located in the Magdalena basin in the center of the Department of Huila. The study incorporates the perspectives of affected communities, government-led entities, social movements and hydroelectric dam operators.

1.3. Main research question and sub questions

To address the existing gaps in current literature the following research question is presented:

How can the social impacts of hydroelectric dams on affected communities in Colombia be addressed?

In order to provide an answer to this research questions, four sub-questions have been derived:

- *Who are the social actors involved with hydroelectric dams in Colombia?*
- *What are the different understandings of the social impacts of hydroelectric dams?*
- *How are existing mechanisms to prevent or mitigate the social impacts perceived by affected communities and subsequently influenced by social organizing practices?*
- *What are the existing constraints in addressing the social impacts due to the different understandings, social interests or agency between actors?*

2. Theoretical framework

In this research an actor oriented approach was adopted to explore the challenges in addressing the social impacts of Hydroelectric Dam projects in Colombia. This chapter sets out an examination of the theoretical and conceptual embedding of the research. Starting with a review of the existing literature and evidence on social impacts of dams, within its spatial dimensions. Followed by a conceptualization of social impacts, an introduction to the actor-oriented approach and grassroots resistance against dams. The chapter will end by identification of the research problem and presentation of the conceptual model that served as a frame of reference for this study's conceptual lens.

2.1. Social impacts of dams

Large dams, which currently stand at a number exceeding 50.000 were among the most potent symbols of economic development for much of the twentieth century (Berga et al., 2006). Providing water storage that enabled large cities to grow in desert regions, supplying hydropower for industrial and urban economies, and providing irrigation that contributed directly to 12-16% of global food production (WCD, 2000; Richter et al., 2010). However, by the 1990s, large dams came under controversy due to their detrimental environmental and social consequences and how to ensure meaningful participation from those communities most affected (Schulz and Adams, 2019). Subsequently the World Commission on Dams (WCD) was formed in 1998, which led to the subsequent publication of the first systematic assessment of large dams around the world in 2000 (WCD, 2000a). The report brought much-needed attention to the benefits and costs of large dams concluded that: *"in too many cases an unacceptable and often unnecessary price has been paid to secure [dams'] benefits, especially in social and environmental terms"* (WCD, 2000, p. 18).

However, whilst construction of dams temporarily reduced (Schneider, 2013) a global boom of at least 3700 major dams is now again underway due to growing demand for renewable energies to curb carbon emissions (Zarfl et al., 2015), 52% of which is driven by the world's richest 10 percent (Stockholm Environment Institute, 2020). The majority of these dams will be located in developing countries or emergent economies, with some 2200 large dams planned or under construction in South America (Richter et al., 2010; Berga 2016). Schulz and Adams (2019) pointed out that these new global boom dams are not being planned by the recommendations of the WCD report, warning for the repetition of social and environmental costs once more. Importantly, dams have varying social impacts on human population across spatial dimensions. Kirchher and Charles (2016) categorized these into five main levels: Upstream, Resettlement (or Reservoir), Downstream, Country and Global level. The

following section will examine the existing literature by order of three spatial dimensions most relevant to this study, namely, the Reservoir area impacts, Upstream area impacts and Downstream area impacts.

2.1.1. Dam-Induced Displacement and Resettlement

Dams displace more people than any other development project worldwide, with an estimated 80 million people displaced between 1997-2017 by large dams alone (IDMC 2017). Large dams necessitate the flooding of the reservoir area. This permanent and irreversible impact affects the communities that live, farm, or otherwise depend on the land and resources in that area. Resulting in the consequent relocation and resettlement of thousands of people, which is often considered as the most severe societal effect caused by dams (Égré and Senécal, 2003; Hay et al., 2019).

Coupled with economic impoverishment, the social impacts of Development-induced Displacement and Resettlement (DIDR) are enormous and multi-faceted and have been widely documented within the literature (Tan, 2020). The literature stems back from anthropological and sociological studies from the 1950s and 1960s (Hay et al., 2019). Before the 1980s there was an inexistence of policy frameworks on resettlement. However with growing evidence of the negative effects of displacement and resettlement, the World Bank began to take responsibility for aspects of resettlement planning and started developing policy guidelines. Their position was that *'all resettlement programmes must be development programmes which re-establish social and economic productivity' (*Partridge, 1989, p 77). Consequently SIAs, which tend to focus on a single project and limited timeframe became an important stream in the literature (Égré and Senécal, 2003)

In 1982 Colson and Scudder developed a (four-stage) model to explain the ways that populations respond to the resettlement process over time. Numerous authors, as established by systemic review of Kirchherr and Charles (2016), mention the Relocation Framework (RF) as the foundational reference framework on the topic. It is the earliest attempt to understand how communities, households, and individuals act in response to resettlement. The four-stage model revealed that the stress caused by relocation is multi-dimensional, with physiological, socio-cultural, and psychological ramifications. Cernea (2000, p 3661) later criticized the RF and suggested that it had limited use for planners because it applied only to successful resettlement, whereas historically, '*the majority of involuntary resettlement programmes have been unsuccessful*'. Scudder (2011) has continued to develop this model and specified physiological stress (highlighting loss of a home syndrome and anxiety over the future) as a factor in health impacts (communicable diseases, water-borne diseases, vector-borne diseases, and malnutrition).

As time progressed, more attention was directed at social difference and the many contextual factors that can affect resettlement outcomes. For instance brought forward by Partridge (1989, p 377) *'the form, content and meaning of responses within that structure seems to me to vary from society to society, culture to culture'.* A consensus emerged that the people affected by the development ought to be consulted in the whole process of resettlement (Cernea 1990; Wilmsen and Webber 2010; Vanclay 2017). The participation of affected people in practice has unfortunately often remained tokenistic in nature (Wilmsen and Webber, 2015).

In the 1990s emphasis was redirected to closing the policy implementation gap (Hay et al., 2019). Rather than trying to understand this gap as pursued within the SIA and Environmental Impact Assessment (EIA) literature, Cernea (1997) developed the influential Impoverishment Risk and Reconstruction (IRR) model. The model examined the potentially impoverishing effects of involuntary resettlement on communities. The IRR breaks down the complex and multi-dimensional process of displacement into seven impoverishment risks: (1) landlessness, (2) joblessness, (3) homelessness, (4) marginalization, (5) food insecurity, (6) increased morbidity and (7) social disarticulation. Later adding two more risks to the IRR model, namely loss of access to common property resources and educational loss. Noteworthy, Cernea (1997) linked the provision of land with the restoration of livelihoods, a connection which has influenced, to the present day, the 'land-for-land' emphasis of policy guidelines (Hay et al., 2019).

In light of the critiques that similarly led to the establishment of World Commission on Dams, scholars started to question the need for dams from a human rights perspective (Hay et al., 2019). Dwivedi identified a divide in the literature between the reformist-managerial approach, which views displacement as an unfortunate but inevitable outcome of development projects. As Cernea (2000) argued for example *'the outcome is an unjustifiable repartition of development's costs and benefits; some people enjoy the gains of development, while others bear its pains'*. With on the other hand, more radical movements considered displacement as a sign of failed development (Parasuraman, 1999).

Hay et al. (2019) pointed out that despite their different views both approaches were fundamentally concerned with how to deal with the uneven distribution of costs and benefits of dams. Which brough forth a significant contribution to the discourse, insisting that the social, cultural and non-monetary economic costs of dam displacement are not externalized to displacees and resettlers, in an attempt to ensure distributional justice. This subsequently led to a direction in literature wherein also the most 'vulnerable' groups to resettlement are considered (Modi, 2004; Van der Ploeg and

Vanclay, 2017). For example, women's experiences of resettlement tend to be more negative than those of men's (Asthana, 2012; Bisht, 2009; Mehta and Srinivasan, 2000; Tan, 2008;). Other vulnerable groups include, but are not limited to: rural dwellers, subsistence farmers, indigenous peoples, ethnic minorities, women, children, the elderly or the disabled (WCD, 2000; Downing and Garcia-Downing, 2009)

Lastly, Tan (2020) pointed out a number of issues within the DIDR discourse. Stating there is a narrow perspective within DIDR literature, as also Cernea (1990, 1995) and Scudder (1993) have repeatedly emphasized, as it lacks in comparative research across streams in literature. Second, neoliberalism and top-down approaches have remained the dominant approach to DIDR research and practice. With consequence that displaced are perceived to be the inevitable 'losers' within the process of economic development and modernization, driven by market-based approaches (Muggah 2003; Cernea 2007). Following the reformist-managerial approach. Third, many countries underestimate the scale and consequences of displacement by development projects complete sets of baseline data on the numbers, needs or the patterns of people resettled lack (IDMC, 2017).

2.1.2. Downstream impacts

Resettlement area impacts have been by far the most studied impact (90% of studies), wherein downstream impacts are only addressed in 30% of articles according to the systemic review by Kirchherr et al. (2016). As Piggott-McKellar et al. (2020) point out communities in upstream and downstream areas that depend on the river can be significantly affected by dams, even if not resettled. The changes of downstream water flow regimes caused by dams and infrastructure is one of the primary causes of the degradation of freshwater ecosystems, among the most highly threatened, on global scale (Harrison et al., 2007). Experts estimate that more than half of the world's largest river systems are effected by the 7,000 largest dams alone. Having caused indirect social impacts on as many as 472 million people (Richter et al. 2010).

Goldsmith and Hilyard (1984) were among the first to write about the downstream effects of dams on river deltas and estuaries. Only decades later, the WCD's (2000) study gave much-needed scholarly and media attention to the numerous types of serious downstream consequences caused by large hydroelectric dams. Nevertheless, downstream impacts of dams have still been among the most neglected and unevenly considered impacts (Baird et el. 2021; Doria et al. 2018; Hallwass and Lopes 2013; Runde et al. 2020). In result downstream impacts are frequently overlooked, underestimated, undermitigated, and undercompensated (Cernea, 2004; Baird et el., 2021).

According to Baird et al. (2021) downstream impacts of dams can largely be broken down into hydrological and water quality changes (i.e. river impoundment, lack of oxygen, eutrophic conditions). Hydropower dams alter flow regimes as they reduce daily flow rates in the high flow season by storing floodwaters for later use. Whist increasing natural low flows in the dry season, when stored water is released for power generation (Harrison et al., 2007). Seasonal floods hydraulically connect a river with the surrounding landscape, increasing both species-diversity and biological productivity. Without this annual cycle of flooding (and necessary water and nutrients), these flood-plain connection production systems can disappear, resulting in reduction of people's incomes and loss of livelihoods (Richter et al. 2010). One of the most threatening social impacts is the loss of food security that stems from these changes in the flow regime, considering disruptions in flow by a dam can seriously affect the freshwater goods and services (especially fish, flood-recession crops, and flood-plain vegetation used for grazing) that sustain downstream communities (Richter et al. 2010). For example, seasonal reproductive migrations of fish species can be blocked by river fragmentation caused by dams (Agostinho et al. 2007; Pelicice and Agostinho 2008), in turn, negatively affecting fish abundance, fishery productivity, and local livelihoods (Hallwass and Lopes 2013, Arantes et al. 2019; Santos et al. 2020).

According to Lerer and Scudder (1999), large dams have also caused health impacts downstream, such as food insecurity (farming and fishing), water-related diseases, dam failure and flooding. With impacts persisting decades after dam construction downstream of reservoirs (Hall et al. 2005; Wyatt and Baird 2007). Sow et al. (2013) likewise found that ecological changes caused by the Diama Dam in Senegal affected the epidemiology of water-related diseases, increasing the spread of intestinal schistosomiasis and an increase in the incidence of urinary schistosomiasis. Another study by Gray et al. (2012) reported that the Three Gorges Dam likely impacted the transmission of schistosomiasis in China. Dams have also been found to cause increases in vector-borne diseases such as malaria in different settings of sub-Saharan Africa (Kibret et al., 2015). Richter et al. (2010) also pointed to impacts on the cultural and spiritual well-being of downstream communities, which has received little attention from scholars thus far.

2.1.3. Upstream impacts

Greathouse et al. (2006) argue that upstream impacts have been even more understudied than downstream impacts. Which is supported by the systemic review by Kircher et al. (2016), which concluded that solely WCD in its report (2000) describes a clear argument of upstream social impacts.

Now, the most detailed description of dams' social impacts from a spatial perspective (through 7 dimensions) is compiled by Lerer and Scudder (1999), which concluded that dams have (amongst others) caused health impacts on upstream communities due to loss of biodiversity, sedimentation

and flooding, and changes in river flow regime. Which in turn has caused increased food insecurity, water-related diseases and access to health facilities.

Then, upstream communities have also been affected by Dams through restrictions on water use in order to fill the reservoir, which led to a decrease in agricultural production and increased poverty (Duflo and Pande, 2007). Furthermore, Nandi and Sarkar (2021) found that in their study on the upstream impacts of Dams on the livelihoods of agriculture-dependent communities in India, dam construction caused significant submergence of fertile lands. This resulted in the loss of agricultural land, stoppage of production, increased salinity (saltiness in a body of water) and waterlogging, and loss of livelihood assets and leading to increased poverty levels. Also significant health impacts were found, especially during the rainy season due to water-logging which led to increases in waterborne and vector-borne diseases. Wherein the increased poverty levels, psychological stress (especially on head of the family) and food insecurity created favorable conditions for the reproduction of these diseases (malaria, schistosomiasis, filariasis, etc.).

2.2. Social impacts as a theoretical concept

Amongst Social Impact Assessment (SIA) practitioners, there is general consensus (Slootweg et al, 2003) that social impacts relate to the definition as provided by the Interorganisational Committee on Guidelines and Principles (ICGP) (1994): *'the consequences to human populations of any public or private actions that alter the ways in which people live, work, play, relate to one another, organize to meet their needs and generally cope as members of society'.* Some scholars have also attempted to develop more precise categories and types of social impacts (Branch et al., 1984; Armour, 1990; Gramling and Freudenburg, 1992; Juslén, 1995; Taylor et al., 1995; Vanclay, 1999; slootweg et al, 2003). But only few have attempted at lists of specific social impact and even fewer provided operational definitions of them (Burdge, 1994; ICGP, 1994; Vanclay, 2002). Tilt et al. (2009) pointed out that no standard set of social impact variables to study is agreed upon, as such many investigations on the social impact of dams are unique from a component perspective.

According to Vanclay (2002), these varying attempts by scholars illustrate the wide discrepancies in literature about what constitutes a social impact. Wherein significant differences in the range of impacts or groupings, incomplete listings of impacts (including variables that are not in themselves social impacts but rather social change processes) and a general reluctance by scholars to provide dimensions of social impacts all together, is found in the literature. SIA literature stresses that social change has a way of creating other changes, wherein social changes are dependent on the social,

cultural, political, economic, and historic context of the community in question, as well as the project at hand and mitigation measures implemented (Vanclay, 2002).

Therefore Vanclay (2002) stressed that social impacts must be locally defined, as there may be local considerations that cannot be covered in any generic listing *'social impacts likely to be significant will vary from place to place, from project to project, and the weighting assigned to each social impact will vary from community to community and between different groups within a given community.'*. This lack of operational definitions, the vagueness associated with social impacts, as well as an asocietal mentality - an attitude that humans don't count – amongst entities which commission SIAs (such as regulatory agencies or corporations), has led to a focus on measurable impacts and/or politically convenient indicators (i.e. job creation or use of services) (Gramling and Freudenburg, 1992; Burdge and Vanclay, 1995). Relevantly, development projects are often promoted by large corporations who have strong commercial interests in having their project approved with a minimum of delay and minimal conditions of approval (Vanclay, 2002). At the same time, Vanclay's (2002) own attempt to conceptualize social impacts (that is, *all* impacts on humans), illustrated the difficulties of operationalization as it included over 80 variables. In accordance with the international best practice principles, Social impacts can generally be defined, as summarized in Table 1 below. Which will serve as the main reference point throughout data analysis.

Table 1: Description of social impacts in accordance with the IAIA International Best Practice Principles for Social Impact Assessment (Source: Larsen et al., 2018).

Social impacts are changes to one or more of the following:	
Category	***Description***
Way of live	How people live, work, play and interact with one another on a day-to-day basis
Culture	People's shared beliefs, customs, values and language or dialect
Community	The community's cohesion, stability, character, services and facilities
Political system	The extent to which people are able to participate in decisions that affect their lives, the level of democratisation that is taking place, and the resources provided for this purpose
Environment	The quality of the air and water people use; the availability and quality of the food they eat; the level of hazard or risk, dust and noise they are exposed to; the adequacy of sanitation, their physical safety, and their access to and control over resources
Health	People's health and wellbeing – health is a state of complete physical, mental, social and spiritual wellbeing and not merely the absence of disease or infirmity
Personal and property rights	People's personal and property rights – particularly whether people are economically affected, or experience personal disadvantage which may include a violation of their civil liberties
Fear and aspirations	People's fears and aspirations – their perceptions about their safety, their fears about the future of their community, and their aspirations for their future and the future of their children

Slootweg et al. (2001) proposed a conceptual framework which makes an important distinction between social change processes and social, or rather human impacts, which established causal relationships between these concepts. In literature no such distinction seems to be systemically made (Vanclay, 2002; Estevez et al., 2013). Social change processes are herein *'discrete, observable and describable process which change the characteristics of a society, taking place regardless of the societal context'* that are set in motion by project activities or policies (Slootweg., et al 2001). Resettlement is an example of such a social change process, as consequence of land clearance for flooding of the reservoir. As such, many social changes are not in themselves human impacts but rather social change processes that can lead to human impacts depending on their (societal) context. Herein, human impacts refer to *'the effect resulting from social change processes or biophysical impacts, as experienced (felt) by an individual, family or household, community or society, whether in corporeal (physical) or perceptual (psychological) terms.'.* Social change processes valued any given community, therefore prediction of their social impacts are inherently complex. A further distinction is made by the author between impacts resulting from social change processes, and impacts that result from changes to the biophysical environment (including soil, water, air, flora and fauna). That is changes affecting (in quality or quantity) the functions (goods and services) that the environment provides to people. For example, when the surface area of floodplains downstream changes (biophysical change) due to hydroelectric dam development, downstream fish productivity will change (biophysical impact), which in turn influences society as it impacts the livelihoods of downstream fisherfolk (indirect human impacts). Figure 1 below illustrates these pathways, assisting the conceptualization of social impacts for this study.

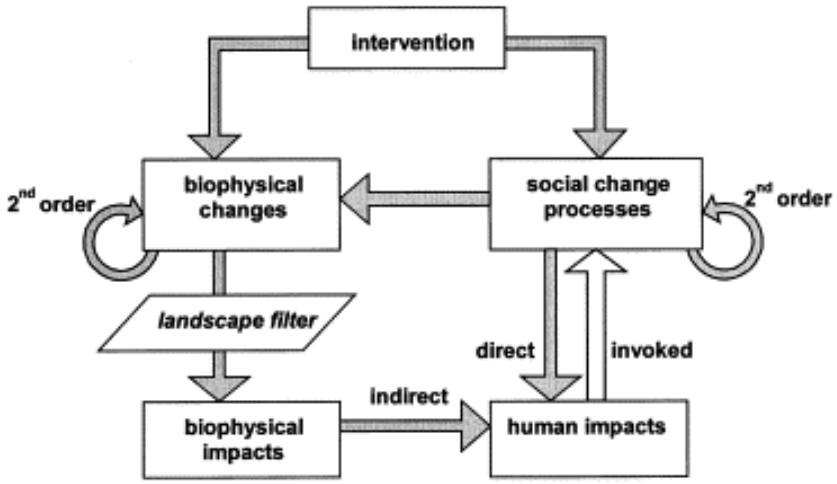


Figure 1: Pathways to derive biophysical and human impacts (Source: Slootweg et al., 2001, p.26)

2.3. Actor-oriented approach

Development is a concept that has changed significantly over time. Paradigms such as Modernization Theory, Dependency Theory and Post-structuralism took center stage up until the until the 1990s. Whereafter actor-oriented theories of development emerged, pioneered by sociologist Norman Long, that opposed grand narratives of development. Herin a shift occurred towards more micro-perspective theories of development that provided sensitivity to diversity and stakeholders, giving attention to human agency in responding to structural constraints and in shaping outcomes of development interventions. At the same time acknowledging that actors are still embedded in institutional structures and processes that both facilitate and constrain choice and strategy (Long 1990). With this in mind, an actor-oriented perspective should not prevent us from seeing the serious limitations of the room for maneuver of many people (Verschoor et al. 2001).

Long's (1990) actor oriented approach constitutes that all external interventions are mediated and transformed by the individuals and social groups affected upon entering their life-worlds, thus facilitating a re-thinking of key concepts such as 'constraints', 'structure' and 'micro–macro' relations. The role of locally informed and situated knowledge and consciousness stands central in interaction, and adds to the agency of local actors. Herein social actors are regarded as active participants, who process information and strategize in their interactions with other actors, instead of simply passive recipients of intervention (Long, 1990). The transformation of knowledge through interaction, influences actors' ability to make decisions and take actions to modify the interventions to fit local social and environmental needs (Arce and Long, 1987; Selfa et al., 2022))

In context of the social impacts of dams, decisions on dams have been influenced by the action of non-governmental organizations ranging from grassroots associations of affected people to international environmental and human-rights organizations (Khagram, 2004). Herein '*social action is never an individual ego-centred pursuit. It takes place within networks of relations (involving human and non-human components), is shaped by both routine and explorative organising practices, and is bounded by certain social conventions, values and power relations.'* (Long, 1990). As such, an actor-oriented approach begins with the simple idea that different social forms develop under the same or similar structural circumstances. Such differences reflect variations in the ways in which actors or networks of actors come to grips, cognitively, emotionally and organizationally, with the situations they face.

Long suggest to work with the concept of 'social interface' to examine the interrelations between (micro- and macro) actor projects and social practices, which explores ethnographically how

'*discrepancies of social interest, cultural interpretation, knowledge and power are mediated and perpetuated or transformed at critical points of linkage or confrontation.'* A main task for such analysis, then, is to '*identify and characterize differing actor practices, strategies and rationales, the conditions under which they arise, how they interlock, their viability or effectiveness for solving specific problems, and their wider social ramification*s' (Long, 1990). A further breakdown of the cornerstones of Long's actor oriented approach is presented in appendix A.

2.4. Resistance against dams

Social movements are considered by political ecologists as the main subject to lead the change of status quo (Martínez-Alier, 2009). According to (Scheidel et al. 2018), grassroots activists have become key actors in pathways towards more 'sustainable' energy provision as these systems caused conflicts and mobilization. Now, it is typically local groups that mobilize against dams, such as farmers, indigenous communities, and fishermen (Bene et al., 2018). They represent what Martinez-Alier (2002) calls the 'Environmentalism of the Poor'. Which environmentalism relating to big dams is frequently a resistance against the State. (Martinez-Alier, 2002)

In Latin America, given the existence of multiple socio-environmental conflicts (related mainly with big corporations), social movements tend to appear and to resist against the generators of conflicts (Quinche-Martín and Cabrera-Narváez, 2020). The Colombian anthropologist Arturo Escobar argued how social movements are capable of *"displaying alternative conceptions concerning women, nature, development, economy, democracy or citizenship that destabilize the dominant meanings"* (Escobar 1999, 251). Likewise, in words of Apostol (2015) *'social movement organisations have been perhaps among the most dynamic civil society groups producing counter-accounts that successfully overcome some of the deficiencies of currently corporate-centred reports'*.

Anti-dam groups have increasingly built international alliances, between local protest movements and global environmental, and used the frame of environmental justice to define their struggles and represent voices of marginalized communities, among which in Latin America (shah et al., 2019). Likewise these social movements often distinguish themselves by leadership structures that heavily involve NGOs or civil society organizations as well as urban intelligentsia, often referred to as "movement brokers" (Sikor and Newell, 2014; Borras, 2016). The frame of environmental justice includes a recognition of the diversity (i.e. cultural) of affected communities and governance norms and forms, and deepening of the right to participation in the political processes which create and manage environmental policy (Schlosberg, 2004). Energy sovereignty is closely connected to this discourse, being an emerging concept that seeks to redefine the priorities for energy system decision making (Schelly et al., 2020), focusing on the rights of communities and individuals to determine their energy systems in ways that are culturally relevant and environmentally sustainable (Laldjebaev and Sovacool, 2015).

2.5. Conceptual model

Based on the theoretical framework and research questions, the below conceptual model (see figure 2) was constructed:

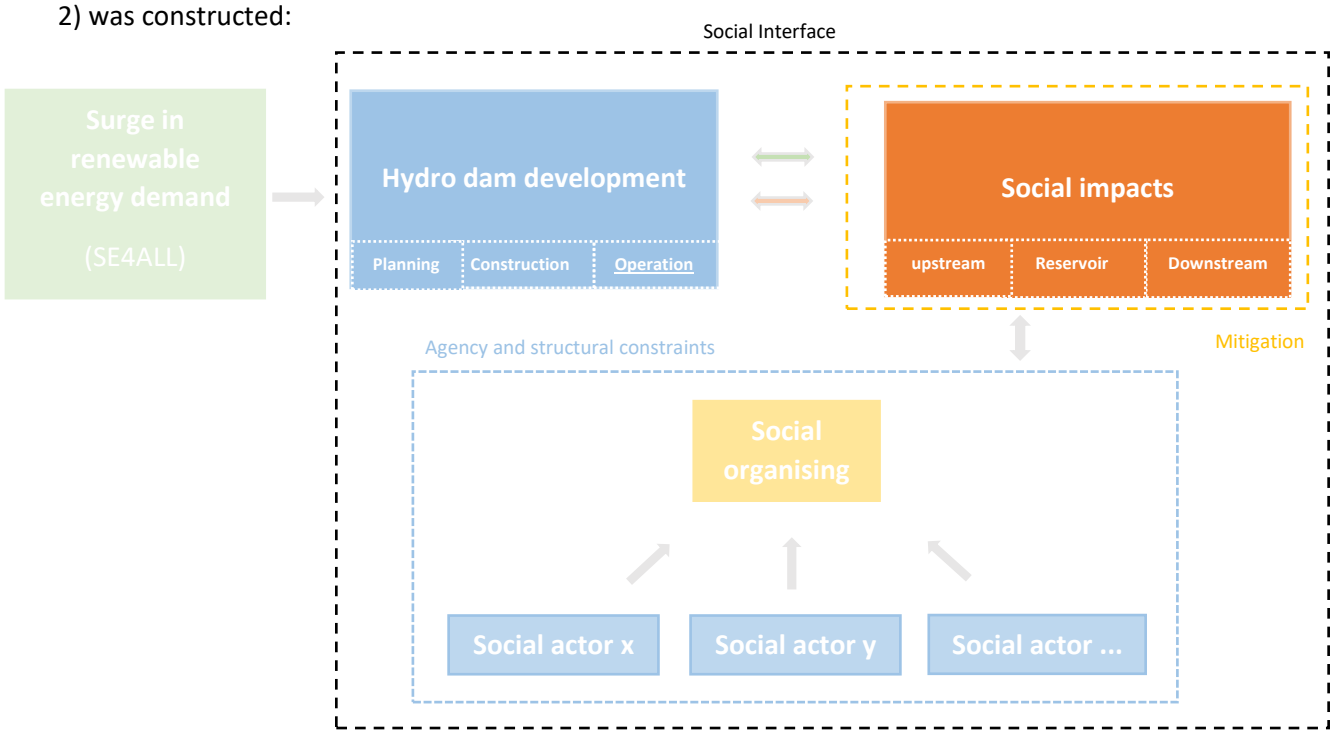


Figure 2: Conceptual model

The conceptual model displays how global demand in renewable energy has resulted in increased development of hydroelectric dam projects. Bringing forth various social impacts in results of the social change processes as well as biophysical change processes (represented by the green and orange arrows) during the different stages of planning, construction and operation. These social impacts vary across spatial domains (upstream, resettlement and downstream), contained by the mitigation measures that are implemented. As impacts enter the life-worlds of varying social actors they will experience and rationalize these in varying ways. Social actors will subsequently strategize in their interactions with other actors as well as their dealings with the hydroelectric dam project. However, doing so within the realm of their agency, which can potentially be affected by the social impacts as is the case for affected communities (i.e. impoverishment). Importantly, the different actor practices, strategies and social action pursued have the potential to mediate and transform dams' social impacts at critical points of confrontation, through social organizing. For example through mitigation measures demanded by peaceful protest or legal claims, which in turn could potentially influence the development of the dam in its whole (i.e. delaying operation or disbanding the project altogether). These critical points of linkage or confrontation of discrepancies of social interest, cultural interpretation, knowledge and power between social actors is referred to as the 'social interface'.

3. Methodology

The research was conducted during a 3 month fieldwork period in Colombia, in the Huila and Antioquia regions, between February and May 2023. With this chapter the research design, methodologies, data collection and analysis and its limitations will be considered.

3.1. Research methods and techniques

3.1.1. Qualitative research methods

This study adopted a qualitative research approach, with mixing of research methods by including participant observation and in-depth interviews (semi-structured). A qualitative research approach was opted for as its best suited to identify issues from the perspective of a certain study population (in this case social actors) and understand the meanings and interpretations that they give to experiences, behavior, events or objects, whilst simultaneously giving a voice to their issues (Hennink et al, 2020). Which is especially relevant since the research aimed to gain a bottom-up understanding of development interventions, more specifically hydroelectric dam projects and their social impacts.

3.1.2. Research area and choice of cases

Specifically, two hydroelectric dams were selected as the study area, the HidroItuango dam located in the Río Cauca basin in the North of the Department of Antioquia and the El Quimbo located in the Magdalena basin in the center of the Department of Huila. The research focused on the HidroItuango case in the Antioquia department in initial phases of the field work on basis of its (historically) contested nature as reported on by academia, media and NGOs, as well as access to research participants through a 'gatekeeper'. It was later adapted to also include the Quimbo case in the Huila department. As such, including social actors related to two Hydroelectric dam cases from Colombia within the research design, each within their own context. There are three main reasons for this adaptation: 1) The access to members of affected communities by the Quimbo project through a gatekeeper; 2) The security concerns (negative advice by Dutch Ministry of Foreign affairs and warnings by locals) related to traveling to the affected communities (especially downstream) by HidroItuango ; 3) The potentially unreliable data collected when conducting interviews with affected communities of HidroItuango introduced by, and in presence of, EPM representatives (which opportunity presented itself), due to the lack of an open, anonymous and (potentially) safe environment for participants.

3.2. Operationalization of concepts

Operationalization is essential for internal and external validity. The concepts and variables mentioned in the research questions are defined in the Table 2 below, based on the existing literature and the research context:

Table 2: operationalization of concepts and variables

Concepts and variables	**Definitions**
Social impacts	The effect resulting from social change processes or biophysical impacts, as experienced (felt) by an individual, family or household, community or society, whether in corporeal (physical) or perceptual (psychological) terms (slootweg et al., 2001).
biophysical impacts	changes in the products and services provided by the environment and will consequently have impacts on the values of these functions for human society (slootweg et al., 2001).
Social change processes	Discrete, observable and describable process which change the characteristics of a society, taking place regardless of the societal context (slootweg et al., 2001).
Social actors	Social actors are all those social entities that can be said to have agency. Social actors appear in a variety of forms: individual persons, informal groups or interpersonal networks, organisations, collective groupings, and what are sometimes called 'macro' actors (i.e., a particular national government, church or international organisation) (Long, 2001).
Social organizing processes	Organising processes span a wide spectrum of practices that involve cooperation and competition between individuals and groups in and across different social domains. These practices form part of the activities inherent in both 'informal' and 'formal' types of organisation. They also include practices that mediate or perform brokerage functions between organisations, levels of authority and spheres of control (Long, 2001).
Social interface	'social interface' explores how discrepancies of social interest, cultural interpretation, knowledge and power are mediated and perpetuated or transformed at critical points of linkage or confrontation (Long, 2001).
Agency	Agency refers to the knowledgeability, capability and social embeddedness associated with acts of doing (and reflecting) that impact upon or shape one's own and others' actions and interpretations. Persons or networks of persons have agency, in which they possess the knowledgeability and capability to assess problematic situations and organise 'appropriate' responses (Long, 2001).
Social action	Social action is never an individual ego-centred pursuit. It takes place within networks of relations (involving human and non-human components), is shaped by both routine and explorative organising practices, and is bounded by certain social conventions, values and power relations. (Long, 2001).
Mitigation mechanisms	Mitigation represents any process, activity or action designed to avoid, reduce or remedy significant adverse environmental and social effects likely to be caused by a developmental project (Marshall, 2001).

Upstream area	Upstream catchment or river area within the country of the dam(s) at question (Lerer and Scudder, 1999).
Downstream area	Downstream area within the country of the dam(s) at question (Lerer and Scudder, 1999).
Resettlement area	Where construction activities take place, the reservoir, close-by irrigation and resettlement areas (Lerer and Scudder, 1999).

3.3. Sampling methods

3.3.1. Snowball and purposive sampling

'Gatekeepers' occupy increasingly important positions within qualitative social work research and their engagement with research is crucial to the ongoing development of a useable knowledge base (Clark, 2011). Gatekeepers have likewise been crucial in recruitment of suited participants for this study, namely a leader of ASOQUIMBO and Member of the Board of Directors of EPM. The social actors of most relevance to the research were identified together with research participants, through the initial set of semi-structured interviews (and supported by secondary data). Unveiling the social actors most relevant and/or influential in addressing the social impacts of Hydroelectric dam project in their experience. After which the gatekeepers opened their networks to assist the researcher in identifying and approaching potential research participants. Herein the researcher adopted snowball and purposive sampling to actively recruit participants who were 'information-rich' to gain depth of understanding on the study's issues (Patton, 2002). This involves identifying and selecting people that are especially knowledgeable about or experienced with a phenomenon of interest (Cresswell and Plano-Clark, 2011). The research aimed to conduct interviews with a range of different social actors involved with the Quimbo and HidroItuango dam projects or its (national) governing bodies who could provide valuable qualitative information, especially those deemed most influential by the social actors themselves, following an iterative research process.

In respect to the in-depth interviews with members of the communities affected by Quimbo, respondents were also selected through purposive sampling together with ASOQUIMBO President Jennifer Chavarro. The target group was identified and the selection criteria were determined inductively by the researcher, guided by early data collection through participant observation and the first set of semi-structured interviews. In order to seek diversity of experiences, opting to interview respondents from different spatial 'impact' areas (resettlement, upstream and downstream), whilst simultaneously aiming to cover a wide range of demographics when it comes to profession, gender and age. As such keeping a locally defined and consequently wide scope regarding social impacts,

potentially covering also the lesser studied impacts of hydroelectric dam projects (i.e. food insecurity, health affectations, cultural change, women's experiences of displacement and resettlement). Furthermore debriefs with the interpreter of the interviews were conducted after each independent interview, to assess when saturation (or obtaining a comprehensive understanding by continuing to sample, until no new substantive information is acquired) was reached (Miles and Huberman, 1994). Which at the same time allowed for flexibility to change or refine data collection strategies as the study progressed.

3.4. Data collection and analysis

3.4.1. Participant observation

The researcher attended a commemoration of ASOQUIMBO on 14th March, 2023, in a observational capacity whilst keeping a logbook. The commemoration was in form of a protest, in which a strategic transport road was blocked near Puerto Seco, Huila. The researcher was able to observe the entire protest, speak with a number of protesters affected by the El Quimbo project and attend a meeting with the Governor of the Huila department. A week was spend together with leaders of ASOQUIMBO. The participant observation was part of the explorative research phase, the first month of fieldwork, in order to create a better understanding of the research topic and context of people affected by the Quimbo Hydroelectric dam project, as well as how social action is pursued through the ASOQUIMBO movement. During the week of participant observation a logbook was kept and a first semi-structured interview was conducted with Jennifer Chavarro, whom leads the ASOQUIMBO organization, which brings us to the second research method used in this research.

3.4.2. In-depth interviews

In total 14 semi-structured interviews were conducted with different social actors of Hydroelectric dam projects Quimbo and HidroItuango , namely:

- 10 Semi-structured interviews with members (7 male and 3 female) of affected communities by the Quimbo project, ranging between 36 to 74 minutes. Find an overview of their characteristics in Table 3 below.

Table 3: Overview of the research participants and their characteristics

	Name	**Sex**	**Age**	**Primary profession (before El Quimbo)**	**Spatial area**
1	Alirio	M	58	Artisanal Fishermen	Downstream area
2	Marcos	M	60	Wood transformation	Upstream area
3	Alexander	M	59	Farmer (livestock and agriculture)	Upstream area
4	Jimena	F	43	Day laborer on farm	Resettlement area
5	Luz	F	48	Day laborer on farm	Resettlement area
6	Jesus	M	62	Farmer (livestock and agriculture)	Resettlement area
7	Diana	F	31	Farming and fishing	Resettlement area
8	Leonardo	M	54	Artisanal Fishermen	Downstream area
9	Gildardo	M	53	Artisanal Fishermen	Downstream area
10	Rodulfo	M	-	Artisanal Fishermen	Downstream area

- Semi-structured interview with the President of ASOQUIMBO (Social Movement). Approximately 1 hour and 45 minutes on March 15th, 2023.
- Semi-structured interview with the Director of Environment, Social and Sustainability of EPM (Operator of the HidroItuango dam). Approximately 1 hour and 30 minutes on March 31st, 2023.
- Semi-structured interview with the General Manager, Sociologist and Technical Director of Sociedad Hidroeléctrica Ituango (Governing body of the HidroItuango dam). Approximately 1 hour and 30 minutes on May 29th, 2023.

Three different interview guides were developed with questions grouped per topic related to the research questions and themes, relevant to the research participants based on their relation to the respective Hydroelectric Dam Project (i.e. Dam Operator or Social movement). Refining the research instrument to capture issues relevant to the respective research participant, on basis of data gained

from previously conducted interviews. Changes made were evidence-based by using data to guide the changes, adding rigour and validity to the study.

Interviews with ASOQUIMBO, EPM and Sociedad Hidroeléctrica Ituango were conducted in Spanish with support of local interpreters. Interpreters have been selected on basis of their comprehension of colloquial and local Spanish and their comprehension of English (since the researcher does not comprehend the Spanish language), as well as their more practical availability to the researcher. Every independent answer was translated back to the researcher to allow for probing and explore issues brought forward by the interviewee. All interviews were recorded by phone and later transcribed as well as translated to English by native Spanish speakers, in exchange for financial compensation. With exception of the interview with Sociedad Hidroeléctrica Ituango, which was conducted and recorded through Teams. The researcher adopted a mix of deductive, inductive and In Vivo coding when analyzing the transcripts. The process of re-reading, re-coding and re-interpreting the interviews was repeated several times until new codes no longer came up and the researcher was able to identify relations between data.

In regard to the interviews with members of affected communities, the interviews were conducted by the interpreter (whom was a member of ASOQUIMBO) to increase natural flow of the interviews and built rapport. The interview guide and questions were translated to colloquial Spanish beforehand and checked for any local or cultural sensitivities with the leader of ASOQUIMBO. Researcher trained the interpreter on how to conduct the interviews beforehand (i.e. pose questions in an open and neutral way) and informed him in the research objective and context. The researcher intervened minimally and selectively throughout the interviews in order to deepen any answers through probes. A logbook was kept during the period of community interviews. The interviews were mostly conducted in the homes of interviewees (with one night also spent in one of the homes), outside during community meetings and one in the office of ASOQUIMBO (as the participant was recently displaced from his home). Helping identify the context in which the communities live and where they might have felt most comfortable to be interviewed, as well as how the communities organize themselves.

Furthermore the ANLA and Ministry of Environment were approached to participate in the research. An interview with Rodrigo Negrete, the General Director of ANLA, was planned but later cancelled. No other person within the ANLA was authorized to conduct the interview since, as a representative declared, it related to critical debates in the country at this point in time. The Ministry of Environment declared they preferred not to speak on the topic of the social impacts of Hydroelectric dam project and as such declined to partake in the research.

3.4.3. Secondary data

To support the in-depth interviews, secondary data sources were consulted to supplement primary data and increase rigor of the research. Secondary sources include Environmental Licenses and Impact Assessments (as published by government agencies), company documents, research articles, reports and official policy documents covering the selected hydroelectric dam projects or their local, regional or national context.

3.5. Positionality and bias

Reflection on subjectivity and awareness of positionality is crucial for any researcher, as it influences the research design, participant selection, data collection and interpretation (Hennink et al, 2020). Herein social background, assumptions, positioning and behaviour all impact the research process (Finlay and Gouch, 2003), as well as how participants in the study react to the researcher and research setting. The researcher took account of the identities he by default subscribes to and his position in the research setting before conducting the research, furthermore the researcher tried to minimize bias by taking encounters at face value and consulting locals in his network to advise on data collection and interpretation (and encountered scenarios). For example, consulting the president of ASOQUIMBO on cultural sensitivities before starting data collection and finalizing the interview guides, or debriefing with interpreters between interviews. The researcher has attempted to research local dynamics and contextual information, in order to gain a better understanding of the participants he encountered and their lifeworld's. Lastly, re-reading, re-coding and re-interpreting of the interviews aimed to minimize bias from the researcher and increase validity of the study, when in doubt (i.e. regarding local sayings) the (local) interpreters were consulted.

3.6. Ethical considerations

Conducting research, and potentially even more so qualitative research, presents a number of ethical considerations. Herin the principles of informed consent, Self-determination, Minimization of harm, Anonymity and Confidentiality have been followed.

All respondents participated voluntary in the study and the interviews started by informing the participants about the research topic, the purpose of the study and the confidentiality of their answers. Participants were told they could withdraw from the study at any time and their anonymity would be protected. Furthermore requesting if, and to what extent, they wished to remain anonymous (name, profession, etc.). As the research involved gatekeepers, it was the responsibility of the researcher to

ensure that participants were not coerced by the gatekeeper to take part in the research, therefore informed consent before starting any interviews was especially important. Furthermore all data records were kept securely at all times and only accessed by research collaborators (audio notes were shared with transcribers). Then, beneficence was considered through accurate reporting (through systemic data analysis) on the data and making the voices of participants heard. Furthermore research findings will be shared with the study community for their potential benefit. Lastly, potential harm to research participants was considered, wherein it was purposefully chosen not to interview communities affected by HidroItuango through initiation, and in presence, of EPM representatives. A number of participants also noted the importance of their voices not being made anonymous in order to give credibility to their stories and pass on their 'resistance and message' to the next generation. A careful assessment had to be made due to a rise of harassment, threats and murders after the fieldwork against artisanal fishermen, among which members of ASOQUIMBO. Ultimately choosing to not make the interviews anonymous after consultation with ASOQUIMBO president. Moreover, two interviews were ended prematurely as participants became emotional and the potential of causing further distress, due to sensitive nature of the interview topics.

3.7. Limitations

Several limitations must be considered regarding the methodology. Starting off, restricted time and availability of resources determined the scope of this thesis research. Herein research activities relied on a 3-month fieldwork period and personal resources available to the researcher (finances, network, etc.). Then, not all social actors (i.e. ANLA and Ministry of Environment) that were identified of significant importance could be included in the sample, due to lack of willingness to participate in the research. Likewise the sample size for affected communities was relatively small. With relatively few women, no adults between age of 18-30 and a limited number of people from (amongst others) upstream communities. Also, since gatekeepers were used for recruitment of respondents, the researcher did not have full control over the research sample and manner in which participant were initially contacted. Wherein existing (power) relations between these actors are to be considered. Lastly, in case of the Sociedad Hidroeléctrica Ituango interview, three people were interviewed simultaneously (to surprise of the researcher). Therefore it limited the possibility to speak independently for the participants or to remain fully anonymous (if aspired).

Also, due to language barriers, since the researcher is not capable of the Spanish language, interpreters took part in the research. As such, the subjectivity of the interpreters or translating errors might have

influenced the collected data, with potential loss of valuable information. Interpreters were able to translate between Spanish and English. However as the interpreter for the community interviews was not fluent in English, some opportunities for probing were lost during the interviews (as probes were misinterpreted as the later transcripts concluded). Furthermore, since the interpreter was an active member of ASOQUIMBO, this strongly benefited the rapport between researcher and participants, however potentially also influenced participants to provide answers socially acceptable to the community and/or movement.

4. Regional Framework

4.1. The ‘extractive imperative'

Despite the contentious relationship between natural resource extraction and development (i.e. socio-environmental conflicts and resource trap) the commodity frontier is reaching further and deeper and is now placed at the heart of development policy across Latin-America, despite its extensive and dark history in the region dating back to the colonial era (Arsel et al., 2016).

Gudynas (2012), a leading author on the topic, pointed out this shift away from classic ‘extractivism’ towards a so called ‘neo-extractivism’. By which progressive government across South America reached significant advances in poverty reduction and strengthening of State in recent years. But not without cost to the environment, ranging from exploitation of hydrocarbons to agriculture (i.e. soy monocultures). The classic extractivist model was driven by neoliberal policy, typical to conservative governments in South America such as the Colombia of Álvaro Uribe (2002-2010) and Juan Manuel Santos (2010-2018), as a (academically contested) means to generate economic growth and employment that would in turn trigger spillover effects to society. At the same time, citizen protests over the social and environmental impacts of exploitation are minimized, denied or repressed.

Within the frame of neo-extractivism however, natural resource extraction is now being justified by progressive governments to pave the way for socioeconomic development, mainly aimed at poverty reduction and addressing inequality in the region (Gudynas, 2010, Gudynas, 2012). Neo-extractivism therefore adopts a strengthened role of the state and adopts the revenues from these primary commodity exports for social policy expenditures. Which has become central to development policy in Latin-America as of the 21st century (Siegel, 2016; Arsel et al., 2016). An important contribution to this stream in literature was made by Arsel et al. (2016). Arguing that the ‘Left Turn’ in Latin American politics, in a pursuit of alternative development approaches, did so more completely on the ‘extractive imperative’. Herein the intensified extraction itself became so central to (post-neoliberal) development and the aspired economic transformation away from primary commodity exports towards higher value goods and service (i.e. electric cars rather than raw lithium), that it temporarily overrides its consequent socio-environmental conflicts. This is especially relevant since Colombia has elected their first leftist president in 2022 and time will tell whether the country shifts from classic extractivism under its previous neo-liberal and extractivist governments to neo-extractivism, will be guide by the extractive imperative or takes a different path all together.

4.1.1. Extractivism of renewables

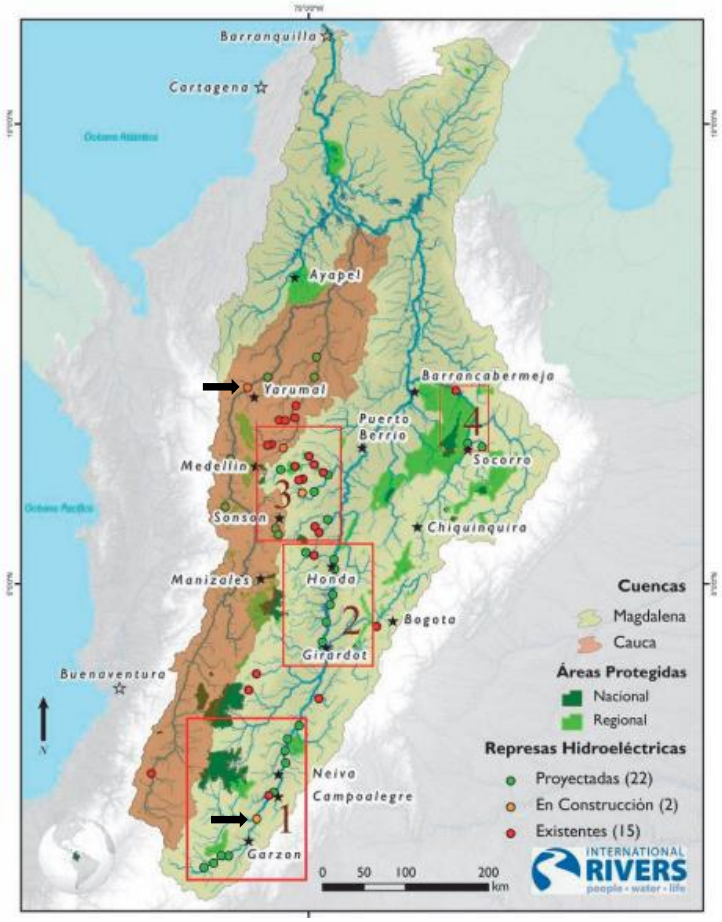
Simultaneously with the intensification of natural resource extraction, Latin America has experienced a turn in infrastructure-led development since the 2000s (Helmcke, 2023). Aimed at enabling extractive practices into remote regions of 'untapped' resources and energies (Bebbington et al., 2020; Hope, 2021; Uribe, 2019). Likewise, Shah el al. (2019) pointed out that the extractive-export model of Colombia and associated sectors, demand not only raw materials but plenty of energy. Arguing that also large hydro dams, based a study on three dams among which the Colombian Hidrosogamoso *'form part of the expansionist and extractive development processes that aim to gain economic, political and cultural-discursive control over territory and resources*'. This very junction of increased development of large-scale infrastructure and the exploitation of natural resources (including renewables) has made Latin America one of the most dangerous places for human rights activists and environmentalists in the world (Raftopoulos, 2017).

Notably, an analysis of Del Ben et al. (2019) on 220 dam-related environmental conflicts cautioned for the 'extractivism of renewables', wherein the renewable energy transition and specifically the surge in hydro power replicates old patterns of violence. Repression, criminalization, violent targeting of activists and assassinations were found to be recurrent features of conflictive dams.

Cardona et al. (2016) likewise described the HidroItuango as 'an extractivist undertaking' aimed at expanding the 'capitalist frontier' into a territory that is otherwise marked as isolated and unproductive, and generate energy "for the sole purpose of obtaining profit from international trade"

4.2. Conflictive dams in Colombia

Colombia has the third largest hydropower installed capacity in South America, which makes for 70 per cent of the energy supply in the country (International Hydropower Association, 2022). The greatest contribution to the hydropower produced is made by 23 large dams (Helmcke, 2021), most of which, except for the HidroItuango, are located within the Magdalena River basin (see Map 1). The top black arrow represents the HidroItuango and bottom arrow El Quimbo.



Map 1: Large hydroelectric dams in the Magdalena and Cauca river basin (Source: Wight and International River, 2015),

The dams are located in rural areas which suffer from (environmental) conflicts and inequality (EJatlas, 2023; IFAD, 2016). While the incidence of poverty is 27.8 per cent of the population at the national level, 40.3 per cent of rural people live in poverty. The multidimensionality of poverty suffered by the people living in these areas are reflected in the high levels of social vulnerability (Angulo et al., 2019). This resulted in the low access to health services, education, social security, and public services for the inhabitants of these rural areas (Correa and Martinez, 2002)

4.2.1. Resistance from below

Colombia has endured armed conflict for more than 50 years between left-wing insurgencies, right-wing paramilitaries and state troops. Several peace treaties have been struck, including a historic accord with the Revolutionary Armed Forces of Colombia (FARC) in 2016 (Ronderos, 2013). Within this environment, the country has had a long history of social movements that have reaffirmed the fight for human rights, despite often labeled as supporters of guerrilla groups in an attempt to delegitimize their resistance (Hainaut, 2020).

The collective actions of social movements are related to the consequences of the armed conflict, the development of an (highly extractive) market economy that does not respond to the needs of a large part of the population, and the consolidation of a State that fails in the administration of justice (Hainaut, 2020). These three processes resulted in the violation of civil, political and social rights for enormous populations (Tanaka et al. 2010). Roa and Mercilla (2017) showed peasant movements, environmental activists, legal and human right NGOs, and university students often formed alliances relating to environmental conflicts and water justice in Colombia.

When it comes to the El Quimbo and HidroItuango dams, the two most prominent social movements have been the Movimiento Ríos Vivos Antioquia (MRVA) and The Asociación de Afectados por el Proyecto Hidroeléctrico El Quimbo (ASOQUIMBO). Whom are both part of a national Colombian environmental movement called Movimiento Ríos Vivos or the Living Rivers Movement. Constituted of communities affected by the internal armed conflict, and the social and environmental consequences of hydroelectric mega-development (and mining) projects. As such, coordinating with many communities and socio-environmental networks nationwide to provide opposition around dam development projects in Colombia, among which the Urrá (Córdoba), Salvajina (Cauca), Anchicayá (Valle del Cauca), Quimbo (Huila), HidroItuango (Antioquia) and Hidrosogamoso (Santander) as told by the president of ASOQUIMBO.

4.2.2. Macro actors

The El Quimbo and HidroItuango, like other large hydroelectric dam projects, have been of high interest to the Colombian state. Both were initially promoted by former president Álvaro Uribe Vélez (2002-2010), and later defended by president Juan Manuel Santos (2010-2018). Both have also been marked by serious irregularities and breaches of environmental regulations and judicial rulings (as will be established), with detrimental environmental and social consequences.

There are multiple 'macro' actors, or 'coalitions of actors' to be taken into account when it comes to this interplay of discourses surrounding Hydroelectric dam projects in Colombia and its subsequent social impacts. According to the interviews with the President of ASOQUIMBO and Environmental, Social and Sustainability Director of EPM, the main macro actor is the National Environmental Licensing Authority (ANLA) under the Ministry of Environment and Sustainable Development, as it governs the Environmental License.

According to Gudynas (2018) the classic extractivist model in Colombia weakened environmental regulations, referring to so called 'express' environmental permits (granted by the ANLA) and attempts by the Santos administration to prevent local mining consultations as examples.

Likewise Vélez-Torres (2014) found Colombia imposed two main power mechanism to enforce the extractivist model throughout the 2000s, in context of mining. Namely, legislation to allow private accumulation of capital through foreign exploitation and the securitization of territorial control (through legal and illegal military) to forfeit (especially ethnic) rights of often already marginalized communities. Furthermore the ANLA has been found to lack resources (staff, experts, time and money) to duly enforce the obligations of the environmental licenses (Guevara Ulloa 2016; Rodríguez 2011).

Amongst the other agencies that are of significance, supported by the conducted interviews, is the Ministry of Mines and Energy (responsible for energy policy and planning). This Ministry also declared the initial 7,482.4 and later enlarged to 41,687.99 hectares, was of public utility to construct the Quimbo dam (Observatory for the Protection of Human Rights Defenders FIDH-OMCT, 2017). Then, the Ministry of Interior was the authority that subsequently placed an energy mining Battalion with 1200 forces to "protect" or rather 'militarize' those lands, as told by the president of ASOQUIMBO. Whereas numerous judicial orders, lawsuits and class action suits have been issued relating to the El Quimbo and HidroItuango dam, the judiciary presents another important macro actor. Some examples will follow in remainder of this chapter.

Depending on the obligations issued in results of the Environmental License, other state agencies might be involved as well. Such as the Directorate of Prior Consultation in case Afro-Colombian or Indigenous communities will be affected. Controversially, the Nutabes indigenous community was only recognized after the flooding of the reservoir area of HidroItuango. In case of El Quimbo, the National Land agency of the Ministry of Agriculture plays a significant role regarding the restitution of 5,200 hectares of land. As obligated by the environmental license told by the President of ASOQUIMBO.

4.3. Two controversial cases

Specifically, two hydroelectric dam cases have been selected the focus of this study, the HidroItuango located in the Cauca river basin in the North of the Department of Antioquia and the El Quimbo located in the Magdalena river basin in the center of the Department of Huila.

As mentioned previously in the literature framework, all external interventions are mediated and transformed by the individuals and social groups affected upon entering their life-worlds (Long, 1990). Taking the above in mind, multiple collective social groupings have been identified which were affected by El Quimbo and the HidroItuango projects, encompassing numerous individual social actors.

Whereas both dam projects have extensive and rather controversial histories, the following chapter aimed to capture some key milestones.

4.3.1. El Quimbo

The Quimbo hydroelectric dam is located in the upper reaches of the Magdalena and uses water from the Suaza and Magdalena Rivers. The El Quimbo is 151-metre-high, with a capacity to generate 400 MW. The reservoir has a useful volume of 2,601 hm3 and a flooded area of 8,250 hectares covering 6 Municipalities within Huila. It is estimated that more than 32 million people depend on the Magdalena basin (Calderón and Armín, 2017).

Six municipalities are recognized by the state and environmental license as affected areas, which are Gigante, Altamira, Agrado, Garzón, Tesalia and Paicol (see Map 2). According to interviews conducted with the President of ASOQUIMBO and community members, the affected area however stretches much further, including municipalities upstream (i.e. Tarqui) and downstream (i.e. Natagaima) of the reservoir.

Figure I-6 El Quimbo reservoir, municipalities and relevant places (GIS map, author's creation).

Map 2: El Quimbo reservoir, municipalities and relevant places (Source : Helmcke, 2021, p.19)

Noteworthy, an earlier 1997 application for the environmental license to build the El Quimbo project was rejected by the government due to the detrimental impacts it would cause on the agricultural sector in Huila (Minambiente 2009:1) (Helmcke, 2023). On August 2008, the national government of Álvaro Uribe issued a decree on the benefits of hydroelectric projects for development. The lands of El Quimbo were declared a zone of "public utility" one month after (Resolution No. 321; Contraloría General de la República 2011). ENEL-EMGESA acquired the rights to the dam project soon after, starting the acquisition of lands and doing "exploration works" months before the environmental licence was granted (Helmcke, 2023).

Since then, a number of breaches of environmental regulations and judicial rulings have presided. Among which two contested socio-economic census from 2007 and 2009 that followed (Helmcke, (2021). The Constitutional Court rejected the latter 2009 census (including 1537 people directly and 1,500 indirectly affected) through sentence T-135/2013 for again not having included all those affected by the El Quimbo Project (Observatory for the Protection of Human Rights Defenders FIDH-OMCT, 2017). In contrast to the number provided by the company, 28,664 people requested to be included in the environmental license. Affected social groupings include primarily: subsistence farmers, artisanal fishermen, artisanal miners, transporters, traders and day laborers (ASOQUIMBO, 2015).

Furthermore the company's filling of the dam reservoir commenced in June 2015, blatantly ignoring a judicial order of the Administrative Court of Huila. The reservoir covers a total of 8,586 hectares that used to be rich in fertile lands (Divided into 809 plots) for production of i.e. cocoa, tobacco, corn, beans, banana, coffee and papaya **(**Observatory for the Protection of Human Rights Defenders FIDH-OMCT, 2017). Despite the court's ban, the President of the Republic Juan Manual Santos, authorized the start of operations of the hydroelectric plant by issuing Decree 1979 of October 6, 2015. The constitutional court declared the Decree unconstitutional and that it ignored the project's environmental, food production, social and cultural costs. Presenting a relevant example of interlocking actor projects' within the National Government of Colombia surrounding hydroelectric projects, the executive and the judiciary.

The Quimbo is currently operated by Enel Colombia (after having merged with EMGESA), part of the Italian ENEL Group, that operates 11 hydroelectric plants in Colombia (including the Betania). It is worth noting that EMGESA (further referred to as ENEL-EMGESA) has been governed by several members of Colombia's political class (FIDH-OMCT, 2017). Including José Antonio Vargas Lleras (former secretary to the Presidency of the Republic) and brother of Germán Vargas Lleras the Vice-

President (2014–2017), María Consuelo Araujo (former Minister of Culture and Chancellor to the Presidency) and Luisa Fernanda Lafaurie (former Minister and Deputy Minister of Mines)

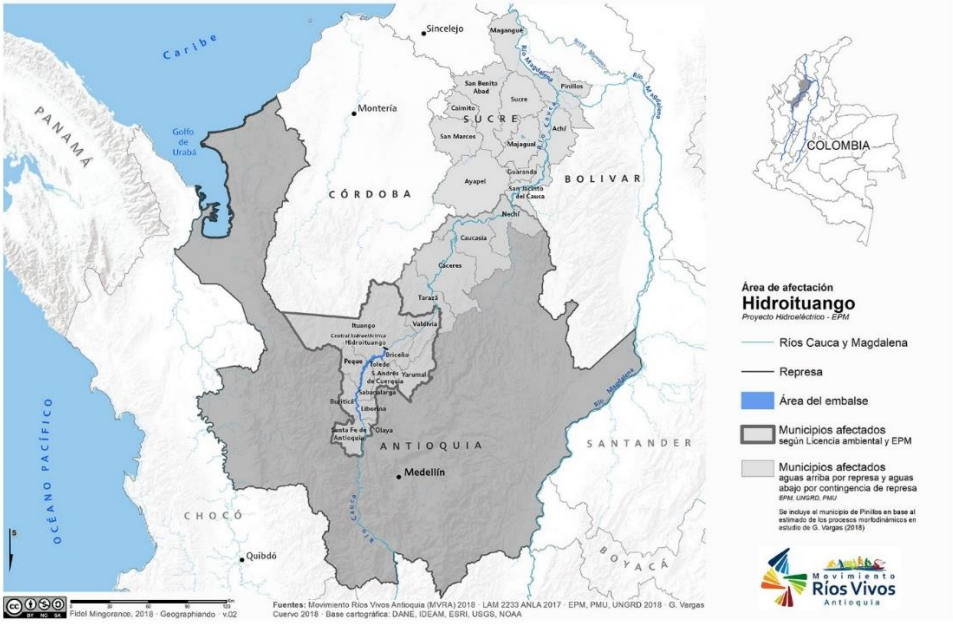
ASOQUIMBO, or The Association of People Affected by the El Quimbo Hydroelectric Project, has organized itself since July 26, 2009 in order to defend the territory against the imposition of the National Government (of Álvaro Uribe Vélez), who declared the "land necessary for the construction of the Quimbo dam" of public utility and social interest to the Italian multinational ENEL-Emgesa (ASOQUIMBO, n.d.). ASOQUIMBO aims to resist the accumulation of transnational corporations by dispossession and the destruction of ecosystems. The organization is made up of mostly peasant farmers, (artisanal) fishermen, artisanal miners ('barequeras') and day laborers.

4.3.2. HidroItuango

The HidroItuango is the biggest dam in Colombia and one of the largest in Latin America, expecting to provide almost 20% of Colombia's electrical needs. The construction plans were approved back in 2009 and despite its nearly collapsing in 2018, the operation started in 2022.

In case of HidroItuango, the affected communities comprise municipalities in the Western, Northern, and Lower Cauca regions in the department of Antioquia, of which 12 municipalities are recognized in the Environmental License: Ituango and Briceño, where the main works are built; and Buriticá, Liborina, Olaya, Peque, Sabanalarga, San Andrés de Cuerquia, Santa Fe de Antioquia, Toledo, Valdivia and Yarumal (Hidroeléctrica Ituango, 2019).

According to MRVA the zone of influence of the dam extends to 19 municipalities and 26,000 hectares of land (Debate Ciudadano de HidroItuango, 2018). Affected social groupings include amongst other: peasant farmers, (artisanal) fishermen, artisanal miners ('barequeros'), day laborers and the Nutabes (indigenous population). Intense rainfall had led to increased turbulence in the river and caused landslides upstream of the dam construction site early 2018, a third tunnel without licensing from ANLA clogged and precipitated the crisis (Above Ground, 2020). The consequent flooding forced authorities to relocate more than 120,000 people of 8 municipalities (The Guardian, 2018). 18 former (high ranking) officials were charged by Colombia's Comptroller General over the HidroItuango crisis (Alsema, 2021). The 27 municipalities affected in result, according to MRVA, are mapped in Map 3 below (Rios Vivos, 2020). The downstream communities situated north of the outlined grey area, were not accounted for by the official Environmental license of EPM.

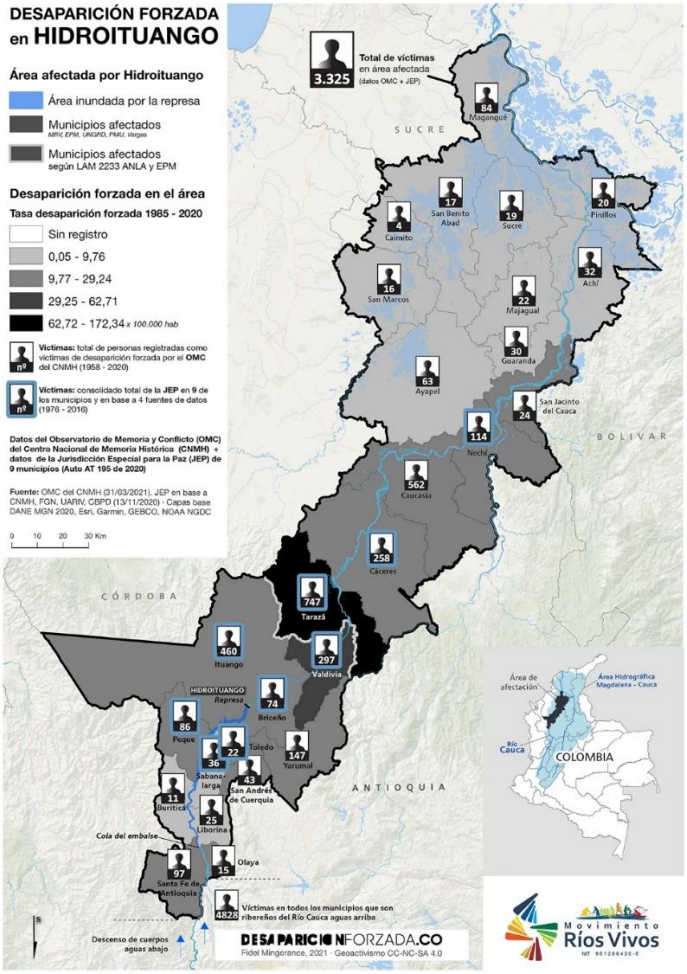


Map 3: Affected areas of the HidroItuango (Source: Rios Vivos Antioquia, 2018)

Important to note, former President Alvaro Uribe created the company that led the project when he was the governor of the Antioquia province in 1997, EPM then emerged as the top shareholder. During his (presidential) term also the environmental license was approved . The Instituto para El Desarrollo de Antioquia (IDEA) became the primary shareholder under Luis Alfredo Ramos (governor of Antioquia from 2008 to 2011) who made the project a priority of the regional development plan, transferring the balance of power to the provincial government instead of that of Medellin (Colombia report, 2019). The HidroItuango is currently still governed by the Antioquia government through the IDEA that holds majority shares in Sociedad Hidroeléctrica Ituango S.A. E.S.P.) The Municipality of Medellín owns 46.33% of shares through the Colombian multi-utility and second biggest company of the nation, Empresas Públicas de Medellín (EPM). EPM was delegated the implementation and operation of the project In 2010, through a 50-year BOOMT (Build, Operate, Own, Maintain and Transfer) contract (HidroItuango, 2023).

Between 2013 and March 2018 alone, Movimiento Ríos Vivos reported more than 150 attacks by state security forces, paramilitary groups and unknown perpetrators during evictions and peaceful protests and warned that the project was exacerbating violence in the region (Amnesty, 2020). Swedish NGO Swedwatch confirmed a pattern of threats and abuse against local residents by the private and public security personnel contracted to guard the site (Above Ground, 2020). Communities who oppose the project are accused of being ‘enemies of development’, causing the stigmatization of social groups that fight against the dam’s construction (Ulloa and Coronado, 2016; ; Amnesty, 2013).

Since 1997, the same year in which the Sociedad Promotora de la Hidroeléctrica was created (by Alvaro Uribe, then governor of Antioquia), 73 massacres were committed in the area of influence, as recorded by RVAM (Rios Vivos Colombia, 2018). The Special Jurisdiction for Peace (JEP) established in December 2020 that 2,094 people were victims of forced disappearance in HidroItuango's area of influence. The forced disappearances were carried out mainly by paramilitary groups, the FARC, and by public force units and the data showed an unusual increase from the first semester of 1996 with the irruption of the United Self Defense Forces of Colombia (AUC) in Antioquia, especially in the municipalities of Cáceres and Tarazá (Jurisdiccion Especial Para La Paz, 2020) as depicted in Map 4 below. The AUC was a right wing umbrella paramilitary organization in Colombia active from April 1997 to 2006, which has notably been tied to former president Uribe, especially his role in the alleged formation of an AUC bloc while governor of Antioquia department from 1995 to 1997 (Zheng, 2011).



Map 4: forced disappearances between 1985-2020 in HidroItuango area of influence (Source: Desaparicionforzada, 2021)

5. Analysis – Social impacts through different lenses

This chapter delves into the different understandings on the social impacts that are generated by hydroelectric dam projects in Colombia, analyzing the perspectives of people within affected communities from the El Quimbo, EPM (Operator of the HidroItuango), Sociedad Hidroeléctrica Ituango (governing body of the HidroItuango) and ASOQUIMBO (social movement). More specifically, how these key social actors involved with the Quimbo and HidroItuango projects define, rationalize and assign meanings to its social impacts.

5.1. The communities affected by El Quimbo

Locally situated knowledge is something that everyone possesses and is generated from the everyday contingencies, interactions and struggles that constitute social life. Taking this in mind, a wide range of social impacts were identified by the affected community members in the sample, along with the meanings assigned to them as these impacts entered their lifeworld. The following section has aimed to provide a concise but contextual overview (so that the results are interpreted correctly) of their experiences with and understanding of the social impacts by the Quimbo hydroelectric dam project, whilst acknowledging their spatial context. Doing so by order of eight key social impact areas, namely access to land and natural resources (or biophysical changes), loss of livelihoods and livelihood strategies, social disarticulation, gendered division of roles, cultural change, dispossession and criminalization, health affectations, and lost aspirations.

5.1.1. Access to land and natural resources

"We were going to kill the hen that laid the golden eggs because these lands that were productive, even in the support of the region and the economy of the region, would never again be productive" - Marcos, male, upstream

Since the declaration of public utility in 2009 for the lands part of the El Quimbo project, the affected communities have dealt with dispossession of land and natural resources. Respondents acknowledged that fertile agricultural lands made up most of the flooded lands where the reservoir is now located. *"We know that it is the exclusion of nature, we know that it is the enrichment of private companies, of large capitalist emporiums, and it is in the destroying of rural communities that practically all their rights are violated and their living conditions and productivity are trampled upon"* (Marcos, male, upstream). In effect it eliminated the access to productive area for commercial and subsistence agriculture, as also Alexander (male, upstream) stated in his interview: *"They practically wiped out our*

lands, 100% arable, 100% fertile, fauna, flora. And the economic activity of the banks of the Magdalena and the Suaza were practically the farms that were on that bank".

Then, majority of respondents stated there were disruptions in flow of the Magdalena river upon controlled discharges of the El Quimbo, as also Leonardo (male, downstream) explained "*And with the generation of energy, the river level goes up and down, and that has turned us into a life that we did not know and it is completely negative".* Which in turn impacted the biological reproduction of native fish species (i.e. cucha, dentón, sardinata) and loss or damaging of property such as canoes. *" … we have lost all the species that are native to artisanal fishing … at the moment it is totally contaminated and without oxygen, so the fish practically cannot develop, they cannot reproduce"* (Alirio, male, downstream). Reportedly, impacting downstream communities along the entire Magdalena river as species of fish reaching Bocas de Ceniza are no longer reaching the quantities as before the El Quimbo project. Also, majority of fishermen signified the ecosystem of the river became contaminated due to Quimbo, with the highest level of contamination being concentrated in the reservoir itself as this is where it accumulates, or as Alirio told "*… everything is contaminated, but the hardest affectation is in those two reservoirs, in what is the Quimbo and Betania".*

5.1.2. Loss of Livelihoods

Some of the most detrimental social impacts found among the respondents encompass economic impacts on their livelihoods, such as loss of income and (un)employment. Directly tied to their access to land and national resources. Wherein, all interviewees depended on either the lands in the flooded reservoir area, or the freshwater goods and services the Magdalena river provided for their livelihoods and communities.

Starting with the five respondents that had their economic productivity situated in what is now the reservoir area. "*All the people who worked in the areas that were relocated, they were left without a job. Many people from Garzón, from La Grava, went to work in the areas that were impacted"* (Luz, female, reservoir). Communities that lived outside the reservoir area but depended on the flooded lands such as the towns of Garzon, Gigante and La Jagua were likewise left without income and employment. Which Jesus (farmer, reservoir) for instance noted: "*Social impacts start when there is a direct impact on economic activities … So this offered the possibility for half the urban town of Gigante to obtain a source of income that allowed them, if not to live comfortably, at least to supply the most basic needs of the family nucleus".* Corroborated by Alexander (male, upstream) whom lives in La Jagua and worked on a farm in the reservoir area: *"speaking here of La Jagua we work in those farms, we*

work in one way or another. It was our livelihood from the peasants here, from the peasant people, because it was from there that they obtained their income to support their families".

Leaving majority of those affected to fend for their subsistence, setting in motion a set of different impacts on an individual and household level when it comes to housing, education and health. As Marcos (male, upstream) that lives upstream of the reservoir noted, stagnating one's life and since only thinking about subsistence: " … *that practically deprived me of having been able to provide a house, a career, a better education for the family, because we had to limit it simply to subsistence, to survive with food … our life stagnated and we had to practically resign ourselves to the fact that we only had to think about subsistence*".

When discussing the livelihood impacts, 'family' was mentioned numerous times within the sample, as was the case for Jesus whom owned a farm in the reservoir area: *" … because I was directly developing my productive activity within the reservoir basin, then we also knew that the psychosocial, economic and family affectations were going to be of great impact. And indeed that happened".* Rendering Jesus' family bankrupt. Likewise, Alexander (male, upstream), noted that the economic part was the most severe impact for him since it affected his ability to provide for his family "*Well, in the economic part it was the hardest affectation, because what I was telling you, we, you, the goal of your economic activity is to maintain it, right? For your livelihood and to feed your family, right...".* As was the same for Rudolfo (artisanal fisherman, downstream)*: "No, well, I was destroyed, I was totally destroyed, because as I said, I could not even provide for my family. My children could not study. Over there I have them in Neiva selling candy and now they're selling snacks, they're selling snacks. That is what they are living on."*. Bringing forth (mental) health impacts for especially the main income provider for the households, as will be discussed later in this chapter.

Besides agricultural production, there are other productive chains which relied on the reservoir area. An example of this is the case of Marcos, whom used to be a wood processer that employed over 10 workers, but was left without work since the declaration of public utility. Stating it was the most atrocious impact he had endured in his life, as it was no longer possible to carry out work or projects in the region: *"we practically saw that we were left without work cuttings, because the farmers could no longer use the trees on the farm, They could not undertake a project … that was our first impact on our productivity and employment".* Gildardo whom is an artisanal fishermen further downstream, pointed to other productive chains having been affected as well, such as the transportation sector and local shop owners

Which brings us to communities situated downstream of the reservoir, which due to the dispossession, water contamination and changes in the river flow faced tremendous impacts on their livelihoods. Some reporting yield and income decreases of 90-95% as result of the El Quimbo: *"… practically 95% of our income went away because of that company, because it was their fault, they practically left us totally bankrupt, many times we do not even make enough for the fuel for the canoe"* (Alirio, male, downstream). Downstream communities have not been recognized by the Environmental License of the El Quimbo as an area of influence. However artisanal fishermen living in these communities have experienced some of the most severe social impacts in result of its construction and operation, as also Rudolfo and Alirio whom are both Artisanal Fishermen explained: *"So it has been a dam that has destroyed us, it has completely destroyed artisanal fishing for us as fishermen, because we survive with artisanal fishing"* (Rodulfo, male) and *"That dam sent all of us artisanal fishermen and the region into displacement, famine, contamination, and now practically even extermination, because they are sending us into bankruptcy"* (Alirio, male). The economic impacts and dispossession have led the artisanal fishermen to have to commit to subsistence living, unemployment, impoverishment and dealing with increasing levels of food insecurity. With the latter posing a significant and increasing threat, as claimed by respondents, to the survival of downstream communities, which will be expanded on later in this chapter.

5.1.3. Livelihood strategies

"It was something I did not know how to do, but I had to forcedly look for another source of income." (Marcos, male, upstream)

In result of the livelihoods impact endured, respondents resorted to alternative strategies to sustain their livelihoods. The working backgrounds of the participants varied, wherein the sample included peasant farmers, artisanal fishermen, wood processors, day laborer's and other formal/informal professions. The (former) professions, as well as the livelihood strategies respondents pursued in response to the social impacts of the El Quimbo, are presented in Table 4 below.

Table 4: Overview of livelihood strategies of respondents

Nr.	**Name**	**Profession (before El Quimbo)**	**New livelihood strategy**
1	Alirio	Artisanal Fisherman, which income provided resources for henhouse (almost 150 roosters) and selling beer	Artisanal Fisherman (subsistence living)
2	Marcos	Wood transformation business with 10+ employees	Merchant/Trader in motorcycle parts (tires, etc.)
3	Alexander	Farmer (greenhouse for cultivating tomatoes and bred sows, pigs, piglets)	Merchant/Trader and artisan (wood) crafts
4	Jimena	Day laborer	Upholstering / renovating furniture
5	Luz	Day laborer at farm (husband was the bread winner and Luz took care of the household)	Productivity project (compensation)
6	Jesus	Farmer, owned three farms in livestock and agriculture (among which cocoa production and pastoral cattle.	Farmer: *"Start from zero, few crops and a few heads of cattle"*
7	Diana	Farming and fishing (cocoa, corn, rice), sold soda and drinks, handmade curtains and raisins (for drying of cacao)	Productivity project (compensation measure) with support from formal/informal loans, fishing
8	Leonardo	Artisanal Fisherman	Artisanal Fisherman (subsistence living) and now cultivating food crops (yucca, banana, papaya, etc.) on the multinational's land along the river banks
9	Gildardo	Artisanal Fisherman	Artisanal Fishing and wife informally sells pie, tamales and rice pudding. Took out loans as well.
10	Rodulfo	Artisanal Fisherman	Artisanal Fisherman (subsistence living): Spending weeks at a time at edge of the dam to raise food to support himself and to make up for transport cost. Wife and son are dependent on selling snacks and candy in the city of Neiva.

As the table shows, close to all respondents pursued alternative livelihood strategies to sustain their families. Varying strategies were pursued, among which growing food crops on river banks (legally owned by ENEL-EMGESA), selling candies or snacks on the streets, taking out loans, and in case formal employment alternatives where attainable changing profession. Alexander (male, upstream), for example, became a trader after his greenhouse on the banks of the Magdalena and therewith his

economic activity ended, as it was declared a flood zone: *"Nothing has been recognized. They knocked down our greenhouse… I am now a merchant, I am no longer a producer. My economic activity has changed. In other words, it took a very tenacious turn".* Which change in profession is not only an economic impact, but also proves to be a social process that results in other cultural impacts, which will be more elaborately discussed later in this chapter.

Leonardo (male, downstream) decided to plant food crops on the river banks, legally owned by ENEL-EMGESA, as an alternative means to provide for his family: "*we plant yucca, banana, papaya, everything that is useful to eat, we plant it on the multinational's land because they bought all the land along the river. We use small strips of land that were left intact after they removed the material to build the wall".* Leonardo noted people could either work, look for a way to subside and resist, or to leave the territory. On this note, multiple artisanal fishermen in the sample reported friends and colleagues having opted for the latter and migrated outwards as a means to survive: "*it's practically like a displacement, that we have to leave, I do not know what to do, because we do not have enough to survive, right?"* (Alirio, male, downstream).

Lastly, in the sample, two respondents mentioned that as consequence of the impacts on their employment and income, they had to resort to borrowing capital. Diana (female, reservoir) being amongst them, having been resettled and granted a 'productivity project', but in need of investment capital to start the project: *"We had to rely on banks but now it is really complicated because the interest rate rose, so that has made us quite stressed"*. The second respondent that mentioned having gone into debt, Gildardo (male, downstream), reached a precarious situation wherein he is borrowing to sustain his family "*… but then the budgets are not enough and we have to resort to the lenders who lend you 20%, so you practically earn to pay the interest of the lenders, so that's the way we are"*

Some respondents also found other forms of employment through their social networks, as Jimena for instance did: *"I thank God that at least Oscar's parents, my father in-law, they work in upholstery and I learned the art of upholstering, of renovating furniture".* Whilst, for those that did not find other means of informal or formal employment, the conditions of work and income dramatically changed. As also Rudolfo (male, downstream), an artisanal fisherman, explained: *"So I have to live on the edge of the dam in order to survive. Because if I fish and come back, I do nothing but transport. I have to spend the whole week to raise the food to support myself"*. Where notably, all the artisanal fishermen interviewed have (had to) stuck to their (generational) craft and primary means of income.

Then, Jennifer Chavarro (ASOQUIMBO) and an interviewee during the observational research on March 14th pointed out that the municipality of Gigante experienced an increase in prostitution during construction of the El Quimbo. People who mainly earned their money cultivating the land now dedicated themselves to prostitution as a form of income for their families and to *"change their life project".* This occurred mainly due to inward migration of workers during construction of the dam, wherein especially girls who were just finishing their secondary studies invoked this livelihood strategy.

5.1.4. Social cohesion and fabric

Another impact that was found among the respondents is a change in the social cohesion. A key social change process that resulted from El Quimbo was the resettlement process. Two interviewees were in fact resettled, as formally recognized by the environmental license. Among which Luz, whom is a 48 year old women that was resettled 8 years ago to New San Jose together with her two sons, husband and mother. When the lands were declared public utility, the individual and community businesses' landholders lost their property rights. Their only option was to sell to the energy company that was able to determine the negotiated price threatening with uncompensated eviction if no agreement was reached in due time, as also Luz explained: *" … everything you are experiencing right now, they did not tell you. No this is not going to happen to you, nor is the other thing going to happen to you. I mean, it was just, well, you sell or we force you out"*.

The resettlement caused a multitude of impacts initially unbeknownst to Luz (which lack of information will be covered in chapter 7). Among the social impacts Luz referred to are the changes in the social cohesion, wherein respondents referred to their former communities as family, which they lost due to having been displaced or resettled. This was corroborated by all three resettled (or displaced) women interviewed (one of whom not formally granted the right of resettlement under the environmental license), wherein families, social networks and communities were reportedly broken apart: "*And in the social part, the part of the fabric, also because my family was split there, my friendships spread to other places, we no longer have the same contact as before… I thought about having my house in La Jagua, well, I did not want to leave my town, because in reality my town is my community, it is my everything there" (*Jimena, female, reservoir).

An interesting finding is that this impact on the social fabric, was also found by Jimena to be connected to their otherwise daily interactions within the community and their ability to barter: *"Like that part of when we went fishing, we used to bring "Cuchas" (Fish) and we traded them on the way. We found tomato, yucca, plantain crops, then we traded them. We fished and bartered and then we*

arrived at our homes. It was not necessary to say, we lived in another community and we cared about the community. Today, even that community spirit is practically lost".

Alexander (male, upstream) whom is a native to a village situated upstream of the Reservoir area, also experienced this 'breakdown' of the social fabric without having been resettled himself, exemplifying the effect resettlement had in the wider community: "*You were already living with your entire family nucleus. Then my brother got this piece of land in such and such place, far away from here, then the social fabric was broken because all the people starting moving out, the families dispersed, some are in Zuluaga, others are in Pitalito, others sold, others got divorced".*

Not all impacts on the social cohesions however are related to the process of resettlement, interviewees also linked the compensation measures to division at the household and community level (which will be discussed further on page 61). Lastly, a few respondents reported conflicts between communities situated downstream of El Quimbo as results of increased food insecurity.

5.1.5. Shift in the gendered division of roles

Notable, upon analyzing the interviews, some findings indicate a shift in the gendered division of roles due to the El Quimbo and ways in which the communities subsequently organized. Whereas men were formerly expected to provide for the household, women now contributed more to the household income (albeit out of necessity), as Gildardo (male, downstream) explained: "*Before, I was responsible for the household for everything and I was able to cover all the expenses of the house, today the woman has to make a pie to sell, make a little rice pudding to sell, make tamales …*" On a different note, according to Jimena (female, reservoir), women learned to be more organized and to speak up in the community and within their homes: *"But the role of women. We learned to be more organized, to expose our ideas more, to learn to speak up. Because many women or many of us did not talk. But now from the same impotence, from the same rage we felt, we learned to talk. We learned to know and face reality. To leave our homes, to leave the comfort of not saying, well, my husband is the one who is always in charge in the house or something"*

5.1.6. Loss of local culture, customs and identity

When it comes to cultural change, there are four impact areas which were found in the data, namely loss of archeology and indigenous remains, artisanal crafts, cultural customs and spiritual connection to nature.

Starting off, archeological and ancestral remains were flooded by the reservoir, including a historic church (cultural heritage of the region) called the Iglesia Church as well as an indigenous cemetery. *"Yes, the archeology was destroyed, on the side where we were, in the farms that I am telling you, that were at that time indigenous resettlements and they destroyed those indigenous cemeteries, and outside that they destroyed them, they stole everything and took them away"* (Alexander, male, upstream).

Another important finding surrounds the loss of artisanal crafts and professions. Whereas artisanal fishermen are dealing with economic and health impacts, it also had significant cultural impacts as their craft which has been passed down for generations was at stake. As Rudolfo (male), like all Artisanal Fisherman in the sample, spoke of with sorrow: *"Well, being an artisanal fisherman is the art that my father taught me, right? To catch the fish. And, well, I feel proud to be an artisanal fisherman because I work and I do it for many family, yes? Many families live from my art and I feel proud. Because the Magdalena River, our father river, they [Quimbo] killed it … I live my life free, that is the pride I have, that I am not enslaved"*. Similarly, for Jimena (female, reservoir) whom grew up in the flood area and used to work on farms as a day laborer, the knowledge and customs she acquired from her parents and grandparents was something she aspired to pass on to her own children. *"The idea of us teaching our children and always having the tendency to work the land, the Quimbo made us lose that …-To go to the river, to go fishing, to go to cultivate, to go to harvest the crops, to learn the knowledge of when the rain is coming, when the sun is coming, when it is perfect to sow, how much is the harvest, in short, all of that. The Quimbo, when it arrived, logically destroyed all that".*

Other cultural customs that were impacted by the El Quimbo according to the interviewees comprised the crafting of 'raisins' that are used to dry Cocoa beans, as Diana (female, reservoir) explained *" … in the cultural part, we lost a lot because we used to have customs and activities … such as the elaboration of these curtains that are also used to dry cocoa, that are called raisins. So this is lost, because first of all they damaged the plant that grows naturally … it is very difficult to find a pinto, that is complicated"*

Then, especially the women in the sample that were resettled, mentioned the loss of natural activities that they grew up with living by the Magdalena river and change in connection to nature. Both by being removed from the places they grew up in and experiencing these same places after its ecosystem was altered. Jimena (female, reservoir) for instance stated *"…they destroyed me, they came in with chainsaws cutting down those trees, listening to the birds falling, the parrots by the river as*

well. It was something quite strong, because when we went to the river to fish, the contact with the fish, with mother nature, with the wind, with the parrots, with the herons, all that is something that was lost. And then one sees a desert without trees, without any of that is so hard, and seeing the displacement of the fauna". Furthermore, stating it was a major shock to be displaced from her family house near the Magdalena river as her 'life project' was to have her home there: *"Here I live enclosed within four walls, small, there I had my mother's house and I would leave and my space was my neighbor, my work and my river. That was my space and I did not need to have large amounts of money or anything to say I was happy and I live well."*

5.1.7. Repression, Criminalization and violent targeting

Another social impact the communities have dealt with is the decreasing security situation and increase of violence that accompanied the development of, and resistance against, the Quimbo project. Wherein one of the respondents endured an assault, as two men fired a gun at him, whilst travelling on motorcycle back from fishing in the Betania reservoir on March 28th, 2023. This attempt on the life of Alirio, whom is president of the Asociacion de Pescadores Calandreros del Rio Magdalena, occurred just a couple of hours after he made a video of a public complaint regarding the fish mortality and the effects suffered by artisanal fishermen due to the controlled discharges of the El Quimbo. Alirio (male, downstream) said the following on the incident, having been forcibly displaced from his village out of safety concerns: "*At the moment I am here in Neiva because of an attack that I had, ASOQUIMBO took me in, they have helped me in the sense of this assassination attempt. Although I had already had 2 threats, yes, 2 warnings I have had, and equally the State has not taken action to what was said".* Another artisanal fisherman was reportedly killed just eight days later "*8 days after the attack on me, they killed another comrade there, a fisherman, they managed to catch him alone and they hit him 5 times, and they killed him and everything remains quiet".* According to ASOQUIMBO (2023), more artisanal fishermen fell victim to harassment, threats and four community members were murdered in the municipalities of Gigante, Hobo and Campoalegre since this incident. Respondents also referred to other threats towards, and killings of, environmental and social leaders across the region and country more generally.

Furthermore, majority of the respondents signified the violence brought upon them by the National Police, National Army and Mobile Anti-Riot Squad (ESMAD) during the privatization of lands, eviction process, and whilst resisting/protesting the El Quimbo. Gildardo (male, downstream) told: *" … they [the government] bombed us with tear gas because they put three security rings, the ESMAD to attack us, the second security ring of the national police and the third security ring of the national army.*

And so they bombed us on the shore of the Magdalena River where we go and fish, we earn the livelihood of our family and there they took out the eye of a comrade with a bomb". Majority *of* respondents expressed their frustration of not being protected, recognized and even stigmatized and criminalized by the government, as did Alexander (male, upstream) *"When he serves them, he is the country's producer, he moves the economy 100%, but when he goes out to the streets to demand his rights, he is guerrilla, a terrorist. They send the ESMAD tanks, they hit him with a club, they kill them, they kill us and nothing happens"*. Artisanal fishermen that worked, travelled or resided in the river banks have faced evictions and lawsuits for entering the lands that once sustained their livelihoods. Gildardo (male, downstream) told: "*Without knowing where they have placed demands in the municipalities so that we leave the territory. They have run over us in one way or another so that we do not subsist in our territory where we could earn our daily bread …".* Illustrating the lack of recognition for identity of the Artisanal Fisherman, who suffered lawsuits and police injunctions for attempting to earn a livelihood for their families: *" … they do not call us fishermen, they call us indeterminate persons, they take away our part of the river, they take away our work and apart from that they even take away our identity, that is how they work"* (Leonardo, male, downstream). Multiple respondents reported intimidation and threats of lawsuits by the company and state.-According to Jimena those who did not support the project were even kept track of: *"It causes me too much fear, so to speak, that it was a transnational or the lawyers of the transnational to send or give orders to the National Police or even the ESMAD, to loot, to demolish the houses, to do everything… there was a certain intimidation and there were certain police commanders at that time who had us identified" (*Jimena, female, reservoir).

5.1.8. Health affectations

Affectations to health are another common impact that was found amongst the respondents. Ranging from lack of access to safe drinking water, water-related diseases, food insecurity and malnutrition as well as mental health problems.

Starting with the pollution of the Magdalena river that previously provided drinking water to local communities, which can reportedly no longer be consumed safely. Majority of respondents stated that the water quality has caused sickness in the communities. One respondent, Gildardo (male, downstream), even claimed 200 people have died in result of the "poisoned water". Alirio (male, downstream) told the following on this: "*… we have to carry the water from the town, carry it to be able to consume, because we cannot consume the water from the Magdalena, right? because we have had many affectations of skin, of stomach, yes, because of the water that is contaminated, so that water is no longer feasible for us to consume…"*. Furthermore, water-related diseases experienced

within the sample included intestinal infections, nausea, fevers, skin conditions (rashes) and chikungunya. Leonardo (male, downstream) told the following about the skin rashes: "*The one who fished near the wall. And when I say close, I mean seven, eight kilometers from the wall down. We all got rashes on our legs… and after finishing the job you had to bathe with boiled water and soap, in order to avoid those rashes that people got on their legs".* Another notable finding was the increase in infections and vector-borne diseases such as chikungunya, which one respondent suffered from her herself, and Alexander (male, upstream) told the following about: *"At least in the corporal part, the colic, intestinal infection, the mosquitoes. The mosquitoes were bouncing around and the people got sick, high fevers* "

Then, when it comes to malnutrition, food insecurity has posed a most severe problem for downstream communities. All artisanal fisherman interviewed, living downstream of the El Quimbo, reported dealing with food insecurity due to having lost their main source of income and nutrition the Magdalena river once provided. As Gildardo (male, downstream) told: *"they have destroyed our food security… today I caught a two-day old fish, I caught a fish to support my family, to pay the bills, for everything, we are totally destitute because of this company".* With artisanal fishermen communities, not being able to afford to eat and subsisting on one meal a day, or two if lucky. As Alirio (male, downstream) told: "*nowadays if we're lucky, we eat two, or one meal a day, right? Because the resources are not enough for us to cover that, because of the income, because there is no more fish, now, the fish consumption system has diminished so much".* Splitting meals across the day, as Rudolfo explained: "*Toca, toca, toca, is to take a small pound of fish and survive on that. One meal a day. Yes. So split one meal in the three meal".* Whereas Leonardo (male, downstream) emphasized this impact on food security likely spanning across the whole Magdelena river for fishermen: "*And now after the dam we cannot even afford to eat. And that is a constant. Every fisherman from the wall down from the Quimbo dam will say the same thing because no one escapes from this situation".* With reports of outward migration of artisanal fishermen as they've been unable to subsist due to their displacement and subsequent food insecurity: *"We are displaced by the government and we are displaced by EMGESA, I at least do not have housing, income totally below zero as I was telling you, the destruction of the social fabric, of biodiversity, of the ecosystem, everything destroyed. They ended the subsistence of many comrades, because many of us have not been able to survive and have had to move to other parts of the country*" (Gildardo, male, downstream)

When it comes to health impacts, one also has to consider impacts on mental health. With multiple respondents having dealt, or dealing, with 'negative thoughts', an 'emotional blow', 'sadness',

'discouragement' and 'depression'. Alirio (male, downstream) said the following on his lack of a future perspective: "*Well the impact has been both in terms of health and mental, it has been very serious because it is one thing that I am not in good health, but to have a spirit of saying, Bacano, tomorrow I am going to do such and such a thing".* Wherein the inability to provide a household income caused a major challenge to mental health of multiple respondents, something Gildardo (male, downstream) spoke about in the following manner: *"now we have even dark thoughts because we do not know what to do if we look to see how we are going to organize ourselves to earn a living in another way… to us to our families and to everyone".* With one of the respondents, Jimena (female, reservoir) even mentioning specifically depression: "*Bent to sadness, to the stripping, because one cannot cry for the whole world to see. One often cries silently at home, in certain things, with depression".* Whereas Luz (female, reservoir) mentioned having become apathic to other people their struggles since the El Quimbo: *"I say the Quimbo made me cry... you live so sentimental that on one side, on the other, you become apathetic to others. You say you did not have friends and you're not friends anymore. You have to put yourself aside and fight for your children, for your family, but it's not the same anymore".* One respondent event reported an increase in suicides within the communities as result of the El Quimbo and compensation provide by the company: "*…those who did not understand received their money and went crazy, others killed themselves, dismembered and even lost marriages. That is, the social part was destroyed*" (Alexander, male, upstream)

5.1.9. Lost aspirations

Lastly, it is important to consider how the El Quimbo project impacted the aspirations of the communities affected. Members from the affected communities acknowledged that the Quimbo has affectively halted many of the aspirations they once had. Ranging from starting or growing a business, sending themselves or their children through education, practicing a profession that was passed on for generations, or even no longer being able to afford thinking beyond surviving the day.

Notably, majority of respondents, across spatial contexts, stated that they were no longer able to have their children enjoy an education. Among which Marcos (male, upstream): *"because you are no longer productive and cannot provide what you need for your family, such as taking your children to higher education or something else, it already destroys the dreams or desires of a family that wants to move forward"*. Where also Rudolfo (male, downstream) endured this impact: " *… my home is destroyed, I could not give my children an education because of that, because the Quimbo finished us off, finished"*

Some respondents even referred to it as *"having been dealt a slow death"* or "*having died due to moral sorrow*", as their life as they once knew it fell apart. Whereas other respondents, such as Gildardo (Male, downstream), expressed feelings of helplessness when thinking about the future *" … to build a future for tomorrow to be able to save something to be able to start a business to be able to subsist in a better way, today all our desires, our thoughts towards the future, have fallen to the ground and we are totally without knowing what to do*". However, notably, some interviewees also expressed their resilience in overcoming the impacts of the El Quimbo: "*One is sustained by, I do not know if it is by habit, but by that condition that we peasants have of resisting and enduring and by a certain stoicism that we manage in the face of adversities."* Herein Jesus (male, reservoir) signifies the agency of local communities when it comes to hydroelectric dam projects, as they are not solely the recipients of the development interventions.

5.2. Social Movement - ASOQUIMBO

In a document addressed to the Inter-American Human Rights System (IACHR) in 2013, ASOQUIMBO stated that *"environmental damage translates into a serious and repeated impact on the human rights of affected people and communities ... Therefore, dams not only have a direct environmental impact, but also affect quality of life, health, access to food sources and traditional ways of life"* (Dussán and Miller, 2017). ASOQUIMBO as such takes a rights based approach, which covers social, economic, cultural and environmental rights of the communities that are victims of the extractivist model (ASOQUIMBO, n.d.), or as current president J. Chavarro told: *"They have a right that must be recognized and a right that cannot be recognized only as individuals, but as communities in specific territories. So it is a defense of the communities, the territories and the rights of the river." (J. Chavarro, date, 2023).*

ASOQUIMBO Initially covered the six flood municipalities of the project, but as the affectations (far) upstream and downstream of the reservoir area grew the movement did as well. This for instance includes the food insecurity for communities downstream whom depend on the resources the Magdalena river provides: *"ASOQUIMBO believes that there is a relationship with El Quimbo and food security, however, as the company has insisted it does not have to take responsibility for downstream problems …"*. Moreover, J. Chavarro mentioned that the impacts have progressively grown: *"new and greater affectations have been progressively presented, even municipalities that are not part of the flood area".* Whereas the most urgent affectations are currently situated downstream for artisanal fishermen, due to hydrological (i.e. water level rises or falls) and water quality changes

(contamination). Including impacts such as: *"Mainly from the year 2019 there are problems with floods [incl. losses of materials and canoes], contamination, skin health situations and food crisis for artisanal fishermen".* Other social impacts that were mentioned in the interview comprise: displacement, dispossession, economic impacts, impoverishment, cultural impacts, health affectations, food insecurity, decrease in social cohesion and others. To address both the transition to renewable energy and social, economic, cultural and environmental rights of the communities, ASOQUIMBO ultimately aims for an alternative model of Energy and Food Sovereignty which is decided collectively by the communities, according to their needs and the care of natural and cultural assets (ASOQUIMBO, n.d.). A model in which the (social) impacts are to be locally defined by the communities themselves, based on their experiences, needs and perspectives.

5.3. Government led entities - EPM and Sociedad Hidroeléctrica Ituango

Whereas those affected by the El Quimbo dam project perceive little to no positive aspects of the El Quimbo project, Robinson Miranda, the environmental and social director of EPM, sees Hydroelectric Dam projects mostly as "*as an opportunity to generate development and improvement of the [quality of] life of the population, which is directly related to the works and the project per se.".* He claimed that the HidroItuango has generated (amongst others) institutionalism, greater security, economic growth and ultimately '*catapulted development of the region'*. Wherein EPM (being a public utility company) is often seen as the figure of the State. Furthermore, almost all the relocated families had improved their quality of life*: "97% improved the quality of life. From the beginning of the construction until now".* This narrative was supported by Elba Mary, Sociologist for Sociedad Hidroeléctrico Ituango, whom stated in her interview that HidroItuango *"in terms of social impact has made a great contribution"* to integration of the territories that lack in institutions, are exposed to the armed conflict and had limited connectivity.

Noteworthy*,* Robinson Miranda stated the environmental and social impacts of Hydroelectric Dam projects are inevitable: *"What major infrastructure project inevitably generates environmental and social impacts".* The social impacts which Robinson Miranda and Elba Mary referred to in their interviews, which in fact are mostly investments and compensation or mitigation measures, encompass: Displacement and Resettlement; Restoring economic productivity through productive projects in livestock, agriculture or social contracting (i.e. forest rangers); Improved community infrastructure and connectivity though roads (1300 km); Improved education by building and

maintaining more than 120 schools in the region; Equipping local hospitals for improved healthcare; Conducting archaeological rescues; Purchases of goods and services in the region; Citizen participation; Socio-political monitoring and improved Security.

Notably, both Robinson Miranda and Elba Mary made a distinction between the terms impact and affectation (or indirect impacts), wherein "*impacts are derived from the construction of a project and the affectations are derived from the fact that something went wrong".* For example, when it comes to upstream and downstream, Robinson Miranda acknowledges there are affectations that the projects has or could have generated (as result of the contingency in 2018). Elba Mary told the following on this: *"we had an evacuation of 23,000 people from various municipalities downstream. So there are some indirect impacts that the Project [EPM] attends to … the upstream management, which is the management of the project's impacts, and the downstream management, which are not municipalities in the impact area of the project. But they were indirectly affected by the contingency and today they have 850 environmental obligations …"*

Now, good to take into account, an earlier study by Quinche-Martín and Cabrera-Narváez (2020) analyzed the alternative accounts of EPM and MRVA on the impacts of the HidroItuango. It concluded that there was a strong discrepancy between the accounts of the operator and those of the social movement. See figure 3 below for an overview of the addressed Indicators for socio-environmental conflicts by both actors. Wherein EPM, according to the study, has not accurately made visible the socio-environmental conflicts present in the case of the HidroItuango dam. In cases attributing these socio-environmental conflicts and social impact caused by the HidroItuango to the contingency'.

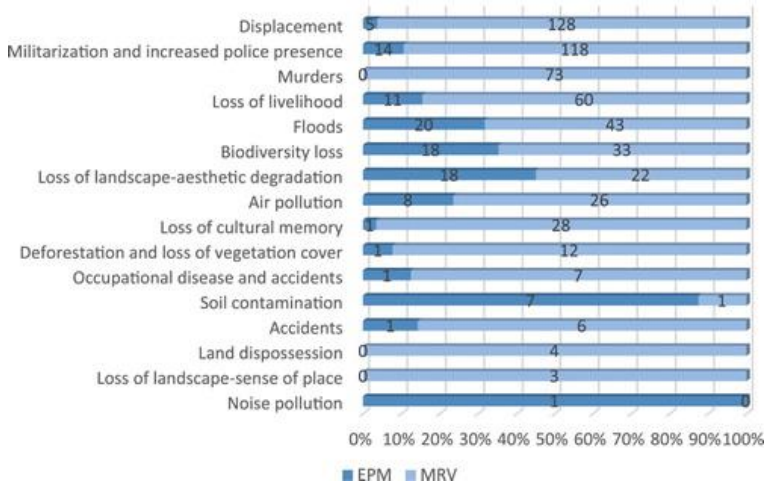


Figure 3: Indicators for socio-environmental conflicts by EPM and RVAM (Source: Quinche-Martín and Cabrera-Narváez, 2020)

6. Analysis - Attempts at recognition and social justice

The following section provides an analysis of the experiences of affected communities with the mitigation mechanisms, and how these were shaped or mediated through social organizing practices by the communities' attempts at social change.

6.1. Gaps in the Environmental and Social Management plan

When it comes to the Environmental and Social Management plan, a number of issues were identified by the members of the affected communities and ASOQUIMBO. Starting off with the Socio-economic census.

6.1.1. A contested census

Starting off, just two of the respondents were recognized by the license (and granted Resettlement and a productive project). Eight of the respondents stated they had not received a single support. Downstream communities were disregarded all together and those living, working or owning lands in the 'official' area of influence were only selectively accounted for. Moreover, for both women in the sample that were recognized by the license, the measures were perceived as incomplete, short-term (with sole focus on financial compensation, employment and housing) and ultimately ineffective.

Rodulfo (male, downstream) is one of four artisanal fishermen in the sample that spoke on the lack of recognition: *"they have destroyed our work area, they have destroyed our fish market, they have destroyed our father river, now we are in the middle of two dams and they do not recognize us as affected. It is an injustice, an injustice of the government".* Jennifer Chavarro explained the recognition downstream is very difficult to achieve since the communities are required to prove the environmental impacts are linked directly to the dam, as ENEL-EMGESA claims it is due to other factors: *"the company has insisted that it does not have to take responsibility for downstream problems because there are many other problems downstream that affect the river and harm communities, so that they have to technically demonstrate that those of the company are responsible for the environmental damage".*

Alexander (male, upstream) was not recognized although he owned a greenhouse in the reservoir area: *"It practically ended. Nothing has been recognized. They knocked down our greenhouse, they came in, as they do, to raise everything with machines and they finished with all that".* Then, Jimena (women, reservoir), whom worked as a day laborer in the reservoir area, told only one of her occupations was recognized and that many workers were not recognized in the census all together:

"The other occupations. And they also ignored my husband's work, my daughter's father, who also worked with me in the area". She mentioned the term 'Dedocracia' as she was only included in the census since the person conducting the census was a relative of a friend and called her, as she did not have to go to work that day. Many others had been left out "*At the time they did the census, many workers had not gone that day … they were never recognized. Currently the struggle continues for a new economic census".*

Furthermore, multiple interviewees mentioned that when there were social measures taken, the focus was on economic impacts but neglected other impacts. Or as Diana (women, reservoir), who's family was resettled and granted a productive project, told: "*It affects the environment, it affects the social level of the families, there are a thousand problems for us that suddenly this multinational company does not look at because they really look at the economic issues"*

6.1.2. Non-Compliance with the Environmental License

Another significant issue that become apparent from the interviews was the lack of compliance regarding the limited obligations of the license. Jennifer Chavarro stated in her interview that after 14 years of being granted the license, ENEL has not complied with the obligations and commitments acquired, on the contrary, it has made about 130 modifications, mainly to reduce the costs of social and environmental compensations. One of these obligations, as pointed out by Jennifer as well as multiple community members, is the restitution of 5,200 hectares of land that were lost with the flooding. These lands generated more than 25 thousand tons of agricultural products annually and represented 32 billion pesos of the domestic product of the department of Huila. Herein ENEL is obligated to assume the cost of the adaptation of 2,700 hectares with gravity irrigation. With the goal to make up part of the agricultural and livestock production that was lost due to El Quimbo.

"These are atrocious damages that, let us say, will never be recovered, but at least what would help us to solve or to overcome such a great affectation is the full compliance with the commitments that have to do with compensations or with the substitution of the productive activities of the communities." (Marcos, male, upstream)

Two affected households in the sample were granted agricultural productive projects by the company in order to generate a new form of income. However, this social change process was not without complications as the company reportedly did not comply to its legal obligations. As was the case for Diana (female, reservoir), which claimed that the installed land did not correspond to the legal

range of hectares, was abandoned before it started to generate any income and the obligated economic support (two monthly salaries) to assist in making the transition before the crops started to generate any income had never been paid to her father: *" … it turns out that at that time the company left us thrown away with this farm that was not generating any kind of income, so in the economic part they left us practically starving".* Claiming that only after ASOQUIMBO spoke to congress things improved and a productive project of five hectares and housing for her family was provided. Furthermore, Diana's family was forced to take out loans to transition to the new crops, which they furthermore were not trained in to properly adapt to: "*Why did not you train the families in those productive projects that you imposed on us so we could learn? Because we come from a community where we used to do activities very different from this*". To make matter worse the house finally assigned to Diana's family was effectively flooded in February 2023 due to wrongful planning, wherein the resettlement process done without proper consultation (as previously agreed plans with the family were changed without consent).

In Luz's (women, reservoir) case, having been resettled and her husband formerly working on a farm within the reservoir area, the productive projects that were supposed to mitigate the loss of income had not yet started after 8 years: *"My husband had his salary and I had my resources to improve. Here, there is no work… the productive projects have not started. Our productive life, our work, is being cut"* She also noted that the potential distance of the plot of land and her limited mobility, could significantly impact her ability to benefit from this project.

Lastly, As noted earlier, interviewees linked the financial compensation measures (not officially part of the license as this obligated reactivating economic productivity) to division at the household and community level, having a counterproductive effect. Wherein the different classifications and levels of compensation designated to members within the communities, resulted in a further breakdown of the social fabric: *"The company arrives, divides and reigns. Because they start, you offer one thing, you offer another, and you do not care anymore if they give you or not"* (Luz, female, reservoir). Wherein the term 'divide and conquer' was mentioned by Alexander (male, upstream): *"And the compensation is a trick that they made… divide and conquer. They classified them. You, the artisanal, that is, the chichi, you get 25 and 3 million more because you go to the course for three months and then we pay for it. To the other one he said. No as you are already fishing to sell, then you are already another rank, so you are entitled to 35 million"*.

6.2. Social organizing practices

Social action is never an individual pursuit. It takes place within networks of relations and is shaped by both routine and explorative organizing practices (Long, 2021). The different actor practices, strategies and social action pursued have the potential to mediate and transform dams' social impacts at critical points of confrontation. A number of social organizing practices were identified in the communities, aimed at addressing the social impacts they endured.

6.2.1. Local actor networks and their strategies

Since its inception in 2008, El Quimbo has been met with local resistance. In fact, a proposed dam at the same site had already been rejected in 1997 over social and environmental concerns. Whereas majority of respondents had actively organized in order to resist the El Quimbo and demand the protection of their rights, the interviews revealed a range of interactions and social organizing aimed at contesting the status quo. Primary objectives mentioned across interviews was to be recognized by the environmental license, enforce compliance with its obligations, demand the communities rights are respected, and in some cases the complete disbandment of the Dam structure (and have the river run freely again).

"we have been so deeply affected by this problem that we have practically become social leaders, spokespersons for the communities, fighters for this great problem that this has caused us."
(Marcos, male, upstream)

Important to note is that majority of respondents reported that ASOQUIMBO played a key role in building the capacity of the communities in their opposition to the Quimbo, among which through and increased knowledge and awareness on environmental and social impacts, teachings on how to effectively organize and provide resistance (i.e. conducting protests and engaging in dialogue), building confidence and patience for resistance, and building legal capacity through training in defense of their legal rights. On the latter, Diana (women, reservoir) for instance told *"ASOQUIMBO is the one that has given me guidance and training so that I can, for example, prepare the legal documents to defend ourselves"*

The interviews also revealed that affected communities have cooperated with a broad range of actors at local, regional, national and international levels. Among those mentioned are; Environmental and Social movements (i.e. Rios Vivos, Planeta Paz, Tierra Digna, Censat Agua Viva),

Indigenous movements and communities (i.e. CRIC), other communities affected by dam projects (Association of Fishermen) in Colombia and Latin America, journalists and media, Universities and Scholars (notably professor Miller Dussan who previously led ASOQUIMBO).

As expressed in the interviews, members of the communities likewise strategized in their interactions with other actors in order to pursue social action through a myriad of ways, including: judicial and legal actions, community hearings, peaceful demonstrations (i.e. blockages of access routes), contacting congressional or senatorial representatives, reporting and communicating environmental impacts (i.e. through local media), as well as dissemination of scientific research.

"ASOQUIMBO was the one who opened our eyes, It told us that we could do what we could do and we are still continuing and every day it is more, the organization is stronger, the resistance with the organization becomes stronger every day, but the damage is already done" (Leonardo, male, downstream)

6.2.2. Achievement through collective action

For over 14 years ASOQUIMBO has commemorated the fight against the El Quimbo and Hydroelectric dams. Which social organizing and action had a number of effects, according to Jennifer Chavarro the most important achievement is that in the department of Huila the general public no longer agrees to the construction of any new dams: *"For more or less 8 years, people do not elect a political representative like the governor without having to commit publicly that he will not allow the construction of any dam in the department anymore … every time there is an electoral campaign, people comes out to say that they oppose the dams"*. Especially important because the Huila department was identified by the national government as a region with water potential for construction of around 11 dams on the Magdalena river. Wherein for instance the Oporopa dam has been shelved in result. This social conscience has caused government authorities (local, regional and national) to make public pronouncements, which Jennifer Chavarro told helps guide public opinion, however is insufficient in and of itself. ASOQUIMBO ultimately aims to progress administrative, institutional and judicial actions against the Quimbo project and dam projects in Colombia: *"ASOQUIMBO has met with ministers, authorities of the national government and several governors during all these years of struggle and we have learned that public pronouncements are not wasted, but that this must be materialized with specific action. Something that helps to advance or transform and, for example, this government should take some judicial actions"*

Notably, at the beginning of 2012, construction of Quimbo was halted due to a blockade by the affected communities. In July of the same year, a debate took place in the Departmental Assembly of Huila, and the President and the Minister of the Environment were asked to suspend the project. On July 31, the Departmental Assembly held a political control debate on the 'Economic, social, environmental and cultural impacts generated by the project'. The objective of the debate was the discussion between actors, namely the national and regional government, with powers in the problems that the project has generated, and those affected. Another milestone that Jennifer Chavarro stated was a National Public hearing on El Quimbo, which she noted was something unprecedented in Colombia in respect to dams.

Furthermore, social action by ASOQUIMBO has also resulted in some judicial achievements. For example, sentence T-135 of 2013 of the Constitutional Court, which declared the initial census by ENEL faulty and aimed to guarantee the effective and informed participation of the communities by carrying out a new census. Which ASOQUIMBO still demands the ANLA and Ministry of Environment to effectively enforce. Similarly, as recent as July 25, 2023, the Council of State notified ASOQUIMBO of the decision to prioritize the ruling on their claim for annulment of the Quimbo Environmental License as it is a matter of ‘special social importance’. Nine years have passed since the lawsuit was first filed and ASOQUIMBO has continuously demanded Environmental Justice for the irregularities that led to the decision to build the El Quimbo Dam in the department of Huila (ASOQUIMBO, 2023)

Lastly, during the observational research on March 14 (World Day of Action Against Dams), ASOQUIMBO strategized the blocking of a strategic transport road on March 14 (World Day of Action Against Dams), to renew dialogue with the National Government and its Ministries. A meeting between ASOQUIMBO and the Governor of the Huila Department followed that same day, which allowed the social movement to enforce pressure on a regional level. Important at this moment in time since, as Jennifer explained, ENEL had requested to modify the obligation regarding the provisions of 2,700 hectares with gravity irrigation (which was later rejected). The researcher noticed the high presence of judicial, police and military actors present during this negotiation with the Governor, whom were later removed upon request of ASOQUIMBO.

7. Analysis - Constraining dynamics to development

This section provides an analysis of the constraints perceived by members of the affected communities by El Quimbo, social movement ASOQUIMBO, dam operator EPM and government led entity Sociedad Hidroeléctrica Ituango in addressing the social impacts of hydroelectric dam projects in Colombia. Identifying some of the constraining dynamics to social development in rural areas of Colombia when it comes to the (global) transition to renewable energies, mainly stemming from conflicting narratives of development and involved interests, limited agency of the affected communities and weak (or corrupted) control mechanisms to protect their environmental and social rights.

7.1. Conflicting narratives

The interviews show there is a clear discrepancy between how EPM and Sociedad Hidroeléctrica Ituango rationalize the social impacts (as established previously) of hydroelectric projects compared to community members affected and the subsequent Social Movement, ASOQUIMBO, that has formed. This same discrepancy was found, and is potentially associated, when it comes to what the social actors respectively believe actually constitutes development.

The interviews showed that the Quimbo and HidroItuango projects were (and still are) promoted by the notion of bringing development to the region, as supported by the quotes from Robinson Miranda and Elba Mary below:

Robinson Miranda (EPM) perspective on development: *" … it is an opportunity for these people and for the region to improve their quality of life, to generate development, to make viable in the case of HidroItuango a region that many years ago was unviable from the point of view of security, productivity, improvement of the economy, of all the aspects that determine the quality of life, these projects catapult this population to improve all these indicators."*

Elba Mary (Sociedad Hidroeléctrica Ituango) perspective: *" ... it [development] has to do with productive development, the theme of educational development. The generation of employment ... the purchase of goods and services in the region ... community infrastructure [education, housing, electrification, security, connectivity/roads]"*

This definition of development, mostly through economic growth (i.e. productivity, temporary employment, purchases of goods and services), institutionalism (i.e. security) and infrastructure (i.e. roads, housing, electrification) was however not shared by the affected communities and subsequent social movements that arose.

Jennifer Chavarro (ASOQUIMBO) perspective: "*alternative model of Energy and Food Sovereignty, decided collectively by the communities according to their needs and the care of natural and cultural assets."*

Community member perspective (example): *"There is a system that is created to destroy the territories or to hurt and simply destroy with a title called development … Development would exist as long as the communities were taken into account, how they really live, what they really need."* – Jimena, female, reservoir

Notably, four respondents stated that the Quimbo project was communicated to them on the notion of bringing 'development' to Huila, for instance through the tourism the project would bring to the region. Marcos (Male, Upstream) told: "*We simply had been blurred by an illusion where we were said that it would become a development in which a tourist emporium would be created*". With parts of the communities initially in support of the project and ignoring those that resisted, as Alexander (male, upstream) explained: *"And because of the compensations and so on, nobody cared about us, before they used to bitch at us, I mean, you do not want to let us receive money, you do not want progress for the town, you do not want this, the town to develop, there is going to be tourism.".*

This perspective however changed over time amongst the communities, as Gildardo (Male, Downstream) for instance made clear: *"they always come selling some ideas, expressing some ideas, deceiving the people saying that there is going to be a good change. That there is going to be development and all that stuff, and it turns out that what they come to sow is hunger in the territory".* This image of 'development' amongst the affected communities quickly changed into 'destruction', 'misery', 'displacement', 'hunger', 'disaster' or other negative connotations as found in the interviews. Or as Leonardo (Male, Downstream) told: *"If development is misery, disease, contamination, hunger, I think that there is not a single positive perspective of the people that live in those places.".* Here it becomes clear that the notion of development as initially advertised by the Dam Operator ENEL-EMGESA was proven untrue to the reality of the people in the communities the dam affected.

Also Jennifer Chavarro (ASOQUIMBO) noted the importance of a shift in thinking regarding development: *"it is important that the people for whom the department built a social conscience that dams are not projects that generate development and that, on the contrary, generate a lot of destruction, that for us is a main achievement let's say so in the imagination of the people of the department beyond the people of ASOQUIMBO"*

Notably, Robinson Miranda (EPM) and Elba Mary (Sociedad Hidroeléctrica Ituango) brought forth the HidroItuango as a project that brought 'great development' to the Antioquia region in their

interviews as well, based on the indicators they themselves proposed, showing parallels to the strategy ensued by ENEL. However to what extent has their understanding of development been guided by the reality of the affected communities? Which brings us to the concept of agency.

7.2. Agency

Upon analyzing the interviews it became clear there are a number of constraints when it comes to the agency of local communities in addressing the social impacts of hydroelectric projects. Among which the lack of prior consultation and participation in decision-making, communities' situated knowledge, and the power disbalance (i.e. political power, legal capacity, technical capacity) between social actors.

"A relationship of inequality and imbalance affects people even more. So that is a position permanent in the fight of the organization from the political aspect" Jennifer Chavarro, ASOQUIMBO

7.2.1. Participation and decision making

According to Jennifer Chavarro (ASOQUIMBO), meetings are the be held with the communities to reduce the power disbalance and speak for the rights of the communities. Looking at the Quimbo case, all respondents pointed to a lack (or rather inexistence) of prior consultation and ability to participate in decision making. Marcos (male, upstream) for example told: *" Because what cannot be ignored is that the communities do not participate in the decision making process. Therefore, these prior consultations must exist in all events, in all these small-scale or large-scale projects..".* Wherein also Luz (female, reservoir) pointed out that ENEL-EMGESA communicated that they were "socializing" with the communities, but in effect solely forced their demands: *"It's not socializing, it's imposing. They come to tell what they are going to do and what they have agreed with the government.".* In addition, Luz told that the representatives of ENEL-EMGESA did not care to inform the communities on the project's potential impacts: *"… everything you are experiencing right now, they did not tell you. No this is not going to happen to you, nor is the other thing going to happen to you".* Mentioning it was a significant barrier as the communities did not realize what was really coming towards them and in result also opposing the ASOQUIMBO movement, with multiple respondents stating they had been deceived by both state and company. Which brings us to the situated knowledge of the affected communities.

7.2.2. Situated knowledge

Almost all respondents associated a lack of knowledge to their limited agency revolving the Quimbo project. This encompasses the lack of knowledge on the social impacts, how to exercise their rights and enforce compliance, and how to organize to achieve social action.

"… so what comes here are very favorable conditions for doing business in a disadvantageous condition, not only with the country but also with the most impoverished people, they take advantage of the fact that the communities in these places often do not even know how to read or write" – Jennifer Chavarro

Starting off, majority of respondents noted they were not aware of the social problems the Quimbo project would bring despite the earlier Betania hydroelectric project in the region. Marcos (male, upstream) told: *"Betania was practically like a mirror for us, but the problem was that we were not in front of that mirror, since we lived in a region quite far away from Yaguará, from the towns flooded with Betania. So, we did not understand the magnitude of the problem".* Wherein, as established earlier, the project was promoted as bringing 'development' to the region. Which Jennifer Chavarro (ASOQUIMBO) corroborated: "*One of the biggest difficulties we had is because in 2009 when the construction of El Quinto began, everyone here thought that the dam was development, that the dam would be a way to generate clean energy*".

Jimena (women, reservoir) reported that in her perception the most fundamental problem for the affected communities is ignorance and the lack of information when it comes to the impact of Quimbo and how to how to exercise their rights: "*How should I exercise them as a Colombian citizen? So, practically speaking, I believe that this is the most fundamental part. The ignorance that still exists within the communities, especially in the rural areas, because logically there, let's say, they dedicate themselves to work in the fields, to cultivate".* Wherein she believes an organized community, with good communication and information, would enhance their local autonomy.

Diana (women, reservoir) added that since many people having had none to limited education, they were ignorant to the problems and ways to defend themselves, until ASOQUIMBO arrived: *"We were ignorant in many issues, right? We were peasants, we were not lawyers .... I mean, many people did not even have elementary school … And they [ASOQUIMBO] taught us how to defend ourselves, how to make many petitions and demonstrations"*. Supported by Marcos (male, upstream), amongst others, whom told: "*They [the state] keep us isolated so that we do not learn how to work in favor of our own defense. For that reason, sometimes we do not even know how to claim, how to demand compliance with the norms".* Leonardo also touched upon the know-how and ability to organize and resist the project: "*We did not know how to fight, we had no idea that one could stand up to a*

multinational". Notably, multiple respondents stated ENEL-EMGESA had purposefully strategized to divide the communities through its compensation measures and criminalization of those that opposed, as established previously.

7.2.3. Power Disbalance

Furthermore, both Jennifer Chavarro (ASOQUIMBO) and community members pointed out a power disbalance between the company ENEL-EMGESA and the communities in absence of a state that protects their rights and wellbeing. Jennifer Chavarro told: *"Another very big problem is that the proportionality of the strength of the company, economic, technical, financial, and more in the absence of the state. There are also many people who are very disoriented with the scope of ASOQUIMBO, since there is no national government or state that responds to the communities for their decisions, and the company obviously exercises economic and political power.*" This absence of state and the political power ENEL-EMGESA held is something also Jimena pointed out: "*That is, there was no mayor's office, there was no attorney general's office, there was no prosecutor's office, there was no police, there was no one to defend us. And everything was in favor of the transnational, because the transnational was in favor of them*". Even reporting that the mayor of Altamira whom supported the farmer communities was effectively replaced, in unusual circumstance, by someone that backed the company. Also Luz perceived the company able to exercise political power over the state: *"if it's the police, if it's the agrarian prosecutor, if it's the ANLA, they are manipulated by the company. They come and show their chest and make their presence known, but what they say does not happen"*.

The proportionality of the strength of the company in terms of finances, political power, legal capacity, technical capacity and other was also reflected on by other members within the communities. Wherein Alexander (male, upstream) touched upon the economic power the company holds: *"the economic interests of transnationals are very tough".* As well as Marcos (male, upstream) that illustrated how this power persuades others in the community to abide, for short-term benefits: *"Citizens who, being our neighbors and colleagues, practically fall in love with some pre-sales that these economic emporiums offer them. With the power that money gives they buy consciences, then they become the obstacle for us to obtain our rights".*

Furthermore, Diana (female, reservoir) referred to her own negotiations with ENEL-EMGESA wherein the relative strength of the company became apparent: "*When a company goes to negotiate with you, they bring two lawyers, two psychologists and all the professionals. Here they would arrive with five, six, ten vans and we were alone. Even the attorney general came, but on their behalf, not on ours. So we had to face all this issue practically in the families and communities alone with only what we had learned.".* Again, highlighting the disbalance in legal capacity and power which limits the

communities ability to exercise and demand their rights. Important to note here is that the communities affected have been dealt significant impacts, for instance on their livelihoods, which in turn significantly limits their capability to resist and organize.

During the observational research conducted, this also became apparent, as most demonstrators on March 14th relied on ASOQUIMBO to provide for transport and food that day. Otherwise significantly limiting the numbers of people simply able to afford joining the demonstration. Furthermore, Jennifier pointed out there have been challenges within the movement concerning a focus on and demand more structural changes when people are in crisis: *"There are conflicts within ASOQUIMBO sometimes because people are in a very big food crisis, so sometimes they want us to only ask for money or stay in the market. It is a whole process to make us fight for things that are more structural".* Likewise, stating that there are significant numbers people who have left the movement because they had exhausted themselves from the struggle, as there were not always short-term solutions.

7.3. A rigged system?

Lastly, the interviews revealed members of the affected communities, together with ASOQUIMBO, have experienced significant barriers in addressing the social impacts of the Quimbo project due to weak (or corrupted) control and judicial mechanisms in Colombia, as well as practices by the Dam operator aimed at restraining social action. Furthermore pointing out the perceived competing economic and political interest at stake.

7.3.1. Weak control mechanisms

A key barrier in addressing the social impacts has been the lack of control mechanism or the weakness (or unwillingness) of state actors to enforce compliance with the environmental license and social management plans. And arguably the lack of protection of the rights of local communities by judicial mechanisms. Jennifer Chavarro specifically referred to the weakness of administrative and judicial entities: *"There is a weakness in the administrative and judicial apparatus of the state, with corruption and negligence on the part of the judicial authorities".*

She mentioned the example of ASOQUIMBO's claim of annulment of the Environmental License which was filed in 2014, wherein the first judicial hearing to review the case only took place in 2019. The request for annulment has not had receive a ruling and as recent as July 25, 2023 was prioritized by the Council of State as a matter of special social importance. Nine years have passed since a claim was first filed. Similarly the Sentence T-135 of 2013 of the Constitutional Court, which declared the initial census by ENEL-EMGESA faulty, has yet to be enforced by ANLA and the Ministry

of Environment. Furthermore, as established previously, the initial decision to fill the Quimbo reservoir blatantly ignored a judicial order annd nonetheless the former President authorized the start of operations of the hydroelectric plant by issuing Decree 1979 of October 6, 2015. In the view of the Administrative Court, this was a clear example of putting private interests over the common good and setting *"a disastrous precedent of disrespect for the Judiciary, undermining the foundations of the social contract"* (Observatory for the Protection of Human Rights Defenders FIDH-OMCT, 2017). One month later, the Constitutional Court (judgment C-753 of 2015) declared the Legislative Decree unconstitutional. As established previously, Jennifer pointed out that it's the National state entities that have failed to make administrative, institutional and judicial actions for problems to be addressed structurally, wherein the regional government of Huila could provide short-term actions to address the critical situation of hunger, social and economic in its communities.

"we have knocked on all the doors here at the national judicial level, We have knocked on all the legal doors at the national level, we have knocked on them with all the evidence, videos, photographs of everything they have done to us …" – Gildardo, male, downstream

Notably, all community members pointed to the National State as the main actor responsible for the impacts the Quimbo caused, foremostly the ANLA. Perceiving the state as having joined forces, in complete favor or literally bought by ENEL-EMGESA, as a key barrier in addressing the social impacts. Nevertheless, the responsibility, neglect and 'ill intentions' on part of ENEL-EMGESA, were still voiced by the community members interviewed, also by Jesus (male, reservoir): *"So, obviously the company does have obligations, it does have responsibilities, but it is the Colombian State, it is the Colombian justice system that has to force the company to comply … the responsibility and damages are all shared, because one gives the permission and the other executes the actions".* But the communities hold the national government as the actor primarily accountable for the impacts suffered by the hydroelectric project, as also Leonardo (male, downstream) signified: "*The barriers are those placed by the State itself in defense of the multinational … That is the big barrier. The one that does not allow the communities to claim fairly, in a just manner, the affectations, the mistreatment, the uprooting, everything that happens".* Considering the state is the one that granted the territory to ENEL-EMGESA, failed to recognize rightful claims of the communities upon their infringement and did not enforce compliance with the obligations of the Environmental license nor the judicial rulings. Alexander (male, upstream) explained the barriers have been prevalent across different state actors: "*Well, the barriers that have always been there have always been from the government itself, the State, right? Because we have been knocking on doors … of the Ministry of Environment, ANLA, Attorney General's Office, Prosecutor's Office".*

7.3.2. Generating Energy, Profits and 'Development' budgets

"The State has been the one that practically gives away the territories and it does not do it for the common good, but to fill its own coffers, to get rich at the expense of the people and the territory. In other words, I have always blamed the State for this." – Alexander

Then, multiple members of the affected communities also pointed out the financial interest of ENEL-EMGESA, among who Leonardo: *"they were only interested in carrying out the project, no more, they are not interested in the community, a multinational is not interested in people. They are only interested in profit, dividends, nothing else". .* Wherein the hydroelectric project becoming operational is a key factor for the project becoming financially viable and profitable. Whereas delays, for instance due to Environmental issues or obligations, presents a barrier to the profitability of the project. Which also Jesus pointed out (male, reservoir): "*The more they can evade responsibilities, the more they can reduce costs, the more profits this means for them. Especially if there is no authority to force them to comply at least with the obligations of the license"*. Naturally it is no secret that ENEL-EMGESA's primary objective as a corporation is to make a profit of the Quimbo project, but it is clear that also the communities perceive it as such.

Not only the economic interest of the company, but also that of state officials and entities were referred to in the community interviews, as for example Alirio (male, downstream) told: "*The State did not solve it because they have shares there, linked to their personal gains, so it was not convenient for them to put more ties to what was the territory where all of us lived.".* Wherein it is important to note, as established previously, that ENEL-EMGESA has been governed by several members of Colombia's political class that have moved from the public to the private sector to stand on the company's Board of Directors (FIDH-OMCT, 2017). Leonardo (male, downstream) referred to it as a 'corporate state', which prioritizes foreign investments over its communities.

Notably, Robinson Miranda, as EPM is a public company (governed by the city of Medellin), started the interview by noting that the HidroItuango project provides resources to the city budget of Medellin: "*Every year we transfer money to the municipality of Medellín, to our owner, so that they can invest it mainly in social issues. So that they can invest in social issues, education, and community infrastructure. This year we are going to give the municipality of Medellín 1.6 billion pesos in profits".* Showcasing the interests, in this case on part of the Medellin government, for the hydroelectric project to go into operation and start generating resources. Again, on the promise of development. Identically being the case for departmental government, as HidroItuango was made part of the departmental

development plan since 1998, and as the majority owner of the hydroelectric project. Javier Toro (General Manager of Sociedad Hidroeléctrica Ituango) acknowledged that one of the key objectives comprises: *"The Sociedad has two major objectives. One is that the project is built, finished, implemented and has the 8 units operating, and begins its periodic operation during the time that is defined in the future.".* Which then is to feed into the budget of the regional development plan of Antioquia: "*That it [EPM] transfers the resources to society so that they can be invested in what the shareholders truly consider it should be used for, which normally and of course is for development of the department of Antioquia".*

7.3.3. Corruption

Majority of respondents associated the inability of the state to protect their rights and unwillingness to enforce compliance with the Environmental License to corruption, among whom Jesus (male, upstream): *"The barriers are basically constituted by administrative corruption, because we are immersed in a corruption process in which an institutional consortium to commit a crime was configured involving practically all State entities."* Leonardo told: *"The barriers are those placed by the State itself in defense of the multinational. Who are the bosses of the politicians? The multinationals. They are the bosses, the ones who put them there, who pay them everything".* Also Gildardo spoke on the issue of failing control entities due to corruption: *"I told the ANLA themselves, as long as they do not change these control entities that constitute these corrupt governments … we are wasting our time"* .

Gildardo also provided an example of when the ANLA came to investigate the situation of the water quality and fish mortality, after which he claims false reports were delivered in favor of the company. Furthermore, claiming the company included people in the census in return for erasing video evidence of chemicals (specifically concrete drying accelerant) that contaminated the river: *"He told them I am going to give them 7 million pesos to each one of the people who had the video, to take that evidence and erase it … he included them in the census".* Similarly, the company paid inhabitants to remove dead fish that arrived downstream (to hide evidence), tried to bribe him as representative of artisanal fishermen to stop his resistance and even had media portray a one-side image of 12 fishermen that were provided 30 million pesos compensation if they told a positive story and not report on the fish mortality, in order to sway the public image. Another respondent, Luz (female, reservoir), reported another incident wherein ENEL-EMGESA paid families to condone the transfer of the images of the Iglesia Chruch *"Then they came family by family, giving them some of what they knew they could convince so that they could sign to agree".*

7.3.4. Criminalization and intimidation of social leaders

Important to note is the criminalization of environmental and social activists by the state and Dam operator. Throughout the struggle of ASOQUIMBO against the project there has been a lot of violence by state agencies and a high process of criminalization and militarization, as reported by majority of respondents and previously established. As also Alexander (male, upstream) told: *"The State speaks well of the peasant when he produces, when he gives profit to all those corrupt people, but when the peasant goes out to protest, then he is guerrilla. Right?".* As discussed previously there have also been increasing threats and murders of community leaders that have opposed the Quimbo, among which the assassination attempt on Alirio Perdoma. Furthermore, the social struggle has been criminalized to the point that the professors of the Public Universities involved, in particular Prof. Miller Dussan, from the Universidad Sur Colombiana, have been threatened and investigated by the Attorney General's Office. According to the FIDH-OMCT (2017), Emgesa's strategy clearly focused on judicial intimidation undertaken at the highest national level. Its ultimate goal was to undermine regional resistance to large-scale dams and regional extractive projects, by a strategy of judicial intimidation actions taken against social leaders. In 2012, Emgesa and members of the National Police have initiated four criminal and disciplinary proceedings against Miller Dussán.

Notably, Elba Mary told in her interview that she perceived Rios Vivos as an 'opposition' or 'interest' group to the HidroItuango project: *" … so it is a group that has had a systematic agenda in the project, which at no time has prevented its normal development, has had spaces, let's say, for participation ... They are not NGOs, they are a movement, as I told you, they do not even have legal status".* Arguably delegitimizing Rios Vivos by stating they are not a legal entity. In addition, she noted that Rios Vivos has also escalated towards international organizations to intervene against the project, such as the Inter-American Human Rights Committee. Whilst acknowledging that the presence of illegal groups has limited the public order in the region and has made access difficult to some municipalities, claiming this was not in result of the HidroItuango project. Which the MRVA has contested as massacres and violence rose since establishment of the former 'Sociedad Promotora de la Hidroeléctric'. With local communities reporting that the project has exacerbating violence in the context of Colombia's decades-long armed conflict, and Amnesty International warned in 2013 that local residents who opposed the project were being labelled as guerrilla fighters and targeted by Colombian security forces (Amnesty, 2013). The latter, also having been reported by members of the affected communities in this study.

8. Discussion

This study examined how social actors rationalize and interact with the social impacts of hydroelectric dam projects in rural Colombia, namely the Quimbo and HidroItuango. The data was gained through observational research and in-depth interviews with affected communities, a social movement and government-led entities including a dam operator. The analysis of collected data contributes to the discourse by providing a comprehensive (bottom-up) understanding of the social impacts of these projects and how the situated agency of actors shapes social change, whilst identifying its structural constraints within the Colombian context.

First, the societal and political context of the Quimbo and HidroItuango and its most relevant social actors were examined in the regional framework (chapter 4). Whereafter the first analytical chapter (chapter 5), also largest part of analysis, relates to how the social actors involved with the El Quimbo and HidroItuango projects define, rationalize and assign meanings to its social impacts. The second chapter (chapter 6) analyzed the experiences of affected communities with the mitigation mechanisms aimed to address these impacts, and how these mechanisms have consequently been shaped or mediated through social organizing practices by the communities' attempts at social action. Whereas the third chapter (chapter 7) analyzed the barriers and constraints in addressing the social impacts of Hydro dam projects that prevailed, in context of the selected two cases in rural Colombia. This following chapter aims to connect the insights gained across chapters and place their contribution within the societal and literary context.

8.1. Deterioration of natural and human assets

The affected communities naturally spoke from their lived experiences, consequently recognizing the multi-facetted and interlinked nature that constitute social change and impact, which we will discuss first. The hefty social impacts that were experienced across the Upstream, Reservoir and Downstream area include (but are not limited to): dispossession of natural resources, loss of livelihoods, social disarticulation, shift in the gendered division of roles, cultural change, increased violence and criminalization, health affectations (physical and mental), and lost aspirations for the future.

Before all else, the communities recognized the dispossession of their fertile agricultural lands and river banks, disruptions in flow of the Magdalena river and contamination of its freshwater ecosystems as fundamental causes of many of the social impacts they endured. These changes to the

biophysical environment lead to (indirect) social impacts, as it affected the goods and services that the environment provided to these rural communities (Slootweg el al. 2001). Downstream fishing communities for instance lost their primary source of nutrition and livelihoods due to the loss of biological reproduction of native fish species. This consequently led to critical levels of food insecurity and rising malnourishment. Several scholars shed light on the loss of food security that stems from these changes in the freshwater flow regime. These insights therefore build on existing, but limited evidence of authors like Pelicice and Agostinho (2008), that found that seasonal reproductive migrations of fish species can be blocked by river fragmentation caused by dams, In turn, negatively affecting fish abundance, fishery productivity, and local livelihoods (Hoeinghaus et al. 2009; Hallwass and Lopes 2013, Arantes et al. 2019; Santos et al. 2020). Considering the reports from ASOQUIMBO and fishermen on food insecurity in the communities further downstream the Magdalena river, the impact of the Quimbo project in its entire spatial reach remains to be studied as it falls outside the scope of this study.

Another biophysical change the respondents identified were the water quality changes, as linked to the river sedimentation, lack of oxygen and contamination of the river's ecosystem. The study found that communities experienced water insecurity, water-borne diseases (i.e. intestinal infections, nausea, fevers, skin conditions) and vector-borne diseases (i.e. chikungunya) in result. This evidence supports existing research on water- and vector-borne diseases caused by dams. Such as from Kibret et al. (2015) that found an increase in malaria in different settings of sub-Saharan Africa resulting from dam development. Or Sow et al. (2013) that found the Diama Dam in Senegal affected the epidemiology of water-related diseases, which increased the spread of for example intestinal schistosomiasis. Similar to the findings of intestinal infections in this study.

Then, the declaration of public utility in 2009 was unsurprisingly mentioned as the starting point of the social impacts the communities endured. Which dispossession caused (amongst other things) the loss of livelihoods of those with their economic activity located in the area (i.e. agricultural and fishing) or who's productive chains relied on these lands. Herein the loss of livelihood caused a number of profound social impacts on upstream, reservoir and downstream areas as respondents outlined. Causing a ripple effect to amongst others their food insecurity, health affectations, households' lack of access to education, impoverishment and loss of cultural identity.

On the latter, whereas varying livelihood strategies were pursued across the sample, not one of the artisanal fisherman abandoned the craft of artisanal fishing, despite the impoverishment and critical situation of food insecurity these downstream communities endured. Whilst other factors are

undoubtedly involved, this hints at the cultural significance of their artisanal craft, as it linked closely to the 'identity', 'freedom' and 'way of life' for the fishermen. This finding provides a new insight into the relationship between livelihood strategies and cultural identity in context of artisanal fishing in Colombia. Something similar was found by Cinner (2014) that concluded that coral reefs contribute to the identity, lifestyle, and social norms of reef fishers. This attachment to fishing likely varies across social and cultural contexts. Noteworthy, the loss of natural activities and spiritual connection to nature was signified especially by the resettled women, to have had a hefty cultural impact. Signifying the need for cultural sensitivity. The finding supports the existing theories of Vanclay (2002) and Slootweg (2001), that claim the weighting assigned to each social impact will vary from community to community, wherein human impacts are tremendously dependent on their societal and cultural context. Stressing the urgency of participatory and bottom-up approaches to development interventions, informed by local and cultural sensitivities.

Furthermore, findings of this research suggest that the loss of livelihoods caused significant psychological stress and mental health impacts amongst majority of respondents, especially for the head of the family (traditionally males). Their aspirations for the future and the future of their children (i.e. education, health, etc.) were central in the feelings (i.e. sense of helplessness) they expressed related to their loss of livelihood. This finding builds on evidence from Nandi and Sarkar (2021) that linked impoverishment to heightened psychological stress on the head of the family, in result also being more receptible to waterborne disease vectors (i.e. malaria, schistosomiasis, filariasis). Which presents also a significant risk to the communities affected by the Quimbo.

Notably, social disarticulation was noted by the resettled women as one of the most severe impacts experienced. Placing a high value on their connection with their previous homes and communities (often referred to as 'family'). Such rupture is a common "social impoverishment risk" of resettlement according to the RF model of Colson and Scudder (1982), which stresses the physiological, socio-cultural, and psychological ramifications of resettlement. Notably, for the resettled women, the impact was tightly connected to their lost connection to the natural places (i.e. banks of the Magdalena river) and communities they lived and grew up in. This aligns with Hirschon's (2000) school of thought that attributes social disarticulation to a loss of place-based identity. Women's experiences of resettlement tend to be more negative than those of men as other scholar have found (Asthana, 2012; Bisht, 2009; Mehta, 2009; Mehta and Srinivasan, 2000; Tan, 2008). Unfortunately this study did not include any resettled men in the sample to afford a comparison between male-female experiences.

Furthermore respondents from the immediate upstream areas noted the family nucleus was broken up across wider spatial dimensions. Which requires future attention in academic research.

Lastly, a high level of violence against, intimidation and criminalization of those that resisted was concluded, especially during earlier stages of land dispossession and evictions. Furthermore, communities members that resisted were stigmatized and in cases framed as “guerrillas” by the state, with high levels of militarization that followed due to assignment of the 1200 forces of energy mining Battalion to the lands declared public utility. Furthermore the violent targeting of, and threats against, social leaders recently increased in case of the Quimbo. This sadly supports existing research from Bene et al. (2018) that found that repression, criminalization, violent targeting of activists and assassinations are recurrent features of conflictive dams. The HidroItuango dam has historically experienced extreme levels of such violence. Presenting a particularly dangerous context for social or environmental activists that oppose hydropower projects in this critical moment in the renewable energy transition. As violence against social and environmental leaders across Colombia again significantly increased in recent years (Salazar et al. 2022; Front Line Defenders, 2023)**.**

8.2. Underestimated, undermitigated and undercompensated

Another key result that arose from analysing the interviews with affected communities of Quimbo and the ASOQUIMBO movement, is that there is clear discrepancy between mitigation measures and the needs and realities of communities on the ground (as the above section supports). In result, many people affected and a wide range of significant social impacts were left unattended by both the Dam Operator and government. ASOQUIMBO and the community members related these to a number of issues.

Starting off with the incomplete ‘area of influence’ and census as defined by the environmental license, with a serious disregard of upstream and downstream communities. Research on the social impacts of dams has historically focused on resettlement area impacts. Wherein downstream impacts are frequently underestimated, undermitigated, and undercompensated as pointed out by Baird et el. (2021). Likewise, greathouse et al. (2006) argued that upstream impacts have been largely understudied, even more than downstream impacts. Both are found to be the case for the mitigation mechanism of the Quimbo (and HidroItuango) project, which suggest this skewed focus in research is replicated into EIA regulation and practice in Colombia. Likewise, wrongful practices in conducting the

census were confirmed by the community interviews, wherein for instance land titles and the full economic activity of people within the license's area of influence were not recognized. This comes to no surprise considering the license has been contested on multiple occasions, among which by the Constitutional Court through sentence T-135/2013.

The communities also perceived there to be an oversaturated (and short-term) focus on resettlement and economic mitigation measures (mostly monetary compensation), for the respondents that were recognized. These insights build on existing research of Vanclay (2002), who claimed that SIA practice often tends to focus on politically convenient or easily measurable indicators (which might similarly explain EPMs 'quality of life' indicators). Also the 'land-for-land' as first established by Cernea (1997) that linked restitution of land to the restoration of livelihoods, was found in the mitigation measures. Which leads to the finding that, ultimately, many environmental and social obligations for the dam operators or state entities were never, or only partly, complied with. Among which the restitution of 5,200 hectares of land and adaptation of 2,700 hectares with gravity irrigation, the agricultural productive projects for those resettled and the obligated economic support (i.e. for those that transitioned to new crops).

8.3. Energy Sovereignty and 'integration of the territories'

Fundamentally, the social actors' visions on development clearly contest one another and follow opposing schools of thought. First, the views seem to partly coincide with the divide in the discourse on displacement as identified by Dwivedi (2002), with the 'reformist-managerial' perspective on one hand, and the 'radical-movementist' on the other. The radical-movementist approach positions displacement as the manifestation of a developmental crisis and a sign of failed development. Which fits the position from ASQUIMBO and community interviews that perceived Quimbo and other large dams to generate 'destruction' and 'disaster', rather than development (on which notion it was promoted by the state and company). Furthermore, this exact change in the Huila society's perception was deemed as a significant achievement in their resistance. On the other hand, The 'reformist-managerial' approach rationalizes social impacts as an unavoidable consequence of development. A perspective shared by EPM and Sociedad Hidroeléctrico Ituango, that deemed the social impacts as an inevitable consequence to any major infrastructure project.

Then, it became clear that the affected communities find social impacts not only to be multi-facetted and interlinked in nature (as established above), but are to be locally defined by the

communities themselves, based on their experiences, needs and perspectives. ASOQUIMBO takes a rights based approach, which covers social, economic, cultural and environmental rights (including the rights of the Magdalena river). Which reinforces the claim of Shah et al. (2019), that pointed out that anti-dam groups increasingly adopt the frame of environmental justice. To reach this goal, ASOQUIMBO advocates for a model of Energy and Food Sovereignty, decided collectively by the communities according to their needs and the care of natural and cultural assets. Centring the rights of the communities in decision-making on energy systems. Interestingly, energy sovereignty is a relatively new concept in the discourse that has sought to redefine the priorities for energy systems, indeed focusing on the rights of communities and individuals to determine their energy systems in ways that are culturally relevant and environmentally sustainable (Laldjebaev and Sovacool, 2015). Presenting a bottom-up approach to ensure a just energy transition.

Furthermore, the government-led entities rationalized the HidroItuango as having catapulted development in the region and improving the quality of life, even of those communities it displaced and resettled. The latter, extremely optimistic claim, follows the thinking of early resettlement policy guidelines of the World Bank in the 1980s (Partridge, 1989), wherein resettlement is framed as a development programme with aim to re-establish social and economic productivity. Now, the notion of 'development' as told by the government-led entities encompassed mostly economic growth (i.e. productivity, temporary employment, purchases of goods and services), integration of the territories (i.e. institutionalism and security), improved education and health (i.e. building schools and equipping hospitals), and connectivity (i.e. infrastructure such as roads). This again, rather optimistic, notion of the HidroItuango as bringing great (mostly economic) development and 'integration of the territories' supports the claims by Muggah (2003) and Cernea (2007). That found that those displaced and impacted are still perceived to be the inevitable 'losers' or in this case supposed 'winners' within the (market-based and neoliberal) processes of economic development and modernization.

This 'integration of the territories' also feeds into the claim from Cardona et al. (2016) that described the HidroItuango as an extractivist undertaking aimed at expanding the capitalist frontier into a territory that is otherwise marked as isolated and unproductive. Or Shah el al. (2019) that likewise claimed that hydro dams in Colombia 'form part of the expansionist and extractive development processes' to gain control over territory and resources. Which this study would argue was even more so the case for Quimbo. As the energy and its profits (Italian multinational) of the Quimbo project were exported beyond Huila whist the communities had to bear the brunt of its social and environmental impacts, under the guise of mostly economic (specifically touristic) development.

Which, as mentioned previously, was not atypical to the conservative governments of Uribe and Santos under which the HidroItuango and Quimbo were conceived (Gudynas, 2012). However, interestingly, the HidroItuango was also found to be justified by the government-led entities on a second notion, which is to invest in social plans and "*development of the department of Antioquia".* Which suits the neo-extractivist model more commonly adopted by the 'left turn' in Latin America.

Lastly, the large gap in the social actors' perspectives suggest that EPM and Sociedad Hidroeléctrico Ituango produced a rather narrow scope on the spatial and multi-faceted nature of social impacts of hydro dam projects. This is of course with the caveat that social impacts vary from project to project, and are not expected to be identical between the Quimbo and HidroItuango. However, earlier research of Quinche-Martín and Cabrera-Narváez (2020) supports this claim as they similarly found a significant discrepancy between the accounts of EPM and MRVA (representing the affected communities by HidroItuango) on the social impacts of the mega-dam.

8.4. Constraints to 'development' in rural Colombia

It is exactly the opposing views and conflicting definitions on 'development' described above that have prevented the protection of rights of affected communities over the years. Leading to a number of significant constraints for not only the communities affected by hydroelectric dam projects in Colombia, but the expansion of the energy transition still to come.

Now, ASOQUIMBO pointed to the weakness in the administrative and judicial apparatus of the Colombian state as having been caused by corruption and negligence, likewise all community members pointed to the national state (foremostly the ANLA) as the prime constraint in their struggle. Fitting the claim of Martinez-Alier (2014), that suggested resistance against dams is frequently aimed at the state. The perception of affected communities surrounding a 'corporate' or 'corrupt state comes to no surprise considering the weakness of control and judicial mechanisms found. Ample evidence suggests how national state agencies, especially the ANLA, were politically influenced to progress the construction and operation of the Quimbo project, even despite court rulings. A few examples in the judicial sphere to demonstrate their argument are the Sentence of T-135 of 2013 that is yet to be enforced, the decision to fill the reservoir against judicial order and ASOQUIMBO's claim of annulment of the Environmental License that has been pending for over nine years. Then, the inability of the ANLA to enforce compliance with the existing obligations of the environmental license, such as the restitution of 5,200 hectares of land or conducting an accurate socio-economic census amongst the affected communities further strengthen these claims. Gudynas (2018) argued the classic extractivist

model in Colombia has been the root cause for the weakening of environmental regulations and enforcement, which could explain the state's failure in this respect. Wherein the so called 'express' environmental permits were found to ring true to the Quimbo case, since the environmental license was provided only after the communities had been disposed of their lands and exploration work by the company had already commenced. Furthermore the ANLA has been found to lack resources (staff, experts, time and money) to duly enforce the obligations of the environmental licenses according to Guevara Ulloa (2016) and Rodríguez (2011). Which further strengthen this argument of the purposeful weakening of the enforcement of environmental regulation.

Another points that needs to be addressed is the stigmatization, judicial intimidation strategies and degree of criminalization aimed to repress local resistance and voices in the communities. It supports the claim of Del Ben et al. (2019) that cautioned for the 'extractivism of renewables' and specifically the surge in hydro power to replicate old patterns of violence. Wherein repression, criminalization, violent targeting of activists and assassinations were found to be recurrent features of conflictive dam, as the finding of this study indicate was likewise a feature of El Quimbo and (secondary data shows for) HidroItuango. The high degree of militarization, especially during the eviction processes, shows parallel to what Vélez-Torres (2014) found are the two main power mechanism through which the Colombian state enforced the extractivist model in the mining sector throughout the 2000s. Namely, legislation to allow private accumulation of capital through foreign exploitation and the securitization (legal or illegal) of territorial control. The placement of an energy mining Battalion with 1200 forces to "protect" or rather 'militarize' the expropriated "public utility" lands for the Quimbo certainly fits this claim. Historically high levels of political interest and influence have likewise presided over the HidroItuango dam where even higher levels of violence against the affected communities presided. Most devastatingly, 2,094 people became victims of forced disappearance in HidroItuango's area of influence with an unusual increase when the Sociedad Promotora de la Hidroeléctrica was first established ((Jurisdiccion Especial Para La Paz, 2020; Rios Vivos Colombia, 2018).

Then, the study further revealed that there are a number of additional barriers that effectively limited the agency of the affected communities by the Quimbo project. Among which the situated knowledge of the communities (which grew over time), the lack of local participation and decision-making mechanisms as well as the further marginalisation of the (already marginalized) rural communities. The latter, having caused increasingly skewed power relations in comparison to the

proportional strength of the Colombian state and dam operator (i.e. political power, legal capacity, technical capacity).

According to Long (1990), locally informed and situated knowledge and consciousness contributes to the situated agency of local actors. Insights of this study unsurprisingly strengthen this claim. Wherein illiteracy, educational background (or rather lack thereof), limited knowledge on future social impacts, how to exercise rights, enforce compliance, and effectively organize to achieve social action (i.e. protest, judicial actions, etc.) were identified as key constraints to the agency of affected communities. Which for instance, led to many people in the communities to initially trust in the promise of 'tourism development' as was promised by ENEL and the state, as well as a limited their capability to resist when these perceptions changed over time in the communities.

The study also suggest a severe lack of participatory methods and participation in decision-making for the communities regarding the Quimbo project, despite bearing the brunt of the social costs. This supports the claim from Wilmsen and Webber (2015) that participation of affected people in practice has unfortunately often remained tokenistic in nature. Contesting however the top-down decisions that were made proved enormously difficult considering the skewed power relations at play. Herein the absence of state on behalf of the communities, and the strong economic, political, technical and legal power the company held posed an enormous obstacle as perceived by the communities to exercise their agency. The social impacts communities endured, such as loss of livelihoods, further exacerbated their constrained capabilities to pursue social action (especially more structural demands). Wherein rural communities in Colombia endure heightened social vulnerability due to the high levels of multidimensional poverty (Angulo et al., 2019; Perez and Perez, 2002).

8.5. Shaping development outcomes

Now, despite the paramount challenges faced by affected communities, as the above established, the findings of this study also concluded that affected communities were ultimately capable to shape social change, and mediate some of the impacts of El Quimbo and even other hydroelectric dams that were planned for on the Magdalena river basin.

This fits the actor-oriented discourse, wherein external interventions are mediated and transformed by those affected and development is the outcome of struggles and negotiations (Arce and Long, 1987; Long, 1990). Whereas social organizing since 2009 across networks of relations, led amongst other things to a shift in public opinion on the impacts of hydro dams in Huila, strengthened

participation among those affected and (regional and national) state entities (i.e. National Public hearing), public pronouncements from state entities, judicial sentences (i.e. Constitutional sentence T-135 of 2013 although weakly enforced) and remarkably halted the construction of new dams in the department (i.e. Oporapa dam). Notably, the findings of this study strengthens existing research regarding the influence of affected communities and grassroots organizations on dam decision making (Khagram, 2004; Scheidel et al. 2018; Bene et al., 2018) in context of Colombia.

Then, the analysis found that affected communities strategized and organized through a broad range of strategies (i.e. judicial actions, peaceful protest, community hearings, dissemination of scientific studies, etc.) with high levels of collaboration across local, national and international actor networks (i.e. indigenous, environmental and social movements, universities, etc.). The latter strengthens the claims from Roa and Mercilla (2017) that showed peasant movements, environmental activists, legal and human right NGOs, and university students often formed alliances relating to environmental and water justice in Colombia. As well as other authors (i.e. Sikor and Newell, 2014; Borras, 2016) which found that social movements increasingly involve NGOs or civil society organizations as well as so called "movement brokers", or Shah et al. (2019) that examined the globalizing networks of environmental justice movements. Which interaction between actors and actor networks arguably helped significantly built the capacity of the affected communities in their resistance. Noteworthy, whereas Scheidel et al. (2020) found women to be at the forefront in 21% of Environmental conflicts. Women have likewise stood at the forefront of ASOQUIMBOs resistance (i.e. the president and vice president of ASOQUIMBO are both women) and women in the communities reported to have become more organized and accustomed to speaking out in their communities in result.

Whilst acknowledging other factors beyond mobilization influence whether social change is achieved. Struggles led by social movements can bring important social and environmental contributions as outlined above. As such, further research on how social movements are important actors for just energy transitions and equitable development is needed. Wherein a long way remains for the communities' ultimate goal, as advocated by ASOQUIMBO, to be achieved:

***" …** alternative model of Energy and Food Sovereignty, decided collectively by the communities according to their needs and the care of natural and cultural assets."*

9. Conclusion

In light of the global boom of at least 3700 major dams underway by 2030 due to growing renewable energy demand around the world, in spite of the considerable controversy since the 1990s regarding its environmental and social impacts, this research has set out to uncover how social actors perceive and give meaning to the social impacts caused by hydroelectric dams in context of the Quimbo and HidroItuango projects. Whilst recognizing both agency of the communities affected and subsequent social movements in shaping development outcomes as well as the structural constraints that prevail in rural Colombia.

The analysis of in-depth interviews with ASOQUIMBO (social movement) and different members of affected communities by the Quimbo hydroelectric dam contributed to a bottom-up understanding of the social impacts caused by hydroelectric dams in Colombia, across Upstream, Reservoir and Downstream areas. The study furthermore identified how social organizing has taken shape, its subsequent achievements (or social change) and the constraints that have prevailed to the communities' aspired sovereignty over natural and cultural assets. The research also analyzed how government-led entities in Colombia rationalize the social impacts of the HidroItuango and define 'development' more broadly, based on interviews with EPM (Operator of the HidroItuango) and Sociedad Hidroeléctrica Ituango (governing body of the HidroItuango).

Whilst cautioning for the oversimplification of the economic, cultural, political and social context of Colombia and the consequent arena for hydroelectric dam conflicts, an attempt is made at addressing the social impacts of hydroelectric dams on affected communities in rural Colombia. The findings of this research outlines four main considerations.

First, a diverse range of social change processes, biophysical impacts and consequent social impacts were concluded to have resulted from the Quimbo dam. These include (but are not limited to): dispossession of natural resources, loss of livelihoods, social disarticulation, shift in the gendered division of roles, cultural change, increased violence and criminalization, health affectations (physical and mental), and lost aspirations for the future. This outcome confirms the wide ranging and immensely detrimental environmental and social consequences of the Quimbo dam, illustrating especially its multi-facetted and interlinked nature. Herein it is to be noted that this research adopted a wide scope regarding the social impacts that were included in analysis (i.e. across gender, locations, professions). As such, allowing for a comprehensive analysis, but also limiting the sensitivity of the study to the deeper (cultural, social, political etc.) context of different impacts. Which sensitivities are required to ultimately prevent or mitigate any future social impacts.

Second, social change has been achieved through local mobilization and social organizing by ASOQUIMBO despite numerous hefty constraint that aimed to repress local voices and resistance. A change in social consciousness and awareness in the Huila department can be considered as one of its key achievements. As this led, amongst other things, to the shelfing of the plans for another large hydroelectric dam in the Magdalena river basin and shifted the power relations. Further research is therefore needed on how grassroots struggles led by social movements, such as ASOQUIMBO, can lead to a more just and equitable energy transition.

Third, findings of the study also point to an extremely constraining environment for addressing the social impacts hydroelectric dams in Colombia. Strengthened environmental regulations and enforcement system will be instrumental to prevent past mistakes, as social and environmental impacts were externalized to local communities and left almost completely unmitigated. With the latter in mind, local and cultural sensitivities are to be accounted for which requires sincere participation of local communities in dam decision-making. Wherein the mere consideration for emerging concepts in the literature such as energy sovereignty are advised. Also, it has become apparent that the strong executive branch and weak judiciary allowed for the rights of affected communities to be violated often without significant repercussions for those responsible. This has presented a major obstacle for justice in Colombia in a more general sense, but likewise has been detrimental to dam conflicts within its borders. This consequently, amongst other things, allowed for the repression, criminalization, violent targeting of social leaders and forced disappearance surrounding the struggle of rural communities against hydroelectric dams. Presenting an extremely dangerous context for social and environmental activists that oppose hydropower projects in this critical moment in the renewable energy transition.

Lastly and instrumentally, whether it has been the neo-liberal extractivist model that promised to bring forth economic development and modernization to the region, or the neo-extractivist promise of social policy expenditures. Finding of this study suggest that the voices of the Quimbo and HidroItuango communities have been overwritten and repressed by the notion of wider ‘development’. Whereas Colombia has recently elected their first leftist president since its independence, time will tell whether the country shifts from mostly classic extractivism under its previous governments to forms of neo-extractivism, the ‘extractive imperative’ of the ‘left turn’ or takes a different path all together. A such the new executive direction of President Gustavo Petro will be instrumental to the future of hydroelectric dams in Colombia, and whether the ‘extractivism of renewables’ will once more preside in Colombia over the coming years. Which will undoubtedly constitute social forms, actor networks and renewed efforts at social action to arise in its path.

"Mobilization is inherent to the social movement, it is something that cannot be stopped."

Jennifer chavarro, President of ASOQUIMBO

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11. Appendices

Appendix A: cornerstones of actor-oriented approach

The cornerstones of an actor-oriented approach can be summarized as below, according to Long (2003):

1) Social life is heterogeneous. It comprises a wide diversity of social forms and cultural repertoires, even under seemingly homogeneous circumstances.
2) It is necessary to study **how such differences are produced, reproduced, consolidated and transformed**, and to identify the **social processes involved**, not merely the structural outcomes.
3) Such a perspective requires a theory of agency based upon the capacity of actors to process their and others' experiences and to act upon them. Agency implies both a certain knowledgeability, whereby experiences and desires are reflexively interpreted and internalised (consciously or otherwise), and the capability to command relevant skills, access to material and non-material resources and engage in particular organizing practices.
4) Social action is never an individual ego-centred pursuit. It takes place within networks of relations (involving human and non-human components), is shaped by both routine and explorative organising practices, and is bounded by certain social conventions, values and power relations.
5) But it would be misleading to assume that such social and institutional constraints can be reduced to general sociological categories and hierarchies based on class, gender, status, ethnicity, etc. Social action and interpretation are context-specific and contextually generated. Boundary markers are specific to particular domains, arenas and fields of social action and should not be prejudged analytically.
6) Meanings, values and interpretations are culturally constructed but they are differentially applied and reinterpreted in accordance with existing behavioural possibilities or changed circumstances, sometimes generating 'new' cultural 'standards'.
7) Related to these processes is the question of scale, by which I refer to the ways in which 'micro-scale' interactional settings and localised arenas are connected to wider 'macroscale' phenomena and vice versa. Rather than seeing the 'local' as shaped by the 'global' or the 'global' as an aggregation of the 'local', an actor perspective aims to elucidate the precise sets of interlocking relationships, actor 'projects' and social practices that interpenetrate various social, symbolic and geographical spaces.
8) In order to examine these interrelations it is useful to work with the concept of 'social interface' which explores how discrepancies of social interest, cultural interpretation, knowledge and power are mediated and perpetuated or transformed at critical points of linkage or confrontation. These interfaces need to be identified ethnographically, not presumed on the basis of predetermined categories
9) Thus the major challenge is to delineate the contours and contents of diverse social forms, explain their genesis and trace out their implications for strategic action and modes of consciousness. That is, we need to understand

how these forms take shape under specific conditions and in relation to past configurations, with a view to examining their viability, self-generating capacities and wider ramifications.

Appendix B: Interview Guide community interviews

As a participant in this study, you will be asked to participate in an independent interview. The main use of the information you provide will give a better understanding on the perspectives of different 'social actors' on the social impacts associated to Hydroelectric dam projects in Colombia. The interview will take approximately 30 - 60 min to complete.

Your participation in this study is completely voluntary. You may choose not to participate or you may withdraw from the study at any time.

Your anonymity will be protected and you understand that only the personal data that you give permission for, will be used on any documents, presentations or other output of the research. Can you tell me to what extent you want to be anonymous in my research, may I use your name and/or occupation?

If you agree to have the interview recorded, the recording will be deleted after transcribing, which will be no later than 3 months after recording. Do you have any questions before we start?

Section: Lifeworlds / demographics

1) Can you tell me about who you are?
    a. Where do you live and for how long?
    b. What kind of family do you have?
    c. What is your age?
    d. What is your profession?

Section: Understanding of social impacts

1) What do you know of the El Quimbo Dam and what is your perception of this project?

2) How did you learn or hear about the social impacts of the El Quimbo?
    a. When did you learn about these social impacts?
    b. Whom informed you and how?

3) <u>What is your understanding and perception of these social impacts?</u>

4) <u>What kind of effect does the El Quimbo have on your life?</u> (For example: housing, health, social cohesion, income and employment, nutrition, land access, etc.)
    a. <u>Have these effects changed over the years, how?</u>
    b. <u>Why is this happening in your perception?</u>

5) How did your perception of El Quimbo or its impacts evolve/change over the years?

a. Can you explain why?

Section: Coping strategies

1) What did your life look like before the El Quimbo dam?

2) How has the El Quimbo dam and its social impacts effected your life aspirations/goals?

3) What are you doing to maintain your way of life?
   a. How are you coping or dealing with the social impacts of the El Quimbo?
   b. What are your strategies to maintain your livelihood?

Section: Social organizing

1. Is there anybody helping you to prevent or mitigate these social impacts on your life?

2. How do you express yourself when it comes to the social impacts of El Quimbo?
   a. Whom do you talk with about these impacts?

3. Do you feel represented in the process of the El Quimbo?
   a. By whom?

4. Do you feel you have an influence on the process and its social impacts?
   a. In which ways do you try to influence this process?
   b. Is there any support in place in your perspective, in what manner?

5. Who do you think are responsible for preventing, or finding solutions, to the impacts on your life?
   a. For example: Government, the local community, the company, etc.

6. Are there any barriers in place in your perspective, what are they?

7. What would be your ideal scenario when it comes to the future of El Quimbo and this region?

8. What would you recommend doing to avoid a situation like the one you and your community are experiencing?

Section: Other

1) Is there anything else you would like to mention in this interview?

2) How would you want to be referred to in any output of the research?