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Environmental Governance and Legitimacy of Hydropower Development in Turkey

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Declaration

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

Signature……  ……..

Date: 16.08.2021

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This thesis was an adventure by its own as the final chapter of two years, an inspirational studies in Noragric. As the submission date will remind you, Covid-19 made the period extra challenging. Therefore, it is of great importance to highlight help and support throughout this difficult times.

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Abstract

Mainly after the liberalization of the energy market, the development of hydropower in Turkey had rapidly grown. The so-called hydropower boom has been subject to many years of debate and controversies. While the earliest large dam projects served public needs and were developed by the public sector, the latest run-of-river projects were invested by private initiatives. Parallel to private investments, large dam projects were still in the government's policy agenda, aiming to develop the maximum techno-economic potential of rivers in Turkey. These projects are opposed by several groups from civil society, mainly local communities and non-governmental organizations and are accused of non-legitimized actions.

This research aimed to discover underlying issues of hydropower policies in Turkey by comparing the most recent controversial large dam case (Yusufueli Dam) with run-of-river cases from Artvin province where a significant part of social mobilization has emerged. The area is located in the northeast of Black Sea, along with its mountains, valleys and river basins rich in biodiversity. A series of semi-structured interviews was conducted with various governance actors.

To understand the sources of conflict, Environmental Governance Systems (EGS) framework by (Vatn, 2015) was outlined with its structures, namely key actors, interaction patterns, rules and resource regime. In line with the outcomes of hydropower policies on the national level, the case study was applied using the legitimacy framework focused on its implications at the local level. The framework allowed for discussion of the decision-making processes, environmental outcomes and distribution of costs and benefits.

The main findings showed that the government policies fall short in considering and sort out local communities' concerns. The main sources are a top-down approach in applying the decisions, lack of transparency and accountability issues with local authorities, which are claimed to be under pressure from the central government. Consequently, the primary outcomes are compensation issues, livelihood losses due to decreased biodiversity, and damaged natural reserves valued by nature tourism potentials. Finally, an important note from the comparison of cases showed that the actors involved (private or public) significantly influence the perception of distributive justice. Despite the more significant impacts in terms of social and environmental losses, the publicly invested large dam Yusufeli case had eventually become easier to gain the consent of local communities and negotiate its outcomes. On the other hand, privately invested projects still hold the potential of high degree conflicts.

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CHAPTER 1

Old Halfeti submerged under Birecik dam lake, Southeastern Anatolia, 2016, Own Work

1. Introduction

1.1. Development of Hydropower and Global Issues

On a global scale, it is possible to identify emerging stresses over river ecosystems. The freshwaters are primary resources available for human use. The pressure on the hydrological cycles is emerging, and the river flows are in transition. While quality and quantity parameters are still the main criteria for human consumption of water, the river ecosystems and the integrity of its process became widely acknowledged in the last decade. More specifically, the physical and morphological qualities of resources are essential for healthy rivers.

Natural flow regimes are under stress with water allocation or alteration activities such as hydropower plants, dams, or reservoirs. The hydrological cycle is under the pressure of human activities, and they are in transition. The estimated consequences are *"affected biodiversity, food, and health security and ecological functioning, such as the provision of habitats for fish recruitment, carbon sequestration, and climate regulation, undermining the*

resilience of terrestrial and aquatic ecosystems." (Rockström et al., 2009) Water management methods are the main driver of the transformation across river basins. The sediments are held in more extended periods, and the river discharges are altered. 30% of global river sediments are estimated not to reach the oceans (Vörösmarty et al., 2004). Among the hydraulic manipulations, the most affecting are irrigation activities, groundwater use, large dams, channel dredging, and wetland drainage.

As the oldest and cheapest clean energy technology, hydropower is still heading the global renewable energy trends. Approximately 15.9% of the global energy produced today comes from hydropower, with 1308 GW of installed capacity worldwide (International Hydropower Association (IHA), 2020). The global growth rates for hydropower development have consistently been between 2.5% to 3% per year for nearly two decades (IHA, 2019). The development of hydropower will continue as long as the projects are economically efficient (e.g., high energy efficiency, long life span, regional development) with its potential social benefits (e.g., livelihoods, flood protection, other uses of water) and low environmental impact (e.g., low greenhouse gas emissions and air pollutants) compared to other energy production systems (I. Yuksel, 2007).

Hydropower technology is in many ways beneficial compared to other energy resources in terms of environment and sustainability. Significantly low emissions from the life-cycle of projects in particular motivate the choice for hydropower. In recent years, hydropower development has been put on the agenda for climate change mitigation strategies. Carbon markets have been benefiting hydropower projects and become one of the international development policies towards a "cleaner energy" transition (IPCC, 2011). Particularly in developing countries such as China, India, Brazil and Mexico international carbon markets provide capital through the Clean Development Mechanism and many companies prefer to get carbon credits by investing in hydropower. This strategy as a market based policy instrument provides investment capital in order to cover developing countries' needs. UNESCO (2020) acknowledges that hydropower will continue to play a role in climate change mitigation. In brief, hydropower can be promoted as one of the solutions to climate change and intrinsically the number of the projects expected to increase. As much as its benefits are promoted, there has been a global debate over its consequences and challenges in the local level. As the numbers of projects increased, the impacts on the local environment and communities started to become more visible. Hydropower projects interfere with common natural resources, which is in interest of various actors and purposes. The management of rivers have become even more complex

with the growing involvement of the energy sector, particularly regarding its ecological-social impacts and the distribution of its benefits and costs.

Hydropower projects when built as multi-purpose dams with a reservoir, can serve other beneficial purposes such as irrigation, drinking water, flood and drought control in addition to energy production (IPCC, 2011, p. 8). However, the utilization of this vital natural resource can still have severe impacts and may interfere with the state of the freshwater resources. The common damages caused by the large dams on the environment can be physical, chemical and geomorphological. In addition, it can be changes in biological productivity or alterations of the fauna (World Commission on Dams, 2000, p. 74). In addition, the reallocation of rivers may also result in social impacts such that locals are forced to relocate and change their livelihoods. The value and meaning of these natural resources can vary in different communities, such as some may have spiritual or cultural connection to nature (Goodland, 2010). Oppositions of activist groups and associations of victims that are affected by the large-scale projects has become widespread on a global scale (World Commission on Dams, 2000, p. 19). The World Bank as the biggest financial provider of the large dams responded to public opposition by withdrawing its finance support from particular projects that attracted great concerns (ibid). In recent years, there is a shift towards more small-scale hydropower (<10 MW) or towards run-of-river systems. These types are considered having less significant environmental and social impacts (Konak & Sungu-Eryilmaz, 2015). They only use the natural flow of the river (I. Yuksel, 2007). However, according to the IPCC (2011) report, the classification of hydropower plants differ in countries and the projects are highly site specific. As an example, when small-scale projects, which tend to be environmentally friendly, are built in large numbers along one river basin, and they may actually cause greater harm than one large dam (IPCC, 2011, p. 450). In overall, globally the development of hydropower and whether they actually contribute to sustainable development or generating local problems, is highly contextual and case dependent.

In sum, the global climate change policies will continue to pressure the energy transition towards renewable resources. The energy researchers predict that following decades the interest is more on the wind and solar power as the costs are decreasing. However, the technical constraints of these technologies points out the importance of hydropower once again. In addition, two decades later after WCD report about large dams, the technical experts of the energy sector and other international financing institutions (e.g. World Bank, IFC) have developed guidelines in order to minimize the impacts or improve the sustainability of the projects, including their cumulative effects. These guidelines are not legally binding.

Nevertheless, the challenges of hydropower will remain in conflict as the context in each country varies. In addition, within the countries the stand points can differentiate as the interest over river resources also can be multiple and socially complex.

1.2. Hydropower Development in Turkey

In Turkey, the electricity demand is predicted to grow, and the country is also engaged in sustainable development strategies (Yuksel, 2013). Since 2009, Turkey has been a signatory country to Kyoto protocol. The Ministry established a strategic plan that involved utilizing all hydropower potential of rivers before 2023, the 100th anniversary of the Republic of Turkey (Ministry of Energy and Natural Resources, 2010, p. 12). In order to reach this goal, the energy sector extended in liberalization. The International Energy Agency suggests that Turkey should continue completing the liberalization of the energy market of remaining state-owned resources such as hydro and coal (International Energy Agency, 2016).

The development of hydropower is legitimized as critical option as it is a primary national resource and will reduce energy dependency and increase energy security. The number of hydropower plants started to increase significantly after 2001 (See Figure 1). The increase linked to a new energy market regulation that allowed private companies to rent rivers for 49 years (Islar, 2012). Today, 90% of the currently operating plants are developed by the private sector and the rest is constructed by The State Hydraulic Works (DSI) (DSI, 2019). The academic studies and experts support the hydropower investments, as it is a cleaner and local energy option, which will reduce greenhouse gas emissions and foreign-resource dependency. However, these advantages seemed to result in overlooking the consequences in local level. Thus, there has an emanating opinion against these policies, advocating that adequate and correct planning have not been achieved for hydropower investments, which increased rapidly with the private actors in the energy sector (Yılmaz, 2018).

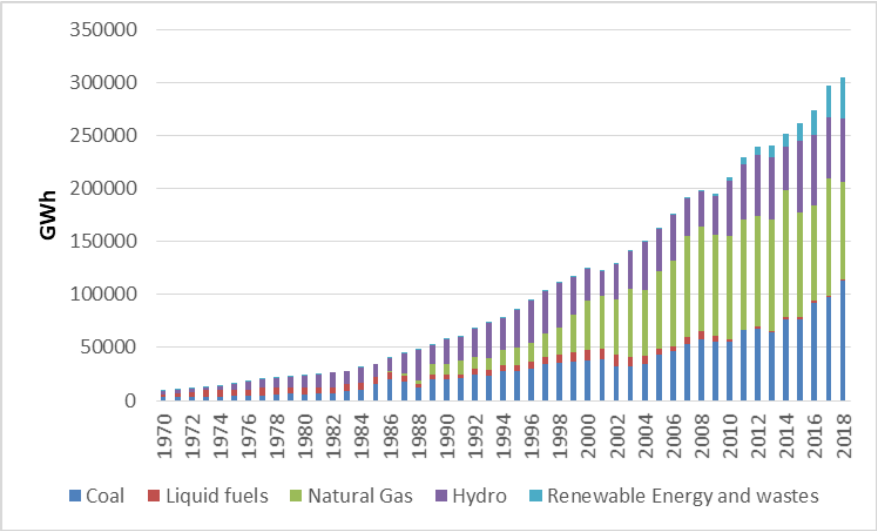

Figure 1: *Primary energy production in Turkey between 1970 and 2018. Data retrieved from (TEİAŞ, 2021)*

Following the rapid development of hydropower projects, various debates have emerged at the local-regional level in Turkey. The disputes are more or less correlated with the global course of events regarding hydropower development. There is a shift from large dams to the small-scale hydropower plants, according to the scholars. The large dams were criticized due to its large impacts on ecological and social systems. However, contrary to expectations small scale projects did not bring more consensus and local acceptance. The scholars have been debating about these conflicts and the different approaches. Earlier studies discussed the necessities of the projects in order to exploit the economic potential of rivers and contribute to sustainable development and specifically promoted small-scale projects (Balat, 2007; I. Yuksel, 2007; Yüksek & Kaygusuz, 2006). After 2010s, the academic studies critiqued and assessed the issues of small-hydropower in local level, specifically in the northern part of Turkey (Baskaya, 2011; Kentel & Alp, 2013). These issues are mainly related to weak investigation of the project area, inadequate environmental impact assessments and excluding locals from the process. Eventually, the opponent local reactions have increased significantly. Today, it is still a conflicting issue for specifically rural areas. The locals continue to reject the development projects; believing that they have not gained any significant benefits from the projects rather underwent deterioration to their livelihoods and environment.

1.3. Controversies in Black Sea Region and Artvin Province

The global trend for small-scale or run-of-river type hydropower has become visible in Turkey after 2005. The potential of developing small-scale projects promoted as sustainable in terms of environmental low impact, social and economic contributions in local level. The

Eastern Black Sea region in Turkey, assessed as having high technical potential for small scale due to the topographic and hydrological characteristics (Yüksek & Kaygusuz, 2006). The region is associated with receiving high precipitation. The annual precipitation in average can be 643 mm, this region can reach up to 1198 mm (Uzlu, Akpınar, & Kömürcü, 2011). The increasing opposition views from the locals has been subject to studies as "*strong mobilizations*" (Kavak, 2020; Yaka, 2020). The anti-hydropower movement from the regions has been associated with socio-environmental justice (Yaka, 2020). The locals associate these projects as a threat to their living environments. As a natural resource, the rivers provide several ecosystem services climate regulation, cultural value, economic services. The Coruh River, located at the eastern part of Black Sea region, has been an important subject of development interests. The province of Artvin is mainly located around the body of the river. The region has long history with hydropower development plans and has been in various discussions such as biodiversity concerns, social injustices, transboundary issues and financial supports. The main and large dam projects are developed by public investments with partnerships of consortium groups of international actors. The involvement of international actors have placed the global perspectives into local and other NGO's agenda.

EGS framework will be adopted with cases from Artvin province with the aim of pointing out the differences between national and local governance. In addition, in this case with international actors and their influence in the environmental governance. The national process is slower to adopt such changes. However, these locally important projects with funds from international actors can bring different approaches and practices. A study about developed country influences on developing countries emphasized that in some cases civil society have found support into their agenda through these actors and their financiers (Scheumann, Baumann, et al., 2014). The international actors put pressure on financiers of the developed countries and have demanded the same standards in their home countries. The effectiveness of such efforts found to be changing depending on the policies and regime type regarding the land-owner state country.

1.4. Problem Statement

The development of hydropower in Turkey has resulted in conflicts in the Black Sea region, located in the northern coast of the country. The rapid growth of small-scale projects along with large conflictual dams led to livelihoods' changes, migration, resettlement and environmental problems in the region. Several attempts and efforts have been made to enhance the implementations of regulations by the government authorities in line with international standards and approaches such as the one of the European Union. The most recent objective is to adopt the EU Water Directive system and develop integrated river basin management plants. However, the above mentioned conflicts remains unsolved as local protests over the projects continues.

The conflict resolution in long term may be possible with the coordination of various actors, including whom will bear the most consequences. In this context, it is essential to understand the motivations and perceptions of different actors over the usage of natural resources. In overall, the aim of this research is to address the issues of hydropower development in Turkey; an unbalanced energy policy ambition particularly focused on its economic and climate change mitigation benefits over its costs generated in the local level such as impacts on river ecosystems and socio-economic losses. These outcomes are assessed from economic efficiency and environmental effectiveness in relation to the issues of legitimacy and civil society participation.

The long-term resolution of these conflicts may be possible with the coordination of various actors, especially the ones who bear the most consequences of hydropower development in the country. In this context, it is essential to understand the motivations and perceptions of different actors regarding the use of natural resources. Overall, the aim of this research is to address the issues of hydropower development in Turkey; an unbalanced energy policy which particularly focuses on economic and climate change mitigation benefits over the local environmental and socio-economic costs that it generates. These outcomes are assessed by economic efficiency and environmental effectiveness in relation to the issues of legitimacy and civil society participation.

This thesis is structured around two main research objectives stated as follows;

i) the governance system of hydropower development in relation to river resource use
ii) the legitimacy of hydropower policies and local level implications for run-of-river and dam projects

Firstly, it is essential to define a framework of the institutions, rules, regulations and patterns of interaction within which these local struggles have emerged. Secondly, following the current policies and arrangements, secondly, the outcomes are assessed with the criterions of environmental effectiveness, economic efficiency, and issues of participation, legitimacy and justice.

Using a case study, I aim to explore what motivates civil society actors to reject projects and how this can be related to policy outcomes and legitimacy issues in the governance system. In other words, to what degree civil society participate in the decision-making and implementation processes, which problems and values are included or disregarded at the local level. Within the second objective, the research focuses on a province from the Eastern Black-Sea region where the strongest rural mobilizations have emerged. The narrative analysis approach apply in order to understand respondent's stories and how they experience and interpret the processes of hydropower development.

1.5.Research Objectives and Research Questions

Following the overall aim, two objectives are defined. These objectives are then connected to specific research questions in line with theoretical frameworks and concepts related to environmental governance.

Objective 1: Analyze environmental governance of rivers in Turkey; to understand the conflicts, motivations of different actors and their interaction patterns related to hydropower policies

1. What are the structures of EGS framework, its actors, institutions and their roles?
2. What are the regulations/rules about Rivers?
3. What are the interactions, outcomes and their distribution, the status of Rivers related to hydropower activities?

4. Throughout the years, how did the structures are change and with which effect?

Objective 2: Assess the legitimacy (Vatn, 2015) of process and outcomes through cases from Artvin province; by characterizing the participation level (Pretty, 1995) and portraying conflicting perceptions

1. How are the perceptions of different actors with the processes of hydropower development project and decision-making? (Input Legitimacy)
2. What are the outcomes of the hydropower policies and how are they perceived by different actors? (Output Legitimacy)

CHAPTER 2

Eastern Black Sea, 2017, Own Work

2. Theory and Concepts

Previously formulated problem statement described the emergence of analyzing the governance structures of hydropower development and assesses its outcomes in order to reason for tentative recommendations. By means of assessment, the research aims to discuss sustainable usage of rivers and reflect on the local environmental and social struggles, which have resulted from the development projects. To support the research, in this chapter I aim to build the theoretical framework and its concepts. Blumer (1954) described this method as "sensitizing concepts" which provide "*a general sense of reference and guidance in approaching empirical instances*" (Bryman, 2016, p. 383).

The theories of environmental governance and its relevant concepts are found to be favorable to the research in several ways. It allows the understanding of key structures and actors of the system with their roles, motivations and actions and the principles in order to evaluate "what is better to do". These concepts may allow expending the perspectives to

facilitate the coordination of the natural resource usage in a more sustainable manner. See Table 1 below with an overview of concepts and links to the objectives.

Table 1: *An overview of the links between objectives and theory/concepts.*

	Theory/Concept	Method/Data	Reference
Objective 1: Analyze environmental governance of hydropower development in Turkey			
Structures of EGS framework, its actors, institutions and their roles	EGS Framework	Primary: Interviews Secondary: Literature, official documents, media	Vatn (2015)
Regulations and rules			
Outcomes, their distribution and status of Rivers			
Structural changes and its effects			
Objective 2: Assess legitimacy of the process and outcomes through cases from Artvin province			
Perceptions of different actors on decision-making processes	Participation Typology, Legitimacy Framework	Primary: Interviews Secondary: Literature, official documents, media	Bass, Dalal-Clayton, and Pretty (1995); Pretty (1995)
Local level outcomes and how are they perceived by different actors?	Legitimacy Framework		Bäckstrand (2006); Vatn (2015)

2.1. Environmental Governance Systems Framework

The Environmental Governance framework is a model designed to analyze environmental governance systems. In this study, the framework refer to research by Vatn (2015) and his Environmental Governance Systems (EGSs) framework (Figure 2). The framework broadly defined as containing general variables and institutions that are interrelated. Paavola (2007) defines environmental governance as "*the establishment, reaffirmation or change of institutions to resolve conflicts over environmental resources*" (Paavola, 2007, p. 94). The aim is to analyze these relations and the successful governance of environmental resources. Vatn (2015) defines environmental governance as *"the use, management and protection of environmental resources and processes."* He also underlines this as a conflicting issue and can be related to numerous examples. The topical theme of this study, hydropower power plants are an example of development structures that involve with vital environmental resources; rivers, watersheds and landscapes. The relation of hydropower development to the environment can be described with two dimensions; i) the energy utilizing facility that contribute mitigating

greenhouse gas emissions ii) in conflict with needs and interests of ecosystems and inhabiting local communities. The environmental governance perspective is beyond simply managing an environmental resource. It also has a more long-span frame that cover all actors and variables. The key elements of environmental governance are institutions, actors, environmental resources and the technology. By means of institutions, Vatn (2015) categorizes them as three groups; resource regime, the rules governing the political processes and the institutions of civil society.

Actors defined as three groups; *economic, political* and *civil society*. The means of such actors in EGSs are about their actions, motivations or goals, capacities, rights and responsibilities. In this context, the definition of these actors are as follows;

- *Economic actors:* Can be grouped as producers and consumers, holding the rights to various productive resources. Producers can have production based on private or public properties. Their goals or aims may differ such as profit-benefiting or public welfare. The consumers are part of civil society however their role categorizes as economic actors people as consumers takes part as an economic actor rather than a civil society actor.
- Political actors: They define the resource regime and the rules of political processes. Two types exist; public authorities of a state, region or community and the international governmental organizations (IGOs) and their institutions.
- *Civil society:* They define the normative basis of the society which can be either organized or unorganized, and provide legitimacy to political actors.

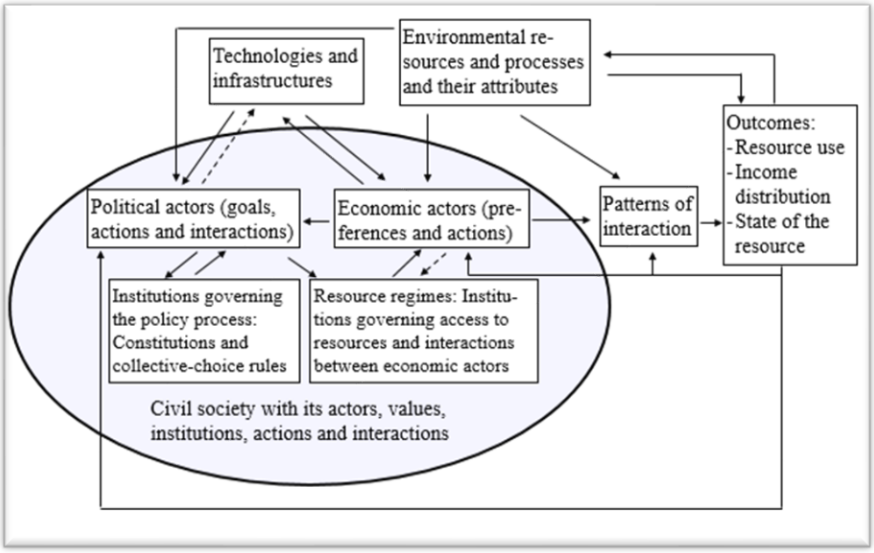

Figure 2*: Environmental Governance Systems Framework (Vatn, 2015)*

The first group of institutions, *Resource Regime* defined as "*Institutions governing use and protection of environmental resources and processes. There are two sets; the rules governing access and rules related to interactions (within and between actors)".* The first set of rules are related to the property and use rights. These rights are about the access, withdrawal, management, exclusion and alienation from the resource. Vatn (2015) emphasizes the importance of defining the resource as its type of property. The property type of environmental resource can bridge over to the understanding resource attributes and how the rules should be regarding the access. The second sets of rules are about interaction between actors regarding coordination of resources and the products produced.

The second group is the *institutions governing the political processes*, describe as "…*the constitutional rules that typically govern both the relationship between citizen and their political representatives and what powers these representatives have*." (Vatn, 2015, p. 152). In addition to these rules, collective choice rules are also considered as structuring the policy processes, which can be in local, national or international level.

The variables placed upper part of the framework (See Figure 2), defined as follows;

- *Technologies and infrastructure* are directly influenced by the choices of political and economic actors. Technology production may result from changes in resource regime.
- *Environmental resources and processes* is about attributes of the resource and affects the outcome directly. In addition, the attributes of the resource influence the choice of resource regime, actions of the economic actors and patterns of interaction.

- *Patterns of interaction* differs between different types of actors previously described. For instance, economic actors are considered as separate from each other in terms of their interaction pattern. The civil society indicates patterns of informal interaction where the norms can refer to what is considered as an approved action.
- *Outcomes* refers to the state of resources. Depending on the acceptability of the outcome, policy process may be affected.

The EGS framework will be use to analyze the topic of interest; hydropower development. In Turkey, the hydropower policies are concentrated on using the rivers at maximum capacity for power production from clean and local energy resource and its other beneficial functions (e.g. flood control, security objective, and irrigation). If one look from this perspective, hydropower is an economically beneficial solution for the national energy and water usage complications. However, the discussions on the development of hydropower appeared to be more than an economical or technical matter but also related to highly complex societal, environmental and political shortcomings. Thus, with the EGS framework the research aims to reveal the disregarded issues within the policy domain, in line with the arguments of the various actors. Particularly, the research interest is with different motivations and perceptions of actors, their interaction patterns and how the benefits and costs are distributed among them.

Previously defined variables will takes place in Chapter 5 as described in Figure 2. The technological infrastructure definitions slightly different across the globe regarding the differentiations in regulations and rules. The technical definition refers to the head (water level) and the power generation capacity (Guerrero-Lemus & Martínez-Duart, 2013). In addition, the structural types can differentiate with the projects. Small-scale hydropower or run-of-river types generally have little capacity in terms of energy production. The advantages are easier operation, low investment costs and relatively small physical changes required over the river. However, the main concern is “how” and “where” the small-scale the projects are built. Along the same river line, high numbers of projects are a concern regarding their cumulative effects. In addition, a typical run-of-river may consist of diverting channels or pipes, which can result with adverse effect in ecosystems if not carefully managed.

The large scale or dam type of hydropower has been the focus of the discussion in early 2000s, particularly after the groundbreaking WCD report (World Commission on Dams, 2000). The large dams have more adverse effect that can be linked to a single project, compared to one

small scale. However, the advantages of the structures have found to be feasible with its other usage benefits and higher electricity production. In addition, these type of structures act as "batteries", holding the water bodies and eventually provide flexibilities for electricity production. In conclusion, the design and use of technology is highly depended on the spatial conditions. Hence, careful planning is substantial and coordination is required. The wrong implementation of the technology can affect other economic actors and the natural conditions of river (e.g. sedimentation problems, flow regimes). For instance, these attributes of the resources may influence the resource regime in ways of changing the regulations such as implementing integrated methods (e.g. cumulative impact assessment). In the case of hydropower one of the key interaction rules can be licensing and water usage agreements. The energy markets and the role of private companies, renewable energy incentives (feed-in tariff), and the government (e.g. public-private partnership) are also highlights in analyzing interaction patterns.

2.2. Outcome Assessment: Good Governance, Legitimacy and Participation

As we move to the Objective 2, the main question and curiosity was "If the technology is sufficient enough and highly beneficial as producing renewable energy, what is the reason for the failure in terms of dissatisfying the communities and resulting with conflicts, including environmental problems?" At this point, the way how Vatn (2015) look into the outputs and evaluating the governance structures was influential and convenient with the concept of *good governance*. He formulates criteria for the evaluation of the processes and that may lead to changes with the structures. Later, he emphasize several criteria that should be considered and formulates the *framework* of *legitimacy*. Firstly, I will look into the definitions of good governance and the framework of legitimacy by Vatn (2015). Later theories of *participation* will follow with its approaches in governance and development literature.

2.2.1. The Legitimacy Framework

The concept of legitimacy commonly referred in political science theories and is related to the judicial system and is about justified authority, government or the system as a whole. Vatn (2015) frames the concept in two main folds; *input legitimacy* and *outcome legitimacy*. The input legitimacy refers to the decision making processes. The output legitimacy is referring to the results of the governance systems. The frame unfolds to different underlying concepts:

- Input Legitimacy: The process legitimacy refers to decision making and its three key components
    i) procedural justice
    ii) participation
    iii) transparency
    iv) accountability of decision-makers
- Output Legitimacy: The legitimacy of results have three key components
    i) Distributive justice: how the benefits and costs are distributed among the effected actors.
    ii) Effectiveness: refers to ensuring the capacity to achieve the intended goals.
    iii) Efficiency: about achieving these goals with the lowest cost.

Legitimacy in the case of hydropower, can be understood as a societal arrangement of hydropower activities where the values (cultural and environmental) and livelihoods of the local communities are safeguarded, protected or included. The framework will allow the discussion to follow the path as i) how in the decision-making level of hydropower three components presented (the decision of where to build the power plant, by whom and how the decision had taken) ii) how the outcomes are distributed among the actors (economic actors and civil society/local communities) and how the environmental effectiveness have been achieved. Regardless the intentions behind the actions, which is difficult to demonstrate, the results of these actions can be understood and perceived differently. Hence, the degree of how legitimate the processes are changes. The framework here becomes useful, as to unfold the underlying issues of the governance system.

2.2.2. Theories of Participation

Participation can have different meanings depending on the context. On one hand, participation can refer to simply being involved and receiving information; on the other hand is a social institution that related to the nature of human relations. Participation is considered as a fundamental principle in governance or a precondition that measures its efficiency in line with the collectively decided goals. Participation used as a method to improve the performance of governance. Vedeld (2017) describe the meaning of participation in governance "*... to what extent and in what contexts the (participatory) formulation of goals and implementation of policy are or should be with the state, with the bureaucracy and politicians and to what extent the wider public including civil society, private sector, ethnic, regional groups etc. should be*

involved in different contexts (polycentric governance).” It is important to distinguish how and by whom the structures and processes are decided, implemented and later on observed or monitored and evaluated.

Regarding how the decisions are made and how the locals participates within the decision-making stages, scholars defined various levels in approaches. The inclusion of broad-range stakeholders or actors in the different levels which could be the processes of planning the policies or at the implementation stage of projects (Few, Brown, & Tompkins, 2007). Participation is referred to be necessary for promoting sustainable development (Bass et al., 1995). Their work provides detailed inputs for the planning within the context of sustainable development. It is crucial that the state secures such conditions and build *trust.*

In the case of hydropower, one of the most common tool is Environmental Impact Assessment (EIA) where the participation of stakeholders takes place in the case of projects, though the insights differentiate globally. In Turkey, this tool is also used to secure the participation of the local communities in the process. It is a substantial tool as one and only safeguarding tool for balancing between economic activities and its environmental impact with the societal consideration. The process is to inform the people whom will be effected and to achieve feedback with consensus oriented meetings. In the case of hydropower projects, its usefulness has been developed and revised several times with the regulations, as the demand for better applications has increased. The means of demand here, is to safeguard stakeholders and the long-term or short-term environmental impacts of the projects. In addition to the conventional approach of project based EIA, the environment ministry has been developing the strategic environmental assessment (SEA). There has been several attempts to develop also additional tools such as Cumulative Impact Assessment (CIA), which later will be touched on. These recently developed tools are more complex compared to EIA and requires high levels of coordination within economic actors.

EIA can be considered technically more simple as its boundaries are only with one project and impact area arising from its development processes, however its usefulness are highly debated. Bass et al. (1995), criticized project-based tool for its limitations in practice. According to the authors, the processes of EIA can hardly go beyond a passive, one-way participation or information sharing. In some cases, authors describe, the technical language used by the conductors of the EIA is limited to completely informing the locals. Eventually, the feedback is rarely considered in order to improve the decision-making processes.

The case of hydropower in Turkey, shows patterns of exclusion in i) *the policy-decision*

level and ii) *at the implementation of the projects*. Related to the first issue, the means of participation to the environmental policies is that how they are selected and towards which goals. The governance must take both economic efficiency, environment and legitimacy into the consideration and balance in a way that all actors' concerns are reflected and involved (Vedeld, 2017). Turkey's policy goal towards *clean energy* usage has taken hydropower as its main interest. In order to reach the goal of reducing greenhouse gas emissions and increasing the share of local resources in energy, Turkish government generated series of legal and economic policy instruments. However, in Turkey both the water resources and energy planning is organized in a way that has strong central bureaucracies and is limited in terms of being open to the civil society (Scheumann, Baumann, et al., 2014). As an example to the latter issue, the case study from Islar (2012) showed that the locals are intentionally neglected in the processes. The locals were informed about the projects after the construction started.

In overall, the Objective 2 focuses in relation to the emerging anti-hydropower movement, firstly the characteristics of participation together with other legitimacy criteria for good governance.

Table 2: Participation Typology and Characteristics. Adapted from (Bass et al., 1995; Pretty, 1995)

Typology	Characteristics
Manipulative Participation	Participation of representatives from official boards however nonelected and without power
Passive Participation	The main decisions are already made and people are informed withaccouncements by project managers and/or administration officers. Information held by professionals.
Participation by Consultation	People are consulted or asked questions. The process does not necessarly influence the decision make and the professionals are not obligated to consider the inputs from people.
Participation for Material Incentive	People contribute with resources (e.g. labour, in return for food, cash, material incentives). Short-term progress, people gain no experience nor skills.
Functional Participation	Interactive and shared decision making, however only after major decisions are made by external agencies. Participation as means to achieve project goals.
Interactive Participation	Joint analysis, development of action plans, strenthening local institutions. Acknowledge participation as a right. Systemic and structured learning in the processes. Locals have a stake in maintaining the practices.

Self-Mobilization	Own initiatives, independent from exteral agencies to change system. They develop contacts for technical advice, control over how resources are used. Governments and NGOs provide framework of support.

CHAPTER 3

Eastern Black Sea, 2017, Own Work

3. Methods

3.1.Research Design

One common approach in qualitative research methods is to develop the theory out of the research processes, which named as grounded theory. The theory takes place as an outcome in the research, not a starting point (Flick, 2015). Due to the limitation of time and experience of the researcher, it is found more appropriate that the way to conduct this research should aim testing the theoretical frameworks and concepts rather than developing one. However, it is not intended to have them as definitive but as a framework that will allow supporting the arguments in the research.

The research conducted in this thesis is based on qualitative methodology design. Two objectives have shaped the data sampling and analysis. The first objective is to lay out a national framework in Turkey on hydropower policies and to describe the governance actors. For this

purpose, secondary data such as relevant official and non-official documents were reviewed and discussed (Chapter 5). The second objective is focused on a case study, and is based on a series of interviews. In addition, secondary data was used to further support and evaluate the arguments of the case study. The sampling of the data was selected as *purposive sampling*. This sampling method can be applied to units of people, organizations and even documents which are directly linked to research questions and objectives (Bryman, 2016, p. 408). Therefore, for all objectives the sampling method served fairly well.

The interviews were conducted as semi-structured and with sampling of each participant representing a category in the governance system. Their point of view signifies their role and how they position themselves in the arguments. Comparing and contrasting the different arguments presented by the respondents gives insight to the complexities of the conflict in terms of social and cultural differences, and may furthermore contribute to a better understanding of the situation. Finally, the research process has come across with limitations that could significantly influence the quality of the research, namely biases and translation in text documents.

3.2. Case Selection

Following the second research objective, the criteria that have determined the case selection was (i) the degree of conflict and (ii) the availability of relevant information. The province of Artvin is located in the Black Sea region of Turkey. Due to its prime hydrological conditions, this area has been subject to a significant number of hydropower development projects, initiated by both public and private actors. Concurrently it is also the area where these projects have met the most opposition by the local communities. This presence of conflict in the region between different actors reveals the practical challenges of hydropower policies.

The second criteria for the selection of the case was the availability of information. The selected participants were involved in a number of different projects within the Artvin region. Therefore selected this region was selected as a case and the aim is to combine the interviews with existing literature, news articles, official documents and social media. By focusing on the Artvin region as a whole, as opposed to specific singular projects, there is a greater availability of relevant data and arguments. In order to enrich the data, I also asked general questions about the topic to the participants, which would reveal more insights for the objective one, such as their role in the governance system. Projects used as examples were selected from the responses,

which locals or experts have given examples to specific issues (e.g. conservation, cumulative effect, and livelihood changes, social and political struggles).

3.3. Data Collection

In order to get an overview of the national framework for Turkish hydropower, a number of official documents were collected on the development and progression of hydropower policies in Turkey. The review of these documents lay the basis for the discussion in Chapter 5. Compared to the interviews, the secondary data is less affected by personal biases and can therefore be used to answer questions related to the political-administrative system, the official rules and the binding policy decisions.

The different types of secondary data were combined, focusing on a smaller sample with higher quality (See Table 3). Firstly, the most important actors were identified, described in laws and regulations in relation to description in the EGS framework. These are also key organizations and institutions that have critical roles in the governance system. The following step is to find relevant official documentation. There have been frequent changes in rules, regulations and structures of institutions and organizations. I aimed to focus on the most relevant and up-to-date changes.

Table 3*: Overview of secondary sources*

Source	Authors/Creators	The Data	Themes
Official Web Sites	Ministries, municipalities, public institutions and organizations	Statistics, Annual Reports, Activity reports, Sector Reports, EU reports, Lists of projects	Energy Water Hydropower (Run-of-river and Large dams) Environmental Impact Assessment Artvin Province
Official Web Sites	Non-governmental Organizations	Reports, Cases, Studies, News articles, Opinion articles	Energy Water Hydropower Rivers The projects in Artvin
Websites and Social Media	Local organizations	News Articles, Opinion articles	Specific cases/projects
Newspapers	National and Local newspapers	News Articles, Opinion articles	Specific cases/projects
Literature	Scholar web search	Academic studies	Hydropower Socio-environmental impacts

The main aim with the interview data was to present arguments related to the case study. The purposive sampling strategy aimed to reach out to people that had experienced, been involved, taken roles or had interests in the hydropower projects in the Artvin province. In addition, the snowballing method (finding new participants through current participants) was later applied to find a greater sample of relevant subjects.

Interviews serve to collect data about perspectives and experiences of different actors of the governance system. Qualitative interviews are generally interested in researching participants' perspectives, opinions, values or experiences (Bryman, 2016, p. 466). The type of interview used in this study was semi-structured. The semi-structured interviews provide opportunity for novel issues to emerge and give space for the respondents to talk freely while also allowing the researcher to catch relevant theoretical or conceptual themes. The interview guide (See in Appendix) was structured concepts related to the governance and legitimacy framework. In addition, some general questions were posed to understand their backgrounds.

All of the interviews were conducted online and recorded using Zoom, due to the travel-restrictions caused by the Covid-19 pandemic. The processing of data was approved by the NSD (See in Appendix). Each participant was handed out the information and consent form before the interviews that were approved by each of them. All interviews were done with camera, however, only voice recording was taken. All participants, with one exception, were in the comfortable environment of their home which had a positive contribution to the interaction, and may have led to more open and honest answers. One interviewee was located in their office, which seemed to affect the participant's answers to some of the more political questions.

Table 4*: Overview of primary sources*

Interview	Tag	Type of Actor	The Role
1	E1	Economic	Engineer. Private company.
2	E2	Economic	Engineer. Worked in Yusufeli dam and other cases. Expertise
3	P1	Political	Engineer. Public institution, expertise in hydropower and EIA.
4	C1	Civil Society	Works in a national NGO. Expertise in conservation, not with hydropower. Did research in the area, worked with locals (conservation related)

5	C2	Civil Society	Spokesmen of an NGO. One of their main objectives is to stop hydropower plants.
6	C3-E	Civil Society	Works in a national NGO. Expertise in hydropower cases. Worked in the area.
7	C4	Civil Society	Journalist. Investigated the majority of the cases with conflicts.
8	L1-E	Civil Society	Local and academician. Expertise in the area, nature conservation and the hydropower cases in the area.
9	L2	Civil Society	Local NGO representative. Their focus is any type of environmental damage and protection of cultural values (e.g. mines, hydropower, stone pits, road constructions)
10	L3	Civil Society	Local from district Yusufeli.
11	L3	Civil Society	Local, works in the municipality of Yusufeli.

3.4. Data Analysis

The data investigated in this paper vary in terms of format and source-category, both of which require different types of analysis methods. For the first objective, the data was used to get an overview of the Turkish hydropower framework in order to provide context to the case study in the Artvin Province. This information was mainly sourced from official reports and academic studies, focusing on factual content as opposed to interpretations and biases. For this reason, the content analysis method was used in order to determine and explore recurring and important themes and concepts. This is often applied with quantitative data however is also found to be useful to apply on documents (Bryman, 2016, p. 562).

The main data of the second objective were the interviews, providing perspectives and local norms essential to understand the sources of conflict within the Artvin case study. For this purpose, taking into account the participants' role and background related to the case study, a narrative analysis was conducted on each interview. In addition, a thematic analysis was performed, looking at the different interviews combined to find recurring ideas and concepts. Although the interviews were mainly used as data for the second objective, it is important to notice that some of the information gathered from the interviews were used to supply the context of the Turkish hydropower development described in objective one. The two objectives

have different focus and concepts however both portray the similar themes. Therefore, coding the interviews were applied with more general categories (See the samples below in Figure 4). In order to not lose the meaning in the original language, the recording transcript kept in original languages and analyzed in the original language. Later, findings were translated and if necessary direct quotations were translated.

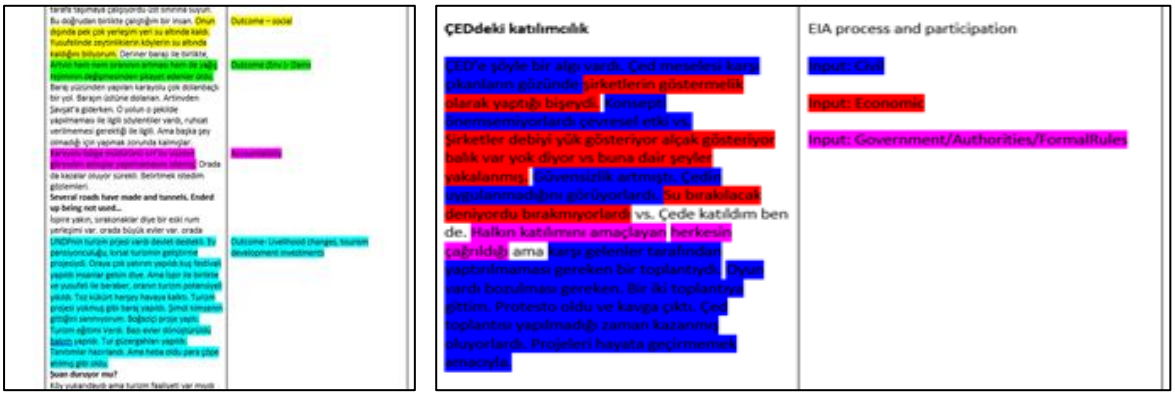

Figure 3*: Left side, transcript from interviews in Turkish. Right side concepts and themes.*

The interviews with different actors have in overall revealed different perspectives and narratives. In definition, the narrative is "*how do people make sense of what happened and to what effect*?"(Bryman, 2016). The approach to analyze interview data was both related to what empirical findings reveal from the study area on emerging issues with the process and the outcome. However, also based on the opinions, different values and conflicting issues were considered. There were particular issues that the research questions have pointed out (concepts) and also from participant's perspectives different "stories" related to these concepts have appeared. Therefore, chapter 6 is structured accordingly. In overall, the analysis for two objectives followed these bullet points and questions below;

Objective 1: *Content analysis* to identify patterns in the data

1. Definitions of roles, rules, actors, responsibilities, aims/intentions/objectives and choices etc.
2. What is the decision and what do they say to justify their arguments?
3. How do different actors describe each other and what are the perspectives?

4. Empirical findings, compare from different actors and institutions (e.g. calculation of electricity, hydropower potential, economic efficiency, environmental outcomes (positive or negative?) How are they described and evidence portrayed?

Objective 2: *Narrative analysis* for critical assessment of the portrayed above outcomes with legitimacy framework

1. Code the patterns, frequently appearing themes/words
2. Find the parts that the concepts of legitimacy are revealed
3. Is there any pattern of how actors define these terms?
4. Look for how issues are defined and which actors are pointed out for the source of the issues

Finally, to combine different data sources, a triangulation method was applied. A document is also in this category however, it is carefully written and often a clear aim and way to pursue the audience (Bryman, 2016, p. 553). In a conversation, one may have the same intentions however it is more spontaneous. Therefore, both may reveal slightly different aspects. In addition, individuals often speak their own mind while a document or report may be collectively made to represent an organization or a group of people. This in another sense is also useful to apply a triangulation method which will cover up the weaknesses of each data.

3.5. Limitations and Evaluation

This research had encountered with few limitations. The secondary data used for the analysis and combined with other sources was another challenge. The main limitations here are with secondary data (news articles, research papers and reports) which are conducted by others and may reveal quality issues (Bryman, 2016, p. 313).

The research was conducted without fieldwork observations due to covid-19 travel restrictions. This limitation made the selection of the case challenging. Time limitation was another challenge mainly for the collection of primary data (interviews). The researcher choose to stop at one point due to limited time left for the analysis. As part of both writing and analysis, language appeared to be an important challenge in two ways i) translation as time consuming ii) interpretation and meanings. Regarding the former, I choose to avoid time-consuming direct translations rather I only focused on important parts in data. The latter issue attempted to be

minimized with footnotes where some terms appeared that needed to be explained by its specific meanings in language.

Moreover, there are essential criteria that should be discussed regarding social research and qualitative methodology. The main quality criteria are reliability, validity, and source dependence. Regarding the reliability, Flick (2015, p. 208) suggest that that the researcher should distinguish between the statements by participants and interpretation by the author. This approach was kept in consideration and applied mainly in Chapter 5. Flick (2015) also suggest that to increase reliability detailed and reflective research process can be applied. Important decisions are justified in previous sections.

The concept of validity have two aspects; internal and external validity. In qualitative research where interviews are applied, one should argue external issues such as the ones appeared during the interaction. The previously mentioned challenging response appeared in one of the interviews (See Section 3.3) can be considered as a validity issue. Regarding the source reliability and trustworthiness, according to (Bryman, 2016, p. 41), it is important to provide context or background of these sources to ensure of the meaning.

CHAPTER 4

Eastern Anatolia, 2018, Own Work.

4. Literature review: Hydropower Development in Turkey

This chapter reviews literature about *hydropower development* in Turkey. The topic of "*Hydropower Development in Turkey*" is extensive. A preliminary research resulted with approximately 350 articles from the research database Web of Science. Table 1 summarize which key words were used. The criteria to refine them was i) being cited and timely ii) adds up to the knowledge iii) clear research questions iv) critical thinking. While reviewing, following questions were as of important; i) what are the authors' debating about hydropower and how the debate has changes? ii) what concepts used and defined? iii) what are the problems addressed iv) what suggestions are made?

The selected articles covers the same topic with different approaches and concepts. The literature review here is outlined as thematically and includes comparison of these approaches, concepts and significant findings. Consequently, the gap and debates overarching from the literature will be used as the base for this thesis. In addition, the chronology appeared to be important, in order to identify what changes in debates and knowledge over time have occurred which could be important to support the findings in the next chapter.

Table 5: *Key words used in literature review research.*

	Research Domain			
1	Hydropower	Turkey		
2	//	//	Sustainability	
3	//	//	Development	
4	//	//	Participation	
5	//	//	Governance	↑ OR ↓
6	//	//	International Standards	
7	//	//	R:black sea	
8	Water energy nexus	Turkey	-	
		←AND →		

4.1. Sustainable Development and Hydropower: From dams to run-of-river

From the beginning of the 2000s, while the energy demand increased rapidly, a search for resources to meet the need began. In particular, as a renewable energy policy, a domestic and abundant resource, hydroelectricity was found to be beneficial. It was preferred as the leading development tool of government policy due to its economic feasibility. The scholars, though, slightly differentiate this justification, where few emphasize an economic point of view. Others stress the health and environmental cost of non-renewables, referring to increasing emissions of the energy sector.

Ediger and Kentel (1999) argued that fossil fuel is highly associated with environmental and health concerns, resulting in high economic losses. As an alternative solution, they overview the renewable potentials. The authors do not find the renewables technically and economically feasible. However, a step-wise combined use was found to be applicable for future policy implications. Here, it may be possible to deduce the starting point of debates over renewables options where hydropower came out as the most feasible among them.

As the large dams can supply the high electricity demand, the early 2000s promote the advantages of large dams. In addition, the other water usage benefits of large dams draw attention. Kaygusuz (2002) emphasize Turkey's high potential and the regional development plans urgently needed to build dams. For instance, he portrays possible development benefits of dams developed under Southeastern Anatolia Project. The region development project

consist of irrigation and electricity production from dams. The supportive arguments for large dams continue with emphasize on their development benefits.

Later, in line with global debates, concerns have increased over the social and environmental impacts of large dams. Around 2005, there is a growing interest in promoting small-scale or run-of-river type hydropower plants, which can compensate for the irreversible damages and controversies (Balat, 2007; Demirbas, 2002; Kaygusuz, 2002). In addition, this argument is also supported by the technical potential of Turkish rivers, where there are high steeps and fast-flowing natural resources. Hence, it is an opportunity for the energy sector to utilize this economic potential with small-scale projects. A renewable energy review study, Demirbas (2002) emphasizes the development benefits of large dams. However, he suggested that small-scale projects should be developed to compensate for the impacts of large dams. Furthermore, he argues the general advantages, however, with limited empirical inputs. Similar claims appear in few other articles as well (Balat, 2007; I. Yuksel, 2007). A common trend among the scholars is to highlight empirical inputs related to technical and economic feasibility analysis. However, comparative advantages for environmental and social advantages are portrayed rather general without empirical inputs.

In later years, the concerns over run-of-river projects are increasing among scholars. Yüksek and Kaygusuz (2006), in general, showed supportive arguments. However, the authors also emphasize the possible adverse side effects of these projects. They stimulate careful planning and land selection, commitment to regulatory and license processes, providing the water for ecological needs, and ensure fish migrations. Likewise, Erdogdu (2011) argued the necessity and comparative advantage of hydropower development far ahead of fossil fuel resources. However, the author also pointed the environmental concerns related to hydropower which can significantly impact ecosystems if not planned carefully. Bakis and Demirbas (2004) provide insights for the "small vs. large" debate and draw attention to the cumulative effect discussion. They exemplified a study from the United States which proved that multiple small-scale projects exceeding the impacts of one large dam. However, the modes or types of small-scale hydropower may define the significance of the cumulative impacts. Therefore, it is not implicitly possible to define such a relationship; instead, one should consider the spatial links and technological variables. In addition to this comparison, the author highlights the impacts of the large dam as being more acknowledged. The critical takeaway here is that the correlation between the energy production capacity of hydropower and the impacts are not necessarily interrelated. In other words, it is not possible to draw a trend between production capacity and

ecological impacts. Thus, the impacted area's spatial location and ecological values are the most important criteria to assess the actual outcomes of a hydropower project.

Kentel and Alp (2013) discussed similar energy power plants' challenges with a different approach. Maximizing the renewable energy potential of rivers while sustaining the natural resources came out as the most significant challenge. The article emphasizes concerns over social and environmental issues at the local level. Unlike other studies, the authors detailed the issues within hydropower during operation and construction phases. They recommend tools such as Integrated Watershed Management (IWM), Cumulative Impact Assessment (CIA) and Strategic Environmental Assessment (SEA) approaches. In addition, the grid energy loss was found to be concerning. Efficiency measures are as necessary as the utilization of small-scale projects.

The concluding remark is that even though there have been changes in rules and regulations, environmental and social consequences are not evaluated in the planning and decision-making processes. Thus, a collective effort is needed where all stakeholders can take part in decision-making. The tools recommended here are also part of the integration process to the European Union. Thus, environmental and social criteria that need to be explicitly applied for natural resource management is appeared to become a challenge for the country.

As the projects continue to be constructed rapidly, the concerns have grown specifically within the experts in the field of water management share a consensus over the impacts of small scale hydropower plants. A survey research have exemplified concerns about hydropower development in Turkey among experts (Kurdoglu, 2016). The findings showed that experts have a consensus over environmental impacts and specifically the water released from the power plants, also known as compensation water. Another important issue came out as evaluation of EIA reports which are weakly operating in practice. Thus, we can identify the environmental impacts are overarching. Another empirical study, focused on a case from Ceyhan River, monitored environmental impacts of small scale projects in more details (Alp, Akyüz, & Kucukali, 2020). They use an integrated method "ecological impact scorecard of small hydropower plants in operation". The results showed significant impacts where the conditions for hydropeaking, downstream fish passage and sediment management are key variables: *"Hydropower (SHP) plants interrupt river continuity, fish migration, and change downstream flow regime during operation."*

In conclusion, the meaning of sustainable development within the hydropower implications have changed over time among scholars. The earlier studies showed that as a technology itself hydropower is beneficial enough to support development with sustainable manners. However, as the gap between legal framework and practices in local level occurred, the meaning of sustainability has changed. Furthermore, these discussions seems to be effective in the governance system, as parallel to these discussions it is possible to identify similar changes in rules and regulations. These changes furthermore will be discussed. Before that, another important side of the discussion is overarching; the international standards and Turkey's institutional changes.

4.2. Influence of European policies and other International Standards

After liberalization of the energy markets, the Turkish hydropower policies have opened up to international actors. Another influencing variable is the EU candidacy processes which significantly affected the management of environmental resource management. This influence is not only visible in the changes of rules and regulations but also with involvement with investments of international actors, specifically in dam development.

Scheumann, Neubert, and Kipping (2008) examines the changes in environmental and resettlement policies. EU influence was analyzed within different dam projects under different political and economic circumstances, legal changes and practices. The results showed that there has been moderate changes towards international standards. As an example to these moves, changes in Environmental Impact Assessment processes were given. However, the authors concluded the changes as inefficient in overall decision making despite the fact that the rearrangement in regulation opened the EIA process to civil society. The main limitations were expropriation law changes and legally legitimized exemptions of few large dam projects from EIA requirements. In sum, even though efforts made to make the rules and regulations in line with European policies and to achieve better standards, the other changes in regulations perceived as obstacles to achieve the objectives in practice. Notably, these changes appeared to be important to discuss further in the analysis of governance system.

Another study, Scheumann, Hensengerth, and Choudhury (2014) aims to explore "*norm diffusion and contestation"* in dam policies of emerging economies. The World Commission of Dams report was taken as an extreme event that influenced policies all around the globe, however, the influence in practice varies. Their findings showed that in Turkey, the non-binding WCD report did not make significant changes while international funders and EU membership

processes has been more influential in terms of motivating the actions. However, there has been few changes in decisions that made the authors interpret the actions as being highly political.

The study exemplifies two key events on this matter; i) the law change in 2010 that allows hydropower construction in protected areas and more attempt to expend property rights ii) two large dam constructed with consortium of international funders (Scheumann, Hensengerth, et al., 2014). The first event, linked as being a response to European Union which have slowed down the negotiations. The second event, ended up withdrawal of funders which later continued with domestic funders and the project was constructed. Finally, the authors concluded that these international norms could be understood as democratization of the processes which is a motivation for only a group of elites. Central governments may tend to follow recommendations best serving for national interests, while the local level interests could be overlooked.

In this case, authors emphasize that Turkey follows low-carbon transition while ignoring other environmental protection issues and local rights. Finally, how they describe the governance system of hydropower/dams is a key point which later could be useful in the analysis: "*The political-administrative system in Turkey where dam-related water resources and energy planning is highly centralized and organized along sectoral lines with strong central bureaucracies, does not (want to) open to civil society and/or locally elected representatives."* In other words, international norms and standards such as WCD report and World Bank guidelines has been influential in Turkish hydropower policies, however had limitations within political and administrative systems. Additionally, similar discussions have occurred within the small scale hydropower researches. Kucukali and Baris (2009) compared the EU policy perspectives, though related to small-hydropower policies. The findings are similar to previous studies, emphasizing EU membership as a source of motivation. The study concludes that these changes are still far from achieving EU standards, specifically referring to environmental impact assessment and fish passage regulations. The author suggests changes in rules and regulations and "*more effort should be spent on monitoring and auditing of the facilities."*

In conclusion, towards better standards for hydropower and water management in Turkey, previous studies identified inefficient institutions and issues in distribution of responsibilities, despite the efforts to change in law, rules and regulations. The significant point here is that in the governance system, this distribution can function well if the roles are internalized by various actors, in other meanings if well motivated.

4.3. The critique of privatization and Social Mobilizations

The hydropower debate has been at the center of the country's agenda within national media, parliament and societal organizations. The debate has concurrently appeared among social science researchers. Researches choose to focus on the social mobilizations from rural areas where the voices have been raised. The local communities frequently started to protest the projects, applied to the court to cancel the projects and formed platforms or organizations against environmentally damaging projects in their districts. The scholar studied these social mobilizations in relation to energy policies and privatization, technocratic water management, social and environmental justice, participation and socio-political aspects, and identity. The authors adopt approaches such as critical discourse analysis, conceptualization/framing and political ecology.

Islar (2012) aims to evaluate similar challenges however with a critical approach towards small scale hydropower development. The study emphasize the growing social mobilization, aims to discover what are the main drivers. In addition to understanding social and environmental issues generated by hydropower projects in local level, this articles opens space to politics of water management debate. The author pointed out several legal changes as a proof that the private sector is favored in hydropower policies: "*The ambiguous EIA processes, renewable energy laws allowing construction on reserved and protected areas and urgent expropriation decisions are illustrations of how the legal rights are negotiated in a way that favors private interest."* In addition, the differences in discourses occurred between different actors. She describes two edge discourses between promoters of hydropower and anti-movements as: *"Modernization combined with neo-liberalism constitutes the powerful discourse guiding and legitimating the Turkish state's development policies and regulations."* and counter movements "*the alternative discourses of 'legitimate' by emphasizing the marginalized and the socially, politically and legally excluded."* A key point from this article is the gap in discourses and also different perceptions within the governance system which are shaped with different values, interests and motivations.

A sustainability framework study, which has stronger inputs to discuss these challenges. Konak and Sungu-Eryilmaz (2016) takes the discussion by analyzing obstacles behind the conflicts and fractionated the topic intro three aspects; *resource, development and property* rights. The study mapped out the gaps between valuations of environment which different actors define in various ways under these themes. The meaning of *resources* came out as an economic

resource in government's framing where within locals' framing as an ecological entity. The meaning of *development* represents employment and income for the government. For the locals, meaning differs in long term with existing values such as livelihoods, culture and living conditions. Lastly, *property* conflict is divided into two sides; *public interests vs privatization.* From government point of view, privatization and liberalization of energy market is necessary in order to develop the projects. However, locals perceive these attempts as a threat and loss of public use and rights over natural resources.

Kibaroglu and Sayan (2016) explores small-scale hydropower development through distributive environmental justice. They interpret the findings as the changes in hydropower policies are highly influenced by external actors (e.g. international financial institutions, the EU, Kyoto protocol). As a result, these forces have "*altered the power relations"* where they refer to the local level struggles. Their analysis of a small scale project case has showed an illustration of this power relation dynamic, between decision makers and civil society: "*state-private sector alliance circumventing and excluding existing beneficiaries (i.e. locals and the environment)."* Finally, it is advised to the policy makers to face the dual meanings of environmental resources within the society if they intend to allocate the benefits and costs with an equity manner. Another study aims to integrate non-human into the concept of energy injustices and the relationship between energy decisions, landscape change and grassroots activism (R.C. Sayan, 2019) The author define this relationship as "*Such constructions are widely intertwined with social, economic and environmental inequalities such as loss of habitats, deforestation, limitations to access to water, loss of agricultural land and touristic areas and limitations on recreational activities of locals and public opposition."* Hence, similar issues of justices are highlighted within the local level implications.

In a later study, Kibaroglu and Sayan (2016) asks the question "*why local communities perceive it* [processes of small-scale hydropower projects] *as non-transparent and non-democratic?"*. Their case study shows patterns of non-participatory approach which they refer as "*non-inclusive HEPP process*". The authors interpret the findings as sourced from "*modernist legacies of nationalism and developmentalism"* which also embedded in the politics. They refer to legal system which also analyzed in the study and find that the legal framework is sufficiently exist within EIA laws in terms of promoting participation. They refer this mismatching, the law vs practice, as a "*malfunction of the meaningful participation".* The case study focuses on south-west region hydropower processes. They examine the processes and the participation of locals which they demand conditions of meaningful participation. The

authors conceptualize this as "*not necessarily centered on deliberative democracy or the principles of the Aarhus Convention".* Instead, they define the meaningful participation through the narratives of locals and/or within the legal framework. The results showed that even though the legal framework provides the base by EIA laws, the modernist approach of decision-makers block this key element of sustainable development. Their analysis showed the reason behind this approach is the public officials sees hydropower processes as a technical water management issue that only government institutions can handle and provide the best solution. These decision-makers and evaluating designers of projects, also indicate what is provided by EIA laws has to be carried out by the energy companies not the public officials. Thus, there is a divergent view as to whom should be responsible for weakly planned projects.

The case study from the Black Sea region aims to understand the relation between non-human and human concepts within socio-ecological justice (Yaka, 2020). She describe the social mobilizations; *"Organizing village meetings and inviting academics (environmental and electrical engineers, sociologists and economists) who support the cause has been a very effective tool to inform local communities and equip them with scientific knowledge in their struggle against state-backed private companies."* A concluding remark from this case study is that the justice framework is not only meaningful in a sense that how environmental costs and benefits are distributed but also the right of humans co-existing within the environment. The highlighted issue of justice here is helpful to furthermore support the understanding the cases from the same region which is examined in Chapter 6.

Finally, a case study from Eastern Black Sea region looked more in depth of social mobilization and their motivations, criticizing the overlooked aspects of the mobilization which commonly referred to an ecological movement (Kavak, 2021). The social mobilization in rural regions against hydropower projects are seemed to be fragmented. The author highlighted the complexity of groups and their agendas. The social context is highly critical and may be evident to differentiate the motivations behind the environmental activism. A key takeaway here is the relationship between the forms of livelihood (or class position) and political mobilization against hydropower. Thus, it is important to pay attention to different motives exist within civil society; which can represent political ambitions (e.g. being against the government party), livelihood threats and/or forms of environmentalism. Knudsen (2016) also emphasize the identity issues within these mobilizations. He argues that within the environmental activism, the agenda rarely becomes environmental issue based action despite the claims of activists which frequently referred to being above politics and a people's movement. Thus, one should

keep in mind that the context of environmental activism in Turkey is highly related to ideologies, identities and even party politics. These two studies pointing out different contextual motives of environmental activism in Turkey becomes useful to inform furthermore in the next chapters, where it can be helpful to differentiate the conflicting discourses in governance system and if a collective choice based decision can be achieved.

4.4. Significance of this research

Following the time scaled literature review, it is possible to identify the knowledge accumulation as follows:

1- Rapidly growth in economy lead to energy demand increase.
2- Environmental and public health concerns in addition to economic issues of fossil fuel resources resulted with the need for alternative resource utilization: hydropower.
3- Hydropower found to be highly beneficial as being a cheaper, more reliable and flexible solution in addition with low emissions, hence became the possible best alternative.
4- The policy objectives towards increasing the exploitation of high hydropower potential was possible with market instruments; liberalization of energy markets with incentives to attract the investors.
5- Consequently, to regulate the markets and balance the policy outcomes, planning and correct environmental regulations are required.
6- There has been attempts to regulate and enhance the environmental concerns related to hydropower projects.
7- However, the governance system in Turkey has been identified as having top-down approach and strong bureaucratic roots. Hence, a gap between practices in local level and decision-making national level has occurred.
8- The strong opposition from civil society had emerged. Currently, locals are facing with administrates and energy sectors where they are in search for justice and questioning the legitimacy of development prospects of energy-water nexus: hydropower.

Following the most recent debates, in this thesis it is aimed to analyze the conflicting issue of hydropower in relation to the river resource management with the approach of environmental governance. The theory informs that the sustainable natural resource management could be possible with the coordination of actors which have various motivations, values and interests. The literature presented here lays out the issues and hence, useful to identify the problems where this research could come in to contribute with debates.

The theories of environmental governance comes in use to identify the underlined issues of socio-ecological systems. In parallel to what has been described in literature, it is possible to identify frequent changes within rules and regulations. The literature review showed strong influence from EU and international standards, these changes will be put under scope in order to find out the related outcomes with these changes (e.g. an adaptation from EU regulations may not necessarily result with the same objectives). Later to define the legitimacy framework, series of cases will be assessed through the narrative and discourse of various actor; including civil society actors, politicians, decision makers and international agencies. The province of Artvin and hydropower projects have been controversial both with large dams and run-of-river cases. It is crucial here to emphasize that this study will not choose to separate the focus within two types of power plants, as in literature it is the most common approach. A comparison of both projects would provide more insights into current debates. The EGS framework also provides the link between "technology and infrastructure" and other structures of the system which may lead to identifying significant effects on the outcomes, depending on the preferences and availability of technology.

In conclusion, the literature have signified the importance of perspectives over resource management and how these can generate conflicting issues in practice. To put in simple, the energy production competes with other interest to use rivers or protect them and could be concern of various actors. The activities, in this case energy production, may interfere or result with unexpected outcomes. This research, furthermore will focus on expanding the understanding of this particular issue of gap between rules of law and practices in relation to the interaction patterns of various actors. Hence, later may stimulate possible solutions in policy making. In addition, a discussion of different narratives of key actors will follow as these can represent the overall shaping of governance system towards its goals and objectives.

CHAPTER 5

Southern Turkey, Seyhan River, 2016. Own work.

5. Objective 1 - Environmental Governance Model for water and hydropower development in Turkey

This chapter applies the EGS framework and concepts. The presentation do depend on the thematic content of data which are primarily official documents and reports published. The thematic analysis is applied in order to identify patterns and connect to the broader topic of hydropower and environmental governance. The focus in this chapter will be mainly on energy policies while whenever possible water related aspects are also examined. In 2005, the law amendment for renewable energy in Turkey was established which developed an incentive mechanism and defined principles and rules regarding renewable energy resources. In parallel with the privatization of the energy markets, the share of the private sector has increased. Towards the 2023 goals, this past year half of the techno-economic potential of hydropower capacity has been achieved. Meanwhile, socio-economic and environmental concerns have emerged at the local level and various civil society actors and organizations established campaigns, studies and meetings in order to demand better standards and the inclusion of locals

into the process. Following sections will look into the most up-to-date structures and rules while also looking into important changes.

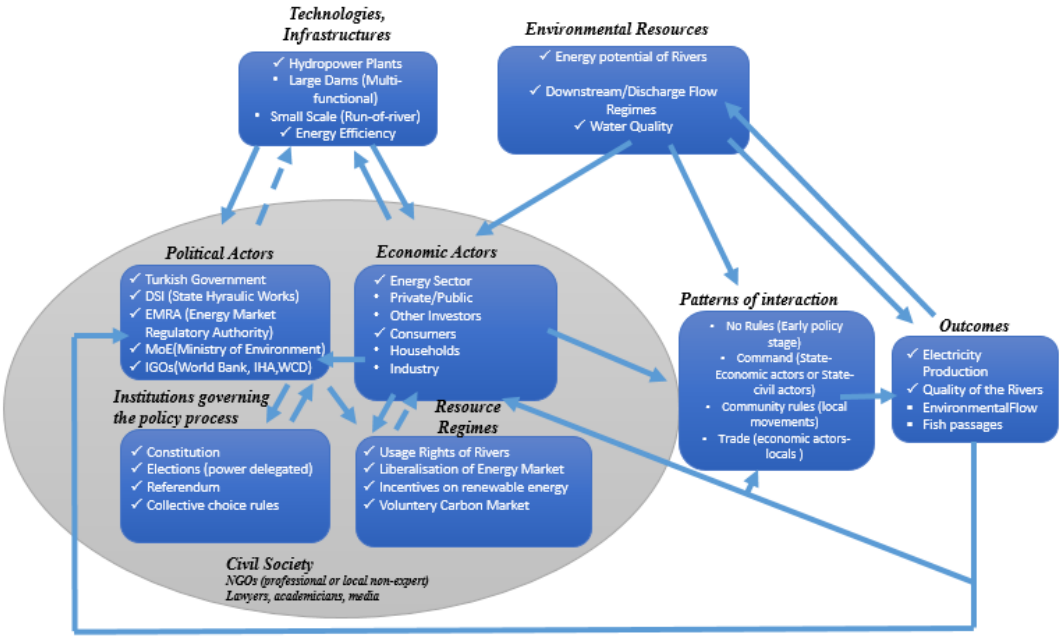

Figure 4: Environmental Governance Systems Model applied to hydropower development in Turkey, adapted from Vatn (2015).

5.1. Environmental Resources and Processes/Resource Attributes

The attributes of rivers as environmental resources can influence the outcomes significantly. Vatn (2015) describes three ways i) the choice of resource regime ii) actions of economic actors and iii) the pattern of interaction. What is referred in this section with resource attribute are the flow regimes, the water cycle and status of rivers.

The annual average rainfall in Turkey is approximately 574 mm, corresponding to an average of 450 billion m^3 of water per year (DSI, 2020). The surface water techno-economic potential is found to be 94 billion m^3 per year. Considering the availability of water, Turkey is not considered under category of a water rich country. The previous year, available water per capita was calculated as 1350 m^3 (Turkish Water Institute, 2021). It is predicted that with the population increase available water per capita will drop to 1240 m^3 yearly. The future challenge is not only population and economic growth as a stress factor but also under the risk of climate change. Therefore, careful and sustainable management of water resources are vital for both the growing population and under stress ecosystems. The water resources (surface and groundwater) in Turkey are used for three main anthropogenic activities; irrigation (%74),

drinking water (%13) and industry (%13) (Ministry of Development, 2018). In total, almost half of the water available is being used for these activities. The purpose of energy is not included, as the activity does not directly consume the water. Therefore, the prioritized objectives of national water policy focus on water resource degradation problems such as intakes, usage rates and pollution.

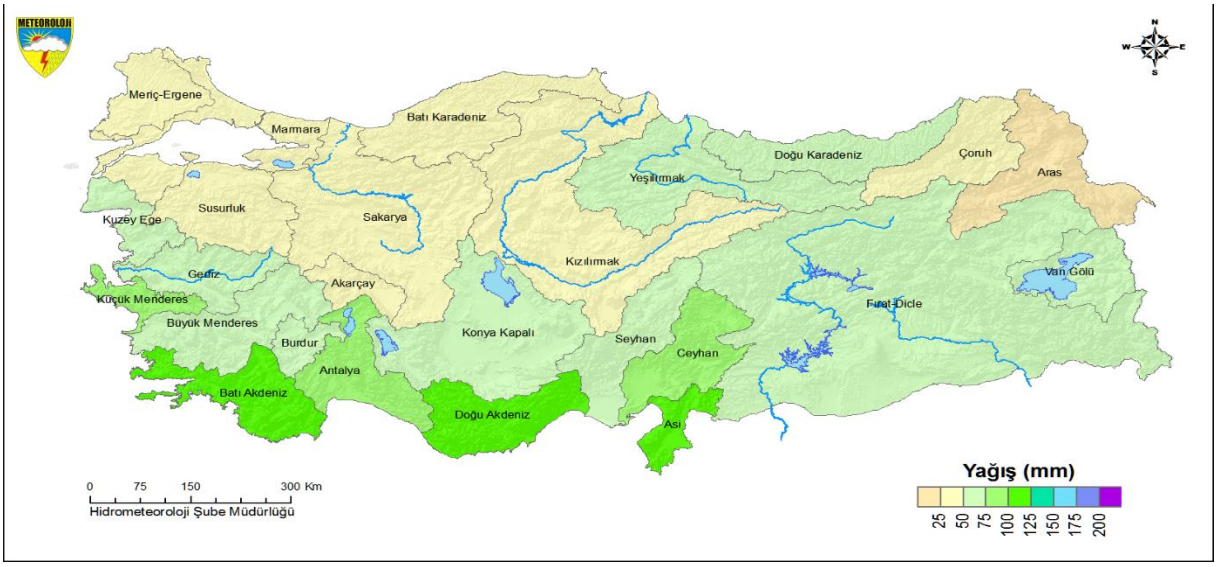

Figure 5: *25 River basins and areal precipitation. Source(MGM, 2021)*

There are 25 river basins, and are mainly sourced from within the borders (See Figure 6). The flow rates and flow regimes vary with seasons and within regions. The water policies are shaped mainly by physical conditions such as precipitation regimes. Different climate types occur depending on the geographical diversity. While the Black Sea and the Mediterranean are regions with high precipitation levels, Eastern Anatolia and Central Anatolia have low precipitation. In other words, water distribution along the river basins is unevenly distributed. When compared to population, the distribution creates a challenge for water management systems. For instance, %28 of the population located around the Marmara river basin (See Figure 6) which only carries %4 of the total water flow (DSI, 2019). In terms of hydroelectric potential, by percentage most significant shares are from the least populated areas.

Following the resource potentials, the theoretically calculated value corresponds to an energy production potential of 433 billion kWh/year which represents the gross potential of hydro-geographical conditions. Half of this potential is assumed technically achievable. When economic, social and environmental constraints are taken into consideration, the number is reduced to 180 billion kWh/year. By the end of 2020, the total installed capacity of hydropower

plants was 31.391 MW and yearly electricity production was reported as 108 billion kWh/year. (DSI, 2020; Yılmaz, 2018). It is estimated that the maximum potential will be put in use after 2023.

Evaluating the resource availability and attributes of river resources in Turkey, we can summarize the influence for all three definitions, mainly the resource regime and actions of economic actors. The water-energy policy domain mainly prioritizes public needs and economic growth where the objective of hydropower policies is to utilize resources for its maximum capacity. In other words, to complete the construction of energy facilities that would be ready to produce electricity whenever needed. Examples from developed countries emphasized with their hydroelectric potential almost completely utilized (DSI, 2020). The value of rivers therefore are based on their energy production capacity with economic and technical constraints which eventually defines so called *"maximum capacity"*. This target in relation with the resource attributes highly influence the interaction patterns. Especially in dry seasons and dryer areas the changes in flows can be associated with the local level conflicts.

5.2. Technologies and Infrastructure: Dams and Run-of-river Hydropower

Perhaps one of the most advantageous forms of structures used to manage water resources is hydroelectric power plants. The diverse structural characteristics such as reservoirs, regulators, energy generators, energy storage, diverting channels have made hydropower beneficial development tools. In Turkey, these structures are frequently in use. Moreover, due to the geographical conditions hydropower plants and especially dams hold significant position in development strategies.

Strategic plan for the country is to prioritize the economic growth as well as utilize the water resources to be used in economic activities. State holds the right for control, usage, management and distribution of benefits from these economic activities. Therefore, political actors assert great influence on the choices of technology. The main justification for this choice is hydropower as being economically sound and corresponds to lower risk for the country (domestic resource). Compared to other options such as coal and gas power, which are the current dominating sources in energy production, hydropower is considered as much more beneficial choice. The transition in energy system is however not only limited to investments in hydropower but also local coal fuel power plants, nuclear, solar and wind power. Therefore, the Turkish energy policy's main interest is to utilize domestic/local resources.

More specifically with hydropower technologies, the structures and/or type of power plants have significant influence. The prominent choice is between dams and run-of-river hydropower. Simply put, the structures can be with or without reservoirs. The installed capacities (in MW) are also considered as a categorization however it is a site specific and design choice. Some valleys are more suitable for large dams while others are exploitable for channel or run-of-river types. While large dams provide energy and irrigation benefits, run-of-river (sometimes referred to channel type) is only used for electricity production.

As an energy production technology, hydropower provides flexibility and reliability to the energy system. The potential should be evaluated economically so that it will be ready for use, considering the increase in demand due to both population and economic growth and external dependency (Koç, 2014). This view dominated and efforts are being made to quickly and in any way commission of the hydroelectric power plants. The theoretical potential is indeed not possible to reach and there are constraints. However, economic and technical potential is usually seen as a "sound" target.

5.3. Hydropower Policies: The Objectives and Goals

The environmental governance system defines a set of goals and objectives towards achieving economical and environmentally sound outcomes. However, the policies applied within a system may or may not achieve expected results. In addition, outcomes may be perceived differently by various actors that have roles in this system. In order to understand these dynamics, we should first look into the defined objectives and goals by the policy makers.

The Ministry of Energy plays a significant role in determining energy targets and practices. Various plan and strategy reports have been published over the years. The Supply Security Strategy document, published in 2009, was approved by High Planning Council (2009). This document is also used as a basis in the plans and strategy reports prepared by other institutions. Therefore, this source is the starting point in our definition of goals. In the following years, details on this primary target were added to the plans prepared by the Ministry of Energy. At this point, three reports were found to be significant for comparison.

The first is the renewable energy action plan, prepared in line with the European Union accession process. The second and third are the ministries' strategy plans from 2010-2014 and 2019-2023 periods (Ministry of Energy and Natural Resources, 2010, 2018). Finally, two

examples from other institutions, which have an important role in using natural resources, examine how the same goals are stated.

It is predicted that the national energy demand in Turkey will increase above the global average (High Planning Council, 2009). Thus, there is an emerging need for more investments. It is argued that privatization would decrease the energy sector's marginal costs and the energy demand. Moreover, developing the grid lines for electricity trade with neighboring countries was also put on the agenda (e.g. Europe transmission lines). The law amendment established in 2001 was an important step towards establishing a competitive and liberalized electricity market with restructured public institutions and novel market rules. In overall, the main objective of the decision was to secure the electricity supply and reflect the consumers' gains.

The course of action was listed regarding which resources shall be used. The prioritized objective is to use domestic resources. For renewable energy, a minimum of 30% of the total electricity production share was set by 2023. However, this target can be modified in case of technological, market, and resource potential changes. The long-term work should be based on utilizing the total technical and economic potential of hydroelectricity. The document does not include any other specific constraints related to ecosystems or climate. However, we can interpret the allowance for modification would open space for negotiations between various ministries governing the natural resources.

The renewable energy action plan was prepared in collaboration with European institutions, following the EU directive 2009/28/EC (Ministry of Energy and Natural Resources, 2014). The main motivation was stated as follows; "*Turkey, as a candidate country, has prepared this action plan in order to show its commitment to these renewable energy goals and the EU accession target."* Thus, it should be noted that this is a clear objective for the energy goals. More specifically with hydropower, the target was stated as "quite ambitious" referring to the 34000 MW installed capacity. Along the way to achieve this target financial obstacles were noted. The incentive price given to the investors was found to be lower than market prices, which could not attract the private investors. Thus, changes were advised. The strategy of policies are summarized as;

- the hydropower potential evaluated at maximum potential and private sector will contribute greatly to the national economy
- hydropower projects will be taken into consideration in relation to prioritized river basin needs

- the economic analysis must consider today's economic conditions.

Similar to the previous document, the official strategy plans from 2010-2014 period stated the targets first to maximize hydropower production, secondly to consider a basin approach (Ministry of Energy and Natural Resources, 2010). In the latest energy strategy report differently, the ambitious statements are replaced with more precise and sound targets. Specifically for hydropower, the installed capacity is slightly lower. The overall goal is to increase the total renewable energy installed capacity from %59 to %65. The goal, regarding hydropower, is to achieve cumulative installed capacity (MW) of 29.748, 31.148, 31.688 and 32.037 respectively for the years 2019-2023, starting from 28.291 MW, to be reported every six months. This target is slightly below the 2009 target (34000 MW). In addition, utilizing national coal reserves and strategies towards accelerating natural gas and petrol searches were prioritized. There are also energy efficiency goals, however, with a second level prioritization.

Another interesting point from the official targets is how renewables are put together with coal power plants, corresponds to one fourth of the 2023 goals (Ministry of Energy and Natural Resources, 2018). It is understood once again, the prioritization is strongly with national resource utilization. Once question to pose here if the emissions from coal power plants or climate change concerns take place within these strategies. There are no specific targets put for emissions from the energy sector. However, it is noted that other strategy plans such as climate change adaptation plans were also taken into consideration.

When we look at the cited climate change report, the emphasis is on economic growth while following the specified targets. There is a strong emphasis on the position of Turkey in climate change agreements; "*Turkey plans to limit its emissions by taking measures in a way that will not adversely affect its sustainable development and efforts to fight poverty*." There are no reference emissions as it is considered that Turkey is under the category of middle income developing countries. As an external opinion, International Energy Agency (2016) acknowledged significant improvements with renewable energy however the national coal fired power plant investments and searching for oil and gas reserves found to be concerning in terms of emission levels.

Turkey officially became a signatory to the Kyoto protocol in 2009. Ministry of Environment and Urbanisation (2011), The climate change action plan (2011-2023) set targets for the energy sector as to i) decrease energy intensity ii) increase usage and production for

clean energy iii) limit greenhouse gas emissions from coal power plants by increasing efficiency and using clean coal technology iv) decrease the grid losses and leaks (%8). Following the second goal, hydropower projects were distinctively emphasized on its constraints; "*Assessment of the entire technical and economic potential of hydroelectric energy based on river basin capacities, taking into account economic, environmental and social conditions".*

The ambitious goals indicate great interest in increasing renewable energy usage. However, Turkey has prioritized interest in economic growth, thus in the overall energy goals are overweighed with economic efficiency. Therefore, nuclear and national coal reserves are included. In sum, insights from different documents of various government organizations stated similar targets (in numbers), however, with different emphasis on context and terms/conditions. For instance, while the interest is maximum energy production for the energy ministry, other ministries had added conditions of river basins. It is essential to highlight the term used "*maximum capacity".* Even though environmental and social constraints are included in the definition, compared to the targets from different years, a significant change does not occur considering optimization. Moreover, it is possible to identify another motivation for the same objectives to follow European Union trends. In other words, be part of the trading network in the European Union and comply with renewable energy targets of the EU.

5.4. Actors, Roles and Goals/Motivations

We have now looked at policies and their objectives which showed slightly different interests of policy makers. Now, we move on to see how different actors whom are directly or indirectly effected by these policies or have interests. Moreover, how they position themselves and take place in governance system and management of water. This section will present three main groups of actors (See Table 1) that take roles in the governance system; economic, political and civil society actors which are categorized based on their roles. Overall, we can define them as i) the economic actors which are the energy facilities ii) political actors which have the power to make decisions over resource use and interaction rules iii) civil society which ensures democratic legitimacy of political actors. According to Vatn (2015, p. 144) economic actors can be both private and state based, political actors can be both local level and national, civil society actors can be NGOs and other non-organized set of citizens based on interests and will.

When examining the actors, the definitions or attained roles are first described as in laws, regulations and formal rules. In other words, how their roles and responsibilities are attained. In addition, I will provide few important insights from the interviews and how different actors described their roles in "*the use, management and protection of environmental resources and processes." (Vatn, 2015).* This was helpful to understand especially how civil society organize themselves since these are not based on formal rules and mostly not defined clearly.

Table 1: *Main groups in hydropower processes, interaction groups.*

Political actors	**Economic actors**	**Civil society**
Government (Parliament and President)	Private sector	Local people/communities who are affected from projects
National authorities (Ministries)	Public sector	Local NGOs (organized with certain objectives such as opposing to hydropower projects and privatization)
Local Authorities (ministries)	Creditors/Funders	Other NGOs, mainly environmental protection objectives.
Local Authorities (municipalities, governors and village elected leaders)		Media
		Academics
		Experts (e.g. conservation experts, engineers)

5.4.1. Economic Actors

The scope of economic activities have two sides; producers and consumers, and who are strongly linked. If there is no demand, there won't be any need to supply the product. The product here is energy/electricity, hence it is slightly more complex within its own system. The energy plant operators are not the only economic actors but also distributors and transmitters. The electricity generating facilities are both under private and public management. As the public entity, DSI (State Hydraulic Works) is the main hydropower constructor and operator. Over the years, there has been significant change with the dominating actors in the electricity sector, from public to private after the reforms applied to the energy sector in order to increase the privatization and the total investments (See Figure 7). The private sector's major investments are run-of-river type power plants while the main public economic actor DSI has

invested in large dams. These projects are listed according to their ownership. However, we cannot simply distinguish the actors based on ownership. Both sectors have built projects also cooperatively, in other words through private-public partnership. For instance, to facilitate and secure the investment costs for the dam projects DSI preferred to use the Borrow-Operate-Transfer (BOT) model (DSI, 2019). They strategized to adopt a new finance model referring to the uncertainties such as insufficient payments and delays. Since the privatization, the share of private sector in electricity market increased. Today, the public sector does not dominate the market.

In addition, there is an incentive establishment that is given to the private sector which invested in channel/run-of-river type or that has reservoirs less than 15 km^2 for the years 2005-2020 (Law on the Use of Renewable Energy Resources for Electricity Generation, 2005). This market instrument is called Renewable Energy Sources Support Mechanism (RESSUM). In 2019, among 777 renewable energy power plants 465 was hydropower which receives 7,3 USD per kWh produced (EPDK, 2021).

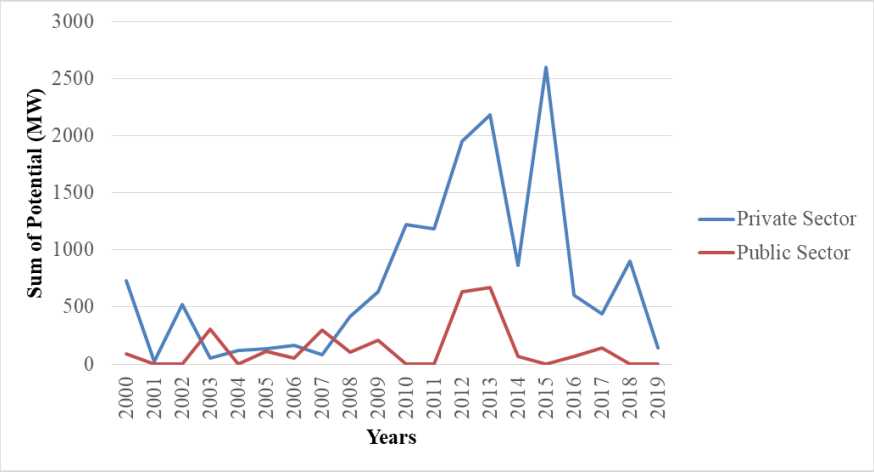

Figure 6: Hydropower plants, sum of installed capacities 2000-2019, for private and public sectors. Own Work. Source: Data retrieved from (DSI, 2019)

The goals and motivations of public and private sectors may differ. Generally, the private sector is referred to as prioritizing mainly profit making. This prioritization may disregard other aspects such as environmental protection or relations with other stakeholders from the civil society. On the other hand, some private actors may choose the strategies of "good relations" with other stakeholders in order to achieve public acceptance.

As the state operator, DSI is an organization that is motivated by various public interests. The dams serve a wide applications of public benefits such as irrigation, drinking water supply and flood control, in addition to the electricity production. Therefore, their priority is to plan and facilitate dam projects. In addition, they have a critical role as public authorities in allocation of water resources, distributing the rights to access and use.

Overall, two groups of economic actors take place in the governance system. The private companies mainly invest in run-of-river projects which are incentivize and are more profitable. These projects takes shorter time to build and lower investment and operation costs. The second economic actor DSI as the public investor mainly involved with large dams.

5.4.2. Political Actors

The first type of political actor Vatn (2015, p. 147) describes is public authority; "*public authority has the power to decide in matter involving constitutional and collective choice rules in a society, implying the power to formulate resource regimes and act as a third party regarding conflicts appearing between* [actors]." The main and most developed public authority as the state which may have different ways of organizing themselves and have institutional arrangements in various ways. Vatn (2015) focuses on the meaning of the state, its power and other constitutes that share this power. Hereby, I will only focus on what forms and bodies are in the Turkish bureaucratic system related to hydropower development. Moreover, there is an important subject of the meaning and the role of state which came out to be important with hydropower projects. However, this discussion will take place in Chapter 6.

The elected central government and the president has the power to govern for five years. The government assigns the ministries and hence gives them the responsibility for decision-making for instance with environmental policies and actions. On the regional/local level, ministries have branch offices which have the responsibilities, however mostly in larger regions or cities. In the case of hydropower, we can distinguish three main ministries and national authorities which are actively involved in the governance system. The energy domain referred with Ministry of Energy and Natural Resources which are responsible for energy and other natural resource operations such as mining. The water domain is categorized under the Agriculture and Forest Ministry. Finally, the Ministry of Environment and Urbanization is the main responsibility for all kinds of landscaping and preventing environmental degradation and pollution.

At the local level, there are two main segment of local authorities based on different powers. The first is governor which administrates 81 provinces. Governors are assigned by the president. Their responsibility is to implement legislations, constitutional and government decisions in the provinces (Turkish Water Institute, 2021). The second is the local governments which are elected, also known as municipalities. They have administrative and financial autonomy. The smallest units here are villages/neighborhoods[1] which have elected authorities; a headman and a council. Different from municipal electives, they do not represent any political party and have limited powers. They are responsible for leading the area, organizing and implementing the decisions related to the village. In hydropower cases, headmen are important figures as their leadership is respected by most of the citizens in rural areas and are seen as the main communication channel to reach out the villagers.

To summarize the role of key actors in water governance and more specifically with hydropower cases (See Table 4 for all actors and their roles).

i) the main and most important decisions are taken in central government together with the president and the ministries
ii) the local governments and its councils can as well take decisions such as to give permits for constructions
iii) the sub directorates of ministries are the main responsible to implement the rules in local level.

Table 4 *Public Authorities, including central (ministries) and other local authorities. Sources: Ministries web pages and Union of municipalities (TBB).*

The Ministry	Sub-Directorates	Duties and authorities	Action (relevant to HEPP processes)
Environment and Urban		To assess environmental impacts To protect natural resources from pollution To determine quality standards	Assess the environmental impact of the projects
Energy and Natural Resources			Secure energy supply, increase energy efficiency, establish targets
	EPDK - Energy market regulatory institute	To issue licenses for electricity production, defining the rights and obligations. To monitor market performances	Balance/regulate electricity market

[1] In rural areas smallest settlement units are villages while in urban areas are neighbourhoods.

		setting performance standards and electricity production facilities	
	EÜAŞ – Electricity production Cooperation	Responsible for operating electricity generation of public capital built power plants.	Produce electricity efficiently and integrated to the electricity market
Agriculture and Forest		Responsible for the use of agricultural, forestry and water resources as well as protecting.	Water allocations and water user rights distribution
	Nature Conservation and National Parks	Wildlife conservation and protection of nature. To determine the principles of protection and use in the regions determined by international protection conventions.	Can issue permits for construction regarding their responsible areas (nature conservation)
	General Directorate of Water management	To determine policies related to protection, improvement and usage of water resources, provide coordination, prepare river basin management plans.	Develop river basin plans
	State Hydraulic Works (DSI)	Responsible for the planning, management, development and operation (only strategic projects) of all water resources. Monitoring discharge water and water use rights agreement	Plan hydropower projects and give water-use permits. Public legal personality with private budget
Local Government & Authorities			
Special Provincial Administrations (SPA)		There are 81 SPAs	
	General provincial council	Decision making body	Examines files of projects under Annex II (see section 5.5.1.3)
	Provincial Executive committee		
	Governor	The chairman of SPAs. Represents the state in provinces. Not elected, assigned by the president.	Responsible to make sure of the decisions made by ministries are implemented.
Municipalities		There are 1396, including all types of cities and districts of provinces. All lead by a major and council, which are elected by citizens through political parties.	Important decisions can be taken in the councils, such as construction permit or changing status of a land (expropriation).

Villages		There are 18,247 and only 7% of the total population resides. Has administrative and financial autonomy.	
	The head of village and committee	Elected by the villagers. Procuring public services	They do not have power to decide on projects, however as the representatives of the villages, he/she is highly respected within the communities. The consent of local communities channels through this elected political actor.

5.4.3. Civil Society Actors

In order to understand the interaction rules of EGS model, we should differentiate between meanings of civil society. Firstly, democratic principles are key conditions of non-organized individuals as citizens that could open and fairly take part in decision-making (Vatn, 2015). Citizens should participate deliberately and offer rights to political actors, to represent them and take decisions on their behalf. Secondly, there are also organized groups in the civil society that have certain goals and objectives, where citizens have the right to be part of as members, take decisions collectively and participate as a group in societal events. Lastly, it is possible to identify locals where they organize themselves on specific cases in less organized ways. Locals may prefer to come together to protest hydropower projects. These people in some cases are organized under certain groups/NGOs or they only received support from these NGOs while they organize independently. Locals or affected people have the right to participate during the environmental assessment process and to raise opinions. The energy company and/or consultant firms are obligated to arrange meetings with affected people and the ones who would like to join to an open public meeting for citizens. However, this may not be the case for all projects since there is a certain conditions. In other words, if a project found to be not associated with any harm to local communities and environment, it can simply be constructed without any meetings with locals.

In brief, civil society actors organize in various ways and less organized compared with other actors. More specifically in hydropower cases, it is possible to identify two main groups of actors involve frequently. At the national level, there are professionally organized environmental NGOs and local level activist groups. The former group are at the forefront of the policy decision making. As the professional groups, they represent other civil actors mainly

by being included in workshops or any other negations between political actors. This however takes place more at the national level. At the local level, the activist groups time to time coordinate with professional groups, seek help and other support for their arguments. The locals also established their own organizations and choose to interact independently. The core of actions mainly are to protest, sue the projects and demand support from local representatives. Nevertheless, the patterns of interaction are essential to understand better the actions of civil society as well as other groups.

5.5. Institutions Facilitating Interaction

It will be useful to follow the process from the very start, where the energy companies start by planning the projects with the government institutions, obtain permits and licenses and finally operate the power plant which will continue for 49 years. The state initially sets the rules and plans accordingly to the coordination needs. To build a power plant, the most suitable places are considered both in terms of water hydrology and prioritized public needs. The meaning of needs here also involves the civil society actors which have other interests, needs and values regarding the resources. In overall, coordination is a key element between and within the actors. For instance, in a dry season where the water is not abundant, the interaction patterns may change due to rivalry. A third party involvement is also crucial here since there is a high possibility of conflict. Therefore, public authorities take an important role such as monitoring the activities. In sum, considering the various actors that are motivated and have various interest, the rules/patterns of interactions is critical in governance systems.

Firstly, the rules of the economic processes will be presented. There are three key aspects which defines the rules of how one can access the rivers for energy production;

1- Water usage rights: An agreement/contract between the state authority and the energy company. The economic actor must follow this agreement during all phases of the project.
2- Environmental Impact Assessment: The approval of the report means that the project will be constructed and operated under certain conditions that will consider, measure or remediate all possible environmental impacts.
3- The rules of the market: The power plants will produce energy and then sell it in free market. This interaction is within economic actors as well as between economic

and civil which in overall is an indicator of public benefits (cheaper prices and how the electricity demand is supplied)

5.5.1. Economic Process: Resource Regime

In Turkey, natural resources can be categorized as public property. The rules access is defined is in the constitution, Clause 168;

"*Natural wealth and resources are under the jurisdiction and disposal of the State. The right to search and operate them belongs to the State. The state may transfer this right to real and legal persons for a certain period of time. The exploration and operation of which natural wealth and resources are carried out jointly with real and legal persons of the State or directly by real and legal persons is subject to the express permission of the law. In this case, the conditions that real and legal persons must comply with and the surveillance, inspection procedures and principles and sanctions to be made by the State are specified in law."*

Simply put, the natural resources including rivers are state (public) property. According to (Vatn, 2015), state property in principle refers to the resources are owned by citizens however the decisions are made by state-authorized representatives Indeed, the Turkish state as the owner, and the public authorities, has the right to define who can use the rivers and how. The state can temporarily give the right to use and manage to other actors who are clearly defined and comply with the laws. These activities are regulated and monitored by the state authorities. Rivers as natural resources can be used and managed by the government for public benefits. When we examine specific laws on water bodies, there are some key rules and regulations defining the access. The main water law was established in 1926. Throughout the years, there haven't been any significant changes on this level. Instead, new rules and regulations were issued on specific matters. There are approximately thirty law arrangements concerning the broad topic of water.

The most significant rules regarding hydropower development are the water usage right agreement, regulations of Environmental Impact Assessment (EIA) and the electricity market. In addition, recently a water allocation regulation was established. The decision-making process of this regulation was based on a study which conducted by participation of civil society and experts.

Before moving to the most relevant rules regarding the resource regime, Table gives an historical overview of the changes in laws or regulation which are relevant to hydropower development.

Table 6 *Significant changes in laws or regulations and few important events relevant to the changes.*

Year	Law/Regulations/Events	Significance and notes
1993	First EIA regulation	Environmental concerns integrated into economic system
2001	Electricity market law	Privatization
2003	Water use rights agreement (Plans prepared by EIE and DSI, also private sector plans are accepted.)	Private sector gained rights to use rivers for energy production.
2005	Renewable energy law	Principles and rules
2005	Incentive mechanism for renewables	Applied until 2020,
2007	Private sector HEPP plans are *not* accepted	An achievement to slow down the "run-of-river hydro boom"
2009	%10 discharge flow	Civil society achievement, the movements had influenced
2010	Permit required for nature conservation areas	Contested views over authorities (who decides for permit and how)
2010	EIA change	The report should be obtained before the license (electricity from EPDK)
2012	Surface water regulation	EU water framework basis
2012	River basin protection and management plans shall be prepared	An important step in water management, towards EU water framework adaptation
2014	Sectoral Water Allocations Workshop, participants from civil society and economy sectors	An achievement for participatory decision making
2014	No. 29186 EIA renewed	More up-to-date (EU policies)
2019	Water Allocations regulation put in use (prioritization of demands)	The result of 2014 participatory meeting

Note. Compilation of findings from rewieving legislations (Source: https://www.mevzuat.gov.tr/)

5.5.1.1. Water Use Rights

According to the energy market regulatory framework, a production license shall be obtained by signing an agreement called "*water use agreement*". The regulation entered into force in 2003 and regulates the procedures and principles. The DSI website advertises different projects with their development stages, locations, power capacity and with candidate right holders. The projects are open for applications which have been developed by bilateral agreements, build-operate-transfer (BOT) models or other types of multi-stakeholder agreements. An important remark here is that after 2007, projects developed by private entities are not accepted.

At this stage, there are two critical aspects; feasibility reports and the discharge water calculations. The format of feasibility reports is given by DSI in Appendix 3-A. The report should include a detailed plan and assessment of climate and water resource conditions including predicted environmental impacts. In addition, other water demands and rights should be included, and will be prioritized. If the report is accepted, an electricity production license can be obtained. After the approval, the water usage agreement is signed. Considering the water to be released for the continuation of ecological conditions, Clause 15 indicates the precautions. The company is given responsibility for any hydrological problems and "*... ensures the maintenance of natural life downstream of the water intake point of the stream bed and leaves the amount of water to meet the water rights in this section without any interruption and fluctuation."* As a quality standard, a discharge flow was set of %10 of the last ten-year average. If this amount is not sufficient, all water should be discharged. Last, but not least, it is possible increase this value by evaluating the spatial ecological conditions. According to Clause 16, an EIA report should be obtained before signing the water usage rights agreement. In addition, a report should be given which is called Downstream Water Rights Report. The agreement indicates the private entity is responsible for damages that may arise during the operation.

Since 2003, the regulations have been renewed frequently. The first form does not include any environmental or ecological settings. A feasibility report is the main obligation which holds the detailed hydraulic calculations including the upstream-downstream effects. DSI is responsible for the approval of these reports. However, in principle if damages may arise, the responsibility is completely assigned to the company. In addition, other activities are strictly banned (e.g. selling water or using it for other economic activities). In the most recent format, the clauses on environmental issues had been strengthened. In addition, the company has been

given responsibility to put in use the flow monitoring system, including the purchase. In some locations, DSI reported that they set up cameras to watch these flow measurement stations (DSI, 2020).

Even though the agreement is clear about private entities being liable to the terms, there is no clause stating what the consequences of not following the agreement are. However, the regulation commands in case of a license cancellation or EIA report approval cancellation, the water usage right agreement is concurrently will be overdue. Moreover, the Environmental Impact Assessment process is another interaction rule between actors including all stakeholders. This step is the most critical condition where the environmental and social concerns are practically considered in decision-making. Note that, there is no social impact assessment requirement. However, this process is open to public inputs.

In conclusion, the actors providing electricity have been given the right to use and access the environmental resources. Similar to other user actions, all activities are regulated and shall be monitored according to the legal framework. The energy companies have the right to enter the physical property and build the power plant, own partially the land occupied with the facility building. However, this doesn't switch the property rights to become the owners of the resources. They obtain a license and sign an agreement that basically describes "how" they can use the resources. Hence, the companies become the renters of that particular area they operate. Certainly, their actions and behaviors interact greatly with other actors or users of the same resource. The rivers, as public property, are of interest to many and the use rights are obtained from the central government and its components. The prioritization of certain demands appears to be crucial change to define distribution of rights, to allocate the water (water allocation regulation). However, this requires careful planning and careful examination of the conditions. The formal rules will not always comply on a practical level where between actors' behaviors show contradicting interaction patterns. Environmental flow or discharge flow is a specific issue in operation where behavioral uncertainty occurs. The command power will most likely be beneficial, however, there may also be a possibility for more conflicts. The regulation of Water Use Right are tightened later and previously built power plants have lost economic values. Later in objective 2, this will be covered with examples from the interviews.

5.5.1.2. Environmental Impact Assessment Process

The EIA is the key step of hydropower plant construction and regulates the actions in a sense that is intended to minimize the harm to the environment and to local communities, while ensuring their rights to participate in the process. Before going into the practice level and exploring the interaction patterns of actors, we should look into how the legal framework sets the conditions for participation. The environmental impact assessment process is the only phase that allows citizens to participate in decision-making and allows environmental protection.

There are certain categories that the regulation applies to. Annex I includes the hydropower plants with capacity larger than 10 MW. List under Annex II is for power plants capacity between 1-10 MW. The meaning of these categories are about what process of EIA will be applied. The first category is under the EIA compulsory application. The second category are projects that will go under a selection-elimination criteria in accordance with the severeness of environmental impacts.

The commission examines the application and the members are selected as i) representative from public institutions (local) ii) ministry authorities iii) project owner and EIA report authors (consultation firm). A general condition for all members is being an expert or having knowledge about the project or the field. If necessary, more members could be added to the committee (e.g. experts, unions, civil society). The committee must consider inputs from local communities. The meeting with the locals is the only step that allows an opportunity for communication and coordination between civil and economic actors. The rules indicate that the meeting should be led by a ministry authority and the experts should inform the locals about all possible impacts for their lives and the environment; *"At the meeting; it is ensured that the public is informed about the project, and their opinions, questions and suggestions are received."* However, the committee is not obligated to visit the local area and do examinations. Later, the special format is prepared by the committee, taking into consideration the projects' significant environmental aspects and the opinions and suggestions made in the public meeting.

After a long and detailed process, the project either receives a positive or negative decision. However, the positive decision does not mean that the project will not have a significant effect on the environment. The report consists of measures that will prevent these impacts, thus the project is acceptable with its environmental manners. When we look at all the decisions so far in accordance with EIA regulations (1993 until today), only 61 projects were rejected in a total of 7252 projects. In addition, 65934 projects were found not to be necessary

to assess for environmental impacts (category II). In principle, it is possible to assess the EIA process in transparent and participatory ways. The decisions made are a product of a committee which should imply a rich assessment process including the locals' views which have the opportunity to be included from the very beginning of the cases.

5.5.1.3. Energy Markets and Privatization (Trade)

A general rule in energy markets is that the production should be equal to the demand simultaneously, if there is no storage in the electricity supply system. For a reliable system, a common strategy is to have a large number of power plants integrated into the system and in various types, it is relatively costlier to distribute electricity to small consumers (households) than the industry. The reasons are the lower load factors (energy intensity) and they are also more often taxed than large consumers. The demand changes hourly, weekly and even seasonally. Typically, the demand is lower at night, also lower demand for the weekend and over a year lower demand in summers, depending on the conditions.

According to (EPDK, 2021)EPDK (2019), in Turkey the consumption decreases in spring months. The season is also where the water revenue is highest with increasing precipitation. Therefore, generally the lowest prices are observed in the spring period. In summer months the demand increases significantly due to air conditioning and agricultural irrigation, thus so does the average prices. The winter period has the same conditions due to need for illumination and heating. Figure 2 illustrates an example (from day-ahead market) to previously described changes in prices. The highest prices are observed in 2018 is September and for 2019 is July. The lowest prices observed in 2018 is March and for 2019 is April.

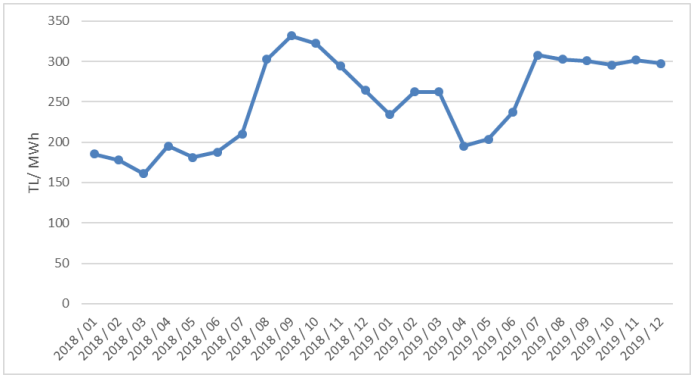

Figure 2: *Monthly weighted average MCP (market clearing price or day-ahead price) for the last two years (Source: (EPDK, 2021))*

In Turkey, the electricity markets have been through a series of privatization reforms. Since the 80s there have been several changes in the law to step by step liberalize the entire

electricity market, from producers to distributors. The outcomes are expected to secure the supply and reflect on consumer prices which the public would benefit from. The level of competitiveness has become better each year. Since 2014, the indexes for both supply and demand are found to be complying (TEİAŞ, 2021).

The incentive in unit price is 73 dollars per produced MWh electricity. More specifically for hydropower, incentive mechanisms found to be beneficial to promote small scale hydropower plants. As of today among all options, there are more hydropower plants that benefit from the RESSUM. By installed capacity for the year 2019, 60% of total resources is hydropower. Previously, explained targets have been achieved in terms of installed capacity and increasing private sector shares. While this is acknowledged as a success story for the energy sector there is a divergence in opinions that the benefits are not fairly distributed.

Table 2: *Summary for privatization of the electricity sector, including hydropower.*

Objective/Target [What?]	**Input/Action [How?]**	**Outcomes/Motivation [Why?]**
Privatize energy sector	Liberalize markets	More capital for investments
Increase options/mix of resources	Increase competitiveness	Secure supply Reduce prices
Increase share of domestic resources and renewables	Provide incentives	Reduce dependency on exports

5.5.2. Rules Governing Political Processes

Previously, we had defined "*who has power to make decision*". More importantly, the question here is how this power is given and distributed? Therefore, one should define the political regime and the distribution of power. Vatn (2015, p. 152) exemplifies two dominating systems on division of powers in democracies. The power of the state is based on three main bodies, in other words separation of power and which are legislative, executive and judicial powers. In Turkey, the legislative power is given to the parliament, executive power is carried by the elected president and finally for judicial power there are independent courts.

Regarding the democracy in Turkey, there is a very recent milestone; constitutional changes towards a presidential republic. In 2018, after a national referendum certain changes were made in the constitution, including redefined power distribution. One of the main

structural changes was that the executive power was given to the elected president. Before the amendment, this power was shared by the president and the Council of Ministers. Today, a president is elected every five year in addition to parliament members (indirectly via political parties). The elected president later forms the council of ministries and assigns the head of each ministry. These assigned ministries are not obligated to be from the parliament (e.g. current minister of environment is an independent member).

The recent changes in government structure and which bodies carry the powers considered as a sort of concentration of power. The system is currently still in transition. Thus, the changes in institutions governing natural resources seem to be conflicting or overlapping. For instance, in 2018, ministries were re-established. The food, agriculture and husbandry ministry and water/forestry ministry were combined; hence the Agriculture and Forestry Ministry was formed.

5.5.3. Civil Society and Opposition Groups Interactions

The civil society interaction patterns are considered more informal than any other action sphere. Even though there is a clear stance opposing hydropower, the perceptions vary. Organized national NGOs developed campaigns around the years when hydropower projects were rapidly growing. Today, it is not on their main agenda. The common approach here is that all campaigns are based on a form of supporting local movements. There are several local NGOs which were organized as well. In addition, some campaign based organizations also occurred such as the Water Rights Campaign and the Platform Against Commercialization of Water. The platforms' objective is to gather people with same discourses and ideas over the problem. Other civil society actors such as media, experts and academicians have also taken a side often with the locals. Some of these civil society organizations could take part in the decision making process and are in coordination with governmental actors. Local NGOs arrange protests and meetings at the local level and when applicable to sue the projects. In overall, civil society has organized in various forms and reacted to the Hydropower cases which can be related to both their interests and perceptions over the problems. This will be covered in later sections. However, regarding these divergences in views which can be highly related to the actions, I would like to provide examples of various groups of civil society that have organized with the hydropower processes.

All participants emphasized that the role of civil society in the processes is very important. However, how people organize and how their "action" has been perceived by other

actors, differs. Participants' description of civil society organizations, NGOs or opposing movements. The national NGOs can be considered more experienced in the field. Their approach is certainly different from recently formed organizations. Their approach is to be the bridge between government/state and local people/civil society. They prefer keeping the communication while also supporting locals and opposing the projects. An expert, academician, has also described their role as supporters. He works with both government and locals, acknowledging the importance of local groups while distinguishing the groups by their expertise. Accordingly, national and more experienced NGOs have professional and science based nature conservation acts while local groups are weaker in knowledge and only organized with a certain cause or problem.

A regional group representative described their approach and their objective with forming the platform which is mainly organized under the same certain discourse. Their role is to bring people together from local level in order to achieve showing the locals' reaction in sight. By means of discourse here, it refers to how the water/rivers are valued (commodity or an ecological entity). On the other hand, from local activist groups, a participant described their approach slightly differently. Their main objective is to keep the existing lifestyles, nature and culture alive in their region.

Overall, we can define three different types of organizations in the case of hydropower which we can divide into three; i) expert based organizations that are active in the governance system ii) cause/objective/discourse based organizations iii) local community organizations which are mostly physically affected people.

5.5.4. Interaction Rules

Schlager and Ostrom (1992) defined the most relevant operational-level property rights as "*access"* and *"withdrawal*". Previously defined rules have shown how the companies have the right to use the water, such as the discharge water levels they are required to follow. In other words, they have the withdrawal right to harvest the product (energy). However, with respect to other users of the same resource. Thus, it is possible to identify several interaction rules that can be categorized.

Previously, we looked into key formal rules and how the rights are distributed legally and interactions are arranged with certain laws and regulations. While those can describe "the national standard" additional rules may apply in practice. Vatn (2015) have described them as

"informal" rules of societies, communities and between/within various actors. While these normative and conventional types of institutions may not be suitable to be included in the legal framework, they play an important role in practice and would also lead to certain changes. In the case of hydropower in Turkey, so far I have described the regulations and significant changes with the formal structures. Here, the changes appeared to be influenced by societal demand. The civil society organizations had campaigns and conducted studies to prove the problematic actions that should be standardized or constrained with certain legal rules. However, in the background of these formal initiatives there lies some informal rules. In this section, I will exemplify from the semi-structured interviews which I had found would surely be useful to understand some informal rules that would significantly affect the outcomes (See the Table in Appendix for quotes from interviews).

At the beginning, it has been revealed that the rules and plans determined in the implementation of policies and the transfer of rights to the private sector are insufficient. As a result of these practices, the local people took action to stand up and asked for help from experts they knew or could reach. More active civil society actors, such as professional associations, national NGOs and academics have carried out various studies and revealed the local level problems. At the same time, it is seen that experienced actors in the energy sector contribute to the studies (For example, research studies supported financially and experience sharing). As a result of these studies, legal regulations were detailed and supervision has been increased. In addition, several projects were canceled as a result of the lawsuits filed by citizens seeking their legal rights.

The earlier years of privatization can be described as a "no rules" stage where the outcomes did not foresee the future problems. Therefore, the need to change these regulations arose. These new regulations also brought other problems. First of all, there has been a serious distrust and anxiety among the local people due to the first experiences. Therefore, they try all means to oppose and cancel a project in order to be made later on the same river or stream. Likewise, on the opposite side, it was understood that various ways were used to carry out the project. For example, the headman (empowered by elections), who are local representative chiefs of villages, are key actors here. If the headman can persuade the project to be carried out, he can usually persuade the public. But this also depends on how well the leadership is accepted. Companies also carry out their efforts to persuade them mainly towards these actions. At the same time, companies try to strengthen relations by helping various institutions in the region (such as mosques, schools). This can be seen as a kind of social responsibility activity or as a

means of persuading people. This type of informal rules can be related to community-based types of rules which Vatn (2015) described as a form of reciprocity. Here, the "gifts" as helping the communities can convince the locals and persuade them to give consent to the projects.

Private companies may have their own standards or they follow international standards. Moreover, some companies choose to apply for international banks for credits. Their actions are strictly monitored where they receive funds for. If this is the case then one may expect another type of interaction. An economic actor, from the private sector, has described how they make contracts with construction firms and have "their own way" to implement the rules. Here, we can understand the actors may also take initiatives to do the work with certain standards. Thus, exemplifies what Vatn (2015) describes, the command form of interaction within (we) actors.

5.6. Outcomes

The outcomes can refer to various aspects depending on the resource and the use. Hydropower is considered as renewable energy, hence its contribution to avoid emissions are an important criteria. When we consider environmental outcomes based on the resource used, we should evaluate both in terms of electricity production and impacts on rivers. The overall environmental goal of hydropower policies is the avoided emissions and the risk of energy dependency. Therefore, firstly the national outcome of electricity production is discussed. Secondly, there is an emerging concern about local level impacts of the power plants. This issue is however not easily measured. There are only few official reports that emphasize these problems. Non-governmental organizations had prepared reports and laid out possible impacts. I will overview the macro level problems that have implications to the nation wise aspects of economic efficiency, environmental effectiveness and distributive justice. The next chapter will follow up same criteria with more focus on micro-level, in other words practical local level issues where the environmental costs are reflected on local communities.

The main perceptions regarding the outcomes are economic efficiency and environmental effectiveness and justice issues. The economic efficiency lies heavily on the development of large dams which feeds several economic activities.

5.6.1. Resource Use: Electricity Production

Table 7 *Development of hydropower potential. Source (DSI, 2019)*

	Public/Private	Number of power plants	Installed Capacity (MW)	El. Production capacity (GWh/year)	Percentage of total potential (%)
Operation	Public	68	13.766	48.952	27,2
	Private	646	17.625	59.053	32,8
	Total	714	31.391	**108.005**	**60**
Construction	Public	2	700	2.569	1,4
	Private	35	579	2.009	1,1
	Total	37	1.279	4.578	2,5
Planned	Public	42	1.574	4.704	2,6
	Private	210	7.620	21.680	12
	Total	252	9.194	26.384	14,6
Before 2023	>10 MW	241	6.123	19.832	11,1
	<10MW	613	2.594	8.570	4,8
After 2023		-	4.419	12.631	7
TOTAL		1.857	55.000	**180.000**	**100**

The targeted outcome in terms of electricity production was set to at least a 30% share of renewables in total electricity production and maximum capacity installations for hydropower (Section 5.3). The target for renewable energy and hydropower in Turkey had been nearly achieved. The total renewable resources now can produce almost half of the demand (See Figure 8). However, the hydropower development have not been progressed as predicted earlier by the government. The latest report shows that yearly production capacity in operation is 108 GWh per year was (DSI, 2020). This number correspondents to 60% of the techno-economic potential (180 GWh/year). Today, the predicted number for the year 2023 is 135 GWh/year which is 88% of total potential (See Table 7). Altogether, the ambitious target has been reduced to more sensible values which is more realistic with the progress achieved so far.

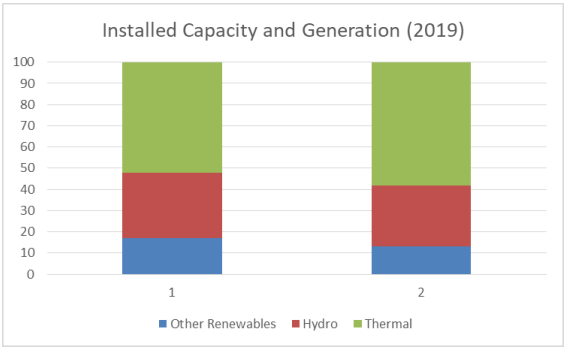

Figure 7: Electricity production data from 2019, installed capacity and generation percentages (Data from TEİAŞ (2021), figure own work)

There is a difference in terms of production when we compare two types of hydropower plants. The power plants with reservoir are more efficient and has higher production capacities. For instance, the production data from different power plants showed that dams supplied 21,7% while run-of-river supplied 7,7% of total electricity demand in 2019 (See Table 8). One of the main motivation for utilizing hydropower frequently stated as the need for supply considering the rapid increase in demand. It is possible to identify significant contribution from the large dams while run-of-river power plants contribution is much lower due to their low production capacity.

Table 8: *Comparison of two main types of hydropower plants (2019) Source: (DSI, 2019; EPDK, 2021)*

	Installed Capacity (MW)		**Production (GWh)**		**Consumption (GWh)**
Total	8.4957,7 (100%)		294251,32 (100%)		301982,7 (100%)
Hydropower	28.494,8	33,54%	88.863,899	30,2%	29%
Run-of-river	78.50,09	9,24%	23.291,83	7,92%	7,7%
Dams	20.644,7	24,3%	65.518,92	22,3%	21,69%

As a result, these values show a positive development when evaluated in terms of reaching the potential and putting into operation. The critical point here is that while the target focus on the capacity, in other words “ready in use”. There is no significant point to the yearly electricity production. The yearly production values may fall under the capacity. There could be several reasons for this shortage, such as the yearly climatic conditions and operational problems. Hydropower is technically considered as a backup in the system, which provides flexibility to the grid. The economic and political choice justifies developing the potential at maximum capacity so that the system would be ready for fluctuations in demand.

The previously overviewed production values and capacities have influenced civil society perceptions. The counter argument is how efficiently the power plants can produce electricity, less focus on "capacity" rather more stress the actual outputs in terms of electricity. In addition, the demand projections and the losses in grid system are other arguments. The increase in demand resulted below the expectations in recent years. The losses in the system have not changed much over the years. Altogether, the electricity production as an outcome has been related with counter arguments which reveals the significance of perceptions and legitimacy debate. This is furthermore discussed with efficiency criteria considering the overall policy target (Chapter 6-Section 6.3.1).

5.6.2. State of the Rivers

EGS model refers to outcome as the state of resource. The construction and operation of power plants can significantly cause changes with the status of rivers. As mentioned earlier, the rules and legislations are frequently adopted due to such changes and effects. There has been also influence of civil society actors which argued the outcomes as "not acceptable".

To better understand, this section will give an overview from official documents and NGO reports, focusing on the findings related to the outcomes. While the reports from non-governmental organizations are problem-oriented, studies from public institutions are prepared as guidelines and solution oriented. This section briefly explains the documents from these institutions and their assessment regarding outcomes. These findings represent the main discussions in the national agenda.

The earliest reports are shared by the Union of Chambers of Turkish Engineers and Architects (TMMOB). The main issues found was EIA reports and discharge water flows (Chamber of Construction Engineers, 2009). The main findings are as follows;

- EIA reports are not prepared adequately. In short periods, reports are prepared without liable data and most of the time without field work.
- Insufficient in determining the discharge water left for the sustainability of ecosystems. The regulated amount is not sufficient especially for key biodiversity areas.
- For future, watershed management should be considered and climate change effect should be considered.

WWF Turkey studied similar problems with hydropower plants and guided campaigns. Water Risks Report, define the hydropower cases in Turkey as an example of "*how faulty plans and weakly integration of economic, social and environmental concerns can increase risks over resources"* (Öktem, 2014). The sources of these risks were not considerably taking into account of;

i) the current and accurate flow conditions of the river basins
ii) the climatic characteristics
iii) the effects of climate change
iv) the possible effects on the river basin ecosystems

Administrative level the discharge flow criteria was not sufficient or effective in practice. Even though the legislative changes were made, the already planned or working power plants faced problems such as decrease in energy production capacity. In some cases, the discharge flow is not enough to sustain ecosystem services and other social needs.

Another critical outcome is the impacts on fish species. Hydropower structures mostly block or considerably change the passage routes for fish. There isn't any specific requirement or regulation within the previously described rules. However, the law no. 1380 "aquaculture law" was established in 1995. The relevant clause states that *"Fish passes, lifts and fish curtains must be built while establishing facilities such as dam lakes, ponds, and embankments. "* The effectiveness of such rule is found to be extremely low.

An assessment from the Ministry of Agriculture stated that none of the publicly invested dams have fish passages, only 35 regulators have included various structures without stating any indication of functionality. One important finding here is that until 2014, they have determined 1034 hydropower plant EIA reports made a commitment for fish passages. This number includes projects that were completed and under construction. However, there is no exact finding for how much of these commitment were complied.

According to the latest activity report of DSI (2020), it appears the planning has been completed with the R & D studies on this subject. The technical guide was prepared in previous years, but it was stated that there is not enough data on the status of local fish species at the basin level and a regulation is needed to improve the ecological status of river ecosystems. The latest plan report emphasize the overlap between authorities and unclear duties regarding the fish passage structure.

Moving on to the ministry reports, there are important reports, strategy and development plans that emphasized concerns and challenges of utilizing maximum technical hydraulic potential. The river basin management plans are seen as a prioritized solution. The main approach is taken from EU Water Framework (Ministry of Agriculture and Forest, 2014). Growth of the hydropower sector is also one of the reasons that support the basin management approach as a new policy to be followed in water management. The requirements within this scope are expressed as follows;

"In some regions, it is important to improve transparency and participation as well as developing standards and institutional capacities for the evaluation of cumulative effects in order to eliminate the problems and disputes experienced due to the negative ecological and social impacts and information deficiencies created by HEPPs."

In overall, the findings from official reports and NGO studies had pointed out both the issues of input and output legitimacy. Regarding the decision making process in practice it lacks adequate level of participation, transparency. Moreover, the rules have appeared with overlapping authorities, such as in with fish passage regulations. The outcomes discussed with various actors have a common point that conflicts have appeared at the local level. The next chapter therefore will focus on these specific issues with examining cases from Artvin province.

CHAPTER 6

6. Objective 2 – Outcome Assessment of Cases in Artvin Region and Legitimacy Framework

The following chapter will use a case study of a region which is associated with local conflicts related to hydropower projects. Several local NGOs and platforms were formed to "resist" projects in the region and their impacts on local environment and communities were discussed.

Artvin is a province located in north-east of Turkey, along the border with Georgia. The Çoruh River is the main basin in the region which is the fastest running river in the country. The overall hydropower potential is one of the highest. The geographical variety made the area suitable for various type of power plants such as large dams with cascade design, run-of-river or channel type and regulators.

This study focused on the debated or conflicting cases in order to understand the issues at the local level and how they are linked to policy implications. These cases are not isolated

from central government, on the contrary they are strongly linked. Therefore, the participants are a mix of both local and from central regions who have worked, studied and researched projects located in the Çoruh river basin and/or nearby regions. In addition, other documents from NGOs, ministries and local newspapers were used to support the arguments of respondents. As a result of these discussions, the issues of legitimacy has been identified, however, with contested opinions. Here, the legitimacy framework from Vatn (2015) and its criteria are found useful to lay out these views and discuss the conflicts at the local level and legitimacy of hydropower policies and practices.

Before the legitimacy discussion, a brief description of the area and its environmental values are presented. Later, the input legitimacy will be outlined with issues of transparency, accountability and participation. Related to these criteria examples from both large dam cases and run-of-river projects are provided in addition to participants' statements. Lastly, output legitimacy will present both distributive justice and the effectiveness regarding hydropower policy outcomes.

6.1. Brief Description of the Study Area

The Çoruh River has been an important subject of development interests. The province of Artvin is mainly located around the body of the river. The region has a long history of hydropower development plans and has been in various discussions over issues such as biodiversity concerns, social injustices, transboundary issues and financial supports. The main and large dam projects have been developed by the government (DSI) as well as in partnerships with various consortium groups of international actors. The involvement of international actors has placed the global perspectives into local and other NGO's agenda. In the region of Artvin, the local communities in the rural side are associated with low incomes, especially the villagers that have livelihoods based on small-scale agriculture. Migration to other areas and to cities is common. The rural communities also have families in cities from which they get economic support. The climate is special which conditions to grow various agricultural products such as tangerine, olive, grape and rice. Bee keeping and husbandry are also a common livelihood in the area.

The Çoruh river basin locates in the Causcaus region which was identified as biodiversity hotspot (Myers, Mittermeier, Mittermeier, Da Fonseca, & Kent, 2000). Another important study about the red-listed butterfly species have showed several species that are under

threat with dams and hydropower projects, including the Çoruh river basin area (Karaçetin & Welch, 2011).

The valley, which is located in the Eastern Black Sea as a location, also has the characteristics of the Mediterranean and inner Anatolian climates. The region is defined as having an important plant area, bird migration routes and rich fauna. According to BirdLife International (2021) monitoring assessment, the Çoruh Valley was found to be an IBA in danger. The area found to be rich in biodiversity and 83 plant taxa found to be fulfilling KBA criteria. Especially three species of them only expands in Çoruh Valley. The area with the mountains Eastern Black Sea is also an important bird migration route. Wild goat (Capra aegagrus) and Mediterranean horseshoe bat (Rhinolophus Euryale) are endangered mammal species found in the region. There are also few red list inland water fish species (Starry sturgeon), butterfly and damselfly species. The monitoring report also had listed the threat score as very high, due to the future mining activities (planned) and completed dam projects (energy and irrigation). Similarly, Ministry of Environment and Urbanization (2016) reported that dam and hydropower activities will negatively affect biodiversity and ecosystem values, especially butterfly species. It is predicted that a large proportion of IBE is under risk of being lost.

As of today, according to (DSI, 2019)DSI, 19 power plants are planned and 32 are operating. In operation, five of them are listed with the dam type and the rest are channel (run-of-river) type. When all the construction is done, along the main body of the river, 10 dams will produce electricity. Whether the other projects along the trajectories of the Çoruh river will be completed depends on the private investments.

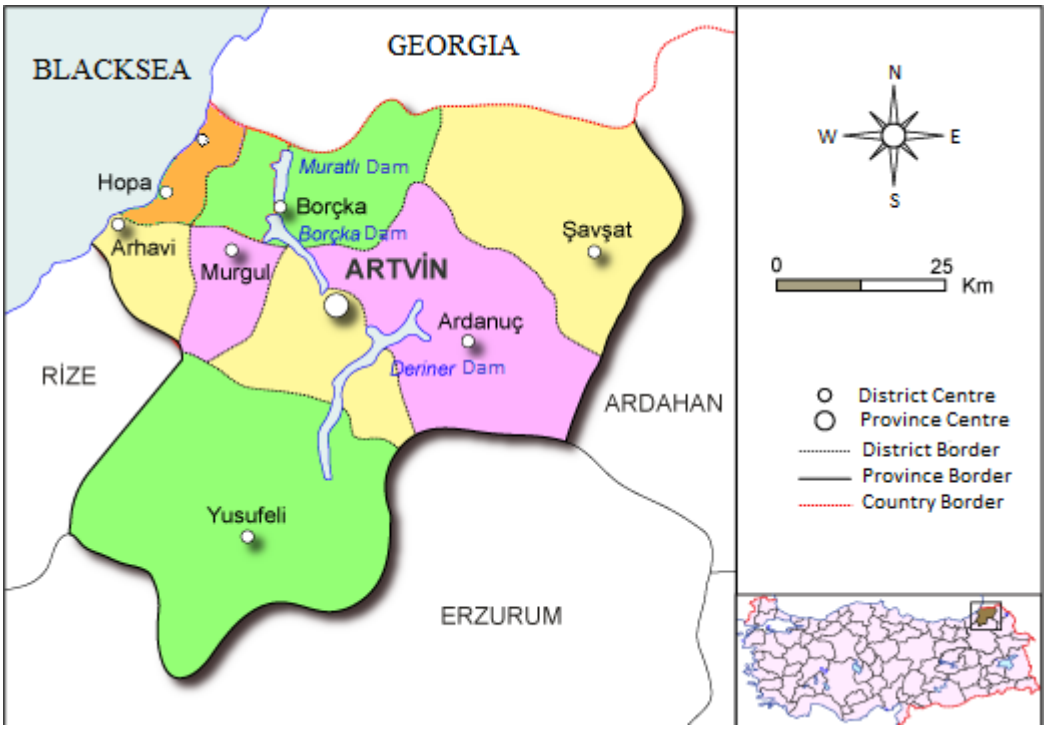

Figure 8: *Map of Artvin Province by Saygılı (2020) (Edited for translation)*

6.2. Input legitimacy

The main focus here will be evaluating procedural justice in hydropower processes which examines how the decision-making process is participatory, transparent and how the decision-makers are held accountable. Vatn (2015) define input legitimacy as "*appropriateness and acceptability of decision-making processes on both principle grounds and with regard to the interest of various actors."* In previous chapters, we have touched upon the principle grounds. In this section, I will mainly focus on the issues that emerged from the interviews. Thus, the dominant context will be the interest of the actors. However, it is possible to identify a type of pattern in narratives when compared to the processes of several projects in the region based on how the process is portrayed in local/national news and social media platforms. Where possible these cases are used the support the claims and arguments. The three concepts have presented together in order to keep the narrative component of the respondents.

Before the discussion, an overview of the decision-making process (See figure 9) would be helpful to recall what steps are followed and when the actors are involved. As the first decision stage, the overall targets are set by the Ministry of Energy (MoE). The sub department of Ministry of Forest and Water Affairs (MoFaW) is State Hydraulic Works (DSI) which is the

main responsible for water management structures. They develop the projects together with sub-department of MoE where the most suitable locations are. These plans are the second stage of decision making. Later when the projects are bidded on, the company must obtain positive decisions for its EIA report from Ministry of Environment and Urbanization (MoEU), a license from Energy Markets Regulatory Authority (EPDK) and a water usage rights agreement from DSI. These steps takes approximately one month.

During the EIA process, the company must comply participation of the locals. We can consider this step as the "final approval" which will immediately let companies start the construction. The affected communities and other civil society actors have right to participate, receive adequate information and give feedbacks. These inputs must be considered and justify any changes in the EIA report, before finalizing the plans. Later, construction and operation stages will go accordingly to initial plans where all concerns and issues are taken into account. However, this last stage is where the most problems occur. If not monitored well, companies tend to reduce their costs by not following the initial plans and EIA reports.

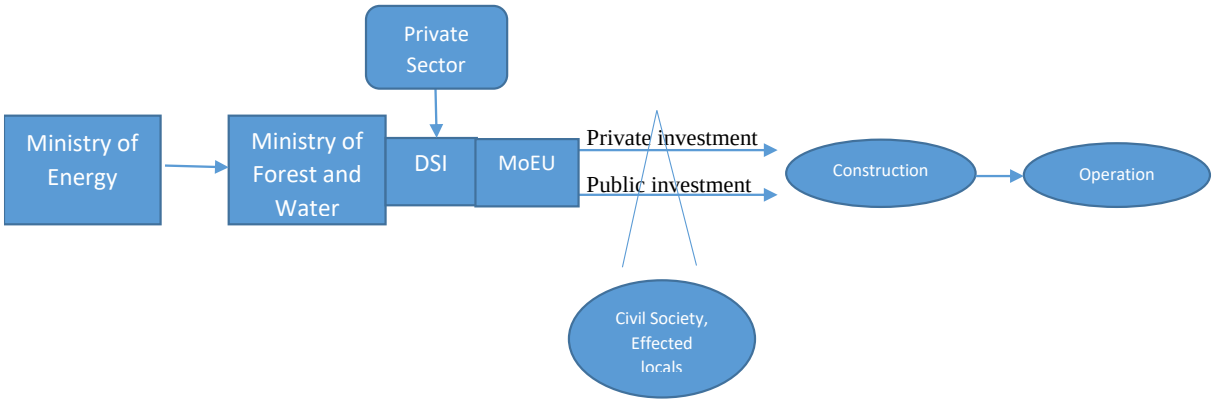

Figure 9: *Overview of the hydropower decision-making processes*

6.2.1. Procedural Justice: Run-of-River Cases

The decisions regarding the run-of-river projects are made by the central government and its public offices, where the civil society participation is limited. The target for utilizing maximum capacity and where the projects will be built are assessed by central government, bureaucrats, engineers and energy companies. As previously explained, MoE is the leading government body and has been taking the main decisions. The main projects were designed by

public institutions (DSI and EIE[2]) which have the access necessary data (e.g. flow measurement, land and property usage) since they have been responsible for water management for over 50 years. However, at the early stage in privatization, economic actors have also taken an important role in decision-making. For instance, in order to achieve the targets more rapidly, private companies were called to design new projects.

The respondents described the decision making process as well as its errors at the early stage in privatization. One participant from civil society described the private companies as taking a critical role in decision-making as a very first mistake that "*messed up the plans*". According to this participant, the profitable market attracted a great number of investors which eventually made it difficult for the public officials to approve the projects. The rapid licensing resulted in faulty information such as short periods of flow observation data and other projects' location along the same river basins. Similarly, two other actors (economic and political) emphasized the errors in planning, more particularly as river basin plans and the coordination between actors. In short, the lack of information and knowledge about the actual outcomes were not predicted.

Concurrently, the rapid decisions also are implemented fast in local level without consulting to the communities. Civil society respondents emphasized the growing reactions of local people. One of them exemplified the reactions and have described his experience with locals; "*In Meydancık valley, I saw women protesting and they stoned the vehicles working in the construction of the HEPP. In fact, our vehicle was a pickup truck and they stopped it because it looked like it. They stopped us and asked what are you doing here?"* The respondents pointed out that locals were not able to receive correct information[3] and answers to their demands and were not able to find responsible or authorities. In addition, the citizens who have reacted or organized collectively to stand against these projects were labelled discriminatory adjectives such as *deliberate actions, lobbyists and imperialism servants*[4]. The societal reactions have evolved into a type of movement. Given these points, we can interpret a sign of

[2] Public institution referred as Electricity and Research Institution (EIE in Turkish).

[3] The small scale projects before 2014 were not under scope of the EIA regulations which means that the companies were not liable to inform and conduct the meetings.

[4] The ministry of environment and forest gave statements to the newspapers in 2010 and 2012, claiming some groups are funded by "outsiders" and doing propaganda (CNN Turk, 2010; Cumhuriyet, 2012)

an accountability issue where the public authorities were not responsive and refused to consider local level reactions and problems.

As discussed in the previous chapter, throughout the years, the regulations have been amended in order to provide more opportunity for locals to participate in the process. However, the functionality of EIA process and the meetings in terms of the degree of participation is still a controversial topic. The governance actors interviewed in this study shared their opinion on participation which revealed two main impressions of the practices. The first impression, all respondents emphasized that there have been several problems achieving meaningful participation at the local level. The opinions differ on what are the sources of this problem and what could be the possible solutions. The second controversy is about the different opinions on opposing groups (anti-hydropower movements).

The perceptions of economic and political actors can be summarized through passive/consultation category with additional elements of material incentives. The legal framework provides the opportunity for cooperation and participation in decision-making. In principle, the legal framework corresponds to what Pretty (1995) characterized as "*Functional Participation*". However, in practice, it could not go beyond only informing the stakeholders. Indeed, one can argue that EIA as a tool itself can rarely go rarely go beyond being passive and involving only information sharing (Bass et al., 1995). There is also an issue of the technical and complicated language used in the reports. The meetings during EIA processes are key for communication and important to discuss the underlying problems. However, the functionality of the meetings are stated as another controversial topic.

Table 9: *Findings related to Participation from the interviews.*

Respondent	Opinion on Participation	Steps in Process	Characteristics (Pretty, 1995)
E1-E	A must for sustainability approach	Stakeholder analysis Good relations hold with local authority Feedback mechanism Information meetings Job creation	Participation by Consultation Material Incentives
E2-E	Must for coordination and strategic	Comprehensive stakeholders study (due to creditor involvements)	Incentives Functional
P1-E	Coordination is weak within stakeholders Central government leads the decision/ Top-down approach Public meetings are not effective Opposing opinions are criticized	EIA process Public meetings	Informing/Consultation

C1	National NGOs can participate in national level decision making. Ministries consult and take their opinions. However, authorities tend to ignore some opinions. Authorities neglect opinions and NGOs due to personal conflicts Local participation is limited at the national level. Competency and knowledge/expertise limited. Own approach-lobbying, being persistent to authorities	Policy decision-making EIA Process	Consultation Occasionally manipulative
C2	Strongly rejects to participate in the processes. The reason is because they do not see any public benefit objectives in policies, they perceive as "*unearned income of domestic and international capital groups"* Reject the approach "*privatization and materialization of water resources"*	The entire process	Manipulative
C3-E	Participation is not well understood by government/public institutions. They don't have enough capacity. Only feedback is taken from locals however later what decisions are made, not shared. Some cases, locals strictly refuse to participate. They protest and refuse to join meetings.	EIA process	Informing
C4	Corporate NGOs participate in decision making. Support locals with info and legal consultancy. Locals on the other hand, protest and find legal ways to cancel projects. They only learn about the projects after the decisions are made. Persuasion with promoting and job offers	EIA processes	Informing Manipulative
L1-E	Locals are against it entirely. They reject participating in meetings and are sure of the harm. Locals rarely experience any good examples. Some private companies aim to implement social responsibility and try to gain consent	EIA process Social responsibility	Informing Manipulative
L2	Ineffective EIA process. Reports are faulty, companies do not carefully examine local conditions. Jobs are provided for some, short-term, and to gain support. Court decisions are not respected.	EIA process Court cases	Informing Manipulative Incentive
L3	Persuasion by authorities		Manipulative

	Powerful actors participate more (economic and positions in the community)		
L4	Persuasion by authorities Command from central government, local government has limited power	Communication channels , through leaders	Manipulative

As portrayed in Table 8, civil society respondents mainly explained how the process is not participatory and argue against actions of authorities and economic actors. They define the EIA process as a step that companies must complete and pass as soon as possible. We could argue that these descriptions links to the manipulative characteristics. Pretty 1995 describes the typology as "*…manipulative and passive participation, where people are told what is to happen and act out predetermined roles…"* and more in characteristics of this approach as *"Participation is simply a pretence, with `people's' representatives on official boards but who are unelected and have no power".* Many of the projects' impact area encloses village areas, thus mostly we see the villages that are in concern or stands out in hydropower debates. The head of the villages, official representatives, take key roles in participation. If the head of villages is convinced, gaining the consent of the majority of the community is more likely. However, in some cases it is possible to come across with polarization in communities. This issue was reflected by several participants and they noted as one the most important outcomes of hydropower projects is that the communities are divided and become "enemies" of each other.

Based on the statements of respondents, it can be concluded that the general approach within run-of-river hydropower cases is a top-down approach. The main and most important decisions are taken in the central units by the public authorities together with private investors. We could argue that the procedural justice issues in run-of-river cases paved the way for a type of resistance within the local communities. The locals are organized under platforms whom are against these procedures. In Artvin province, today there are several active groups. The main objective of these platforms is to protect the local nature and the rivers from all harmful projects mainly run-of-river.

The respondents shared different opinions on these groups. The external perspective is that some civil actors find the reactions a natural outcome of the top-down approach. An economic actor categorized the local groups as who react to the non-participatory and non-transparent processes and some only "oppose" and do not want to be involved in negotiations.

More interestingly, the respondent from public institution have described the same approach acknowledging that the regulations do fail in practice. However, they specifically draw a line against "*only opposing*" groups. He then reflects on the whole process as completely damaging for the participatory process; *"There, some groups come into play, and the case is taken to the courts. Eventually, the process HEPP stops. Or when it is finally done somehow, the locals cannot reach to a level where they can ask and talk* ***[with the companies].*** *Those in between are either winning or losing. In this sense, we have not managed this process very well yet."* In sum, we could interpret once again non-participatory and non-transparent approach is one of the main sources of conflicts, dividing governance actors into winners and losers.

From an internal perspective, these groups define their approach as a type of "defense" against the standardized decision-making process of hydropower projects. Some of these groups are against negotiations and oppose all projects. The difficulty here is how much of the efforts pay off on behalf of the locals. In several cases, rather than influencing decisions, these efforts seem to be only extending the process. In some cases, their efforts could result in "positive" changes, such as increases in discharge water percentages (See Box 6.2.). However, the groups are rarely convinced with the finalized decisions, as it generally means that the projects will be constructed.

Box 6.2. Projects in Kamilet Valley from Arhavi District

According to DSI web lists, four projects were designed and applied by the private sector in 2007, along the stream of Kamilet valley called Ballı/Kapistere. In 2013, the first run-of-river project started construction. The road construction was protested against and issued in court by the locals. In January 2013, a conflict appeared in national news between authorities, construction workers, and the locals (Kacar, 2013). The governor and other authorities claimed that it was not construction work but only drilling works. On the contrary, the locals had a claim that was construction related to the HEPP, the machine's action was not legal and procedural steps were not followed. The locals had also examined the EIA reports and appealed with incorrect information. In 2014, the Municipality Council had approved the construction plans by voting. However, after several attempts, the Council of State made the final decision which approved locals' claims (Daglar, 2014). The license of the project canceled later in 2015.

Another project with 15.74 MW, was planned and obtained its approval for EIA in 2012. Similarly, road construction started with the reason for drilling works. In 2014, Artvin City Court had decided that the construction was contradicting with the zoning plans and was sealed. However, the construction continued despite the court decisions and authorities' declaration of "*penal sanction will be applied*" (Vardar, 2014). The project leader were imprisoned for five months due to illegal act. Later, the company had prepared the construction plans (for the road and power plant) and applied to the municipality. The plans were approved by municipality council. The locals sued the company two times more and court decision were favor of the locals. However, the construction continued. June 2020, locals had reported over a month of muddy running water (Ocak, 2020). The locals claimed that despite the court decisions to stop the company, they continued activities under pressure from the local authorities. According to the municipality, it is reported from the company that it was a technical failure related to the head pond. However, it is also noted that they had started early to produce electricity, without finalizing the head pond. According to the municipality leader, the company was given fines.

Although it is understood that issues with the EIA process affect the functionality of the process and prolongs it at the same time, the reliability of the decisions is questioned as well. The civil society respondents shared a common opinion about local authorities. Their decisions appeared to be in favor of the projects despite the local community's objections. In sum, they frequently refer to local authorities as under "pressure," and the central government does not respect their decisions. This issue of representativeness can be argued regarding their accountability. These authorities are elected and are given the power to make decisions at the local level. Hence, the standards of "*hierarchical accountability*" apply (Vatn, 2015, p. 166). However, even though the authorities are accountable through democratic elections, their decisions are not accepted and appealed to the courts.

We can exemplify with a recent case from Yusufeli district, Kılıçkaya village (See Box 6.1.). According to a local respondent, they tried to convince the municipality board to reject the zoning plan of a power plant. The locals oppose to this project as they are concerned with recently developed agriculture initiative in the village. They claimed that there is not enough water for even their crops, especially in dry seasons. According to the respondent, the local authority have rejected their demand by stating that "*we don't want to be displaced."* In local news, the authorities explain that they did not receive any information about the plans that would counter the approval (Dagıstanlı, 2021). They stated that the central government authorities shared their opinion in favor of the project. Similarly, another project from nearby villages was protested by a larger group with complaints on the decisions taken by local authorities' that disregards citizens' demands. The locals stated that they will file a lawsuit against the decision taken in the parliament (Karafazlı, 2020).

Regarding the transparency, one of the main issue is the true information shared by the authorities (See Box 6.2.) A participant emphasized that one of the main issue occurs during EIA process when the feedback is taken or a meeting is established later the decision-makers do not share information about the final decisions. Another have emphasized that the locals cannot receive correct information from competent authorities. This moreover generates a gap that allows spread of misinformation. Given these points, we can interpret the lack of *transparency* in EIA processes also source of the reactions.

Box 6.1. *Run-of-river Cases from Yusufeli district*

In Kılıçkaya village, the project decision was made earlier in 2014. However, due to opposition in the village the project was stopped. The company have re-applied for the project. This year, the locals have taken the issue up to the administrative court. The locals are concerned about their recent agriculture initiatives. It is stated that they want to establish a counter-migration, from cities to the village. Moreover, a report was established to prove that the calculated discharge water was faulty (Dagıstanlı, 2021).

Another project, for which all three villages in the region reacted, became operational in 2009 as a positive EIA decision. According to local organizations, the project was stopped three times. In 2020, the zoning plans were approved by the parliament by voting. The headmen and villagers of the Yusufeli region protested this decision. (Karafazli, 2020). While the group stated that they did not want any project that would affect the rivers in the villages, they requested that the ongoing court process (related to land use) of the project in question be waited in the administrative court. It was recorded that a month later, the construction activities started with police forces, guarding the area for any conflict that would appear. In addition, the construction area is a pasture land. According to the locals, the company does not have valid permits.

6.2.2. Procedural Justice: Yusufeli Dam case

According to the regulations, the projects larger than 10 MW installed capacity must comply with the formal EIA process. Moreover, it is mandatory for dams with reservoirs larger than 10 million m^3 (Environmental Impact Assessment Regulation, 2014). However, a temporary clause was added to exempt a few projects from the regulations. It was stated that the projects which had been planned or built before the regulation entered into force can be exempted from the EIA process, including the Yusufeli Dam project. However, with the involvement of Export Credit Agencies (ECA), this process was changed.

Together with societal demand, campaigns and ECAs involvement the decision-making, process of Yusufeli dam was opened to civil society participation. A report was prepared according to World Bank standards as well as a resettlement plan was made that evaluate social impacts. Moreover, an alternative project design proposed by the local culture association was considered which would prevent the majority of resettlement action (Scheumann, Baumann, et al., 2014). However, public authorities argued against this alternative based on the cost and energy production evaluation (DSI, 2006) Eventually, the alternative was rejected.

International and national NGOs together with local groups organized campaigns and argued the environmental and social impacts of the Yusufeli dam. Informative reports were prepared by various civil society organizations. Later, as a response to the critiques from NGOs and also with the demand from ECA, an EIA report and Resettlement Action Plan (RAP) were prepared based on international standards (ENCON, 2006). More critique followed due to this new approach in the process. The ECA withdraw due to a lack of complement with their criteria. There is no official statement on due to what criteria the project was found insufficient. However, there are statements about the withdrawal and other findings from fieldwork that would both give an idea of the reasons as well as core procedural justice issues.

Particularly three documents are found with important insights (CounterCurrent, 2011; Declaration de Berne, 2007; Hildyard, Griffiths, Verger, & Godinot, 2002). All are mainly results of collaborative field works of European and national civil organizations. When we look at the procedural justice criteria, the following findings are significant;

- The resettlement area is inappropriate and will not be able to meet the local's current living standards. Lack of participation, on the contrary, public meetings of local groups were intentionally prevented (CounterCurrent, 2011).
- No public acceptance determined. Participation of stakeholders is found to be missing as key decisions were taken without informing. In addition, the inadequacy of women and vulnerable groups was found to be concerning. The absence of a resettlement plan was also criticized (Hildyard et al., 2002).
- Lack of information, consultancy and participation, trust in the authorities and accountability. The local people's concerns are mainly about livelihoods and the new resettlement area (Declaration de Berne, 2007).

Regarding the environmental issues, committed measures to protect endangered species were found inadequate according to standards and the data was insufficient. For instance, fish passage regulation is not fully adapted, neither legally nor technically. Thus, this generated questions regarding the practical functionality of the protection action. The cumulative impact of the river basin did not comply and without an agreement between Georgia and Turkey found to be concerning for the stability of the region (Lambourne, 2006). The transboundary issue, however, did not appear later despite the absence of a bilateral agreement. Both countries seem willing to protect their political relations as neighbors located in a strategic area. Turkey committed to providing financial support to compensate for the impacts and cover the monitoring (Scheumann et al., 2011). One of the IFC standards is to gain consent from affected locals. Since there was a strong objection in earlier years, this could be considered as an influence on the decision. The expropriation and resettlement process was also found to be problematic (Evren, 2014; Scheumann, Baumann, et al., 2014; Türk & Erkan, 2018). A study (Türk, 2018) examining the RAP found the process was not successful in terms of being participatory or transparent. Moreover, they evaluate the plans as "…*top-down operations that are decided first and then rationalized".*

The activist groups initially interpreted the decision of ECAs as a "victory", assuming that the project would be cancelled. However, the state continued with search for alternative funders. Eventually, with a consortium of three construction companies, the project was funded by the national treasury. The leading group of activists continued to sue the project and insisted on an evaluation of environmental impacts and comply with the EIA regulations. The court approved the appeal in 2005, concluding that the project would not carry public benefits without

a proper assessment of impacts. Eventually, this decision was rejected from the higher court. The legal objections proceeded however it did not result with any significant changes. The final decision was made in 2006 and thereafter the opposing stand in the society eroded (Evren, 2014).

Questioning the reason why the creditors withdrew revealed more insights about the procedural justice elements of the process. Considering the critique from civil society, NGOs and academics we could interpret the cause simply as; the process did not comply with international standards. The participation of locals is found to be inadequate as well as committed measures regarding ecological and socio-economic impacts. Scholars intrpret smilarly as the project was problematic concerning resettlement and environmental protection (Evren, 2014) and there were remaining "*unsettled EIA issues*" (Scheumann, Baumann, et al., 2014). The respondents, however, evaluated the decisions slightly different.

One of the respondents emphasized that they followed a model in the processes parallel to World Bank standards. However, after the export credit agencies withdrew for various reasons, the process shifted to a "*classic model*". In other words, a contract was made between state and construction companies without any other social or environmental compliances. Another participant from a public institution noted similarly that technically and physically there were no difficulties in complying with the standards, for them as public servers. However, both respondents described the bureaucratic and political system as a type of barrier. Eventually, they associate creditors' action with having a strong link to these systemic obstacles as well as being a political decision. The economic actor emphasized three reasons i) the Turkish government not willing to comply with issues outside of national legislative framework ii) a political approach due to transboundary issues iii) pressure from NGOs (national and international). The political actor perceived the decision as political due to certain national conditions such as the expropriation and resettlement laws. The respondent emphasized that the creditors should have understood local level conditions and should allow for modification of certain standards.

In summary, reviewing studies that analyzed the processes of Yusufeli dam had shown similar findings, mainly about the evaluation of the project's impacts and resettlement plan. The process lacks participation and transparency regarding the decisions made on the new resettlement area selection, consultation to the locals and shared information. In addition, the issues regarding the transboundary impacts and high degree of ecological losses are main

foreseen outcomes. These findings can be interpreted as the root causes of the final decision of ECAs. One of the milestones is the shift of decision-makers which resulted in drastic changes in the process.

A final note with the accountability have revealed other two aspects. Firstly, the involvement of creditors brought new actors that interfere with what (Bäckstrand, 2006) describe as "*hierarchical and electoral accountability*". Certainly, creditors' decisions and/or the imposed standards that enhanced quality of the process. Their involvement partially attracted additional examinations and studies in the area which would not be conducted within the national framework. After the withdrawal, the state have become the main decision-makers.

The decision-makers are accountable to the citizens' thorough mechanism of representation (Bäckstrand, 2006). How the local respondents describe the process stresses counter argument about elected decision makers. They do not target directly however critized the authorities actions which implies important findings on accountability. As an example, one participant from activist group described the influence of mayor change on the overall decision-making about the dam;

"*Dams are state projects, many were not opposed at first. Later, we had realized our losses. In Yusufeli, the people initially resisted, because we had seen other examples* [of large dam projects in the region]. *Unfortunately, they couldn't stop it. There was a mayor from the MHP party and he had fought exceptionally. The opposition stand ended when the government party was elected for the municipality*"

Moreover, the respondents emphasized the political issues in town. The 2009 elections were portrayed as another milestone. The primary campaign for all parties was to advocate better conditions with the dam process. Two other participants noted how vital the elections were before the government decided to invest in the project. They argue that the results of the elections accelerated the plans and also generated expectations among locals. One emphasized that locals asked more questions and increased their expectations as the new municipality was the government party. However, the municipality had limited power to advocate with the central government. The decisions are made and applied with a top-down approach.

We could interpret that local elections allowed the governmental party to be more active to gain the consent of the locals. Nevertheless, it is not possible to identify a change in approach towards participation. We could argue that the government party facilitated their way out in building the dam with a similar approach in the run-of-river cases. Another participant

emphasized that the dam process has been discussed frequently in previous years, however mostly with the people who are at the forefront in terms of social and good economic position in the communities were dominantly involved. The description of the process also informs on how the consent was gained;

"*Of course, there were negotiations, but I can say that it was more of an imposition rather than an approach of whether you want it or not. They are also aware of people's reactions. Therefore, they avoid collective communication. They approach each other individually. 'The field owner next to you sold the land, and you should sell it too' Does it matter if I don't want it? Before, no one should have sold by taking action together."*

What he describes as collective action of not selling the land does not seem possible under the expropriation law, especially if *"urgent expropriation*" is applied (R. Caner Sayan & Kıbaroğlu, 2020)The decision is not based on public consent. Land owners only have right to negotiate the value of their property. Even though the laws have been through changes to adopt for better standards, it is still found to be not close to the international standards (Scheumann, Baumann, et al., 2014)

Another participant described how the locals consent is gained and the level of participation, both referring to run-of-river projects and dams; *"If the state wants to do it there, it certainly will. Dialogue is for persuasion, convincing the citizens. With what methods? If necessary, they can place the military gendarme at the construction of the dam. It doesn't matter how much people don't want it*."

Finally, we can identify a similar compensatory approach as with run-of-river cases, job opportunities and aids provided to the local communities. Although job opportunities are significantly high due to the large dam construction and the aids were helpful, it is emphasized that local people are excluded from some decisions. The decision-making of the new settlement found to be somewhat participatory, living conditions in the future were not discussed thoroughly and locals were still worried about their future.

In conclusion, while the decision-makers claim that the processes in the Yusufeli case as an exceptionally good example in terms of social and environmental assessment, the respondents from civil society reflected concerns over the processes and approach of authorities. Somewhat good efforts were applied however, the demand from locals was not completely acknowledged.

6.2.3. The Role of the State

According to the respondents and the statements of opposing groups, there is an important debate over the role and the meaning of state. This is an important finding that explains the issues regarding input legitimacy. The key support of procedural justice is the democratic institutions. However, the role of state and the democracy takes place in social arenas are highly questionable. One respondent describe a common description of the state; *"It is a concept in which the state is considered very inviolable, very lofty and even holy. The concept of the state comes first before the citizens of the nation. It's a very intangible concept."* Two other respondents similarly described the perception of "*role of state*" in the society, however with changing notions. The meaning evolves from an unquestioned authority figure to an entity accountable for to its citizens;

"*The state was at the forefront of the individual, now the individual has come to the fore. The state exists for the individual. The individual is not for the state. This perception did not exist before. If our state says so, it is true. There is no conflict with the state, nothing can be done against the state. Not so anymore."*

"*In Turkey, the understanding of the state father*[5] *continues, the state has not only coercive power, but also have a lot of honor. The people adopted and accepted what the state said in many regions and accepted it. In recent years, of course, it has increased with communication technology, let's object to it a little more, let's oppose it. Otherwise, the state would say and do it, especially 30 40 years ago. So this system is evolving."*

When we examine the protests in the region[6], we can see this distinction. Although there is no evidence of change in society in general, it can be concluded that there are two different understandings of the state. The first is that accountable for its citizens, the second is that the actions of state and authorities are not questioned, their power is respected and therefore they wish from the decision-makers. The groups in Arhavi emphasizes the constitutional rights of local people, compliance with regulations and the right to the healthy environment, followed by the responsibility and accountability of government officials as decision makers in the

[5] Father State: In Turkish "*devlet baba*" is a phrase/concept used to describe the state and its relation with the society. The roots go back before the foundation of republic, though the use may have slightly changed. See more in (Delaney, 1995) .

[6] Protest in Arhavi https://www.youtube.com/watch?v=GFwTIPgvVbk, protest in Yusufeli https://www.youtube.com/watch?v=ED75K0F3toI

process. Their main slogans refer to struggle and fight against the projects and decision-makers. They describe their stand against "*the mentality that made our country and our region a geography of plunder"*. Protestors from a village in Yusufeli emphasize strongly that they do not oppose the state and that this was not a rebellion against the state. They stated that most of their districts were already under water, in their words "*enough sacrifice*" was made with Yusufeli dam project. Thus, they want their villages to remain untouched. At the same time, they request that the tourism potential of the region is high and that it should be evaluated in this respect, which is already an important livelihood. Differently, there is a stronger emphasize on "*beg and call*" from authorities. Similar to (Kavak, 2020; Knudsen, 2016) findings, the differences here can be interpreted based on ideologies, values and political interests of local activist groups. The groups carefully avoid to refer party politics however two groups discourses reveals this distinction[7].

Summary on Input Legitimacy

Economic actors emphasize the benefits of the activities. They also draw attention to the damages that may occur and say that precautions should be taken. In general, they emphasize the progress regarding regulations and monitoring. Likewise, political actors emphasize the need for energy and emphasize the importance of using local resources. On the other hand, two kinds of expressions emerge among civil actors. First, it is stated that it puts these resources at risk with privatization (anti-privatization opinion). In other words, it is assumed that in a profit situation the benefit of nature or the public will most likely be ignored. The second opinion emphasizes planning and monitoring whereas public or private wouldn't matter. However, from a local perspective, they do not see any good examples overall that would outnumber. Therefore, these "bad practices" caused a general perspective spread among local communities.

Briefly on Yusufeli case, the participants in this research representing the decision-makers explained the process as just, participatory, inclusive and hence legitimate within national legal framework. However, when other factors were involved there were certain limitations to fully comply with international standards. All respondents' answers pointed out this gap. We could summarize the process as despite the efforts with the Yusufeli dam, the

[7] Two groups slogans are commonly used with any other protests or social activism. The first group's common slogan "*This is the beginning, continue to struggle*" sources from 2013 nation-wise protests against the government (Gezi Park Protests). The other group on the other hand, refer to the stories from independence war in 1919 and being tied to nationalist values.

potential of challenging the system was eroded with the political changes in local level and also withdrawal of the creditors.

Similar discussions were revealed when we compared the two types of projects. Lawsuits were filed in most of them and the civil society participated in the process with their own efforts against the decisions made. When we evaluate the views of different actors in general, participation is emphasized as one of the most deficient stages in projects. The reasons for this problem are interpreted differently. While civil society actors emphasize the justification of local people resisting the projects, other actors emphasize constrained communication and technical problems. Finally, an important factor should be noted on the state-society relationship, which is emphasized by several actors regardless of the type of project. The perception of the state as an authority has changed and the citizen/individual rights are found to be more dominating. However, the ideologies may also influence such perceptions.

6.3. Output Legitimacy

Three criteria are to assess the outcomes; *distributive justice* and *effectiveness* and cost-*efficiency.* Similarly to the previous section, I will divide the sections with the themes that have emerged from the interviews. The output legitimacy criteria will be used to discuss these outcomes thoroughly. We will start with electricity production and economical values and move to the environmental issues which then will follow its implications for livelihood and land changes. The electricity production and the environmental outcomes can be related to policy effectiveness. *Vatn (2015)* suggests question to pose here as *"how well the policy is at meeting its overall goals"* Simply put, the main objective of hydropower policies is to produce electricity, secure the supply and make sure of domestic resources are used for public benefits. Additional to the overall goal, we need to consider the water management policies which clearly targets sustainable use of water resources as well as secures the ecosystem continuity. Therefore, another important outcome to question is *how well the hydropower development can comply with the environmental effectiveness regarding the riverine resources and ecosystems?*

The final theme, livelihood concerns and compensation is both related to distributive justice and cost-efficiency criteria. The first refers to the allocation of benefits and also require an analysis of the compensation. Regarding the cost-efficiency criteria, the data is insufficient

to assess the actual cost of the policies. However, the costs in local level such as loss and concerns on livelihoods will be briefly discussed.

Table 10: *Principles in Distributive Justice, referred in this study based on Vatn (2015)*

Principles	Explanation
Resource-based	Same amount of resources, equal opportunity
Welfare-based	Social welfare should be maximized in the society.

6.3.1. Electricity production

The production efficiencies of power plants have emerged from the interviews as a debate among actors. This argument is only related to the small scale and run-of-river projects. Respondents have different opinions on production capacities and the electricity targets. The power plants noted to have resulted in a failure to achieve their targets. While some links this issue to political choice, others emphasized technical problems. The objective, overall policy target is questioned, and especially for civil society organizations, this problem is often linked to explain why hydropower projects are not acceptable.

Respondents from civil society organizations described the same issue related to wrong calculations and absence of sufficient water flow, leading to low production efficiency in power plants. However, the ineffective outcomes are furthermore linked to a type of political decision; favoring the private sector to generate economic growth in the energy sector. How they describe the hydropower policies showed similarities. One noted on his perception of hydropower policies; *"I see HEPP constructions and HEPP policies as a means of generating unearned income, creating resources and transferring money to someone, rather than energy production policy."* Another respondent similarly described and linked the policy effectiveness to a sector generation; "*It is hard to define a public interest here. We don't need this much electricity. Someone got rich, money was made from investments. They were repaid as votes, maybe. The treasury, as state policy, buys electricity for no reason, with the tax of the citizen".*

Another respondent emphasized the objective of run-of-river projects is to trade electricity and buy emission offsetting credits. The overall target and energy demands are criticized of being "*exaggerated*" and "*wrong electricity demand projections*". Another respondent also pointed out the energy losses in electricity system which is approximately equal

amount of energy that small scale projects produce. Given these points, we can conclude that civil society actors have a common argument that the small scale projects are not effective in terms of energy production and does not aim to benefit the locals nor public interests.

None of the political and economic actors question the electricity target, the need nor the public benefits. They do not generalize the outcomes and only refer to some cases as "*bad examples"* and associated with their technicalities. The faulty implementations are explained with rapid development, planning mistakes, absence of flow rates data and experience of the investor.

When we examine the production and consumption data, there seems to be support for both arguments. In the electricity system, the total installed capacities found to be enough to meet the future years demand. In the short term, there is a supply surplus when supply-demand is evaluated (TSKB, 2018). Moreover, the losses in the grid system does not show significant changes throughout the years (See Figure 10). Some of the projects from Artvin province and black sea region found with low production capacities (Water Policy Association, 2019). However, the data is not available for all projects and each year.

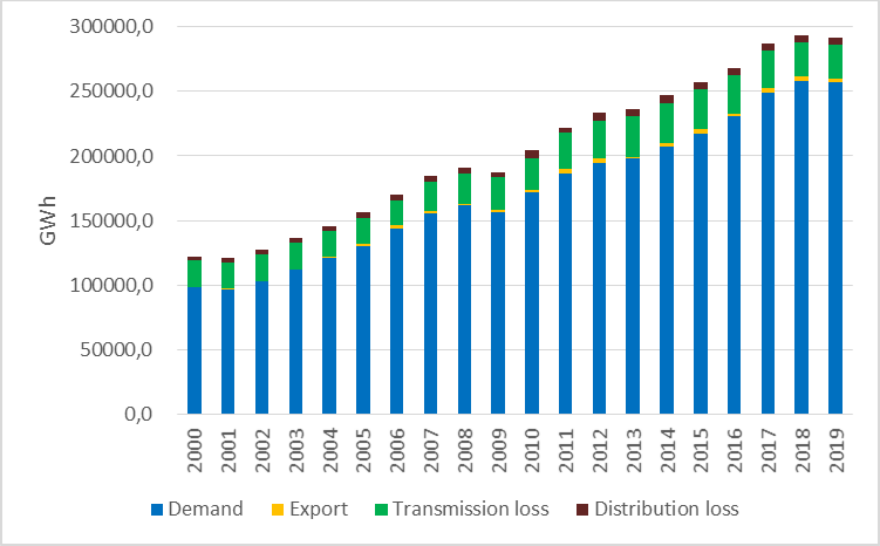

Figure 10: The energy balance in the electricity system (2000-2019), Own Work. Data obtained from EPDK

Once again, none of the participants describe similar problems with dam projects. The dams built along the Çoruh River produce large amounts of energy. Yusufeli alone will produce 1.817 GWh/ year and have total installed capacity of 540 MW. The production of Yusufeli dam

exceeds the total amount of production capacity of run-of-river projects in the region which is approximately 1.151,31 GWh/year[8]. Moreover, the Yusufeli dam project as part of the cascade design (See Figure 11) will regulate the energy production of other downstream projects. It is estimated that the firm energy will increase by 467 GWh/year once the project is complete (ENCON, 2006).

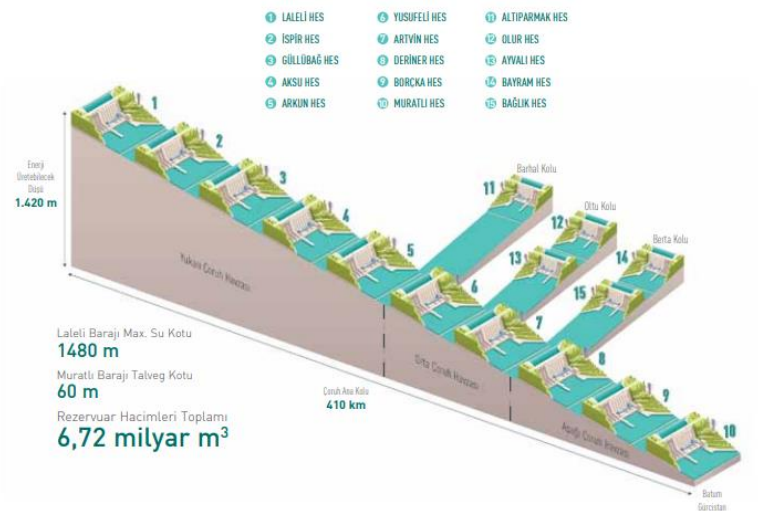

Figure 11: Cascade design dam projects along Çoruh River basin (DSI, 2020)

In sum, we can interpret that the interests of the actors strongly influence the acceptability of efficiency outcome of the projects in terms of electricity production. While large dams stand out advantageous in terms of energy production, the disadvantages such as environmental and social cost as well as high investments costs can overweigh. However, the long-term benefits of large dams are the prioritized policy choice in Turkey. The respondent from public sector explained the comparative advantage of dams; "*If only we could finish our dams, there would be no need for small scales… Our water regime is irregular, dams are necessary structures for water management. If we don't build dams, we can neither irrigate nor distribute drinking water."* Civil society actors does not necessarily compare and justify choices over another. They commonly compare the costs along with almost no benefits for locals. In addition to this uneven distribution of benefits, the burdens have emerged due to how private sector use the rivers and built the projects. At this point, it will be useful to further examine the specific issues with environmental outcomes.

[8] Calculated according to each projects production values shared by DSI.

6.3.2. Environmental Effectiveness: EIA Reports, site selection and other operational problems

Previously described decision making process at the local level have two key binding tools; water usage rights agreement and EIA reports. These two documents form the opportunity to underline possible ecological outcomes and how to provide solutions to decrease the impact or prevent it. Thereafter, in practice the outcomes of these tools determine the results. The respondents described practical issues related to EIA reports and water usage rights. More specifically, three concerning topics revealed from the discussions a) discharge/environmental flows b) fish passages c) site selection. The policy efficiency is highly related and these local level issues are genuinely important as they lead to more discussions. For instance, the site selection criteria creates controversies among stakeholders. The cumulative effects of the projects and the protection status of the area are debated.

Among the respondents, economic and political actors emphasize the recent EIA regulations as more detailed and the process as being examined carefully. Most significant changes established with the EIA and water use regulations such as special report formats including Ecological Impact Evaluation[9]. While the formal rule changes and progress to evaluate the projects are considered to be improving, the civil society actors emphasize issues in practice. They described the reports and processes differently. Examples from the interviews are as follows; *"Ecological perspective is not integrated and are prepared to favor economic interests*", "*faulty prepared and unrealistic", "without examining the area and written in a very short time", "deficient, problematic and copied", "problematic in implementation".* The locals argue that what is written in reports is not followed in practice which is a sign of ineffective monitoring. According to the authorities, the capacity to monitor was increased.

One of the problems frequently encountered in practice is the construction phase. For instance, while a commitment was made to dispose the excavation wastes in pre-arranged areas, pouring them into and around the stream beds was noted as an often repeated mistake. The result of such action is associated with changes in water quality, loss in fish population and river ecosystems, damage to the slope vegetation and increased risk of erosion and flooding[10]. Özalp, Kurdoğlu, Erdoğan Yüksel, and Yıldırmer (2010) evaluating the problems in Artvin,

[9] This report format is commonly noted as an important criteria to evaluate ecological value.

[10] Examples are given by the respondents whom have expertise in both hydropower projects and ecology or conservation disiplines.

they determined damages caused by construction wastes to water resources. TMMOB (2010) recorded the same issues for projects under construction. A recent case from Kamilet Valley (See Figure 13) exemplifies such failures during construction. Although, authorities stated that a fine was enforced, the consequences on ecosystems provoked concerns among locals (See Box 6.2.). Another issue emerges during construction is uncontrolled dust emissions which is linked to effecting the health of forests and eventually honey quality produced around the same area. Altogether, uncontrolled and measured construction can possibly change local environment greatly with polluting the rivers and degrading the area around project site.

Figure 12: *Downstream of Kamilet valley, after construction in 2020. Source:(Ocak, 2020)*

The water-usage studies and the ecological evaluation are two base formats in addition to a standard EIA reports. While EIA is under supervision of Environment and Urban ministry, other two reports are formatted by DSI and Directorate of Nature Conservation under the Ministry of Forest and Water Affairs. The overall objective is to determine discharge water flow according to the local conditions both in terms of water demands and ecosystems sustainability. These base studies are important and can be considered as positive outcomes in terms of evaluating the projects with an integrated approach. However, the discharge flow still holds its controversy among the actors.

In legislation, the threshold value that should be released at the discharge of power plants is referred as *"can suyu"*[11] which can be directly translated as 'the water for life'. The similar concept corresponds to this term is the environmental flow. IUCN (2021) define it as "*water provided within a river or wetland to maintain ecosystems and the benefits they provide*

[11] This term is used in regulations and also a phrase used in informal language. It has a cultural significance which some respondets referred to. The cultural meaning is 'The water given to a person who is about to die'.

for people." The ecosystem conditions should carefully be assessed in order to determine sufficient amounts.

The experts emphasize environmental flows as the most important outcome issue for hydropower plants in Turkey, specifically with run-of-river projects. Over the years, various efforts were made to improve the implication of environmental flows. Flow monitoring stations installed at the power plants established since 2013, and the water left is monitored for 24 hours (WWF, 2014). In addition, some respondents commented on such improvement as result of civil society pressure.

According to the law, the general rule is at least 10 percent of the average flow for the last 10 years must be released from the discharge. This amount can be increased if the ecological needs are higher within the location of the project. As stated in the previous section, objections are made especially in cases regarding the inadequacy of the water flow rates. These discussions may lead to an increase of the amount of water to be left. For instance, one project in Arhavi resulted in a 2% increase (Hurriyet, 2015).Moreover, the methods used to calculate the environmental flow are important. The Tennant method is widely used within the scope of the regulation. According to the participants, this method may be insufficient especially where key biodiversity areas and in areas where different fish species live.

Another important problem in practice is fish passage structures. This issue is still unresolved and legal framework has not yet been fully established. One participant emphasized this gap as the responsible authority is not clear in the law and overlaps. In Artvin region, it is noted as a major problem where migratory species are present. In this case, detailed research by experts is required. As a solution, ecosystem assessment reports may be introduced in some cases. These reports are prepared by experts from different professions and evaluate ecosystem diversity and characteristics, habitat types and conservation or vulnerability situations. Accordingly, the fish passages structures should be designed and corresponding water demands for the fish species should be provided (Karakus, 2013).

While one small scale project impact may be not significant on its own, along the same river line or basin they may generate cumulative environmental effect. The issue of cumulative projects along a creak/stream/river is more of a concern among civil actors and also for the experts. As previously described, while many respondents in this study have described a type of planning issue. This planning also include the river basin projects which is more about the

cumulative projects. In addition, it becomes more difficult to condition the coordination between actors.

A sample guideline prepared to supplement EIA regulations is helpful to understand 'to what extend EIA regulations can identify the issue of cumulative effect. The document indicates that it is possible to integrate cumulative effect during scoping of an EIA report and in Turkish legislations this correspondents to report formatting. Certainly, this type of assessment requires expertise, longer periods and access to large data. (WWF, 2014) stakeholder analysis, had also found a consensus that the most certain issue was adequate planning. According to all respondents, cumulative effect is one of the main problems with run-of-river projects.

The respondents exemplified cases from a valley called Kabaca Valley as an example on cumulative impacts. Along the stream, there are 6 power plants that are very close to each other and the flow regime claimed to be changed drastically. The projects were built between 2008 and 2013. Earlier studies have reported deterioration in the creek bed (WWF, 2013), dust pollution during construction were reported (Özalp et al., 2010). It was predicted that this situation will be effective especially in honey production, which is an important income source.

The amount of water released is calculated by taking into account the other water needs at the upstream and downstream of the power plant. The most important regulation is the rule of prioritized water use. The Regulation No. 30974 *"Water Allocations Regulation*" concerns the procedures and principles applied to the public organizations and authorities regarding the allocation, leasing and licensing. Here, the allocation have defined with certain prioritized demands according to the purposes. Regulation on Water Allocation (2019), Clause 7 states the following arrangement 30974;

1- Drinking and potable water
2- Environmental water
3- Agricultural irrigation and aquaculture
4- Energy production and industrial water
5- Commercial, tourism, recreation, mining, transportation, transportation and other water demands.

In principle, this allocation can be linked to the resource-based principle in distributive justice (Vatn, 2015). The normative stand here is that the resources are public property and hence requires equal opportunity. As mentioned before, EIA studies of projects examine water use rights. It is foreseen that there will be no problems in cases where priorities are observed

and the principle of benefiting from resources is observed, as specified in the law. However, achieving this requires both coordination and trust between actors. In cases where this cannot be achieved, the problem of effectiveness may occur. In particular, the most important criterion is monitoring and compensation. The responsibility in case of any harm in monetary terms is assigned to the company and stated in the agreements.

Finally, another significant concern is related to the site selection in or around important biodiversity areas, natural reserves and protected areas. The Artvin region and the eastern black sea region are a region where unspoiled nature areas and wildlife are in the majority, due to the low population[12] and the lack of industry. These areas play an important socio-economic role in the region. As previously mentioned, there is a debate over protected area and whether any hydropower plants should be built or what could be the limit due to the high value losses. In general, protected or conservation areas are disputed topics in Turkey due to development and economic growth objectives. Several hydropower projects overlaps with KBAs and wildlife reserves such as Çoruh Valley[13].

Figure 13: Point taxon illustration of biodiversity areas in Artvin. Source:(Ministry of Forestry and Water Affairs, 2021)

[12] The population of the entire district was 170.875 in 2019. Net migration rate is -20% in the 2018-2019 period and unemployment rate is 7%. (Source: https://www.doka.org.tr/bolgemiz_Artvin-EN.html)

[13] See more on the study by Eken et al. (2016) about KBAs in Turkey and the threatening activities.

Along with environmental NGOs, local people follows a type of "*strategy*" to obtain natural protected area status for their lands (e.g. surrounding valleys, mountains, river basins). There are important cases (See Box 6.3) that achieved this objective by seeking help from experts to determine the ecological value of the areas and apply to the court in order to acknowledge the value. Kamilet valley is a recent example, where the protection area interest revealed however yet not obtained. The valley is associated to be an intact area which is considered as one of the European hotspots for forests. The local honey keeping livelihoods are foreseen to be affected greatly (Özalp et al., 2010). Civil society organizations applied to the court with a demand for a protection area request. A committee had assessed the region and gave positive results. Next year the Ministry of Energy issued an opinion as negative. The case is on-going and the pending process is associated with the authority change.

Regarding the rules and regulations, we can exemplify few important changes. The expert group respondent in this study emphasized the absence of actions regarding protected areas. In 2010, a law clause was added regarding protection areas. The statement is about the principles and the authority that would specify the decisions in these areas. The change was perceived as an opportunity for hydropower projects to be exempt from the laws of protected areas. In 2011, the authority for declaring a *Natural Protection Area* was taken from Cultural and Tourism Ministry and given to the Environment and Urban Ministry. The change had generated contested opinions, whether this decision will protect the areas against the HEPP decisions. Similarly, (Islar, 2012; Şekercioğlu et al., 2011) argued that these decisions were controversial. Scheumann, Baumann, et al. (2014) specifies the law changes about protected areas are "*a further push"* for the projects.

Another example is the Yusufeli dam case. The impoundment area significantly effects a large biodiverse land. The dam reservoir encloses the Çoruh wildlife protection and development area. Two important measures was noted studies for the protection of mountain

goats and fish species, which are endemic to the region (Scheumann et al., 2011). Studies are on-going in the area.

Box 6.3. *Protected Areas*

Altıparmak Natural Park

After the planning of the projects, experts prepared an impact report (not official) about the possible impacts in the region (Muluk, Turak, Yılmaz, Zeydanlı U., & Bilgin, 2009) According to the report, there were 30 planned power plants initially. The ecological value of the valley was presented. It was emphasized that environmental, socio-economic and cultural issues are not adequately evaluated in the planning of these projects. At the same time, it was stated that the local governments were not consulted sufficiently. Natural and cultural elements of the region are highlighted in the presented report and significant impacts are anticipated as a result of the projects. In 2014, Barhal Valley was declared as a Sustainable Protection and Controlled Use Area/Qualified Natural Protection Area. Today, 6 projects in Yusufeli villages are on the list (applied or waiting for application).

Şavşat/Meydancık Papart Valley Nature Protection Area (2010)

First project in the region was constructed in 2012. Later in 2016 and 2017 four more projects were built. According to DSI web, there are five projects in the district. Along the Papart Creek, two projects operating with 27 MW and 19 MW installed capacity. According to the local office of Ministry of Culture and Tourism, the valley of Papart was declared as a natural protected area in 2010. The justification was state as follows;

"*The area contains examples of wood architecture specific to the region, as well as the interesting compositions created by the dynamic topography including qualified forests and the landscape integrity, in 2010 most of which was declared natural protected area, first and third degree" Source:* https://artvin.ktb.gov.tr/TR-55915/savsat-meydancik-papart-vadisi-dogal-sit-alani.html

6.3.3. Livelihood Concerns and Compensation

Previously described environmental changes have important implications for local communities, particularly in terms of livelihood changes. The livelihood changes due to policy outcomes are suggested to be compensated (Vatn, 2015). The distributive justice criteria explains how "*the distribution of benefits and burdens across activities in a society*" should be divided. Hereby, we will look more into how the benefits are provided in particular with hydropower plants and what the loss (burden) that should be compensated is for the communities.

The challenging part here is with the run-of-river cases of hydropower projects. These projects are only considered stand-alone and pre-assumptions are made so that it would not require compensation. It is also assumed that all water demands are considered and included in the water rights agreement, which then would secure how much water the companies could hold or release. However, in practice there are issues related to discharge water and the changes in water regime burdens the local activities and livelihoods.

In large dam cases, it is more common that populations living within the impounded area are systematically resettled. In other words, forced displacement occurs, resulting in the loss of land and property, which should be compensated for. According to the Turkish law, a trade-off between private property land and public property would be under requirements of expropriation law, namely land compensation. However, the debate is about how this compensation is provided for the locals which is a question to pose on distributive justice.

The benefits for locals frequently emphasized are job opportunities and construction materials purchase from local shops and other indirect expenditures in favoring the communities such as repairing the public areas, schools and mosques. Formally, EIA reports emphasize the benefits for locals as providing job opportunities and benefits of electricity production in the area which are assumed to be later providing economic development opportunities. We could explain this common approach with welfare-based principles of distributive justice. This is the main approach in any type of power plant case.

The civil society actors, particularly locals, rarely emphasize the benefits. Their concerns rely more on the burdens. Regarding the livelihood changes, the participants described a few specific issues. The common losses are described as decline in fish resources, honey production, agriculture, land for husbandry and tourism.

The Artvin province has a different climate within the regions and the agricultural practices vary within the districts. The agricultural production is mainly small scale and household based productions. The areas with high precipitation do not use directly from the rivers. However, in drier areas such as Yusufeli district some villages use the rivers for irrigation. For instance, the villagers of Kılıçkaya reported on their livelihood concerns, due to the low water levels (Dagıstanlı, 2021). One of the participants exemplified this case, where locals recently developed an agriculture cooperation. According to the locals, the water flows are not sufficient to comply demands for agriculture and produce energy. Especially in dry season and for autumn where they use water mills to produce rice and corn flour.

Honey production is an essential livelihood for the Artvin region, specifically at the districts of rich fauna (Ministry of Forestry and Water Affairs, 2021). Another village called Balcı from Borçka region had reported issues with their honey and hazelnut production (Dagıstanlı, 2020). The villagers claim that the already existing two power plants resulted in bee colonies to change their routes.

Tourism activities are an important income for locals. The black-sea region is associated with its mountainous areas, natural reserves and cultural significance. Therefore, several districts attract tourists from both national and international level. A common concern within local communities is how hydropower activities "*ruin nature",* which then eventually change its attractiveness for tourists. Almost all protests and locals' speeches over why they do not want the run-of-river projects include tourism potential of their land.

We can exemplify from one of the earlier cases in Kamiley Valley where during the first protests and conflict between authorities occurred. In the national newspaper, the tourism association leader and a local citizen from the district of Arhavi had explained the importance of this valley; "*This valley is 36 km long. We have been using this valley for many years for several activities. We found Mençuna waterfalls in 1985. It took 27 years to introduce tourism. Now, we cannot doom this valley to the power plants. This valley will save the youth of Arhavi and their economic needs and lifes, for maybe 50-100 years. We want this valley to be protected, first level. This valley is extremely valuable*." (Kacar, 2013).The dialogue between locals and authorities mainly showed how the implied values differ. The locals mainly emphasize their long lasting efforts to create jobs with tourism. While authorities imply the benefits of electricity production for the local areas and how the activities will not impact their livelihoods.

The Yusufeli large dam will result in that the town center, three villages and partially sixteen villages will be left under water. According to the field work report main income sources are family farming and subsistence cropping (ENCON, 2006). While villages mainly depend on agriculture the torn commercial activities and salaries from public services and pension. In addition, they have recorded 108 households that specified no income but only based on their own cropping. On the other hand, the dam constructions have provided opportunities for people to get employed. A local respondent has emphasized on this opportunity as the locals will earn good income while working in the construction as well as gain skills that would bring them other opportunities in their life.

In the Yusufeli dam case, the current debate revolves around the issue of compensation regarding the resettlement and livelihoods. The expropriation of the land and the resettlement was established based on the expropriation and inhabiting law. The land expropriation was followed by cash compensation. Some of the families were provided a household from the resettlement area based on certain right holders conditions. Two local respondents in this study, emphasized that there was an injustice approach.

We could argue that the compensation principle here is the desert base approach. However, the locals argue against the values provided for their property and the chosen right holders. One participant emphasized that the amount given to his family was "nothing" for them to even resettle anywhere in the country. This issue was also related to the size of the families, which then needed to be shared among the siblings as entitlement to inheritance;

"*People living outside Yusufeli were positive. It would contribute with the financial resources for them. After all, Yusufeli is a place where they can enjoy summer holidays. It does no harm to them. But those who live there have a life. Everything is not only having a land. The amounts given for the land are very small. It is shared among the brothers. The land is already scarce."* As the respondent signifies, the value of the land does not correspond with the offers. It was explicitly stated that the expropriation and resettlement will not cover the loss of income or livelihoods. More specifically agricultural, husbandry and tourism activities are not further planned accordingly.

One of the site selection criteria is agricultural land (DSI, 2006). 736 hectares of agricultural land and 129 hectares of pasture were determined in the lands to be submerged. 27% of the total submerged land belongs to these two activities. The agricultural area specified in the new settlement plan covers approximately 13 hectares (4.47% of the new area). When

we compare before and after, the land provided is significantly decreased. In addition, it is questionable how suitable the climatic conditions and soil conditions of the resettlement area and open land, located at an altitude of 500 m, are suitable for agriculture. The locals, specifically residents from villages, emphasized their concerns for the future of agriculture as a livelihood resource (Erkan & Türk, 2017).

According to the respondents, significant tourism development investments were made in the Yusufeli region between 2007 and 2012. The previous popular activities bird watching festival and international rafting races are two tourism activities that are no longer available. During the resettlement area selection, being close to the tourism areas was preferred by the locals (Türk & Erkan, 2018). However, the future of tourism activities in the future is unknown.

The local respondents interviewed in this study signified distributive justice issues related to property and livelihoods. The most prominent question is how locals will continue living in new settlement areas and which job opportunities are provided as well as values undermined. Other studies have noted the resettlement plan and compensation as the core problem, in other words an outcome (Evren, 2014; Scheumann, Baumann, et al., 2014; Türk & Erkan, 2018).

6.3.4. Summary on Output Legitimacy

The advantage of dams in development comes to the fore. A single large dam is one of the projects that the locals support more, both in terms of energy production and job opportunities, and as a development project made by the state for the public. The common discourse of the participants is that the dams will bring great benefits to the country, but there will be just as much damage at the local level. Emphasizing that these damages were not noticed in the previous years, the participants stated that the Yusufeli project should at least take steps to minimize and eliminate these damages. Dams are supported as being collective choice and benefit for all, development mechanisms (Akbulut, Adaman, & Arsel, 2018). While small scale are only private actors profits without compensating the locals losses.

As the cases of Run-of-river projects showed that the local communities have great concerns on its impacts. These outcomes however are highly based on perceptions and interaction patterns of actors. It is expected that, if any damages occur to livelihoods or valuable entities, it will be compensated. However, on the contrary the locals do not believe this type of distribution fair. Their interest is certainly on the ‘opportunities’ taken with the changes over

river structures, namely cultural values, livelihoods highly supported by natural reserves and ecosystems.

7. Conclusion

In many ways, the national development of hydropower facilities through governmental policies, fails to consider the implications and conflicts occurring at the local level. Throughout the years, several changes in rules and regulations were made in an attempt to modify the national framework towards international standards. The EU accession process is one of the main motivations while there is also significant pressure from the civil society. Hydropower related issues are portrayed in different ways within different ministries, as they adopt different positions depending on their interests. For instance, the Ministry of Energy does not support the change of overall hydropower targets nor the projects that are planned. Other relevant ministries question the targets and point out the tradeoffs at the local level. While examining all stakeholders involved, i.e., actors of the governance system, it is possible to identify a similar divergence in perspectives, both for overall policy target and the implementation of the projects. Then, when we move to the local level where the problems are emerging it is possible to identify sources of the conflict.

As showed in the cases from the Artvin province, a gap in practice might appear regarding the arrangement of formal rules within a policy framework. The decision making process of the projects mainly revolves around Environmental Impact Assessment regulations. Their main objective is to provide participation to local communities and ensure procedural justice. However, the top-down approach associated with these regulations has shown limitations and the incapacity to reach its goal. The divergence in perceptions is the solution to this problem. The local actors strongly argue against the run-of-river cases while the public and economic actors tend to negotiate the outcomes and compensate the costs.

Moreover, policies' outcomes at the local level have also showed issues in terms of environmental efficiency and distributive justice. The benefits from producing electricity are found legitimate when serving public interests. The difference between the private (run-of-river) and public (large dam) projects is highly related to the distribution of such benefits. Civil society actors tend to not trust private actors and perceive them as competitors in resource management. The run-of-river projects' cumulative effect drastically influence the environmental flows and significantly impact ecosystems. These changes have showed

implications for livelihood shifts and other development opportunities in the region. Furthermore, similar impacts were determined in the Yusufeli dam case, with possible larger environmental and social changes. However, the benefits for the public in this case open the door for negotiations and increased acceptability. Nevertheless, a remaining challenge for how the locals' rights are acknowledged and respected, even it requires the cancellation of certain projects.

It would be interesting to see if the government would achieve solutions towards increasing objections from local communities by further developing river basin plans. In addition, the upcoming elections in 2023 as well as the target year of hydropower policies, a potential governmental shift could lead to significant changes in social mobilizations and policy target which potentially holds research gaps for future studies.

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9. Appendix

Informal	Actors	**Interviews**
No rules	Economic actors	Beginning of the projects
Trade (Formal)	Between economic actors and state	*P1: "The real problem is planning. There is no planning. No matter where we look at this, let's be clear to you, things get messy when planning isn't done properly. First of all, corporate opinions should be taken before starting a project. The choice of place must be made. Planning and feasibility need to be fully put forward."*
Command	Within economic actors (Construction company and energy company)	*C: There was data and location for the dam and they would open a tender to design a project. They said to the private sector, come apply with your projects. This is what spoiled the business. HES is a very profitable business. Those who wanted to invest attacked.*

	State - locals	*Interested irrelevant everyone???, investors, those who want to expand their portfolio applied to the project. With 1 year flow observation data. Most of them are river-type calc. State waterworks started to have difficulties. The project rained like crazy and they had difficulties because the number of personnel was insufficient. At first there was no environmental flow. You could use the stream as you like and take it all. Investors did it accordingly. Second, there are other HEPPs upstream. He does not know this information. He makes a project, calculates according to the water, but then other companies come out and take the same water.*
	Between economic actor and state	
Community Rules	Within civil society	
	Civil society-economic actors	Incentives
	Civil society-political actors	Private-public cooperation Incentives Built-operate-transfer model Based on the contract E1: "*It was necessary to force our contractors, especially because they were not familiar with the way we worked at the beginning. We put our requirements in the contract. Environmental and social requirements. A document like this [implies big piles of documents]. You have to comply with this if you're going to accept this job. Make a bid according to yourself or do it according to how you already priced. Then we check it during the construction process. From the center [unit], we go and check. In previous periods, creditors came and inspected them regularly. In addition, there are legal requirements and we want them to meet them."* *Second, there are some projects that should not be done, that the public does not want. There is no negotiation there. The public absolutely does not want it. Cerattepe has repulsed it for years. if the public is closed to consensus, there is no participation. Therefore for this reason. If there is any explanation, concerns are expressed, something is done and there is no problem. If the public does not allow a compromise, how do you do it? You do it with gas with truncheons. That's what happened in Cerattepe.* *P2: "If the state wants to do it there, it certainly does. Dialogue is meant to persuade citizens… It doesn't matter what method it is. If necessary, he can put the military gendarmerie on the head of the dam. No matter how much the citizen does not want."* Flow monitoring station, investigation of report (penalty or license revocation) *P:" We established current monitoring stations, that is, this guy releases water from the HEPP to the riverbed, we can now see it*

		online. In terms of control, this has sat down. Those who initially said that I would not leave more than 10% in terms of life water now have to make an ecological assessment report and comply with it. In this sense, there are things going for the better. E2: *"…the platforms created by the state or by a certain upper group are of course always more effective. Because there is a rule maker and follower as the state or the contractual rule maker, international financial institutions. You cannot obtain money etc.[if not follow the rules] a facilitating effect."* *C"It is said that an agreement is made that 2000 m3 / sec will be given as the ancient water right. But there are also fish farms, priority should be given as they are built first. After all, what happens is that no one takes all of this water at night. Upon these complaints, generally due to the complaints of the society, they have now established an online system. Before that, the guard was writing because we left so much water, DSI didn't check it and printed the signature."* - Locals arrange meetings and protests Court cases Experts consulted Conflict/confrontation between project supporters and non-supporters *C: "We go and give conferences all the time. We organize organizations for information. Civil society is not well informed in our country. There seems to be a lot of associations related to environmental problems, but not enough. That's why their strength is very low."* *C: "In line with the studies, we have canceled nearly 130 HEPP projects by using our constitutional rights through scientific studies as well as by revealing the vital facts of those regions."* *C: "Social peace was disturbed. Hostility began between defenders and opponents."* Strengthening relations (Rules of reciprocity) Exchange job creation/social work/contribution to locals consent. E: *"Our communication process… Muhtars are very important qualities in Turkey. Muhtars are actually the language of the people. Even if we don't go, there are situations where they come to*

		us. We have an eba system, demand and complaint. Our friends in the power plant are entering. We have a social expert, he evaluates. If it is something that can be met, if it is a demand that meets our criteria, we realize it. If the complaint is caused by us, we take our direct measures." *C1: "They paint the mosque of the village or invest in mosques. Attention is paid here, as faith is an important value. The headman/muhtar is tried to be persuaded."* *"…Companies don't want to come face to face with the public as they enter there. They make pledges to get on well with the people of that place. We will employ the children of this place. We will renovate the old mosque. We will take the sand, cement and gravel from here. We employ so many people in construction. After opening, we will get a guard etc from you. … Muhtars were important. People working in the construction, quarry operator, sand bearer, etc. They were able to communicate with people in positions like hardware stores and convince the public. Money was also returning directly. There is no proof, of course. People were talking as if they were being paid directly. The construction quarry cut attracted them as well as those they thought could benefit from the promises. The places where these projects are carried out are seriously poor places. So it is not something to be underestimated."* *P1: "If the person you contact with constantly changes their decision, this will not work. One day the headman (muhtar) says I want it, the other day someone else says I am against it. In other words, an institution will tell their needs and we will do it. I mean, they should say their drinking water needs beforehand. When the municipality ruling party changes, they say I didn't want this or the dam… Even if the person changes, there should be no institutional change. The general decision must be followed, not the individual decision."*

Interview Guidelines

General/Introduction

[Yaptığınız iş ve uzmanlığınız] **(Work and Proficiency, Background)**

[Kurumunuzun veya birey olarak doğal kaynakları koruma ve kullanma anlamındaki rolünüzü nasıl tanımlarsınız?]

Opinions about policies (the goals and the process) and input legitimacy

[Hidroelektrik santrallerinin gelişimine, enerji ve su politikaları bağlamında baktığınızda nasıl algılıyorsunuz? Sizce genel olarak bu politikaların öncelikli amacı nedir?[

Appropriateness and acceptability of decision-making process

[Geçerliliğini veya haklılığını nasıl değerlendiriyorsunuz?] **(In principle)**

[Karar verme süreçlerini nasıl değerlendiriyorsunuz? Uygunluğunu ve kabul edilebilirliğini nasıl değerlendiriyorsunuz?] **(Normative)**

Accountability and Transparency

[Ortaya çıkan kararlara ve kararı verenlere ne kadar güveniyorsunuz?] **(Trust on decision-makers and authorities)**

[Karar vericilerin ortaya çıkan olumsuz etkilerde sorumlu davrandığını düşünüyor musunuz?] **(In a negative situation, could you find responsibles of such actions?)**

[Süreçlerin ne derece şeffaflıkla ilerlediğini söyleyebilirsiniz?] **(To what degree processes are transparent)**

Participation and receiving information

Bahsettiğimiz bu süreçlerde, sivil toplum nasıl bir katılım sağlıyor? Bilgi alma durumu nasıl? **(Participation)**

Geri bildirim olduğunda nasıl değerlendiriliyor? Sizin istekleriniz ve tavsiyeleriniz? Uzlaşma yoluna gidiliyor mu? **(Feedbacks)**

Karar verme aşamalarında bir katılım oluyor mu? Örneğin ülke genelinde tartışma katılımcılığı arttırma geliştirme vs gibi çalışmalara katılım olabiliyor mu? **(Policy decision-making)**

Ekonomik anlamda değişimler, iş veya parasal anlamda katkılar yeterli görülüyor mu? **(Material)**

Genelde yerel halk birlikte hareket etme yoluna mı gidiyor (eylem vs) yoksa etkilenenler bireysel olarak hak arama yoluna mı başvuruyor? **(Mobilization)**

Output legitimacy and conflicts

Genel olarak hidroelektrik santrallerin ve barajların tartışmasını, fikir ayrılıklarını veya anlaşmazlıklarına baktığımızda konunun şiddetini nasıl değerlendirirsiniz? **(The degree of conflicts)**

En zorlayıcı çevre, sosyal ve ekonomik sorunlar nelerdir? Verimliliğini nasıl değerlendirirsiniz? **(Challenges economically and social aspects, efficiency)**

Hidroelektrik santrallerin faydalarına ve maliyetine bakıldığında ne kadar adil bir dağılım söz konusu? **(Benefits and costs)**

Örneğin fayda olarak üretimden kazınılan fayda yerele ne kadar katkı sağlıyor kalkınma anlamında? Maliyet olarak, zararı kime nasıl etki ediyor? **(Distribution of benefits and burdens)**

Peki konunun içerisende farklı rolleri olan aktörlerin bir koordinasyon problemlemi yaşadığını düşünebilir miyiz? **(Coordination)**

Sizce bu sorunlar geçmişten bu güne değişti mi veya çözümlenebildi mi? Ne derecede çözümlenebildi? **(Changes throught the years, positive or negative)**

Additional questions for economic and political actors…

İki farklı ekomik faaliytlerin tek bir çevresel kaynak ve prosesleri (yönetimi/kullanımı veya korunması) üzerinde birleşmesi ne gibi avantaj ve dezavantajlar yaratıyor? ***(Synergies and trade-offs, Advantages and disadvantages)***

Akarsu kaynaklarının yönetiminde ve kullanımına baktığınızda, bu kaynakların sürdürülebilir kullanımı adına en kritik veya önemli gördüğünüz kural, kanun, yönetmelik vs nedir? ***(Most important rules and regulations, practical problems)***

Projelerdeki paydaşları nasıl tanımlıyorsunuz? Bu paydaşlara bağlı olarak, sürecin herhangi bir aşamasında zorluk ve sorunlarla karşılaştınız mı? (ör. yerel ikamet, siyasi veya ekonomik konular) Bu durumlara karşı aldığınız önlemler nelerdi veya yaşanan durum karşısında tepkiniz ne oldu? **(definition of the stakeholders in the projects and approach in practice)**

Çevresel etki değerlendirme süreci ve toplantılar ile ilgili deneyimlerinizi veya yerel halkla görüşmelerdeki tecrübelerinizi paylaşır mısınız? **(EIA meetings)**

Information Letter and Consent Form (Approved by NSD)

Request for participation in the Master Thesis research project: "Hydropower, environmental governance and participatory development in Turkey"

Coordinating Institution: Department of International Environment and Development Studies (Noragric), Norwegian University of Life Sciences (NMBU)

Researcher's name and contact information: Melis Terzi, melis.terzi@nmbu.no

I would like to take this opportunity to inform you about the **master's thesis research project** ***"****Hydropower, environmental governance and participatory development in Turkey"*and would like to kindly request your participation, either in your personal capacity or as a representative of your institution. This letter includes all information about the project and your participation.

Purpose of the project

The overall objective of the project is to learn more about the governance of rivers in Turkey and the sustainability of hydropower development, to understand the participation of civil society and to what degree good practice and/or international standards can deliver the sustainability of hydropower projects. The research will consider actors, institutions and their roles in the water governance with their economic, environmental and social dimensions. The project will last five months, from January 2021 to May 2021.

Why are you being asked to participate?

The selection criteria is, you as the participant having position or relation the key institutions and organizations regarding the research objectives. I have selected the samples based on the information from organizations that the samples have the competency to participate and answer the questions.

What does participation involve for you?

If you choose to participate, you will involve in a semi-structured online interview. The online network Zoom was selected as the communication platform. The interview is estimated to be around half or an hour, depending on the context and will be saved as a voice recording.

Participation is voluntary

Participation in the project is voluntary. If you chose to participate, you can withdraw your consent at any time without giving a reason. All information about you will be made anonymous. There will be no negative consequences if you chose not to participate or later decide to withdraw.

Your personal privacy – how we will store and use your personal data

We will only use your personal data for the purpose(s) specified in this information letter. We will process your personal data confidentially and in accordance with data protection legislation (the General Data Protection Regulation and Personal Data Act). Only the master student and the supervisor will have access. The recording will be transcripted into text and will be replaced your name and contact details with a code. All data collected including list of names and details will be stored in NMBU research server and locked.

The questions will be about the economic, social, environmental and other related issues regarding hydropower development. The data will be secured as red label (confidential). Your identity will be *anonymized*, meaning as a respondent *will not be* personally identifiable in any account of the research including the publication. The answers will be treated as representing your institution, organization or your role within the context (e.g. civil society actor, economic actor, politician, local authority etc.).

What will happen to your personal data at the end of the research project?

The project is scheduled to end 01.06.2021. Findings will be shared later as thesis document in NMBU open digital research archive. At the end of the project, recordings and data collected will be deleted.

Your rights

So long as you can be identified in the collected data, you have the right to:

- access the personal data that is being processed about you
- request that your personal data is deleted
- request that incorrect personal data about you is corrected/rectified
- receive a copy of your personal data (data portability), and
- send a complaint to the Data Protection Officer or The Norwegian Data Protection Authority regarding the processing of your personal data

What gives us the right to process your personal data?

We will process your personal data based on your consent.

Based on an agreement with NMBU, NSD – The Norwegian Centre for Research Data AS has assessed that the processing of personal data in this project is in accordance with data protection legislation.

Where can I find out more?

If you have questions about the project, or want to exercise your rights, contact:

· NMBU via Pål Olav Vedeld, by email: (pal.vedeld@nmbu.no)

· Our Data Protection Officer: Hanne Pernille Gulbrandsen, by email: (personvernombud@nmbu.no)

· NSD – The Norwegian Centre for Research Data AS, by email: (personverntjenester@nsd.no) or by telephone: +47 55 58 21 17.

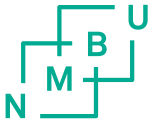
Master Student	Project Supervisor
Melis Terzi	Pål Olav Vedeld

Consent form

I have received and understood information about the project **"**Hydropower, environmental governance and participatory development in Turkey" and have been given the opportunity to ask questions. I give consent:

☐ **to participate in an interview**

I give consent for my personal data to be processed until the end date of the project, 16.08.2021.



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