AMERICAN UNIVERSITY OF BEIRUT

POROUS BARRIERS: HYDRO-POLITICS AND THE ROLE OF EXPERTISE IN THE STRUGGLE AGAINST DAM PROJECTS IN LEBANON

by
HUSSEIN AHMAD EL MOUALLEM

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Approved by:

Dr. Elizabeth Matta Saleh, Assistant Professor Anthropology — Advisor

Dr. Livia Wick, Associate Professor Anthropology — Member of Committee

Dr. Roland Riachi, Associate Researcher (and Lecturer) Laboratory of Social Dynamics and Spatial Reconstruction (LADYSS)University of Paris — Member of Committee

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ABSTRACT
OF THE THESIS OF

Hussein Ahmad El Mouallem for Masters of Arts
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Title: Porous Barriers: Hydro-Politics and the Role of Expertise in the Struggle Against Dam Projects in Lebanon

Dams are considered to be temples of modernity. During the past century, dams projects were spreading through the whole world accompanied by the development policies adopted worldwide. Under the current circumstances of climate change, many have argued that dams are a solution to continue supplying water in the dry years. Lebanon following the development trend in the 1950s, adopted many dams projects. However, because of the changing sociopolitical circumstances and the civil war, these projects were put on hold until 2010 when the dams projects were resurrected by Gebran Bassil.
These policies are not neutral or technical solutions only. They are the result of knowledge production and molding a certain kind of expertise knowledge for political benefits. In this thesis, I will be exploring dam discourses in Lebanon and the counter-knowledge and expertise put forward by engineers, geologists, and other experts. The activists are using their knowledge to produce an opposing knowledge to the hegemonic knowledge that is empowered by the political ruling elites' plans of development. I investigate how, where, and in what circumstances this counter-expertise knowledge is produced. I talk about an alternative reality imagined by the expert activists to supply water for the people without relocating the current inhabitants of the area. The thesis builds and unpacks the different epistemologies that experts have and to understand how they are situated politically and socially. It also borrows Bourdieu's forms of capital to analyze how they are keys to gates that only people with specific forms of capital can enter. Finally, in thinking through knowledge and questions of epistemology, I engage in reflexive thinking about what it means to do ethnography during the Covid-19 pandemic. Crucially, my ethnographic research took place during the lockdown. I therefore had to be experimental with my methodology as many restrictions were put in action. I mainly relied on interviews, and para-ethnographic methods (Holmes and Marcus, 2005) where I treated my interlocuters as counterparts in the research and utilized their memories, experiences, and anecdotes as my ethnographic basis. I also had a virtual hike that was full of visuals to make it appear as realistic as the guide could make it real.

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LIST OF ORGANIZATIONS

World Bank: international developmental donor organization

The Green Party of Lebanon: advocates sustainable development and environmental justice

T.E.R.R.E Liban: Environmental NGO Headed by Paul Abi Rached

Bisri Team Terre Liban: a daughter organization of T.E.R.R.E Liban based in Bisri

Lebanon Eco Movement: an umbrella of environmental NGOs that work together headed by Paul Abi Rashed

The National Campaign to Save the Bisri Valley: a campaign created by Lebanon Eco Movement focused on the Bisri valley and dam issue

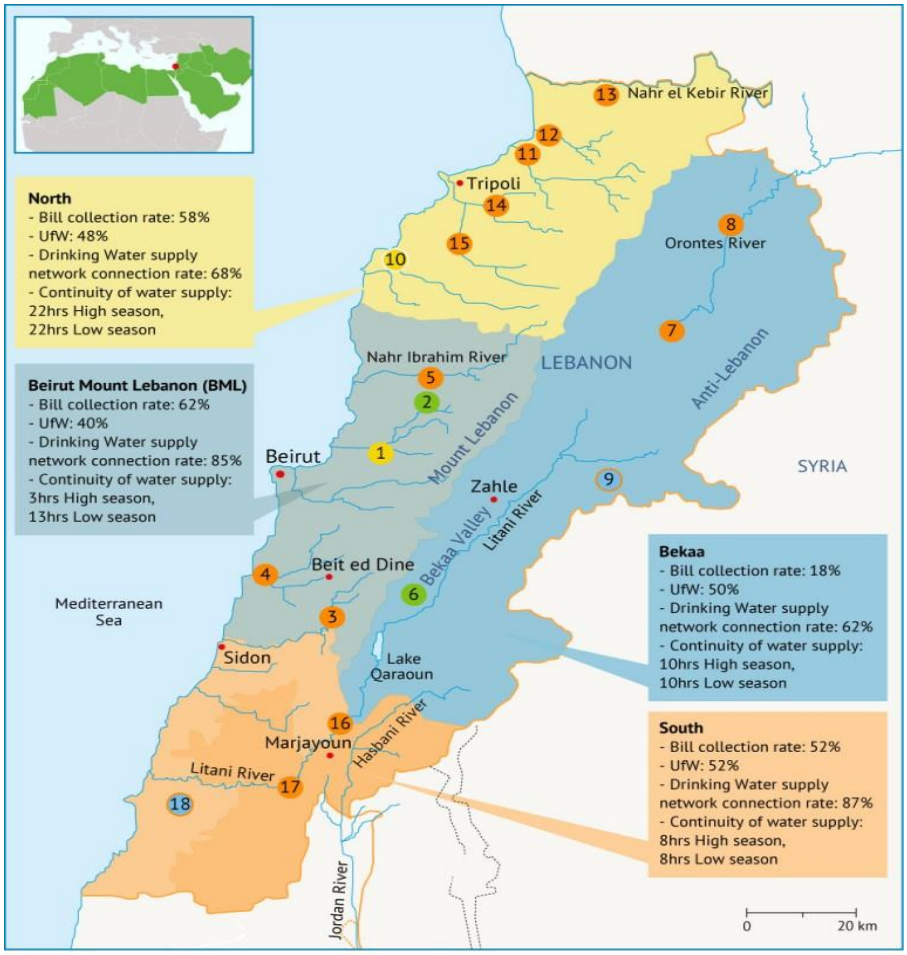
Council of Development and Reconstruction (CDR): a governmental apparatus concerned with implementing infrastructure and development projects

LIST OF INTERLOCUTERS

Name	Affiliation	Number of interviews	Date of Interview
Mohammad Khawlie	The Green Party of Lebanon	1	26 March 2021
Karim Eid Sabbagh	Independent Researcher	1	22 March 2021
Paul Abi Rashed	Lebanon Eco Movement and T.E.R.R.E Liban	1	9 April 2021
Roland Nassour	The National Campaign to Save the Bisri Valley	1	3 April 2021
Joanna Doummar	Professor at AUB	1	10 April 2021
Carl Saad	Bisri Team Terre Liban	1	6 April 2021

CHAPTER I

INTRODUCTION



	No.	Dam/Lake	Storage capacity (MCM)	Purpose
BML	1	Boqata	6	Drinking
	2	Chabrouh	8	Drinking+Irrigation
	3	Bisri	120	Drinking
	4	Damour	42	
	5	Janneh	30	Drinking+Irrigation+Hydropower
Bekaa	6	Qaraoun	220	Irrigation+Hydropower
	7	Younine	5.7	Drinking
	8	Assi Phase II	37	Hydropower+Flow Regulation
	9	Massa Lake	8	Drinking
North	10	Mseilha	6	Drinking+Irrigation
	11	Bared	37	Drinking
	12	Qarqaf	20	Irrigation
	13	Noura el tahta	35	Drinking+Irrigation
	14	Iaal	12	Drinking
	15	Dar Boochtar	55	Drinking+Irrigation
South	16	Ibl al Saqi	50	Drinking+Irrigation
	17	Khardali	120	Drinking+Irrigation
	18	Kfarsir Lake	15	Drinking

6 Completed dam
1 Dam under construction
3 Planned dam
9 Planned lakes
Town
River and Wadi
National border
UFW Unaccounted For Water

Figure 1. Map of Dams in Lebanon (Fanack, 2015)

I am writing this thesis almost a year after the World Bank suspended its funding for the building of the Bisri dam on the 4th of September 2020. In this thesis, I will be documenting and analyzing the role of the National Campaign to Save the Bisri Valley in addition to the work of other activists and academics who are against building dams in Lebanon. I will be analyzing how their expertise and work have been pivotal in defying the Lebanese government's rhetoric regarding the need to build dams in order to provide water for the Lebanese population. In the course of my research, my interlocuters were providing more feasible and less costly alternatives to resolve the shortage of water in Lebanon. Nevertheless, through online interviews and discussions with my interlocutors, I gained invaluable insights into how such rallies were understood and experienced. Pertinently, I learnt how expertise knowledge was deployed in ways to counter prevailing narratives about dams as future-making project.

The thesis will look into the engagement of these activists and academics resisting the state's policies of dams' building in Lebanon since 2012. I focus on the case of the Bisri Dam because it was central to much of the counter-expertise strategies deployed. It also gained a lot of media coverage and national attention. Through the Bisri Dam, I unpack an attempt of environmental political activism that played an important and vital role in halting the project until the World Bank withdrew the funding in September 2020. I will try to dissect how the rhetoric adopted by these expert activists was propagated and then gained momentum during the 17th of October 'Revolution'. This was also a point where the state was desperate to continue building the dam because of the impending economic financial crisis Lebanon. Significantly, the World Bank was reluctant about the whole project. It

ultimately called off the project on the 4th of September 2020, which, perhaps, ironically, was considered a triumph for the campaign, activists, and different revolutionary groups.

The thesis delves into some of the debates pertaining to infrastructure of knowledge, most especially those concerned with mega infrastructure projects such as dams. These knowledge infrastructures are "robust networks of people, artifacts, and institutions that generate, share, and maintain specific knowledge about the human and natural worlds." (Edwards, 2010, 17). In the first chapter, I will discuss the methodology I use to study the experts. Then I move to studying the different knowledges of the experts and their positioning along the sociopolitical spectrum, and finally the anthropology of naming and its relation to my interlocuters. In the second chapter, I will give a brief history of dams in Lebanon from the Mandate period reaching the current strategy of the water sector adopted in 2010. After that, I will discuss the role of the World Bank as the green development bank. In the third chapter, I will build on the different knowledges explored in the previous chapters to further conceptualize technocratic knowledge and engineering knowledge. I explore the different forms of capital my interlocuters have accumulated. The symbolic and social capitals they accrued that permitted them to enter the World Bank offices and participate in the experts' meetings. In the third chapter, my interlocuters will also take us on a trip to the past to understand the convergences and divergences in perspectives that happened in between the experts. In the fourth chapter, I discuss how two types of knowledges, traditional knowledge adopted by the state, an organic knowledge adopted by the activists experts was translated into reality. In that chapter, I explore the hegemonic aspect of dams and the dominating aspect of these project in Lebanon. I also discuss an alternative reality generated in the imagination spaces of my interlocuters to create a different reality. An alternative reality is present inside

our heads through imagination. Just as science fiction is a representation of an imagined reality that opens up new possibilities, I wanted to experiment in real life to see what realities we could create if such avenues were within our reach. Talking to my interlocuters showed me that they shared a similar alternative reality. Although each one had a different take on realizing it.

A. Interlocuters

It was very interesting that all my interlocuters wanted to be quoted by their real names. Although I was asked by the IRB to use pseudonyms due to the sensitivity of the topic, my interlocuters were insistent that their real names were used. I will elaborate upon this later. Another issue that I faced during my research was gender inequality in this field. As the subject is related to infrastructure and engineering, it was dominated by males. I contacted four female experts and interviewed only two. Yet they were not directly related to the Bisri case. In total, I contacted 10 male experts, interviewed 5, and had a phone call with one which will be also discussed later.

Throughout this thesis, I will trace the narratives of five male interlocutors. The first one is Mohammad Khawlie, a geology professor at AUB and a member of the Green Party of Lebanon which is a part of the global network of the environmental Green parties. He was a member of the team that met with the World Bank on several occasions. Khawlie acquires the expertise on dams from a geological perspective focusing on the nature of the rocks and the underground water in Lebanon. Karim Eid Sabbagh, an engineer by training, he has a Master's in urban planning from AUB, and a PhD in international development from SOAS.

Karim Eid Sabbagh wrote his PhD on the water sector in Lebanon, which was later adapted into a documentary called "We Made Every Living Thing From Water." Eid Sabbagh tackles the issue of dams from an engineering perspective in addition to unpacking the development rhetoric adopted by the government regarding the dams' projects. His engagement against dams' projects in Lebanon started with the Janneh Dam[1].

Thirdly we have Paul Abi Rashed, a prominent environmental activist in Lebanon, the founder of the NGO Terre Liban and the head of the Lebanon Eco Movement which is a network of more than 60 environmental NGOs working in Lebanon. Paul Abi Rashed's engagement with the issue of dams' dates back to 2014 with the Janneh Dam. He said: "From this river [Nahr-Ibrahim where the Janneh dam is to be built] the battle of dams was initiated by Lebanon Eco Movement" (Paul Abi Rashed, interview, 9 April 2021).

Another interlocuter is Roland Nassour, an architect by training with a Master's in urban planning and the coordinator of the National Campaign to Save the Bisri Valley. He started working with the Lebanon Eco Movement in 2014 on Janneh Dam and later he became the coordinator of the Bisri campaign. Finally, there is Carl Saad, a youth activist from Jezzine area near the Bisri valley and a member of the Bisri Team chapter of Terre Liban. Carl gained his knowledge through first-hand activism in the NGO to preserve the Bisri Valley. Carl took me on a virtual hike in the valley because of COVID-19 restriction and our inability to go on an actual hike. He showed me the hidden places in the valley such

[1] Janneh dam is part of the decennial water strategy that focused on building dams on different rivers to supply water for the Lebanese population. It was to be built in one of the most biodiverse landscapes in Lebanon. This resulted in the destruction of the terrain and the eradication of the different tree species which will result in the abolition of various animals, insects, and birds because they will lose their habitats.

as the caves and the waterfalls and told me more about the cultural, historical, environmental, and social importance of the valley.

During my interviews and talks with my different interlocuters, I sensed that they had similar opinions on certain issues, yet they are not a homogenous group that adopts the same ideals or views the dams' policies through the same lens. Some tensions exist among some of my interlocuters because of the differences in perspective. Nevertheless, they were able to create a different rhetoric to that propagated by the state about the importance of dams through different methods. Eid Sabbagh translated his PhD dissertation into a movie that offered a different understanding of the water issue in Lebanon. Khawlie produced research about the water resources in Lebanon and is active within the green party, he also was part of the experts negotiating with the World Bank. Paul Abi Rashed is important for his environmental activism through Lebanon Eco Movement and later his partnership with Roland Nassour in creating and leading the Save the Bisri Valley Campaign. Nassour was the coordinator of the campaign and was able to mobilize social media to raise awareness about the issue among the people. Although they were part of the same campaign, Nassour and Abi Rashed were not always on the same page regarding the tactics and strategies. In this thesis I chose to explore the narratives and engagement of my interlocuters without highlighting the disagreements and disputes that rose through the journey of resisting the dam because my interest lies in unpacking the role of their expertise in countering dam building enterprises in Lebanon. Within this scope of ethnographic analysis, disagreements did not surface in the data.

Although women interlocuters are not directly related to Bisri, they both look at the issue of dams in a critical way. Joanna Doummar, a professor at AUB, is a ground water

hydrologist who worked on the feasibility of dams in Lebanon and alternatives to dams' projects. She answered my interview questions via email because she was not available to conduct an in-person interview due to her tight schedule. Jana is a feminist urban planner. Jana is pursuing a PhD in sociology. She is interested in the relation between the people and the city and the politics behind engineering and designing infrastructural projects. Jana gave me an insight on the hegemonic relation between the state and the people and how these relations are translated in infrastructure projects.

B. Hiking through the Valley

Covid-19 pandemic changed our understanding of fieldwork. As an anthropology graduate student, my master's thesis was supposed to be my first actual fieldwork experience, but the pandemic had different plans for us. I became chained to the couch in my living room, apathetic and temperamental. I felt helpless and unable to do anthropology because of the restrictions on social interactions. These restrictions were supervised by IRB, which sometimes had even stricter rules regarding social interactions than the Lebanese government. After a long back and forth to gain IRB approval, I thought they would allow me to conduct fieldwork if I were to take the necessary precautions. At the time however, IRB only permitted online interviews and fieldwork. This is very different than standard anthropology and ethnography. I did not know what to do or how to proceed. Later, my advisor, whom I am very thankful for, sent me some articles to read and a link for a series of webinars about online fieldwork and ethnographies. These webinars were part of the series 'Doing Ethnography Remotely' and after months of feeling lost and incapable of doing my

work, I started to get insights and inspiration about how I should carry on with the project. I focused on the Facebook pages of the National Campaign to Save the Bisri Valley, Paul Abi Rashed, Roland Nassour, and the Lebanon Eco Movement. I then found out about the Bisri Team chapter in Terre Liban.

The team conducts hikes, birdwatching events, and other environmental activities in the valley. I contacted them and asked for help; they directed me to Carl Saad, the young man from Jezzine. I am grateful for Carl's help and for his acceptance to participate in this unusual experiment I produced; actually, he was enthusiastic to be part of it. I called Carl in March 2021. I was reluctant on the phone as what I was going to say might seem absurd and funny for him, but it was a necessary creative invention to bypass the restrictions. On the phone, unsure, I asked Carl about the feasibility of going on a virtual hike through the Bisri valley. I explained that it means that Carl has to prepare pictures and videos of the trail we are going to hike following the same sceneries we would see going on a hike in real life. Carl was not reluctant at all. He agreed right away, and we set a date for our virtual hike weeks later, which gave Carl all the time he needed to prepare.

On the 6th of April 2021, I woke up in the morning as if I were really going on a hike. It was more convenient for Carl to do the interview and the hike early in the morning. The pictures Carl used were from previous hikes, with different groups of people doing the hike, and this made me feel like a part of the group as Carl was taking us through the valley. On the bright side, the virtual hike of an eighteen kilometers trail takes an hour whereas it would take 4-5 hours in real life.

We met at Mazraet al Shouf's side of the valley on what is called *Sakhrat al-Imad*, the Rock of Imad. Imad, a man in his 40s, considers himself to be the guard of the valley. He

left his urban house years ago and built a hut that he inhabits on the rock overseeing the valley. Carl told me that the whole landscape would be covered with water if the dam was built. This is a very vast area of green cover, it has different kinds of trees including pine, fruit, oak, and poplar trees. From the rock to the valley, we passed through the first historical wonder. The Roman stairs that date back to more than 2000 years. We were treading the same road that Jesus trod, according to Carl. The stairs are made of limestone rocks; they became slippery over the course of the years because of the rain that fell in the past 2000 years. The stairs are a part of the silk road, the Eurasian trade network routes, which passes through Saida reaching Damascus.

After descending the stairs, we took a left, walking in opposite to the village of Bisri, we then reached a heavenly place: the hidden waterfalls. Here were multiple waterfalls in close proximity to one another. The scene was quite magical. In the virtual world, I passed through a waterfall covered with trees and plants from all sides. The water was falling into a lake, the water of the lake was so pure and transparent. We continued our walk until we reached a cave. We entered the cave, it had a sandy ground, and the water was going through the cave, dripping from its top, and cutting through it to reach another waterfall outside of the cave. When I saw this place, I had goosebumps. The water reflected on the top of the cave giving it a turquoise color. The cave walls were jagged, giving the sunrays the opportunity to penetrate into the cave.

The tour, however, was not just about the natural wonders of the Bisri Valley. In the cave, for instance, our guide showed us evidence that the dam should not be built in this area because of its porous nature. Besides, the rocks of the area are very porous, and they do not trap the water.

Mohammad Khawlie, the AUB geology professor and member of the Green Party told me previously, “Most of the surface cover in Lebanon is made up of limestone and carbonate rocks […] the rock surface in Lebanon is very very caverns and porous, this means that water gets inside.” (Mohammad Khawlie, interview, 26 March 2021) If the dam were built, water would still penetrate through these rocks into the underground aquifers.

“Carl, if the dam was built, would this area be also covered with water?” I asked. He told me that all this area would be covered with water, it will disappear. I was shocked for a second, I disconnected from the hike, unable to speak. I imagined myself hiking under the water, the dam would destroy all this beauty and for what? For the dream of bringing Litani’s polluted water to Beirut.

We continued our hike on the basin of the river, sometimes we walked directly on the basin, and then we drifted a bit further. We started walking towards the village now, leaving the waterfalls and the caves behind us. We walked through agricultural lands and forests, although they are interconnected, we were able to see the borders of each terrain clearly, as if they were drawn by an artistic prodigy who mixed his paintings yet preserved their distinct hues. We reached a field with fewer trees, the sun was reflecting on the grass freely here, there were two marble columns. They were out of place, they did not belong here for me, the newcomer. Carl told me that we reached Eshmun’s temple or Cleopatra’s temple. I did not see anything except these two columns. Carl informed me that these two columns are part of the temple, the temple that is underground now, and we are standing over it – virtually, that is.

When my virtual tour guide told me about the Phoenician myth of Eshmun, I began to think about how he perceived history and people’s relationship to it. I also remembered

my talk with Paul Abi Rashed. He told me about the other important dam project, which is Janneh dam on Nahr Ibrhaim. The river is also called Nahr Adonis 'the river of Adonis.' Paul Abi Rashed took me across the eddying currents of his memory to 2014 when a geologist took them on a hike in Nahr Ibrahim area to show them how the river disappears and reappears after two hundred meters. "You will say that I am talking nonsense." Paul Abi Rashed said, "Adonis dies at this point [where the river disappears] and then he is resurrected." (Paul Abi Rashed, interview, 9 April 2021) For Abi Rashed, the Phoenicians did not understand the natural phenomenon that took place where the underground rocks cracked, and the water leaked inside to reemerge 200 hundred meters away. They told the story of the river through the myth of resurrection of Adonis and Astarte. It is interesting how the two main dams in the 2010 strategy were to be built on these two historical mythical rivers, each carrying its own story of the peoples that lived in Lebanon.

These myths and references to Phoenicians are entangled into certain narratives of nationalism in Lebanon that tie the Lebanese to the Phoenicians rather than the Arabs. However, they got caught in the middle of the experts' knowledge. Although not the focus of my thesis, I nevertheless wondered how the narratives of nationalism got caught between the myths and heritage on the first hand, and the development solutions of state building on the second (Stensrud, 2019)

In Bisri the heritage of the valley was demoted when the archeological teams of the Ministry of Culture started to excavate around the columns, they found huge rocks and buried ruins. As Carl told me, there were teams from the Council of Development and Reconstruction (CDR) and the Turkish contracted company present during the excavation. When the ruins appeared, they closed the area and buried the excavated monuments so the

Ministry of Culture would not be obliged to stop the dam construction works in order to carry on with the excavation.

We continued our hike alongside the river reaching the agricultural plains. Carl laughed, "Usually during my hikes, we take a break here and harvest some fresh fruits from the fields depending on the season. Unfortunately, we cannot do this in the virtual hike." We then reached the pine forest where I have camped twice before. Carl usually asks the hikers to bring with them towels and clothes to change because now we will go through the Bisri river to reach Saint Sophia Monastery and Saint Moussa Church. Fortunately, it is a virtual hike! These two structures date back thousands of years: they are not some piles of rocks that can be relocated to another location as the CDR's plan was. These places were built over the bones of monks as I was told by my guide. The monastery was built during the same time of Hagia Sophia in Turkey. In this monastery Moussa, a brigand from modern day Ethiopia used to hijack travelers passing through the Bisri Valley, was baptized and became a monk. After his death, following a very strong earthquake that destroyed the monastery, the church named after him was built over the remains of the monastery in the 1500s and was renovated in 1735. "All churches in Lebanon were renovated later on, except this one. Its last renovation was in 1735," according to Carl.

The CDR's solution was to disassemble the church and the monastery and relocate them to a nearby village. As if history itself can be simply dismantled and relocated to another place. We then ended our hike in the Miraculous Church of Bisri which stands on the village's entrance to the valley. It was the base for the guards of the valley against the dam in the past couple of years.

Although it was virtual, the hike was magical. That is the least I can say. I did not think that I would be so engaged in the virtual hike, or that I would feel emotional and get goosebumps. The hike brought together the social, historical, and even agricultural aspects of the valley together. When we conducted the virtual hike, food sovereignty was becoming a hot topic in Lebanon. Carl told me that the valley is very fertile. During a food security crisis, the government could plant the valley to secure its food sovereignty, however it was still trying to negotiate with the World Bank to reinstate the funding of the dam. The Bisri valley as Nahr Ibrahim in Janneh among other dam locations, if preserved, can all be building blocks of the Lebanese identity because of their historical, environmental, and economic values. However, the government with the modernizing and development dreams had different plans for building the Lebanese identity and state. The state's plans were to construct dams as monuments of development that enshrined a particular discourse of development (Shore and Nugent, 2002; Larkin, 2013).

C. Conceptual framework

Whenever I tell anyone that I am writing my anthropology thesis about dams and engineers, I get the same reaction. How is anthropology related to dams and engineering? Dams are infrastructure projects. Nevertheless, infrastructure projects have been disregarded for a long time in anthropological research because they were regarded as technical structures that support life, elevating them from the social life of people, and stripping them of any importance in anthropologic research (Niewöhne, 2015). Infrastructures are more than technical structures; they restructure the social practices of the people. "[B]uilding

infrastructure is not a neutral endeavor. While continuing to embody visions of progress, [infrastructures] serve vested interests, enforce regimes of control, and create geographies of abjection and segregation" (Di Nunzio, 2018, 1). Thus, dams as cement infrastructures "can be used to represent state power to its citizens, the political effects of these projects cannot be simply read off from their surfaces" (Larkin, 2013, 334). Infrastructure categories differ and generate multiple forms of address: any set of inquiries will focus on a category because infrastructures are not merely technical. "Infrastructures are not, in any positivist sense, simply 'simply out there.' The act of defining an infrastructure is a categorizing moment" (Ibid, 330). Not only does infrastructure control the flow of services, but it also defines how people understand citizenship through the provision and connectivity to these services via the infrastructure networks (Ananad, 2017).

As huge infrastructures, we analyze dams as tools used by governments to showcase their hegemony and journey toward the development of the state. Dams are projects of the state and have the financial and development background. What is interesting about studying dams is their visibility. Infrastructure projects are usually unseen and unnoticed when they are functioning (Star, 1999). Dams, on the contrary to other infrastructures, are seen when they are functioning. For example, we do not see sewage networks, the internet lines, or the telephone lines. We usually take the invisibility of the infrastructure for granted as long as it is functional. As a result, the study of dams as huge infrastructure projects means studying their materiality and presence in the surrounding on the social and ecological levels.

Dams are used to gather water for various usages. Water becomes intertwined within the socioeconomic cycle. It is a basic right for human beings, vital for the food regimes of the people, and for hygiene and sanitation purposes. Thus, water cannot be defined as the

chemical compound made up of two hydrogen atoms and one oxygen atom. Our relationship with water is complementary; we cannot exist without water, and water as a process cannot exist without us. Humans are able to change the form and destination of water to maximize their benefit from the water flow (Workman et al. 2021, 404).

Anthropology of infrastructure brings back these technical positivist projects to the social sphere. Technical knowledge was uncontested and treated with a positivist attitude. Looking at the effects of these decisions, it becomes clear that the knowledge and expertise are not neutral nor objective; they stem from knowledge systems that are politically and socially driven. Knowledge is not the product of scientific research alone. It is important to note that knowledge is being produced beyond universities and research centers; it is being produced in every aspect of society. This, not so neutral, technical knowledge would shape the society and the relations between the government and the people.

Lately, technocracy in Lebanon has been advocated as our escape from the crisis we are passing through. But what we see around us is the work of technocrats, the positivist experts who have the knowledge. Engineers, viewed as neutral experts who have the solution for most of the problems, are an example of how knowledge is not objective, rather it is socially and politically produced. “Now personally I have a whole project, but it is not getting together to teach engineers politics because engineers do not understand that all they are doing is political. Any design in itself is political. Any technology in itself is political.” Karim Eid-Sabbagh told me. He continued, “My immediate criticism is how engineers build the world. I mean this country is built by engineers! Look around you, they decide who gets what, and who gets excluded.” (Karim Eid-Sabbagh interview, 22 March 2021).

In today's world, local knowledge is considered non-knowledge, it is represented as the opposite of the modern knowledge; a part of the romantic past that hinders development (Nygren, 1999). This resonates with disregarding the Indigenous knowledge in favor of the technical experts' knowledge. Timothy Mitchell talked about this in his book *Rule of Experts* where technocratic experience is more valued, giving the technocrats more cultural capital to influence the policies of the states and the governments (Mitchell, 2002). In the globalized world we live in, the global and local spheres are very interrelated, and knowledge does not deviate from this standard. Knowledge is a heterogenous construct that emerges from "diverse cultural, environmental, economic and socio-political factors" (Nygren, 1999, 282). Local knowledge is hybridized through these glocal (Eriksen,2016) networks formed. In the first stages of the research, I thought that I would be faced with local knowledge that does not talk to the technical knowledge of the advocates of the dams. However, throughout the thesis, this hybridization of knowledge between the native and technical knowledge will unfold clearly.

D. A Note on Traditional Versus Organic Knowledge

The interlocuters who accompanied me through the journey of this thesis utilized their expertise and knowledge to counter these mainstream discourses about dams in Lebanon carried out by the state through the government affiliated experts. My interlocuters, coming from different backgrounds ranging from engineering, geology, planning, and a heterogenous mixture of local and modern knowledge, are defying the knowledge hegemony propagated by the state and the experts advocating for the dams' projects. The latter are supported by the

World Bank which is a producer of knowledge as well as a producer of development projects in the global south. This type of knowledge production by the elites of development has effects on the societies. This knowledge produces a set of facts that classify and differentiate between populations and their environments. The World Bank also trained thousands of professionals in the borrowing countries to do its form of green development (Goldman, 2001). In Gramscian terms, hegemony can utilize intellectual tools to propagate its ideals and projects to gain the support of the population. “Hegemony may also refer to the conscious direction provided by a hegemonic center, such as a government, toward establishing some unity of political and cultural means and end.” (Kurtz, 1996, 107)

Intellectuals, according to their positionality, and their situated knowledge (Haraway, 1988), are either on the side of the hegemon, keeping the status quo, or they are resisting the hegemony and working for the best of the community. According to Kurtz, “Traditional intellectuals are agents who tend to represent and direct the interests of those in power.” he added, “organic intellectuals are agents who tend to represent and direct the interest of subaltern populations who are being exploited and to provide them with a counter-hegemony to resist their exploitation.” (Kurtz, 1996, 108) In my study, my interlocuters, who are opposing the existing hegemonic formation, are producing a counter discourse. They are combining local and modern knowledge in order to mobilize and lead the people’s struggle against the building of the dams in Bisri and other sites. Their knowledge is being utilized in favor of the communities they are working with; against the hegemonic traditional knowledge the state is trying to impose on the citizens.

Alice Stefanelli (2020) wrote about engineers and architects as organic intellectuals in Beirut between 2012 and 2015. These intellectuals were defying and protesting Beirut

municipality's project of building a highway connecting Achrafieh to the seaside. What is similar between the project that Stefanelli wrote about, and my research is the resurrection of development projects drawn in the 1950s. The projects of that era belongs to it, they are outdated now because of the changed circumstances (Stefanelli, 2020, 663). Engagement by engineers and academics with the campaigns stemmed from combining their expertise with their civic duty. As it will unfold in the thesis later on, my interlocuters were critical of the status quo, and they utilized their training and knowledge to create an alternative narrative to that of the political elites. However, there were experts and engineers that were defending these developmental projects. Stefanelli (2020, 651) wrote, "experts are seen as tacitly advancing the interests of their powerful patrons through their work, agreeing to disguise self-interested projects as technical solutions dictated by scientific necessity that it is claimed rests at the heart of planning." In order to expose these politically driven projects, the expert activists had to utilize the weapon they had: their knowledge and expertise.

What is interesting about the campaigners is that they do not disguise their political engagement, not in alignment with the Lebanese political parties, but in the mobilizations to impact the policies and projects (ibid, 662). As Paul Abi Rashed, Karim Eid Sabbagh, and Roland Nassour elaborate later in the thesis, their activism is political, and the environmental struggle is intertwined in the political life. Stefanelli argued that knowledge is utilized by both parties in the urban planning in Beirut, the activists, and the municipality, in opposite directions. Each party would accuse the other of being politicized and not abiding by the expertise (ibid, 663). Similarly, in the case of dams in Lebanon, both parties, the state and the activists accuse each other that their actions have nothing to do with expertise. The experts would take sides as knowledge and science are not neutral. Roland Nassour believes

that science in itself is political (interview, 3 April 2021). The experts can provide justifications for the development projects and disguise the political interests behind them in the name of science (Stefanelli, 2020, 663). On the other hand, the science and expertise can be utilized to defy the status quo and voice the people's demands and concerns. In both cases, technical expertise is not neutral, it is situated according to the sociopolitical standing of its bearers (Haraway, 1988).

The work of Stefanelli is very similar to what I try to do here by looking into the positioning and politics of the experts in relation to the projects that affect the lives of the people. Experts and engineers take sides in such projects. They can support them and provide justifications for the political powers to carry these projects on, or they can question and critique them in order to raise awareness and change the status-quo as did the campaigners in Beirut's highway project (Stefanelli, 2020), or in Bisri where the activists and campaigners were able to create an alternative narrative on the national level against the prevalent discourse supporting the dam project in Bisri.

Throughout the thesis, I will be starting from these concepts but going beyond them. This thesis is a humble attempt to unpack how the experts were able to hybridize their knowledge locally to produce a counter narrative that resisted the government's rhetoric, reaching the triumph of stopping the Bisri valley dam in 2020.

CHAPTER II

COUNTER CURRENTS OF KNOWLEDGE

I called an academic considered an expert on the water issue in Lebanon. His academic training qualifies him as one of the very few experts in his field of study in Lebanon. After I introduced myself and my research to him, he was very surprised as how anthropology, the science of the ancient man as he described it, deals with dams and people current affairs. When I asked him about the possibility to sit for an interview, the following happened:

Hussein: Can I conduct an interview with you about the Bisri Dam for your expertise and engagement with the issue?

Interlocuter: Look Hussein, I do not sit for interviews unless they are heard or attended by a big audience. All what I have to say you can find on my Facebook and YouTube pages. I do not speak except in front of an audience.

This phone call, which was at the beginning of my research, was a pivotal and difficult moment during fieldwork. I felt somewhat helpless and at a dead end. I kept on asking myself: "What if all experts won't participate and won't agree to be a part of this research; what will it look like?"

I decided to pay attention to such kinds of challenges in order to reflect on process through which certain kinds of knowledge are valorized over others. I also became interested in the performances of expertise knowledge. For instance, in the way my interlocutor above

refused to sit for interviews. Or that, all the experts not only permitted me to use their real names but also expected me to do so.

This incident was also interesting after I experienced the dynamics with the academics, who occupy a similar power position if not even a more powerful stand than me. In this chapter, I will be discussing methodological questions, including issues of accessibility to the experts and how to study their knowledge. I start by reflecting on some of the conceptual and methodological questions that arise when studying experts. To do so, I draw on anthropological discussions pertaining to elites where similar issues of accessibility have arisen and the methodology to overcome the issues of accessibility. After that, I explore the situation of knowledge along the sociopolitical spectrum and the reflexivity of the expert activists. Finally, I will discuss the politics of naming and public recognition of the knowledge they embody, an issue that was ultimately central to me eventually gaining access.

A. Pitching a Tent in World Bank's Boardroom

An ethnographic study of elites—including experts—has its own set of challenges. As Shore wrote, "One cannot simply pitch one's tent in the board room of the World Bank." (Shore and Nugent, 2002, 10) In other words, engaging with well-established anthropology methods, such as participant-observation, are difficult, if not impossible. Questions arise pertaining to identify the field site as well as methods used.

When studying the experts, I am trying to write an ethnography of their knowledge and its application. The study is not about their personal lives, but instead it is a study to

understand the settings of knowledge production (Holmes and Marcus, 2005). So, the ordinary anthropological methods such as following the interlocuters to their homes might not create substantial material and results for the study. It is hard to study elites and experts because they are not found in one site. They are scattered among different planes. Some are connected; however, they are not found in the same place (Nader, 1972).

Given that my interlocuters comes from different backgrounds, it becomes even harder to find them in the same place; thus, multi-sited ethnography was the method I used. I had to connect the places where my interlocuters are. For example, Karim Eid Sabbagh, the development academic, worked on Janneh dam alongside Paul Abi Rashed and Roland Nassour, he also worked on the water management in Lebanon in his PhD research and later his documentary. Roland Nassour and Paul Abi Rashed worked on other dams, and they have even met with the World Bank in the experts' panels. In those panels, Mohammad Khawlie was present as well, because his academic expertise won him a right to be at that table. Khawlie is also a member in the green party and an advisor to multiple environmental interventions. I established this connection through the comparisons emerging from the answers and interactions of my interlocuters with the questions and themes. Because they are mobile and not concentrated in a single site, their knowledges are built differently and are compared, "in the form of juxtapositions of phenomena that conventionally have appeared to be (or conceptually have been kept) 'worlds apart.'" (Marcus, 1995, 102)

Finally, the pandemic has pushed me towards more unconventional methods. I focused on interviews and virtual participant observation, whether a virtual hike, or a virtual trip in the memory of my interlocuters. They come from different intellectual springs, their

knowledges transfuse and breaks the walls of dams' hegemony. I experiment with para-ethnographic methods (Holmes and Marcus, 2005; Miyazaki and Riles, 2005) treating the expert-subjects as counterparts in this research. The interlocuters are partners in producing the ethnography and the theory behind it through their inputs, descriptions, and the utilization of their expertise. Para-ethnography promotes reflexivity where the ideas and forms of knowledge are put in conversation to create an encompassing picture of the expert activists' engagement. I relied on the interactions, reflections, and forecasts of my interlocuters to analyze what I was not able to see and write ethnographically. Later in this thesis, I will present examples of para-ethnographies during the World Bank meetings portrayed in the anecdotes of my interlocuters that attended these meetings. In the final chapter, I will rely on my interlocuters imagination, knowledge, and expertise to propose an alternative to the current water sector management. These are examples of how para-ethnography is reflexive examining of the expertise and anecdotes.

B. Situating Knowledge

As the focus of this research is the expert activists, already we have a picture in mind of their knowledge situation. All of them are utilizing the knowledge they have possessed to oppose the status-quo traditional rhetoric about development and dams. The knowledge and expertise they have, are acquired in universities, yet they infused them with firsthand experience. This production of knowledge is regarded a form of political action (Neary, 2012; Stehr and Grundmann, 2011). Universities are understood as essential sites for economic production, factories of economic growth that provide the economy with knowledge products

for the growth of the private sector, they also provide workers who are well-equipped to elevate the private industry (Shear and Hyatt, 2017). The knowledge we gain in universities through academic training is not neutral, it is political, and it serves a certain goal. However, our reflexivity and engagement would push us to think critically. I used ‘our and us,’ because I believe that my university life was full of this reflexivity. I changed majors from computer science to political studies and now I am finalizing my anthropology thesis Master’s. Throughout this journey, I was taught by critical pedagogues who enriched my critical thinking. I was enrolled in several mainstream undergraduate courses, but the presence of those pedagogues helped to pinpoint the flows in these mainstream courses. Although universities are factories of the private sector, universities also are a site for critical inquiry and politicization of cultural production (Shear and Hyatt, 2017,4).

Knowledge is not only situated socially and politically, but it is also reflexive. By reflexive, I mean examining one's own knowledge and belief systems and being critical about them challenging the ‘neutrality’ characteristic of knowledge. This is the reason knowledge is treated differently by different academics, experts, and activists. For example, my interlocuters situated themselves against the status-quo, and were critical about the systems they were in. Karim Eid-Sabbagh spoke about memories as a young student in his engineering class questioning the efficiency of making a transportation system model in class as a training for the engineering students. Modeling is a theoretical practice where the model is tested in perfect situations. When he raised his concern to the professor that the modeling is unrealistic, he was told, “yes you are right if our model gets 40% into reality then it is a good model.” He felt at that stage that engineering lacked critical engagement with the work

they did. As he was questioning the profession further, he started to lose interest in engineering (Karim Eid Sabbagh, interview, 22 March 2021).

In fact, all of my interlocuters had similar stories. Paul Abi Rashed went to law school to become a lawyer and defend the people, he then moved to environmentalism because of his own self-taught readings through which he understood that environment is the basic human right (Paul Abi Rashed, interview, 9 April 2021). Roland Nassour, similar to them, went to architecture because construction in Lebanon is unorganized and it does not take into consideration public appeal and the surrounding environment (Roland Nassour, interview, 3 April 2021). During their time as students in universities, whether public or private, my interlocuters found within these spaces the tools for critical investigation,

These universities have also trained the technocrats behind the dams' policies in Lebanon, some of these are academics at the universities and producing knowledge supporting the projects, others are bureaucrats, technocrats, and engineers. The positionality of the experts depends on their engagement in the society, academic training, exposure to the culture, and critical thinking.

C. Do not Disguise my knowledge

The research about Bisri is politically charged because it was a public issue, and there were clashes and incidents that unfolded during the past years related to Bisri. I was asked by the IRB to have an oral consent form and to use pseudonyms rather than the real names of my interlocuters. When I started to invite people for the interviews, Karim Eid Sabbagh

replied, “feel free to use my name when quoting.” Then Mohammad Khawlie wrote to me that he wants to be quoted under his real name. In my interviews with the rest of my interlocuters, all of them wanted to be quoted under their real names. This posed many questions for me about why would someone want to be quoted under their real names? What does the story shared have to do with the names?

D. The Name

As anthropologists have long shown, names and practicing of naming, both have important roles in society. They play a vital role in building the identity of the persons and the connections these people form. Add to that, they classify, individualize, and create social action by applying culture and language. These names become markers of the people’s identity, class, and the group they belong to (Bramwell, 2016; Raheem and Akande, 2019). Names become a tool of recognition and belonging to certain group; also, a reflection of it. It becomes clear why my interlocuters preferred being quoted under their real names. They want their stories to be tied to their names rather than some alias that rips the identity of the knowledge.

E. Confidentiality

Throughout the research, I tried to carry on the informed consent. I had sent the participation invitation to my interlocuters beforehand, they read it and accepted to participate. Then, before we started the interview, we went over it again and I recorded their consent in the beginning of each interview. During coding and writing the thesis, I shared

with them the transcription and what parts of the interview I will use so they are engaged with the research at all its steps. I even kept the option for anonymity, in which I would ask them to tell me a preferred name they want me to use or canceling the participation at any moment. I am grateful for their participation and trust to share with me their knowledge and expertise. Without them, this thesis would not have happened. For this, I feel morally obligated to tell their stories the way they shared them with me.

Anonymity is a key technique used by the researcher to protect the identity of the interlocuters. Pseudonyms are one of the tools of protecting the identity of the research participants. It is viewed as the favorable and default setting in order to achieve the least requirement of doing no harm to the participants (Mukungu, 2017). This practice is developed by IRBs because of harm caused in previous conducted studies. It became a norm to adopt anonymity rather than a deliberate discussion between the researcher and the participants. The agency of the people over their names and identities becomes subtle because research experts drew policies to protect the participants. Grinyer (2002,2) wrote about this, "All the guidelines discussed thus far are based on the premise that individuals not only deserve the protection of anonymity, but that they actively desire it." The question becomes do people really want to be anonymous under pseudonyms?

My interlocuters asked to be quoted under their real names. After reading the transcriptions, they asked for certain sentences to be removed, these were not used in the coding or in the research itself. It was a powerful stance from them to ask to have their names present in the thesis. Karim Eid Sabbagh's "feel free to use my name when quoting" in

Svalastog and Eriksson's words, "can be read as subversive strategies towards the power that research represents." (Svalastog and Eriksson, 2010, 107)

F. Publicity

As mentioned before, names identify people and relate them to a group, or a class. The people I interviewed are known for their active participation in the scene of water activism and knowledge production. Writing a story about these aspects of their lives is part of their public image. Add to that, quoting under their real names would increase the credibility of the research, and thus of their story. I had to establish trust with them by acknowledging their identities, knowledge, and expertise to write about them. Acknowledging my interlocuters under their real names builds trust with them which will eventually solidify the data they would share with me (Svalastog and Eriksson, 2010, 105).

G. Tell my Story, but do not steal my name

When discussing the anonymity practice with one of my interlocuters, he told me that once he was quoted under a pseudonym, but he was identified by a reader because of the way he was described in the research, his position, title, and work. When we talked about this, he laughed because of how loose pseudonymity can be. Does it really matter to be quoted under a different name when the person can still be identified by the readers?

> Every datum attributed to a participant in written research, such as a quote or anecdote, influences how that participant is portrayed. This portrayal can make a participant identifiable even with a pseudonym in place thereby demonstrating

> that confidentiality extends beyond anonymity/pseudonymity (Mukungu, 2017, 6).

My interlocuters' identities are part of their stories, and their knowledge and activism are part of their public identity. Their ownership of their stories and knowledge implies their ownership of their identity and agency. Identity is entangled with the words of the interlocuters. Their knowledge is embodied in their identities, and thus names. Anonymity "implies stealing someone's identity and history." (Svalastog and Eriksson, 2010, 109) Retaining their names through the research, I have safeguarded their knowledge and history, as well as protecting their identity and agency. I told the stories of their knowledge and activism giving them agency over their words, and in their position as experts and activists. It is more convenient to be recognized while respecting their choice to stay anonymous if they wanted to. Stories can give access for the individuals telling them through exposure, and anonymity might backfire and cause harm by stealing their stories (ibid).

Counterparts in research do not want to lose their stories through pseudonymity. By acknowledging them in published work, we support their ownership of their stories and experience (Grinyer, 2002, 1). Anonymity, in principle should be offered to vulnerable groups, but as I have said earlier in this research, I am writing an ethnography of experts, academics, and activists who are equal to me if not more powerful. My interlocuters are not on the fringes of society; on the contrary, they are opposing the state openly and publicly.

> Anonymity protects groups and individuals defined as vulnerable. Groups are defined as vulnerable when they are socially marginalized in society at large or seen as carriers of few or no juridical, economical or other resources, to guard their own interests (Svalastog and Eriksson, 2010, 106).

Anonymity is a tool to protect the identity of the interlocuters and participants, yet it can backfire by veiling the identities of the people about whom we are writing. It can be an effective methodology when the participants want to be anonymous. For that, we need to carry informed practices of research. Our research subjects should be able to have a say in what is written about them and based on that they decide whether they want to be anonymous or not. In my research about equivalents rather than marginalized populations, it was important for me to have them decide the way they want to be portrayed and quoted in the text. Although it was different from the IRB's view, but I respected the confidentiality and trust my interlocuters gave me. So, it was not my choice of anonymity or not because "it is clear how problematic it is to make judgements on behalf of others, however well intentioned." (Grinyer, 2002, 3)

H. Knowledge, Hegemony, and Identity

This chapter showcased how knowledge is produced and the positionality of knowledge production in society. It is crucial to acknowledge that knowledge and expertise are not situated in a neutral bubble, they are interwoven in the society. As Roland told me, "As I understand it, science is political by definition." (Roland Nassour, interview, 3 April 2021) All the knowledge we acquire is rooted in the society we are in. It is shaped by the society, and knowledge itself shapes the community as well. Also, certain institutions have a more powerful grip of the means of knowledge production. These can produce what Gramsci terms as the traditional knowledge that becomes the prevalent ideology of the society.

Opposing these institutions becomes a challenging task because of the cultural and social capital they have. In the following chapter, I will be discussing how the cultural and social capitals of my interlocuters won them a seat on the table of negotiation with the World Bank. Then I will demonstrate how the 'experts'" knowledge brawled with the 'native-expert' knowledge with an ethnographic portray of the meetings inside the World Bank offices through the memories of my interlocuters.

CHAPTER III

HISTORY OF DAMS IN LEBANON

> The Americans came here first in 1954 it was actually them who built the Albert Naccache dam [Qaroun Lake], dams actually originate from there. The early engineers like Naccache, Salameh, Abd el Al were trained in France and Germany. They picked high modernism from there and brought it back to Lebanon. It is always tied to Lebanese capital, Beirut, being the banking financial capital since the beginning of Lebanon. The development model they propagated, having learnt in France, fit well with the ideas of financial elites. there was a meeting of minds. There was no antithesis between their development ideas and the financial or the bourgeoise in general. This is how [the development projects, in particular dams,] come together and more so under Chehab. (Karim Eid-Sabbagh, interview, 22 March 2021)

A. Introduction

In this chapter, I will examine the history of dam building in Lebanon as part of the broader modernization vision of nation and state building. To do so, I draw on interviews with the following interlocutors: Karim Eid Sabbagh, Mohammad Khawlie, and Roland Nassour. I draw on archival/historical literature to situate the project of the Bisri dam within the historical processes, including colonial ones. At the same time, it allows us to understand some of the conditions that paved the way for the certain kinds of political figures to become proponents of the Bisri Dam. In the first section, I look at the history of dams' plans in Lebanon during the French Mandate period until the 1960s with the building of the Qaroun Dam. The second stage extends from the late 60s to 1990s with the increasing political turmoil in Lebanon that exploded into a civil war in 1975. The third section looks at the first decanal plan in 1999 that produced the Chabrouh Dam and later the Brissa Dam. The fourth section looks at the period that extends from 2010 onwards that tied the developmental projects to the political promises of the Free Patriotic Movement under the ministry of

Gebran Bassil. Finally, this chapter will discuss the role of the World Bank in the development projects and how it became the bank of development in the world.

B. Developmental Trend of the mid-20th Century

Despite its small geographic area, Lebanon encompasses all elements of the water cycle. These include snow, rechargeable groundwater, sub-marine springs, and rivers (Shaban, 2020). From this we notice significant water resources latent within the ground of Lebanese topography. These resources largely depend on potential future water uses, in addition to projects concerned with storing winter run-off (Abd el Al,1959). Because of its nature and resources, Lebanon was named the Water Tower of the Levant (Riachi, 2016, El Tawil, 2019). It has been a motive for the engineered solutions that were focused on "[the] policy of resource exploitation on the basis of large infrastructures was viewed as a dimension of development." (Ghiotti and Riachi, 2013, 141) This was a motive for putting plans for the development and management of the water resources within the country. Engineers were the proponents of these plans in Lebanon. These engineers were trained in Germany and France and enacted the European development ideals in Lebanon (Karim Eid Sabbagh, interview, 22 March 2021).

Engineer Abd el Al, the prominent engineer whose name is tied to the Litani project, said in various places that Lebanon does not have raw materials to extract and depend on. It must depend on its one treasure: the Litani river. For Abd el Al, Litani is the vital vein for the country, and relying on it solves all major water issues for one third of the Lebanese republic. It is one of the effective means of urbanization (Abd el Al, 1948). Abd el Al was

an engineer in the water sector during the Mandate period. After the independence he became the general manager of the Ministry of Public works. The water plans that were being developed before independence were carried on after independence by Abd el Al and his peers in order to develop the state.

After independence, and during the Cold War, and because of its strategic position, Lebanon fell under the Point Four Program initiated by the Truman's administration that was supposed to supply technical assistance for developing countries. The focus of the projects in Lebanon revolved around the water sector. The Americans in the 1950s, as the French before them, focused on the large water infrastructural projects as tools of modernization and development because of the country's water abundance (Riachi, 2016, 32).

This intervention resulted in creation of the Litani River Authority which was responsible for building of the Qaroun dam. USAID helped in building the dam (USAID, 2021) in addition to a loan from the World Bank (Ghiotti and Riachi, 2013, 142). The efforts of the US authorities did not just focus on the Litani river or the Qaroun lake. There have been multiple reports executed by the Bureau of Reclamation that targeted multiple rivers in Lebanon to study the feasibility of constructing large water infrastructure projects on them. Among these reports are, Water Resources Investigations for the Nahr Ibrahim Basin (1957), Water Resources Investigations for the Nahr Damour Basin (1958), and Water Resources Investigations for the Nahr El Kelb Basin (1958). All these three basins are essential in the current water sector strategy. Although the Lebanese state became independent in 1943, international intervention in policy making was still a major factor that has been shaping the

development projects ever since. In the report titled the Development Plan for the Litani River Basin, the Bureau of Reclamation noted,

> The recommended plan for development provides for the construction of the Karaoun Dam and Reservoir on the Litany River, the diversion of a portion of the Litani water through the Lebanon Mountain Range into the Bisri River basin, and the multiple-purpose use of water in both basins for irrigation and power development. The plan calls for the construction of a low dam on the Bisri River to regulate the flow from the Karaoun. (Bureau of Reclamation, 1954).

Bisri dam, which was a low dam proposed originally by the Bureau of Reclamation to regulate the flow of the river, became a large dam project that is supposed to supply water for the Greater Beirut in the 2010 water strategy. The diversion of the Litani River through the Lebanon Mountain Range, Abd El Al proposed, would supply Beirut with drinking water. In a study he presented for the seventh engineering conference in 1959, Abd el Al predicted that by year 1964 the Litani water will supplied to Beirut (Abd el Al, 1959, 78). The plans of Abd el Al remained a dream. It is 2022 now, the Litani has not been diverted to Beirut, in addition to its high levels of pollution which makes it unsuitable for drinking. The Bisri project was not realized as a small dam back then, nor was it passed as a big dam more recently. For many experts it is unacceptable to build the dam in Bisri even prior 2010 Water strategy. Khawlie told me, “In the geology department at AUB in 1981-1982, one of the students studied for a master’s degree in geophysics on the axis of the Bisri dam and the lake. From that time, it was obvious that a dam cannot be built there. The reasons are both the earthquakes and the types of the rocks.” (Mohammad Khawlie, interview, 26 March 2021)

C. Halting the Development Projects on the Eve of the Civil War 1960s-1990

After the construction of the Qaroun Dam in 1959, no other dams were built for decades until 2007 when the Chabrouh Dam was built. The water sector was being focused on smaller projects such as irrigation channels and water supply networks (Abd el al, 1948). At the time, Lebanon started to undergo a number of small-scale civil wars that finally interrupted at a much larger scale in 1975. Eid-Sabbagh wrote, "At the dawn of the war the water administration was in shambles, neither the ministry nor the water offices were fully operational, quite the contrary." (Eid-Sabbagh, 2015, 130) Nonetheless, in order to complete the water policy that focused on dams, Chabrouh Dam project was being studied in 1970 (Bou Jaoude et al, 2010, 408). Its initiation was halted because of the civil war that started in 1975 and did not end until 1990. The project began in 2002 and the dam was inaugurated in 2007.

Due to the civil war, the water sector was heavily damaged. Pumping stations, water towers, and public wells were destroyed and damaged. Supply networks endured infiltration as a result of lack of pressure as well as recurrent service interruptions (Eid-Sabbagh, 2015, 132). In addition to that the administration was still waiting for the realization and application of the 1970s institutional reforms that were proposed. These reforms were not realized until 2000 with the law reform 221 (Riachi, 2016, 30).

D. Water Development during reconstruction: 1999-2009

Post the civil war, the water sector was largely neglected. However, in 1999 a ten-year plan for the water sector was compiled by the Ministry of Water and Electrical

Resources, including all existing studies about dam sites, and brought back the rhetoric of the benevolent colonizing powers modernizing the local management of water (Riachi, 2016, 33). the plan included the building of 18 dams on the Lebanese rivers. The only dam to be finished during the 10 years was Chabrouh dam near Faraya in Mount Lebanon. But leaks were observed, and there are also possible leakages into the Qana plateau (Bou Jaoude et al, 412, 2010).

Brissa Dam, located in Deneye, in the North is another project included in the 10-year plan. The building of this particular dam started in 2003 and was not completed before 2013. The dam is not filling due to leakage through the karstic rocks which are very porous and made of limestone (Mohammad Khawlie, interview, 26 March 2021). An interesting vignette was told to me by a researcher who I told once about my thesis. We talked about my thesis, and he told me that he worked on dams, particularly Brissa dam. When he went to the area to survey the people's opinion regarding the dam, the *mokhtar*[2] told him about the following incident.

When the engineers were inspecting the dam site, a shepherd brought his cattle to drink water near the engineers. He asked what they were doing, when they told him that they were surveying the area for a potential dam; he told them that at this area water leaks, and the river becomes a small stream during the summer. He proposed to show them where he takes his cattle during the dry season, but as expected the engineers did not respond to him. The knowledge of the locals who know the land and the geography through experience is disregarded whereas the engineering knowledge and expertise prevail (Mitchell, 2002). After

[2] A mokhtar is a local official in a town or village in the governmental organization.

paying more than ten million USD on this project, the Council of Development and Reconstruction (CDR) handed the dam to the North water authority without the completion of the works. The works were halted because the dam was not able to collect any water as all of it was being leaked underground due to karst (Riachi, 2016, 34).

E. Politicizing and Reviving the Water Development Projects: 2010-onwards

> On the technical side [policy makers] care about what their thinking is. Second, they want quick solutions. Third, dams are visible; they always remind people of the public infrastructural works. Then there is the corruption of the dams, giving financial gain to different parties. If the Bisri dam is going to cost 1.2 billion dollars, other alternatives will cost less than half that amount.
> Mohammad Khawlie, interview, 26 March 2021.

After the 2009 parliamentary elections, Saad Hariri was named the Prime Minster. The Free Patriotic Movement (FPM) took charge of the Ministry of Electricity and Water (MoEW) for the first time and named Gebran Bassil to serve as the minister. The 1999 decennial plan did not get fully executed as only Chabrouh Dam was established, and Brissa was still under construction. Bassil worked to resurrect the dams' policies. He complied all the studies already made and revived the decennial plan. In 2012 the Council of Ministers approved the new National Water Sector Strategy that focused on building dams in different sites along the Lebanese terrain.

At this time, dams were increasingly financed through loans and foreign aid grants. By the end of 2013, work started on four dams; three are located in areas inhibited by constituencies of the energy minister, Gebran Bassil. They are Msielha in his electoral district Batroun, Bisri in Jezzine, and Janneh in Maten. Dams were not only built as infrastructural

projects to supply water and protect Lebanon from climate change and water shortage. Dams took on new political significance and meaning. Indeed, as Eid-Sabbagh has shown, Bassil used the dams to increase his popularity among the voters (Eid-Sabbagh, 2015, 172). The strategy built on the works of the pre-war era, and the 1999 ten-years plan. The strategy was built upon studies made in the 1950s where dams were prevailing around the world. Experts argued that they were not against dams, but there might be better solutions, and that dams were not the solution for the water shortage issue in Lebanon (Abou Cham, 2013, 33-34). The solutions of the 1950s belong to that era, they might be ineffective because the circumstances changed (Stefanelli, 2020, 663).

During the first wave of dam advocacy in the mid- twentieth century, dams appeared to be advocated as projects of modernization and development. Bassil's policy, however, did not focus solely on the development or modernization rhetoric, there was an added layer of climate change and overpopulation that intensified the developmental plans of dams. Dams were portrayed as an engineered solution that makes use of the Lebanese rivers (Riachi, 2016, 10).

Dams stayed projects adopted by the Lebanese governments since the Mandate period. The only thing that changed is how they are portrayed. In the beginning they were modernization and development projects that fed into the state building rhetoric of that period. Then there was an added layer when they were advocated as a strategic solution to fight climate change and the increasing demand on water by the growing population. However, dams stayed a tool for the consecutive governments for the symbol and promise of development they hold for the population.

F. Banking the World

> The Americans came here first in 1954. It was actually them who built the Albert Naccache dam (Qaroun Dam). The early engineers like Naccache, Salameh, Abd el Al these were people trained in France and Germany they picked high modernism from there and brought it back here. Modernization is always tied to Lebanese capital, and Beirut being the banking financial capital since the beginning of Lebanon. The development model they propagated having learnt in France, fit well with the ideas of financial elites in the capital; there was a meeting of minds. There was no antithesis between their development ideas and the financial or the bourgeoise in general. This is how development comes together and more so under Chehab.
>
> Karim Eid Sabbagh, interview, 22 March 2021

The World Bank alongside The International Monetary Fund were formulated in Bretton Woods convention at the end of the Second World War. The World Bank was responsible for the reconstruction of the war-torn Europe, but after the Marshall Plan, it shifted its focus to the colonies of the global south. During that time, development and modernization ideals advocated by the World Bank were circulating the global south following the dream of modernizing the state.

The politicians, policy makers, bureaucrats, and engineers were formulating and proposing policies and projects to push the wheel of development forward in Lebanon following the dream of modernizing the state. This has been a motive for the engineered solutions focused on "[the] policy of resource exploitation on the basis of large infrastructures [that] was viewed as a dimension of development." (Ghiotti and Riachi, 2013, 142) During the mid-twentieth century, the investment in dams and other large hydrologic infrastructure was the trend. It was widely deployed internationally and perceived as a tool of development

in the global south (Mains, 2019). During the first wave of dam advocacy in the mid-twentieth century, dams were advocated as projects of modernization and development.

When the World Bank turned its finance to the global south, it had to convince the borrowing countries to adopt the developmental agenda for modernization. It started to advocate for social objectives such as poverty alleviation. “If the postwar era from 1945 to 1965 was the ‘development as growth’ era, as economic historian H. W. Arndt has suggested, then the 1965 to 1975 period was the ‘social objectives’ era.” (Goldman, 2005) However, it is important to understand these policy shifts in its global political context. That is, these technical projects of development laden with certain social objectives were managed by the “haves,” the developed world, moving capital, knowledge, and expertise to the “have nots,” the developing world. This ideology of development was reinvented on a bigger scale by the World Bank in the end of the twentieth century when it was turned into a product the World Bank disseminates to the word.

In order to maintain its position in the global arena, the World Bank, with the lending competition from commercial banks’ lending to third world countries and China becoming a lender and an infrastructure contractor; development assistance was not going to preserve the powerful position of the World Bank. The World Bank advocated itself into the Knowledge Bank rather than the Lending Bank in order to stay the powerful player it is globally (Broad, 2007). At this moment, the World Bank became even more powerful and able to draw policy lines for the borrowing countries.

After decades of enrooting its green knowledge (Goldman, 2001), the World Bank was able to create a narrative about dams in the borrowing countries. The presence of the

Bank in Lebanon in the water sector dates back to the 1956. The project was called "Litani Power and Irrigation Project," and it financed the building of the first dam in Lebanon, the Qaroun Dam. Although it highlights difficult engineering and construction problems, it promises that the difficulties and problems can be solved if experts and qualified contractors were employed (World Bank website). Since then, damming projects have been on the table of consecutive Lebanese governments. Bisri Dam was also financed by the World Bank, promising to provide fresh drinking water to the Greater Beirut residents.

The Bank does not only finance loans, produce policies, and disseminate knowledge. It has gone a step further in propagating its green knowledge in the borrowing countries through training thousands of professional in these countries to apply this 'cutting-edge' knowledge on development (Goldman, 2001). Due to its massive knowledge production and professional trainings, the Bank became the largest producer of development research as well the main lender for development projects in the global south. Nevertheless, the institution had its political agenda. It played a significant role in legitimizing the neoliberal laissez faire model in the past century through its research department (Broad, 2007, 702). In order to receive the loans, states are required to adopt structural changes in the administration, the market, they are also requested to adopt new scientific codes resulting in reshaping the knowledge (Goldman, 2005).

For most of my interlocutors, the World Bank has actually become a hegemon of development. The knowledge it produces, the professionals it trains, and the loans it finances are all tools for the Bank to lay down its knowledge as the truth. In the water sector in Lebanon for example, where the dams' policies, the extraction of its water policies in

Lebanon, are seen as the only solution for the water security by the Lebanese community. Roland has an interesting framing of resisting this hegemony.

> There was a prominent narrative about water with no alternative. We created our own narrative that attracted the media. We were able to have a newspaper article, or a news report every two weeks. Sometimes we would tackle the religious heritage, or the corruption of the state in the dams' policies, or even we would talk about 'secret' waterfalls, which are not really secretive, but when it was described as secretive, we would have special coverage for it. We created our rhetoric, and what is more important, is that we tied it to the bigger political struggle. We were proposing an alternative to a tangible solution for the water shortage problem in Lebanon. The problem was not straightforward to the people, it was a managerial inefficiency of the water sector. Correcting the managerial aspect is not appealing nor is it convincing to the people as the simple solution of erecting a wall to collect water. The dam becomes a part of the narrative because the people can see it. You cannot even imagine the pressure we were subjected to when we took things this far. You don't know how many people told us to mind ourselves and let this go. We were laughed at. Once my university professor even asked me, "Do you seriously think you're just going to stop the dam?" (Roland Nassour, Interview, 3 April 2021)

For my interlocutors, the World Bank evolved from a development financing bank to an institution that restructures states and imposes policies on the borrowing states through a hegemony of development knowledge that become a standing truth system. The World Bank knowledge is very prominent, and it is extremely hard to contest. The Bank was producing its own truth about development projects through training new experts and creating knowledges and disciplinary science of development; without these the authority of the World Bank would not be fully exercised (Goldman, 2005, 156). This truth would need its scientists, experts, and subjects. The new knowledges become part of larger truth systems (Goldman, 2001). Knowledge to be accepted by the World Bank hegemony of knowledge has to serve the World Bank's purposes and policies; no matter how prominent the scientist

or expert is, their knowledge would be disregarded if it does not serve the 'green' agenda of the World Bank.

No one in Lebanon believed that these activists would be able to create this immense pressure and stop the dam. No one imagined that they would be able to face the World Bank and Lebanese government and eventually win as they did on the 4th of September 2020. As Roland said, they were laughed at for defying the World Bank. Finally, what pushed the World Bank to be a 'promoter of green development' was a transnational social pressure that demanded "reform or die" after the 'Long March' to dam's site in India (Goldman, 2001). The National Campaign to Save the Bisri Valley was able to do so through its various techniques, using the traditional media, social media, mobilizations in Beirut and the Dam's site, networking, and lobbying all over the world. All of this has given the campaign a position to negotiate, and later on to have the upper hand and stop the project.

G. Conclusion

Dams projects have been contested through the last years by environmental activists who equipped themselves with expertise and knowledge to in order to resist and fight back against the World Bank's and government's development propaganda. In the following chapter, I will discuss how knowledge manifests itself in the battle of dams in Lebanon. I will delve into the meaning of being an 'expert' and the different systems of knowledge, that these experts have.

CHAPTER IV

TECHNOCRACY

As discussed so far, knowledge is not neutral. It is produced and reproduced within the social spheres of human interactions. In this chapter, I will dive into the knowledge forms flowing through engineers and other experts. The accumulated knowledge of my interlocuters allowed them to open the gates of the World Bank offices and reach out the headquarters in Washington DC in order to trouble the water policies and projects adopted by the Lebanese government and financed by the World Bank such as the Bisri Dam.

I will start first by discussing the knowledge translation into technology and technocracy. Then I will move on to showing the different forms of capital my interlocuters have accumulated which allowed them to be influential and enter the World Bank meeting room. In these meetings, they were sitting with engineers and other experts supporting the dam project. The following section will excavate the engineering technology through para-ethnographies which were reflected in my discussions with them during the interviews (Holmes and Marcus, 2005, 245). This section will unpack engineering's discourse and method through the eyes of my interlocuters. Following this section, my interlocuters will take us on a trip to their past during two sets of meetings that occurred with the World Bank in what were called "Expert Meetings." Finally, I will address the type of knowledge my interlocuters believe in: a knowledge, similar to what was discussed in the introduction, which is not only scientific and discredits the local, traditional knowledge, nor a knowledge that gives potency to the local knowledge over scientific knowledge.

A. Technocratic Knowledge and the Social Cultural Capital

As my data and the literature suggest, the knowledge of the experts is taken more seriously than the concerns of the local population because the knowledge of the former appears as an impartial, scientific, and evidence-based scientific authority capable of producing generic solutions (Nygren, 1999). On the other hand, the knowledge and concerns of the local populations always appears subjective and specific, unable to create generic solutions (Stensrud, 2019, 427). Technical knowledge is more respected by the decision-makers who listen to the experts more than they listen to the concerns of the activists (Kuehn, 1996), resulting in fully adopting the technical solutions. Society is ruled therefore by technology and people will adapt their lives according to technological advances (Winner, 2003, 163). In other words, society is ruled by policymakers who are in their turn ruled by technocrats and experts. The latter claim that their authority stems from the authority of science, which no other authority can compete with (Roszak,1969, 392). In this practice, anthropologists, and social scientists "most often locate these limits [of technocracy] in the particular substance and character of technocratic knowledge." Riles (2004, 395) added, "these bureaucrats often described themselves and their place in the market in terms of special qualities of their knowledge." There is a barrier that keeps people who do not have the technocratic knowledge outside its limits. Thus, in order to study technocracy and technocrats we have to study these limits and unpack the motives enshrining them.

In the past couple of years in the aftermath of the Lebanese 2019 uprising, many calls have been made by protestors and political groups demanding the rule of the technocrats

because “they know what they are doing.” In the previous chapter, I argued that knowledge in itself is not merely neutral. It is biased and driven by the political and cultural backgrounds of its holders and practitioner. Engineers, the bearers of technological knowledge, are influenced by their ideologies and values when building the environment, we live in. Thus, technologies are performances of these ideologies and values through which communication occurs, they are social as much as material and even more (Ewart, 2011).

Dams are solutions advised by the technocrat engineers, as engineering technologies to solve the issue of water shortage in a certain area. Joanna Doummar the hydrology professor at AUB told me that Lebanon faces a tremendous water deficit during the summer mainly due to the absence of recharging of the aquifers. This is why dams are one alternative to ensure storage from winter to summer, as she told me in our email exchange (Joanna Doummar, interview, 10 April 2021).

In Lebanon, as in other parts of the world, development projects such as dams are portrayed by the governments as neutral and depoliticized technological solutions (Ferguson, 1994; Li, 2007); whereas development and modernity dreams are at the heart of building states. These “depoliticized” technologies of development are a result of social trends booming during the past century discussed earlier. They are continuous interactions with the environment changing the material environmental we live in (Ewart, 2011, 1). Dams, as technological solutions for the existing water shortage problem in Lebanon, are solutions to the apparent problem rather than solutions addressing the real roots of water shortage (Stensrud, 2019, 423), i.e., the old pipes’ networks and the inadequacy of the rules and regulations put in place.

The technocratic solutions are adopted to solve the existing problems because of their innovative nature. However, technology is not as innocent as it is portrayed. There are multiple layers veiling technocracy in order to appear innocent. Following this rhetoric of technocracy and its prevalence over the social life, modern engineering, an example of technocratic practice, is related to power-infused structures that transform the space and society where the people live (Björkman and Harris, 2018, 246). Before looking at engineering practices and engineers, I will talk about the cultural and social capitals of my interlocuters which also apply to engineers.

B. Cultural and Social Capital

The terms social and cultural capital were coined by the French sociologist Pierre Bourdieu in (1986). Each concept speaks to different forms of accumulated knowledge, networks, relations, and prestige. They are embedded in the social sphere of the people. These forms of accumulation allow people to move along the social ladder, and to enter places that are usually hard to enter. Cultural capital might be institutionalized through an educational qualification. Social capital is the set of connections and networks to other similar individuals. These are transformable in certain conditions (Bourdieu, 1986, 16).

My interlocuters benefited from these forms of capital in their endeavor of resisting dams policies in Lebanon. They benefited from the relations they built, the knowledge they acquired, and the university degrees they hold. In addition, engineers also benefit deeply from their cultural capital in the process of preserving their social position.

Karim Eid Sabbagh has a PhD in development studies from SOAS, which is a translation of his cultural capital. In addition, he worked with Ibrahim Abd el Al foundation.

> it opened doors into the water sector and gave me one political reading of it; that was extremely useful. I got into work with [them] because I was working in the same time on water and questions of war with somebody called Mark Zeitoun who works on water and water hegemony questions especially in Palestine (Karim Eid Sabbagh, interview, 22 March 2021).

In Karim Eid Sabbagh's words, we can see how the social and cultural capitals exchange (Bourdieu, 1986, 21). He was using his cultural capital and his academic training inside the organization, which in turn increased his social capital because of the connections through the organization. Khawlie similarly has a PhD in geology, and he is an applied environmental geologist. He was a professor and the chair of the geology department at AUB. Later, he "created the research center for remote sensing for Lebanon with the National Council for Scientific Research." Khawlie also worked in the Arab Gulf; he was able to acquire a job with the Qatar National Foundation as an advising consultant on environmental issues related to desertification. In addition to all his connections and networks as a professor at AUB and as an advisor in the Qatar National Foundation, Khawlie's social capital can be also seen in his involvement with the Green Party of Lebanon "which of course is concerned with environmental issues and helping other environmental NGOs because I have lots of friends in this domain in Lebanon." (Mohammad Khawlie, interview, 26 March 2021)

In both cases of Eid Sabbagh and Khawlie, we see the interaction between the two types of capital and how they affect each other. Their cultural capital, translated by the educational system, into academic qualifications. Bourdieu (1986, 26) wrote that the

academic qualification grants legitimate access to an increased number of influential positions.

Roland Nassour decided to study architecture at the Lebanese university because of his interest in the environment in order to make an impact in the urban and building policies in Lebanon where there was no consideration for public taste (Roland Nassour, interview, 3 April 2021). Paul Abi Rashed, who comes from a family of scientific background with his siblings studying engineering and sciences, decided to study law although he attended general sciences in secondary school. He decided to study law in order to defend human rights.

> I did not feel that since I have attended general sciences, back then it was understood that if someone studies philosophy he goes into law, general sciences he becomes an engineer, and studying life science at school automatically means becoming a doctor. So, I studied law, but I was obsessed with environment, and I started to participate in lectures, read books. I was accumulating knowledge through self-training. I decided not to practice law but to environmental education because I am a scout leader where we educate the youth. I found myself in the field of environmental education (Paul Abi Rashed, interview, 9 April 2021).

After teaching environmental education for several years, Paul Abi Rashed established an environmental organization alongside his friends called TERRE Liban. He told me about this experience: "NGOs' reputation was bad back then. Those who establish an NGO were seen either as having political ambitions or trying to raise money. So, we did not officially register it because neither applied to us." (Paul Abi Rashed, interview, 9 April 2021) Later in 2012 he founded Lebanon Eco Movement which includes sixty organizations "from all over Lebanon and across all sects. They are not politicized [do not belong to any political party] at all."

Roland Nassour worked with the Eco Movement, and he was the coordinator of the National Campaign to Save the Bisri Valley which was a part of the movement. Because of their work on the dams issues in Lebanon starting with Janneh, to Beqaata, Mseilha, and Bisri, Paul Abi Rashed receives an invitation as the representative of the Eco Movement to a conference in Sulaymaniyah in Iraq to attend as the Bisri campaign representative. He attends alongside Roland, where they met many people from different countries sharing the same struggle as them against the dams but each in his country. He described the event,

> We were exposed to other organizations, and our campaign received more exposure to become an international campaign rather than a national campaign. Roland and I presented about Bisri, and we were able to network with different NGOs from different countries, the campaign started to get bigger, and the pressure upon the World Bank was growing as well (Paul Abi Rashed, interview, 9 April 2021).

They have created a bigger network of institutionalized relationships that gave them more exposure and recognition (Bourdieu, 1986, 21). They were able to mobilize their social network to exert pressure on the World Bank which allowed them to access the meeting rooms of the latter, and later on to stop the funding of the dam.

Engineers also possess aspects of cultural capital which can be exchanged into social capital. They do not possess the means of production. They extract value from the cultural capital and educational qualifications they have through selling the technologies and services, in our case the dams. As they are utilizing this particular form of capital, they might be considered to belong to an influential group in society (Bourdieu, 1986, 20).

Cultural and social capitals give dominance and access to their holders in the social spheres. Both forms of capital allowed my interlocuters to reach out to the World Bank and exert pressure upon it in order to listen to their concerns. On the other hand, the engineers'

cultural capital and their academic qualifications give them leverage in the society as the problem-solving technocrats whose knowledge is true and depoliticized.

C. Anthropology of Engineers

Karim Eid Sabbagh studied civil engineering as an undergraduate student. When I asked him why he shifted his academic life later on, he told me the following,

> why did I change from engineering? I got fed up with it. I was an engineer, and I remember we were doing transport modeling in class. I told my professor all of this is just modeling [an experiment in class]. He said, "Yes you are right if our model gets 40% into reality then it is a good model." I was sitting there surprised with this lack of critical engagement with the matter that engineers have. That turned me off. The other thing that turned me off was when I was working on a construction site in Oman. These guys were working 10 hours a day, 48 degrees in the shade. with a relative humidity of 120%. It can't get more humid. You are basically walking through fog, and they were getting paid 5 euros a day. There I thought, "You know what? This is not for me." My immediate criticism is about how engineers build the world. I mean, this country is built by engineers; look around you. Engineering is politically produced and has political effects on who gets something, who pays for it, who gets excluded. And with all these dams my issue is with the huge amount of money being spent and now we see and feel it. now looking at the updated water sector strategy there is a brief mention of the financial crisis, but they still want to spend billions of dollars that will be paid by users 'wen ayshin into' we are already talking about users not citizens (Karim Eid Sabbagh, interview, 22 March 2021).

This interview excerpt is an example of how engineers design the world, and how they are trained to do so. We live in an engineered environment as Karim Eid Sabbagh said. Engineering influences social relations through granting access and excluding people from service. These are created by the engineering activity (Ewart, 2011, 228).

D. Engineering Knowledge

In the article "What is Engineering Practice," Sheppard et. al. wrote that problem solving is a central activity of engineering practice (Sheppard et. al., 2006, 430). They create new technology and infrastructure that best solve a specific existing problem (Workman et al, 2021, 245). Engineering is thus perceived as technocratic expertise where engineers apply their knowledge in order to solve the problems of the society and invent new systems and infrastructure. This perception of engineering as a positivist applied science made it unquestionable and a seemingly boring site for critical academic research, especially in social sciences (Björkman and Harris 2018, 245).

As it is clear in Karim Eid Sabbagh's interview excerpt, in order to see engineering, we just have to turn around and see our surrounding: from our homes to the water running in the taps and the lighting of our rooms. Even the unseen city is designed by them: the infrastructure networks of water pipes and sewage, the electricity and communication networks, and transport infrastructure. All these aspects of services are designed by the engineers (ibid, 244). The state depends on engineers' knowledge and technologies to provide the services to the citizens through these infrastructural projects. Engineers and engineering practice have become, as a result, an essential component of modern state crafting (Stensrud, 2019, 427).

Engineers have a great say in modeling our social lives and the policies of the state which have created many injustices —Bisri dam for example— through dominating policy making and underestimating the effects of the project on the populations, thus strengthening pollution and power inequalities on the communities (Ottinger, 2011, 230). However,

engineers distance themselves away from politics through the alleged neutrality of science because it is not part of their job description (Von Schnitzler, 2013, 680).

The Lebanese state resorted to the tangible engineered solution of the water shortage case in Lebanon, focusing on building large dams to collect water and distribute it. According to Joanna Doummar, a proper analysis of alternatives and cost benefit evaluation of the many alternatives such as small dams, managing aquifer recharge, and redistribution of water resources should be done before adopting building dams. She said,

> Such analysis of alternatives was not performed duly and properly in the studies for dams I have personally reviewed. Usually some of these alternatives require an extended monitoring of water resources over time and pilot experiments that should have started at least 10 years ago (Joanna Doummar, interview, 10 April 2021).

The driving rhetoric behind this adopted policy was that Lebanon is facing climate change and losing its water resources. But as Joanna Doummar's statement shows, the problem is not merely about scarcity of resources, it is also related to the management of these resources. Water scarcity is therefore not only physical, but also motivated by politics and power relations (Workman et al, 2021, 412)

Engineering application of technocracy is found in all aspects of our daily lives. It is portrayed as a neutral apolitical expertise at work, but its effects are traced in the sociopolitical sphere of our daily lives. Engineering work is about inventing and reinventing solutions for the problems in society. As Karim Eid Sabbagh puts it, "This is something you can find always across engineering. There is always an engineered solution for every problem." (Karim Eid Sabbagh, interview, 22 March 2021). Although there are other experts that are related to the decision that was taken about dams, the prominent voice in these

decisions was the engineering voice. My interlocuters had different interactions with the engineers through their engagement with water in Lebanon. Their perception of engineers is essential to understand the state's position, and the expert activists' position. It also reflects the types of knowledges each party adopts.

E. Perceiving the Engineer

> These projects have the political and regional side. They also follow the scientific dictatorship that believes that only engineers engage with the topic of infrastructure and only they have the final say about the projects. Engineers have a tendency to prefer the discourse of modernity and development from a narrow perspective of what development and modernity mean. I mean, the discussion is diverted from the people's interest to assessing its importance from a development perspective. It becomes detached from reality, treating the project as abstract ideals rather than a service in the people's interest. If we did not build the dam, what will we build instead? As if not building something is wrong. All people ask me, "Ok, if we halted the dam what do you want to build instead?" When I say nothing, they get surprised: "You do not want to build anything instead in Bisri?!" (Roland Nassour, interview, 3 April 2021).

Not only has engineering become the prominent application of science in modern state-crafting, but also the ideals of engineering are propagated in society to the extent that people cannot imagine their reality unbuilt anymore. As Roland Nassour said, people are surprised that he does not want to build anything in place of the dam project. Karim Eid Sabbagh told me that the economic feasibility study of Janneh Dam was conducted by an engineer. He told me,

> the economic study on Janneh was done by an engineer working for the contractor Salameh. It is a horrible study. It says basically, "We need to price water so that we can pay for the dam." There is no socioeconomic study. It is just a cost benefit analysis, and basically saying water costs us this much for it to become feasible. It does not say that maybe we need to make the project smaller to make things feasible. We need to raise prices basically. He does not say it out loud, but his study involves a cost scenario, saying that only at this cost scenario it becomes feasible (Karim Eid Sabbagh, interview, 22 March 2021).

This also reflects the abstraction that Roland Nassour talked about. The study does not take into consideration the interest of the people; it only looks at the dam as an abstract, as a building of modernity and development in place. The significance of this study for Kraim is that it does not look at the actual costs of engineering. He said,

> You are talking about an investment project which, at that time, was estimated at 300 million before they realized they have to dig all the gravel. They were expecting to build on the base, but then they realized that there is, oh, 70 meters of gravel and they need to excavate and fill with something else. And if something is costly in engineering? Usually it is excavation (Karim Eid Sabbagh, interview, 22 March 2021).

Not only was the project expensive, but it was also not the final price because of the excavation that was yet to be priced. These practices, such as excavation, become the engine of more technocratic work. They create a wider gap in the structure that requires an even larger intervention (Riles, 2004, 393).

> Excavation costs a lot of money. You are filling trucks with dirt. This is where contractors make a lot of money just sending trucks back and forth because it is not one truck or two trucks, it is massive amounts of trucks. And who is *gonna* know if there were 100 or 150 trucks? there are ways to inflate these numbers. So the 300 million was without the cost expropriation of land, without the additional cost when they found out that there are cracks and to get this water tightly we have to fill them with concrete and isolate them and dig down to get rid of the gravel so the water does not go underneath and can dig under the dam (Karim Eid Sabbagh, interview, 22 March 2021).

Technocrats do not presume such practices as futile or misleading. They believe that they are at the core of their technocracy because they motivate further interventions and "technocratic knowledge projects" (Riles, 2004, 398). From their perspective, their knowledge is accumulative, even its failures prompt more knowledge. Engineering is also present in the policymaking circles especially in the infrastructure projects. The 2010 water

strategy was designed under the ministry of Gebran Bassil, himself is a civil engineer. The way he understood these projects is similar to how engineers understand and design them. Khawlie describes the engineering practice saying,

> To begin with, Gebran Bassil is an engineer, but my concern is that I have been living for a long time and have an experience with engineers. Many of whom are very close friends of mine. The standard typical way of thinking of engineers is [while signaling forward with both arms, his palms parallel to each other] that they see the solution from their point of view, and that's it for them. Nothing else would matter. Any other sciences that affect or impact things directly or indirectly are unimportant. Unfortunately, engineers think in one-way traffic. This is their main problem. Gebran Bassil is not an exception. Also, engineers want quick solutions; in ecology there is no quick solution. Nature works through thousands and millions of years to produce a certain system, a certain setting. You cannot come and change it, destroy it, believing it is good for the humans. No, what nature did is good for the humans. So, engineers do not take natural systems and especially ecological process into consideration (Mohammad Khawlie, interview, 26 March 2021).

The engineers' technocracy does not take into consideration concerns about its practices; it does not even give a weight to other scientific opinions as Khawlie said. Through these three interview excerpts, there is a shared view about engineering being a technocratic dictatorship that prioritizes its ideals and plans over the benefit and interest of the people. It is advertised as neutral, merely scientific, and apolitical, so the engineering knowledge is respected and treated as the way forward in solving the society's problems. However, it usually requires additional solutions, and it sometimes works against the interest of the people and nature. My interlocuters are critical about the government's practices towards the people. It is worth looking more into the ideologies behind these projects and the activists stance, yet it is beyond the scope of this research.

The government, and behind it the World Bank, employed engineers to conduct the studies of the dams in Lebanon. My interlocuters were able to meet with the World Bank's

experts, mostly engineers, because of their cultural and social capital. They were able to debate and engage with the proponents of dams until they were able to build a national and global pressure that resulted in halting the project.

F. Interlocuters as Counterpart in the Research

Given that the meetings with the World Bank took place prior to the start of my fieldwork, I had to find alternative methods to conducting ethnographic research about the expert activists involvement in the halting of dams. One of the sites where activists were present was the offices of the World Bank in Beirut that hosted what were called experts meetings. Mohammad Khawlie, Paul Abi Rashed, and Roland Nassour participated in these meetings held by the World Bank between the experts from both camps; those advocating for the Bisri dam, and the expert activists such as my interlocuters. In this section, we will swim against the current and go back in time through the memories of the three interlocuters to understand the dynamics of the meetings. Because of their experience and judgment, the anecdotes of my interlocuters are not supplementary data. This approach establishes that my interlocuters are counterparts in this research where we exchanged data and research. I will be using their anecdotes as para-ethnographic practices that will put me with them in the expert meetings (Holmes and Marcus, 2005, 244-245).

The negotiating team usually does not stand a chance in the face of the World Bank's teams because it is difficult for activists to talk to the experts who acquire the skills and specialized knowledge (Ottinger, 2011, 231). They usually feel "unmatched and overwhelmed by 'the expert knowledge' of the World Bank delegates'" (Mosse, 2011).

However, this was not the case in the meetings about Bisri because of the expertise and interdisciplinary approach adopted by the expert activists.

G. How Were You Able to Reach the Door of the World Bank?

There were two sets of meetings, the first was in October 2017 according to Paul Abi Rashed, and the second set of meetings was just before the project was halted according to Mohammad Khawlie. Roland Nassour and Lebanon Eco Movement played a vital role in initiating the first set of meetings. They were putting pressure on different fronts until they were invited to these meetings. Roland Nassour said about this period,

> Back then, I was attending a course in the Netherlands where I met a former World Bank official or something like this; he asks me, why we don't file a complaint to the inspection panel in the World Bank in DC. The idea sticks to my head, and I start working on it. We then file the complaint to the inspection panel two months later. The Word Bank's Inspectors visit Lebanon and conduct a preliminary investigation. The complaint gave us international recognition and we started to network with organizations and campaigns against dams in the region in order to exchange expertise (Roland Nassour, interview, 3 April 2021).

Shortly after this complaint, expert meetings started between the sides. Paul Abi Rashed said about this period,

> A female colleague with us in the movement knows someone in the World Bank DC office. She contacts him and they agree that we contact the World Bank and tell them about our vision concerning Bisri. They delegated an inspection team to visit Lebanon in July 2017 to whom we handed our stance and the dangers of the project. In addition, we told them how we, the environmental NGOs, were not granted a public hearing when the Environmental Impact Assessment took place. Then, they decided to let the experts of both sides to meet (Paul Abi Rashed, interview, 9 April 2021).

The second set of meetings was also influenced by a Lebanese expat living in the US who similarly approached the World Bank to conduct these meetings. "As usual, the World

Bank answers that they are ready to meet and discuss the matter." (Roland Nassour, Interview, 3 April 2021) However, how productive are these meetings? Were they able to reach any point? Can these meetings that happened between 2017 and 2020 be described as fruitful encounters between the two sides? How did they evolve?

H. Entering the Room of the World Bank and the Experts encounters

The social capital that the activists accumulated through their social networks was enough to win them a seat at the negotiation table of the World Bank. The meetings that happened between the two sides were supposed to be a space of dialogue and discussion in order to reach a common ground. However, the way the three described them shows that they were not productive. Paul Abi Rashed said about this first set of meetings after reaching out to the World Bank DC office, "We decided that our experts meet with the World Bank's experts (geologists with geologists, biodiversity experts with each other, seismologist with each other and so on)." (Paul Abi Rashed, interview, 9 April 2021) Roland Nassour said that during these meetings, "we had experts such as Khawlie, Roland Riachi, and many others, in addition to Paul Abi Rashed for sure as he is the head of the Lebanon Eco Movement. We delivered a scientific report in the name of the Lebanese Eco Movement." (Roland Nassour, interview, 3 April 2021) Khawlie described a similar formation as that of Paul Abi Rashed; he emphasizes that "There was engineers, but always they are the least. We have met with representatives of the WB to explain to them our vision and views and scientific view why it is bad to do this project, and why it is negative and unfeasible from all points of view." (Mohammad Khawlie, interview, 26 March 2021).

When the meetings started after handing the document, Roland Nassour traveled to Sweden to continue his studies. The experts were meeting together, and when they were raising concerns; they were referred to the concerned World Bank committees.

> I was in many instances talking about the impact of climate change, which does not allow these projects here in Lebanon. They referred me to, [he laughs], a friend of mine who is a professor of agriculture. that guy does not believe that climate change is impacting Lebanon. So, the office of the WB here refers you back to him as a specialist saying there is no impact (Mohammad Khawlie, interview, 26 March 2021).

After a series of meetings, the activists felt that no progress was made. "In 2018 we felt that our efforts are worthless and that the debate has become sterile. We felt that the CDR will continue with the project although we are negotiating and putting our documents on the table." (Paul Abi Rashed, interview, 9 April 2021) Khawlie described this set of meetings as "predetermined on executing the project. *Badna naaml el mashrou' badna naamlo; Rouhou Baltou l Bahr" (*Mohammad Khawlie, interview, 26 March 2021) for Roland, these meetings were a dialogue of the deaf as well. He believes that the World Bank's goal was not a real scientific discussion, but rather "they were only passing time. And after each meeting they release a statement that 'we are meeting with the civil society, we are inclusive, we are transparent.' They make a big fuss out of democratic participation, and this is the biggest lie." (Roland Nassour, interview, 3 April 2021)

These interactions the interlocuters had inside the World Bank are a clear example of the encounters they were having with the experts on the side of the World Bank. I call these encounters disencouters, which are described by Stensrud (2019, 422-423) as "failed or missed encounters, where people talk past each other without encountering resonance." They are failed encounters lacking common ground of the issue being discussed. They lacked the

motive to reach common grounds between the two sides because each side was holding firm to its position without the ability to negotiate and maneuver. A major force behind these disencounters is the political pressure applied. The politics of development have a great say, and they shadow the scientific aspect of development in many cases. In Bisri's case, the tides of politics had a significant effect on the project, whether during the first set of experts meeting, the second set, or the halting the project in 2020. During the first set of meetings, Paul Abi Rashed told me that the meetings were not effective in addition to being disencounters,

> no matter how much experts you have on your side, and how many reports you write, when the Prime Minister gives the World Bank guarantees that there are sufficient studies and that the project is essential because many people are thirsty, the World Bank will not listen to you (Paul Abi Rashed, interview, 9 April 2021).

I. Changing the Discourse

On the dawn of the 2019 uprising, Bisri gained more momentum. People started to talk about Bisri more. "There was a new environmental consciousness spreading among the people." (Paul Abi Rashed, interview, 9 April 2021) Also, there was a growing international pressure through the networks that the activists created. This pushed the World Bank to reinitiate the meetings of experts. However, in the beginning of these meetings, the Eco Movement and the campaign were still boycotting the meetings. So, the World Bank "tried to replace us, the environmental NGOs within the Lebanon Eco Movement by other NGOs and the Green Party, and people who know nothing about the dams because we decided to boycott the first round of meetings." (Paul Abi Rashed, interview, 9 April 2021), Roland Nassour echoes what Paul Abi Rashed said, "Khawlie and a group of uninvolved activists

attended the meetings, the World Bank tried to replace us. I was coordinating with Khawlie who told me that it would be beneficial if I attend." (Roland Nassour, interview, 3 April 2021) This advice from Mohammad Khawlie to Roland Nassour was because Khawlie sensed

> that their attitude between the first set and the second set was different. In the first set, you can feel that they do not give a shit. They are just giving us a chance to explain in order to show us how democratic and good they are. By the time of the 2nd set, we, by we, I mean the Green Party of Lebanon and other environmental NGOs, started sending world messages, international messages to Green Party and pressure groups in Europe and America, and so it became very well known as an international issue, not as a local issue. So, in the second set of meetings, we had with the WB, their attitude was quite different, they were much more receptive to what we were saying. They wanted to listen to what we were saying. Not only meet and have coffee and leave. The second set was much more inherently true, as a dialogue (Mohammad Khawlie, interview, 26 March 2021).

Although the World Bank tried to replace them, the Campaign and Eco Movement struck back when they delegated Roland Nassour to attend these meetings as Khawlie advised. Nassour adopted a different strategy during this round of meetings. He was more pragmatic and diplomatic because "the final decision will come from the World Bank office, we can continue exerting the popular pressure, in the meantime, we would meet with them with a more diplomatic stance in order to convince them." (Roland Nassour, interview, 3 April 2021). He also told me that the first time they adopted a conflictual approach. The importance of this round of meetings is described in Roland Nassour's words,

> I attended the second and third meeting where I prepared a detailed presentation showing the forgery and corruption. Not those of the government, but also these of the World Bank. I showed that the numbers were tampered with and that the World Bank manipulated the data. I presented this in front of the director. This embarrassed the World Bank. In the end the World Bank has its reputation. You can still protest and demonstrate without affecting them. If they do not feel the pressure, they will not change anything (Roland Nassour, interview, 3 April 2021).

The stars aligned in the benefit of the expert activists. Not only were they successful in exerting national and international pressure, but they also fought the battle against the World Bank from within the institution. In addition, the political tides changed, Jounblat became against the dam, and the government defaulted its debts. As Paul Abi Rashed said earlier, the political pressure was enormous from the government. Khawlie said, "Do not forget that they have pressure from the CDR, and the government, they want the dam. The World Bank is not free, but the international pressure that was coming was very important." (Mohammad Khawlie, interview, 26 March 2021) Roland Nassour describes the final stages of the struggle against the project saying,

> The international pressure was intensifying, people were camping in Bisri, and Jounblat was obliged to change his position. We were also winning the battle with the World Bank's director. Then the World Bank asked the government to talk to the people, and later on it halted the project (Roland Nassour, interview, 3 April 2021).

The encounters my interlocuters had inside the World Bank are essential to understand the split between the knowledge paradigms. The World Bank, as Goldman (2001) describes, portrays itself as the green knowledge hegemon and producer. Their projects are also supported by the technocratic dictatorship of engineers who follow their abstract ideals of modernity and development. The World Bank also finances the engineered development project around the world (Stensrud, 2019).

J. The Expert Activists Model of Knowledge

The knowledge that my interlocuters have accumulated is organic (Kurtz, 1996). They utilize it to voice and represent their community. However, the knowledge propagated

by the World Bank and the affiliated engineers is hegemonic (ibid). These two forms of knowledge are very distinct from each other. In addition, my interlocuters aim at creating a different paradigm than the one already adopted by the World Bank. In the prior chapters I showed how science and technology are tools of environmental injustices as adopted by the World Bank and their team of experts. On the other hand, this same scientific knowledge was utilized by the expert activists as a powerful weapon to overcome these same environmental injustices (Cohen and Ottinger, 2011, 4). My interlocuters perceive knowledge as a societal endeavor. Paul Abi Rashed for example said during the interview,

> I own a knowledge that I accumulate from sitting with experts from different backgrounds. When I sit with legal expert, environmental activist, a farmer, a mayor, a notary, in addition to hydrogeologists and biodiversity experts, this session creates knowledge. The Lebanon Eco Movement has begun since the beginning of our activism to hold public hearings to share knowledge. This is why Environmental Impact Assessment includes public hearing so that they shed the light on blind spots for the shareholders. I myself have no knowledge about this, but when I sit with this group of experts and locals, I know a little, I accumulate my knowledge. I am not Paul who wants to talk, [and like people say], "look at him pretending to be an environmental expert." Guys, I'm representing a group of NGOs, experts, and local society. I'm speaking in the name of *these* people. Our campaign is based on studies and experts from the field (Paul Abi Rashed, interview, 9 April 2021).

This participatory method between the experts and the non-experts reconfigures what the limits of expertise are (Barry, 2013, 9). It marries between the local knowledge of the notary, farmer, and mayor with the experts' knowledge of different fields. Also, the public hearings that Paul Abi Rashed calls for give voice to this local knowledge to be heard, bringing up concerns that are frequently disregarded by the traditional technocrats who would otherwise be designing the projects inside their offices (Cohen and Ottinger, 2011, 6). Similar to what Paul Abi Rashed said, Roland Nassour during our interview framed it as follows:

> There should be a solid consideration of the public's opinions and concerns. They have practical knowledge. There should not be a split between the government and experts who have the knowledge because the people also have knowledge, and sometimes their knowledge is more important than that of the experts. This should be translated into an inclusive system of planning and executing projects that considers the people's opinions and concerns. The projects should be the result of the people's needs. I am not saying that the government should only do what the people want because the state has its policies and strategies that prioritizes the public interest at the center of its policies. However, there should be substantial efforts to close the gap between the people and the state in formulating the state's plans (Roland Nassour, interview, 3 April 2021).

Roland, in addition to calling for the societal knowledge that includes experts and non-experts, gives importance to the concerns and practical knowledge of the effected community. This is one of the main pillars of environmental justice where the effected population are able to participate as counterparts to the experts in decisions about design, siting, and the risk assessments of the dangers related to the proposed project (Ottinger, 2011, 231; Workman et al., 2021, 410). This active participation of the people would solve the people's problems and supply their needs rather than initiating projects seeking the ideals of modernization and development of the state. My interlocutors each told me that they do not consider t the current state apparatus in Lebanon to have the best interest of the people.

For Karim Eid Sabbagh, an ex-engineer who left the profession because of its detachment from reality and the injustices that it creates, his project involves a paradigm shift in engineering to bring it back to society.

> Now personally I have a whole project, but it is not getting together. The project is to teach engineers politics because engineers do not understand that all they are doing is political. Any design in itself is political. Any technology in itself is political. Like from the way it is managed (Karim Eid Sabbagh, interview, 22 March 2021).

Eid Sabbagh's project is at the heart of socio-environmental just engineering. As environmental justice is not only dependent on political change alone, but it also needs changing how the technocrats perceive themselves and their roles in the society; how they apply their knowledge and technology and at whose expense (Ottinger, 2011, 234). Eid Sabbagh's project is also potentially an extension of his commitment to attend to social disparities and injustices.

In this thesis, I am not calling for the dismissal of the local knowledge or the technical knowledge and adopting the other. This differentiation will create a wider gap between the people, the state, and the technocrats. In fact, this thesis dives into the practices the expert activists utilized in their endeavor of achieving socio-environmental justice in their struggle against Bisri dam to shows that marrying the two knowledges was the effective technique. It was not populist nor was it detached from the people's reality. The expert activists grounded their knowledge in the communal discussions they had and refined their own perspectives by listening actively to the local population.

K. Conclusion

In this chapter, I unveiled the forms of capital the experts have and how they utilize them either to dominate the society or to represent their people. I showed how the technocratic engineers perceive development as depoliticized practices of modern state crafting and how the expert activists see the technocratic development practices of the engineers (Stensrud, 2019; Ferguson, 1994; Li, 2007). After that, I used an innovative method relying on the anecdotes of my interlocuters about places and events that I could not enter

with them. The anecdotes and sensorial experiences of my interlocuters in the World Bank experts' meetings were essential in understanding the power dynamics behind these projects, starting with the political pressure and technological hegemony that might overwhelm the negotiators (Mosse, 2011). My interlocuters overcame it because of their technical and communal expertise that they were representing. Finally, I discussed the knowledge my interlocuters built and are still building through their active engagement with their societies and sharing knowledge among each other.

After unpacking engineering's hegemony and its prominence in the state building, in the next chapter I will look into the hegemonic practices by the state and the way the development projects are translated into hegemonic practices. Then, I will open the door for an alternative reality that my interlocuters perceive for the water sector in Lebanon that is different from the one we are already experiencing.

CHAPTER V

MATERIALITY OF DAMS

In the previous chapters, I gave a brief history of dams in Lebanon until the current situation that started with Gebran Bassil's reign at the head of the MoEW. After that, I discussed different epistemologies and the situation of the experts knowledge along the socio-political spectrum and the influence of knowledge on publicity and its manifestations in the World Bank and the society. Later, I wrote about my interlocuters experiences in the World Bank meetings and their cultural and social capitals that let them into the offices of the World Bank. In those meetings, the expert activists represent an accumulation of the engagement between the native and scientific knowledge my interlocutress experience through their engagement of the community.

In this chapter, I will discuss how the state's development epistemology is translated into dams projects of hegemony and control through the aesthetics of dams. I will then draw an alternative reality of the water sector in Lebanon through the interviews with my interlocuters whose knowledge allows them to imagine a different situation in which the water is managed in a different way than it is currently. I was inspired to write this chapter after listening to Levar Burton Reads podcast episode about Ursula Le Guin. After Burton read *The Fliers of Gy*, he spoke with Walidah Imarisha about social justice and the legacy of Le Guin. Imarisha told Burton,

> Every time we imagine a world without borders, a world without prisons, a world without oppression, which is science fiction because we never seen that world. But it is really important we can't build what we can't imagine. We absolutely need imaginative spaces like science fiction that allow us to not allow us to not

> only throw out everything we are told is possible but demanded of us so that we can start with the question what is the world we actually want to live in? (Imarisha in Levar Burton Reads, 2018)

Then they continue to say that science fiction helps us to create the future we want to live in. I was listening to this while having a hike, and it came to my attention how important this aspect is especially that the knowledge of my interlocuters is not translated into actual projects although their knowledges have the potential of being turned into actual infrastructural projects in real life. This chapter is an attempt to put these two knowledges against each other, a knowledge that dominates and shows the hegemony of the state; versus a knowledge that would allow people to participate in the decision making of the projects that will affect their lives (Ottinger, 2011, 231).

A. Water is Political

Water is deeply political in the authority and power relationships that govern its supply, demand, and access (Bakker, 2012, 616). Eid Sabbagh echoes Bakker when he told me, “To be clear water is everywhere and it is political and needs to be treated as such. It is ecological par excellence. Politics is a central aspect of any development. It relates to an autonomous development project of wealth creation. Water is an essential aspect of wealth creation.” (Karim Eid Sabbagh, interview, 22 March 2021) How water is treated by the state depends on the political agenda and ideology of the rulers. It is at the heart of the wealth creation, but how it is allocated is different. The need to provide a secure and continuous water supply drew the attention of science and technocrats to modernize and build solutions

to provide water continuously. Dams were a technological innovation and solution that control and redirect the river flows as needed (Bakker, 2012, 618).

Dams, on the contrary to other infrastructures, are visually evident when they are functioning. For example, we do not see sewage networks, the internet lines, or the telephone lines (Star, 1999). Joanna Doummar told me about this distinction between the visible and invisible infrastructure, "Dams are tangible infrastructural solutions while a water network or a well are not concrete solutions." (Joanna Doummar, interview, 10 April 2021) The tangibility of reservoirs manifests the human engineering triumph over the nature. Mohammad Khawlie describes dams as "one good example of human innovation with nature. So, this is purely from a geological point of view, but from an environmental point of view you cannot erect or construct dams everywhere." (Mohammad Khawlie, interview, 26 March 2021) Dams are seen as major development projects. Dams, the "temples of modernity" are the jewel of the crown of modernizing natural resources (Hoag, 2019, 186) because of the enormous efforts carried on to control and direct the river as the technocrats deem good. Water infrastructure projects and dams "have a trait of being very centralized so they concentrate power in few places." (Karim Eid Sabbagh, interview, 22 March 2021) Modernity and development are interwoven with each other; as discussed before, modernizing the state will carry development with it. When Aoun was elected as the president of the Lebanese Republic, he promised that his reign would be the time of development for Lebanon; dams, the temples of modernity and development are then by default a cornerstone for this presidential tenure. Dams are visible to the people; they will tie the success of these projects to the successful reign of Aoun. It is better to build a dam rather than repairing the water sector; Roland told me,

> In general dams give impetus to political parties especially that they are mega huge projects that visual. One can take a picture beside them and feel the pride of building a 100 meters high wall turning an entire valley into a big construction site. They can brag about their huge accomplishments, and like Aoun they can get on a helicopter and rove over six, seven dams under construction. It is a tour of great accomplishments. I mean if someone reformed the management of the sector, how will he have a tour of accomplishments and with what will he take a picture? (Roland Nassour, interview, 3 April 2021)

Erecting a huge cement wall that will become concrete later on is to be seen as a shrine of nationalism. These projects become the cornerstone for nationalist ideology (Abourahme, 2014, 13). Through these projects, the state represents and manifests its power to the community. Dams are not merely development projects used to supply water they have implicit political effects on the population (Larkin, 2013, 334; Swanson 2020, 271). These massive projects are a tool used to show that the government is effective and working for modernizing and building the country (Bakker, 2012, 618). Nevertheless, in the case of dams in Lebanon, inhabitants of the proposed areas to erect dams oppose the dams. Dams are erasing their lives, memories and social cohesion through the land-grabbing and the forced migration of the population from the dam's surrounding. Mega infrastructural projects are tied with expensive geographies of dispossession, extraction, and accumulation (Swanson, 2020, 274). They require a lot of funding and a lot of labor. These are as well translated into political allegiances. Joanna Doummar said that dams "require substantial funding are appealing infrastructure, create job opportunities around the dam and are thought to enhance the touristic activity. Therefore, if we assume that politics is related to economy; then dams are tangible solutions that politicians can attribute to themselves." (Joanna Doummar, interview, 10 April 2021) Through

infrastructural projects like dams, politicians express their domination and enlarge their clientelist networks by providing jobs and relating themselves to the dams. So, these projects do not only hold the names of their builders, but they also take part in the domination practice. They are not passive lifeless structures, rather they are continuously making and being made by "tensions, forces, [and] hidden powers." (Steyerl, 2010)

Dams are also an expression of power and hegemony of the state by controlling the river and water flow. Karim Eid Sabbagh said, "You establish hegemony over the people. you use the river to do that by showing that you are bringing development infrastructure only for your people." (Karim Eid Sabbagh, interview, 22 March 2021) In his documentary, "Flood in the country of the Baath" Omar Amiralay shows how the Syrian regime utilized the building of the Euphrates Dam to showcase the greatness of the Syrian regime (Amiralay, 2003). In one scene, Amiralay takes us to a classroom where a reading lesson is taking place. The reading lesson is about the life of the river which was civilized after the 'Syrian revolution of 1970'[3] and the building of the dam. This documentary shows us that infrastructural projects, particularly dams are not neutral. The government incorporated the building of the Euphrates Dam in the curriculum to create a new collective social memory that revolves around the development the Syrian government is bringing to the country. Through these projects, the politicians are changing the memories of the people. They tie the projects to themselves to portray their reign as reigns of development and prosperity. Khawlie describes this, "Dams are used to induce control on their [population's] ways of thinking and

[3] The coup that Hafez al-Assad carried and overthrew Salah Jadid and appointed himself as the leader of Syria.

elaboration that these politicians and leaders are good people. They are doing projects for us, the Bisri dam and other huge projects." (Mohammad Khawlie, interview, 26 March 2021).

Similarly, in Lebanon the MoEW produced an animated book for children titled *a Nation's Dream* "ḥelem Watan" in 2013 (figure 2). In this book Gebran Bassil and his son take a tour on the infrastructural projects that are accomplished and that modernized Lebanon. Their tour takes place in the year 2020 after the extraction of the oil and gas and the dams were built in addition to electricity plants. Bassil takes his son to the metro station in Batroun, and they go to Beirut, they see the Jannah dam which provides water for Lebanon and Cyprus according to the book. They move to see other projects that Bassil feels proud yet humble to have achieved. (Hawi, 2013) These two examples show how infrastructural projects are not simply there. They are used by governments to mold and shape the social memory, fantasies, dreams, and the relation to the government.

This book as it was intended to target the children and youth would be an ideological tool to build a certain narrative about the significant role of Gebran bassil who is behind these infrastructural projects that were supposed to modernize Lebanon similar to what Amiralay showcased. Unfortunately, we are in 2022, the Jannah Dam has not been built yet, the gas and petrol were not found, neither do we have a single metro station, nor do we have public parks instead of the landfills. Larkin wrote, "[Infrastructure] emerge out of and store within them forms of desire and fantasy and can take on fetish-like aspects that sometimes can be wholly autonomous from their technical function." (Larkin, 2013, 329)

Figure 2. Picture showing Gebran Bassil telling his son about the infrastructural projects (LBCI News, 2013).

During one of my previous pre-fieldwork visits[4] to Bisri Valley to camp there, my friend and I talked about the spatiality of the area. We were camping in the pines forest, then we hiked to the Roman temple, The Saint Sophia Monastery, and the Mar Mousa Church. These are historical monuments, which carry with them a lot of history and stories of many people that lived in the area. The government proposed to dismantle the monastery and church and relocate them in the same form to another area. However, the activists do not trust that the government will do that, nor execute it properly. This lack of trust is clear in the interaction that happened between Paul Abi Rashed and the minister of environment in that time Fadi Jeraysati, and the Member of Parliament Marwan Hamadeh. "I cannot forget how Fadi Jeraysati, and Marwan Hamadeh made fun of the church. The minister said 'they [the activists] are talking about the importance of the church, I thought I would see a cathedral. I went to the valley and found a small church. He was belittling the importance of the Mar Moussa Church." (Paul Abi Rashed, interview, 9 April 2021) Whereas the Roman temple as

[4] I have camped two times in the fall of 2019 In Bisri with my friends during the uprising.

well as the pine forest in addition to the fruit trees will all be uprooted from the area for the dam to be built. The dam will change the environment and the ecosystem in the area. people in the future will not remember what was in the valley, they will only remember that there is a dam in Bisri. A similar uprooting of the past occurred in Faraya when Chabrouh dam overrode the ecosystem of the area. Neemat Badaoui Abou Cham wrote,

> the [Chabrouh] dam had negative effects on some of the inhabitants of the area. As 1,200,000 m^2 were originally covered with apple orchards and greenhouses, and there was also a restaurant on the slopes. All of these were covered by water once the dam was completed. The owners of those lands were given minimal compensation by the government. (Abou Cham, 2013, 14)

Dams will always generate emotions for the people who are in continuous interaction with the mega structure. However, they are complex emotions that can be emotions of pride, agony, or neutrality (Larkin, 2013, 334). What will remain is the dam and the memories and feelings it generates. Whereas the spatial memories people had with the area prior to the dams gets flushed down eventually with the water. These dams are Monuments bearing the names of prominent statemen who pushed for their inauguration. These monuments shape the subjectivity of the public and dictate what is to be remembered and what is to be forgotten. Monuments become the witness and the landmarks that bear the importance and status of those who build them (Shore and Nugent, 2002, 14) For example, the Bisri dam was supposed to be named after Rafik al Hariri, according to Roland Nassour, but MP Ziad Aswad in a townhall meeting in the presence of Gebran Bassil in 2019 called for naming the Bisri Dam after the President Michael Aoun. “These projects root the legacy of the political leaders. They have a lot of territorial power manifestations. They are imposing themselves on the territory in an explicit way.” (Roland Nassour, interview, 3 April 2021). This isn’t the first

time a dam is called after the Lebanese president. In 2007 after the inauguration of the Chabrouh dam, it was officially called President Emile Lahoud Dam for Development (Abou Cham, 2013, 46). Dams have this strong symbolic influence that extends from tying the projects to the names of the statesmen that build them, but also "it definitely has to do with their ego, apart from a lot of money that can be delt out. There is the symbolic part of dams apart from putting your name on them; you are still building the state. It is the high modernist dream of dominating nature; it is a strong masculine act." (Karim Eid Sabbagh, interview, 22 March 2021) Khawlie believe that these projects are tools of propaganda. He told me, "If you take for example during the beginning of Gebran Bassil -the genius- in 2010, he was boosting that they will construct tens of dams that by 2030 or 20 something, everybody will have access to water, what is a better propaganda than this!" (Mohammad Khawlie, interview, 26 March 2021)

Dams have a futuristic promise of development and modernity. Since the strategy was adopted in 2010, the dams proved to be ineffective in Lebanon. Lately the water bill increased, and the rosy future promised by the modernist policies was not reached. Projects have the ability to tamper with the collective communal memory and create a powerful narrative rooted in the society. On the other hand, our hope for a better future, allows us to imagine an alternative reality. In the following section, I will explore the imaginative spaces of my interlocuters that would build a world they actually want to live in as Imarisha told Burton.

B. We Can Be Other Than What We Are

In this section, I will build on the anthropology of future, hope, expectation, and anticipation (Bryant and Knight, 2019). Studying activism means looking into the possibilities of change. Anthropology widens our understanding so that we can imagine what is socially, politically, and culturally possible (Hage, 2012, 288). These possibilities are imagined futures, yet they indicate an imagination of the present. These possibilities occupy a temporality between the present and the future as they are "exploratory anticipation" (Davison-Vecchione and Seeger, 2021, 17). After discussing how those in power translated their knowledge and expertise into dams projects and the motives behind these projects, now I explore how *would* the knowledge of my interlocuters, the expert-activists, be translated in what possibilities. The imagined possibilities are a result of the current and previous experiences of those who dream, they open the door for a lively vivid speculative ethnography of the future (Oman-Reagan, 2018). Speculative anthropology thus is an experimental endeavor to visualize a way of life that is completely different than our present values, yet the modern concerns about the society, environment and oppression are addressed (Davison-Vecchione and Seeger, 2021, 2012). Imagining a different future is to shake our past in order to recreate our present identity to change the world, ecosystem, and culture we live in (Braynt and Knight, 2019, 13; Oman-Reagan, 2018). My interlocuters' imaginations and alternative realities are driven by their past and present relationship to the state. These imaginations are fueled by the current infrastructure projects in the water sector whether the failed dams, or the broken water network and corrupt water management (Bishara, 2015, 34).

My interlocuters' imagination and alternative realities are driven by their past and present relationship to the state.

Karim Eid Sabbagh paused for a second when I asked him how he would manage the water sector in Lebanon to envision his alternative future. His vision is not based only on his expertise, but also on his political ideology. He said,

> Water cannot be isolated from development; it is part of the development strategy. When talking about the water sector, we must talk about a different alternative development strategy. Personally, it would be centered around agroecology as the principal locus of indigenous accumulation to create the productive basis. There might be a 5-year plan if you want to call it that or 4 6 years where you allow little pollution to happen and mitigate it afterwards simply because you are developing and you need to go through certain practices. I do not want to be so restrictive at the same time. It definitely does not focus on dams. It is a combination of groundwater rivers and springs. There is an engineering aspect to it where you have to rationalize the use and supply. It would be free or through taxation of the rich people. The only way we can build a system that actually works for everybody, is by taxing those that have money and by taxing them properly because there are expensive systems and energy intensive systems. We need to tax the people that have the money not the marginalized by mobilizing the wealth that still exists in the country or that is outside and actually belong to people here. Mobilize it well for the best of the society by taking the taxes to support others through services. If we do not talk about water and the taxation of those who have the money, then there is no point of talking about water then we are producing counter hegemonic communes that can live on nothing and they don't have a chance any way, but for the general population it is the only way it is going to work. for me fixing the water networks and administration requires money, it requires quite a big load of money, so it won't be paid through fees like the neoliberal agenda tells you that users are going to pay the fees (Karim Eid Sabbagh, interview, 22 March 2021).

Karim Eid Sabbagh is not only expecting the future to happen, but he also brings past experiences to the present in order to push forward to the future. In his proposition, he tries to transform the collective future by shifting the management of the water sector and financing it through taxing the rich people. Karim Eid Sabbagh, proposition is a speculative alteration of the current system that would shake the present if it happens. "Anticipation, in this sense, works to relieve the anxiety of uncertainty and to 'normalize' the present through a speculative imagination of the future." (Bryant and Knight, 2019, 42-43) Karim Eid

Sabbagh anticipates a solution that includes a series of small dams, not higher than a meter, in order to slow the water flow and increase the recharging of the underground water "that will be a decentralized solution. It will be low technology, easier to fix if there is a problem with one of them, they do not create that much risk, and if Israel attacks it can't blow up *THE* dam, they will have to blow up all small dams and then it doesn't matter. This would be a solution more related to national liberation." (Karim Eid Sabbagh, interview, 22 March 2021). Khawlie had similar vision, his solution comes from his opposition to the current policies as well. He describes his plan as,

> What we call small earth type dams are good; they are quite beneficial and environmentally sustainable. But the dams that they are building in Lebanon that are an inherit part of the water strategy are very very bad. the internationally known best example ever is the Nile. What used to be the policies of the ancient Egyptians and what it is now. The ancient Egyptians built small dams along the locality where it is to be used, I mean now we are constructing a dam 100 km away from Beirut to get water to Beirut, for sure you have to build networks and pipes. The ancient Egyptians built those small dams in the delta. This is where they used it. the new policy makers, built the Aswan dam. The land degradation that resulted the last 50 or 60 years is horrendous and the floods that are happening are extraordinary. Ancient Egyptians built these small dams to control the local floods and did not prevent the fertile silt that comes with the floods on the contrary it was deposited in the agricultural lands and increase the agricultural lands. This is the typical example. Small series of earth dams, using the same soil of the land, we are not bringing rocks and cement *w Denye w Ekhra w Ya Latif*. In Lebanon we have water everywhere, so it has to be always where the demand is, so local supply for the local demand, decentralized system and especially in water. My strategy would have small dams in it; small dams also help in recharging groundwater (Mohammad Khawlie, interview, 26 March 2021).

The speculative imagined solutions by both are not the mere product of their imagination. The premise for their imaginative activity of forecasting a different future is situated in a historical practice that proved to be effective (Whitington, 2013, 322). Amidst the crisis, and the uncertainty, the low-cost anticipated solution proposed by the two activist-

experts relieves the anxiety related to providing water by proposing what should be done (Bryant and Knight, 2019, 43). Khawlie's technical solution is portrayed through,

> The most prominent aspect of water in Lebanon is the misadministration. So, the number one issue, and the most important is the proper sustainable management of water resources in Lebanon. The full story is proper management and proper administrators. Both technical and manageable wise, The right person in the right position.
> So, to supply Beirut, let us assume we have a good system of managing supplying Beirut with water. And this system depends on the river x 40 springs here, 20 wells there. Let us imagine this virtual system, so the management has the data and information how much water is needed, the uses, and where it is located. So, there is a network of computerized system controlling this. Because even in regular times, accidents might happen, even natural accidents. I mean if one of these 40 springs suddenly stops, it appears on the system immediately that the 1.5 million cubic meters this spring is supplying are stopped, the system goes to other sources (Mohammad Khawlie, interview, 26 March 2021).

Given that much is still unknown, the imagination is capable to envision many scenarios alternative to the reality (Whitington, 2013, 309). The imaginative fluids stem from the lived experiences of the people, but they are speculative because so much of the future is still unknown. This is a hope for a better future that does not exist but has the potential to. Because of their expertise, their imagination is more than possibility but less than probability. Hope "is a way of virtually pushing potentiality into actuality." (Bryant and Knight, 2019, 134)

Paul Abi Rashed and Roland Nassour who both brought together the scientific knowledge and the local expertise, vision an alternative management of the water sector that is inclusive and democratic. Karim Eid Sabbagh shares this view with them. Paul Abi Rashed imagines the alternative reality based on his everyday political practices as he sees them; he said,

> If I were in the position of policy making, today or any day; I would act in the same way as I am acting now. This round table we attend to discuss and execute our goals, I would not listen to the contractor or the international funders. I would turn it and listen to the Shepard, the youth, the people. Those with clen hands and who envision a future for Lebanon. Currently, my utmost priority is to fight climate change and achieve sustainable development. All these guides me in the roadmap. I want to preserve the environment in Lebanon, fight the climate change, secure development for the poor people, and supply drinking water for the people. My goal is never to execute projects that would generate millions of dollars for some people. I live my daily life as if I am a member of parliament and a minister. I am a member of the parliament representing the people's concerns and monitor the government; I am a minister who takes action. People call me to solve problems related to the environment. Every day I am an MP and a minister and a citizen in service of providing this sustainability for Lebanon (Paul Abi Rashed, interview, 9 April 2021).

Roland Nassour believes that people's opinion is essential, and their knowledge is as important as that of the technocrats. He believes that this reality cannot exist except under a change in the political regime. His position on water, as well as the participation of the people is derived from his political understanding of the Lebanese system. He told me,

> We need a civil secular state. As long as the system is sectarian, it is impossible to have an inclusive vision about the ecological wealth. We really need a new state and a new system. We need a state. Everything we have been doing and the pressure we have been exerting do not mean that we want this dynamic to persist. We want a government capable of executing its duties. Unfortunately, there is government. We have ruling sectarian leaders managing the country. But in the future, when we have an actual government, the relation with the civil society and the local communities would be different. There should be a participatory mechanism that we talk about and practice. There should be a real consideration of the people's opinion because they have knowledge. Neither do we, the experts, nor does the government have a monopoly of knowledge. Sometimes the people have a more important knowledge than the experts, and this should be translated into the planning of the projects where in the preliminary stages, the people participate and give their opinions and we listen to them. The ideas of the projects should be the product of the dialogue with the people. However, I do not mean that the state should everything in line with the people's desires. After all the state has obligations, and it should prioritize the public interest in its projects even if that contradicted the local interests a little. Yet, there should be substantial and continuous effort to bring the people's interest and the national interests closer. For example, if the state was building a highway that passes through a

> house, if we can move the highway a little away from the house, we should do that. Even if a project benefits a million, that does not allow me to destroy the interests of a single person. I really believe that national interests and the local interests should be complimentary (Roland Nassour, interview, 3 April 2021).

Karim Eid Sabbagh echoes this need to include the people because of their experience and involvement in the projects. He envisions this participatory planning to be,

> Democratic participation is when people get a say in what is really going to happen. If you look at irrigation systems that exist over years of building that are managed locally by people in a certain way. You cannot simply erase them. You will face resistance from the people. To change this, you need the people and the more you ensure the diversity of people the more you are able to implement a process that gives everybody a real voice. First, you reduce the influence of capital, and second you increase the substantive participation of people. So, what I am talking about is really politicizing everyday life and giving people actual real power in decision making, actually it is utopian at this stage, but this would the directions development has to take for it to work out (Karim Eid Sabbagh, interview, 22 March 2021).

In these three interview excerpts, it is clear that the three of them believe that a sustainable environmental solution for the water issue requires a total change in the social relations between the people and the government that produce the current harmful policies that stem from hegemony and the dictatorship of development knowledge (Friedman, 2004, 163). Although each one of them has a different political ideology, the three of them imagine an alternative reality with inclusive and democratic participation because their material relationships in the present make the imagined thinking possible (Whitington, 2013, 310).

These imaginations are a few among many imaginations that we have about the future. We can build alternative realities that we can imagine. And this is why this imaginative is “dangerous to those who profit from the way things are because it has the power to show that the way things are, is not permanent, not universal, not necessary.” (Le Guin, 2004, 219) The interviews I presented in this chapter expose us to a future where we

are radically other from the present situation. These ethnographies show us the radical alternatives realities outside the current system we live in (Hage, 2012). The words of my interlocuters represent the imagination of the social movement that continues to happen to fight the dams' policies in Lebanon. It was fueled with hope when it was still insignificant at the beginning of their struggle. The National Campaign to Save the Bisri Valley gained momentum and was able to become an unstoppable force in the face of the government plans for the valley actualizing their slogan, *Nehna el Sadd b Wejj el Sadd*, we are the dam in the face of the dam (Braynt and Knight, 2019, 136). The technologies of imagination I relied on in this chapter by visiting the futuristic views of my interlocuters, make the invisible future visible to the public. Through their insight as experts and the inability to practice their expertise because of the political tensions behind the dams' plans in the present; they project their knowledge into the future manifesting how the present can possibly be. They create a hope for a future that is within our reach (ibid, 148).

C. Conclusion

In this chapter, I discussed the realities that the expertise and knowledge translate into. The traditional knowledge translates into hegemony and domination of the population by the government's infrastructural projects that prioritize modernizing the state even at the expense of the people. The domination projects reshape the collective memory of the people by erasing spatiality and temporality of a certain place, in our case the Bisri valley. They also rename these places and tie them to the reign of the people that built them. On the other hand, the organic knowledge was not realized because the organic intellectuals are not in the

positions of decision making. Their knowledge and expertise can build a different world. Their knowledge is translated into imaginative envisions of how things should be. Their imaginations portrayed in this chapter through the excerpts are examples of the water sector they want to build, a water sector that cannot be built under this current system as Roland Nassour, Karim Eid Sabbagh, and Paul Abi Rashed expressed. Their vision of the future is anticipatory because they are not waiting for the future to come, they have worked and still work against these random policies. It is also full of hope that grows with every triumph they achieve and keeps them moving forward (Braynt and Knight, 2019, 136).

CHAPTER VI

CONCLUSION

This thesis engages with an experimental methodological as attempt to deal with the challenges that surfaced as a result of the Covid-19 restrictions. This is not to mention the multi-layer collapse that Lebanon is currently enduring. I relied on the paraethnographic methodologies (Holmes and Marcus, 2005) where I relied on the anecdotes of my interlocuters. In addition to that, I experienced a virtual ethnographic attempt in the virtual hike through the valley that I attended with Carl who made it an interesting and successful attempt. Also, I developed a speculative anthropology (Bryant and Knight, 2019; Hage, 2012; Davison-Vecchione and Seeger, 2021) that engaged the imagination and alternative realities my interlocuters can foresee as an alternative to the current development plans being executed in Lebanon.

Through this research, I wanted to investigate the knowledge systems the expert activists have, their origins, how they use them and how are they translated into real life. I refrained from unpacking the relations among my interlocuters to focus on the paradigm shift they helped in. Intellectuals can use their knowledge to preserve the status-quo or to challenge it and represent the people they belong to. In my thesis, the technocrats of the state and the contracted engineers in addition to the World Bank personnel represent the traditional intellectuals. Whereas the expert-activists, the organic intellectuals, are bridging between the local knowledge and the scientific knowledge in order to challenge the status-quo (Nygren, 1999; Kurtz, 1996). These knowledge systems are translated into technocracy and

engineering knowledge that the government was using to advocate for the project as the solution for water shortage in Lebanon. This kind of knowledge is supported and adopted by the World Bank through its hegemony over the green and development knowledge. I was able to argue that the knowledge of my interlocuters is not of one nature. Their knowledge is participatory, it does not stem from their technical and academic training alone, nor does it stem from the local native knowledge of the community they are active in and mobilize. Their knowledge is the marriage of the discussions and knowledge sharing between the scientific experts, shepherds, farmers, and the local communities. The dynamics they have with the community, empowered their knowledge, and allowed them to build up national and international pressure that opened the World Bank doors for them to attend the experts meetings and oppose the hegemony of the World Bank knowledge in the meetings and outside. My interlocuters' stances and imaginations are not only based on their expertise and knowledge. They are also the result of their political beliefs and ideologies that situate their knowledges. Whether they were leftists, seculars, or environmentalists, their political and social identities motivate their knowledges and expertise.

The experience of my interlocuters is evidence that activism is a pragmatic practice. As they were building pressure, mobilizing against the dam and the World Bank, they were open to sitting on the same table with the World Bank experts and contracted engineers in order to discuss and negotiate the deal. The activists activism accompanied by the changing of the political winds were able to stop funding the projects in September 2020. However, dams, as development projects carry with them a futuristic promise (Bryant and Knight, 2019) that was invoked in March 2022 on the eve of the Lebanese parliamentary elections in the cabinet because this project was supposed to provide drinking water for a large population

of the Lebanese people. It is believed that invoking the idea of the project again is nothing more than populist promises by the ruling parties who failed to fulfil any tangible achievement in the past four years.

The expert activism in Lebanon was able to reach out to the whole Lebanese community. For Roland, the National Campaign to Save the Bisri Valley, can give lessons to the whole world not only to other campaigns on how to mobilize to reach the goal. He said,

> It is important to politicize the rhetoric for the campaigns to succeed. According to our experience in the National Campaign to Save the Bisri Valley, the intersectionality between the ecology and politics allows targeting the roots of what caused the current problems that resulted in threating the environment. We were able to simply the narrative that marries between the scientific research and the local knowledge and communicate it to build a solid scientific argument. We worked on different levels, locally, nationally, and internationally. This multi-scalar approach is very important for the success of the campaigns (Roland Nassour, interview, 3 April 2021).

This case study was successful in opposing the government's plans and policies through challenging the mainstream rhetoric advocating the dams. The activism of my interlocuters as we have seen in the final chapter, addresses the problem, yet they provide several other alternatives that would supply water for the population of the Greater Beirut.

Dams are not merely apolitical development projects. We need to study them in their sociopolitical contexts as well. They are tools of hegemony and domination over the society as can other infrastructure projects be because they decide on who gets what services, and who gets denied access to the services.

In this thesis, I mainly followed the stories and experiences of my interlocuters in challenging the status quo and the hegemony of the state regarding dams as development projects. However as stated before, the dam was stopped because of the change of the

political winds, the inability of the state to pay its debt because of the financial crash. Yet, we cannot sideline the role of the activists and expert activists in challenging the government's rhetoric about the necessity to build dams.

How will the future unfold? This is full of possibilities of hope and terror as well. However, what is important about this experience of the activists is that through the dark, there will be activists who will utilize their scientific knowledge bridging the gap between it and the local knowledge to create a social momentum to oppose the domination plans. This thesis is a documentation and analysis of the promising activism of the experts and their participatory methods that intertwined against the governmental projects and opposed its proposed plans and projects that seek to dominate and control the nature and the people. The dam project in Bisri might be revived by the government through different sources of loans and financing, yet the activism of my interlocuters has helped in creating a different rhetoric and narrative about dams in Lebanon.

BIBLIOGRAPHY

"Development Projects: Litani Power and Irrigation Project - P005324." World Bank, n.d. https://projects.worldbank.org/en/projects-operations/project-detail/P005324.

"History." U.S. Agency for International Development, April 12, 2013. https://www.usaid.gov/lebanon/history.

"Water Infrastructure in Lebanon." Fanack Water, September 8, 2015. https://water.fanack.com/lebanon/water-infrastructure/.

Abou Cham, Neemat Badaoui. *Building Dams as a Policy Instrument within Lebanon's National Water Strategy: an Overview.* Master's Thesis. Beirut: American University of Beirut, 2013.

Abourahme, Nasser. "Assembling and Spilling-over: Towards an 'Ethnography of Cement' in a Palestinian Refugee Camp." *International Journal of Urban and Regional Research* 39, no. 2 (December 12, 2014): 200–217

Amiralay, Omar, dir. A Flood in Baath Country. 2003

Anand, Nikhil. *Hydraulic City: Water and the Infrastructures of Citizenship in Mumbai*. Durham: Duke University Press, 2017.

Bakker, Karen. "Water: Political, Biopolitical, Material." *Social Studies of Science* 42, no. 4 (August 2012): 616–23.

Barry, Andrew. *Material Politics: Disputes along the Pipeline*. Wiley-Blackwell, 2013.

Bishara, Amhal. "Driving While Palestinian in Israel and the West Bank: The Politics of Disorientation and the Routes of a Subaltern Knowledge." *American Ethnologist* 42, no. 1 (February 17, 2015): 33–54.

Björkman, Lisa, and Andrew Harris. "Engineering Cities: Mediating Materialities, Infrastructural Imaginaries and Shifting Regimes of Urban Expertise." *International Journal of Urban and Regional Research* 42, no. 2 (February 16, 2018): 244–62.

Bou Jaoude, Issam et al. "Understanding the Leaks in Chabrouh Dam through Detailed Hydrogeological Analysis of the Qana Plateau (Lebanon)." *Advances in Research in Karst Media*, 2010, 407–13.

Bourdieu, Pierre. *Forms of Capital*, 1985.

Bramwell, Ellen S. “Personal Names and Anthropology.” *Oxford Handbooks Online*, 2016.

Broad, Robin. “‘Knowledge Management’: A Case Study of the World Bank’s Research Department.” *Development in Practice* 17, no. 4/5 (2007): 700–708.

Bryant, Rebecca, and Daniel M. Knight. *The Anthropology of the Future*. Cambridge: Cambridge University Press, 2019.

Burton, Levar. "Live! in Portland: 'The Fliers of Gy' by Ursula K. Le Guin", *LeVar Burton Reads* 18 June 2018

Davison-Vecchione, Daniel, and Sean Seeger. “Ursula Le Guin’s Speculative Anthropology: Thick Description, Historicity and Science Fiction.” *Theory, Culture & Society*, November 5, 2021, 026327642110517.

Di Nunzio, Marco. “ANTHROPOLOGY OF INFRASTRUCTURE.” *LSE cities*, June 2018.

Edwards, Paul N. *A Vast Machine: Computer Models, Climate Data, and the Politics of Global Warming*. MIT Press, 2010.

Eid-Sabbagh, Karim-Philipp. *A political economy of water in Lebanon: water resource management, infrastructure production, and the International Development Complex*. PhD thesis. SOAS, University of London, 2015.

El Tawil, Christine Elias. *Groundwater-Based Water Provision of Greater Beirut Area: Policy Opportunities and Challenges*. Master's Thesis. Beirut: American University of Beirut, 2019.

Eriksen, Thomas Hylland. *Overheating: An Anthropology of Accelerated Change*. London: Pluto Press, 2016.

Ewart, Ian. *An Anthropology of Engineering.* University of Oxford PhD Dissertation, August 2011.

Ferguson, James. *The Anti-Politics Machine: "Development," Depoliticization, and Bureaucratic Power in Lesotho*. Minneapolis: University of Minnesota Press, 1994.

Friedman, Jonathan. “The Relocation of the Social and the Retrenchment of the Elites.” *Social Analysis* 48, no. 3 (2004): 162–68.

Ghiotti, Stéphane. Riachi, Roland. « La gestion de l'eau au Liban : une réforme confisquée ? », *Etudes rurales* 2013/2 (No 192), p. 135-152.

Goldman, Michael. "The Birth of a Discipline: Producing Authoritative Green Knowledge, World Bank-Style." *Ethnography* 2, no. 2 (June 2001): 191–217.

———. *Imperial Nature*. New Delhi: Orient Blackswan, 2005.

Grinyer, Anna. "The Anonymity of Research Participants: Assumptions, Ethics and Practicalities." *Social Research UPDATE*, no. 36 (2002).

Hage, Ghassan. "Critical Anthropological Thought and the Radical Political Imaginary Today." *Critique of Anthropology* 32, no. 3 (September 7, 2012): 285–308.

Haraway, Donna. "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective." *Feminist Studies* 14, no. 3 (1988): 575–99.

Hoag, Colin. "'Water Is a Gift That Destroys': Making a National Natural Resource in Lesotho." *Economic Anthropology* 6, no. 2 (June 2019): 183–94.

Holmes, Douglas and Marcus, George. Cultures of Expertise and the Management of Globalization: Toward the Re-Functioning of Ethnography. In *Global Assemblages Technology, Politics, and Ethics as Anthropological Problems* (pp. 235–254). essay, Blackwell, 2005.

Kuehn, Robert. The Environmental Justice Implications of Quantitative Risk Assessment. University of Illinois Law Review, 103: 1-67 1996.

Kurtz, Donald V. "Hegemony and Anthropology." *Critique of Anthropology* 16, no. 2 (1996): 103–35.

Larkin, Brian. "The Politics and Poetics of Infrastructure." *Annual Review of Anthropology* 42, no. 1 (2013): 327–43.

LBCI News. "باسيل ،بطل' رواية رسوم متحركة," May 3, 2013. https://www.youtube.com/watch?v=ez-l7qh_teU.

Le Guin, Ursula K. Essay. In *The Wave in the Mind: Talks and Essays on the Writer, the Reader, and the Imagination*. Boston: Shambhala, 2004.

Li, Tania. *The Will to Improve Governmentality, Development, and the Practice of Politics*. Durham: Duke University Press, 2007.

Litani River Basin Investigation Staff. *DEVELOPMENT PLAN FOR THE LITANI RIVER BASIN REPUBLIC OF LEBANON*. Beirut: United States Department of the Interior Bureau of Reclamation, 1954.

Mains, Daniel. *Under Construction: Technologies of Development in Urban Ethiopia*. Durham: Duke University Press, 2019.

Marcus, George E. "Ethnography in/of the World System: The Emergence of Multi-Sited Ethnography." *Annual Review of Anthropology* 24, no. 1 (1995): 95–117.

Mitchell, Timothy. *Rule of Experts Egypt, Techno-Politics, Modernity*. Berkeley and Los Angeles, California: University of California Press, 2002.

Miyazaki, Hirokazu and Riles, Annalise. Failure as an Endpoint. In *Global Assemblages: Technology, politics, and Ethics as anthropological problems* (pp. 320–332). essay, Blackwell 2005.

Mosse, David. *Adventures in Aidland: The Anthropology of Professionals in International Development*. Oxford: BERGHAHN Books, 2011.

Mukungu, Kate. "'How Can You Write about a Person Who Does Not Exist?': Rethinking Pseudonymity and Informed Consent in Life History Research." *Social Sciences* 6, no. 3 (2017).

Nader, Laura. "Up the Anthropologist: Perspectives Gained from Studying Up." *Reinventing Anthropology*, 1972, 284–311.

Neary, Mike. "Student as Producer: An Institution of the Common? [or How to Recover Communist/Revolutionary Science]." *Enhancing Learning in the Social Sciences* 4, no. 3 (December 15, 2012): 1–16.

Niewöhner, Jörg. "Infrastructures of Society, Anthropology Of." *International Encyclopedia of the Social & Behavioral Sciences* 12 (2015): 119–25.

Nygren, Anja. "Local Knowledge in the Environment–Development Discourse." *Critique of Anthropology* 19, no. 3 (1999): 267–88.

Oman-Reagan, Michael. "First Contact with Possible Futures." Society for Cultural Anthropology, December 18, 2018. https://culanth.org/fieldsights/first-contact-with-possible-futures.

Ottinger, Gwen, Kim Fortun, and Benjamin R. Cohen. *Technoscience and Environmental Justice: Expert Cultures in a Grassroots Movement*. Cambridge, MA: MIT Press, 2011.

Raheem, Saheed Oke, and Akinmade Timothy Akande. "Naming as a Marker of Identity on Nairaland." *African Identities* 17, no. 3-4 (2019): 191–210.

Riachi, Roland. “Water Policies and Politics in Lebanon: Where Is Groundwater?” International Water Management Institute, December 2016.

Richardson, John G., and Pierre Bourdieu. “THE FORMS OF CAPITAL.” Essay. In *Handbook of Theory and Research for the Sociology of Education*, 15–29. Westport, CT: Greenwood Press, 1986.

Riles, Annelise. “Real Time: Unwinding Technocratic and Anthropological Knowledge.” *American Ethnologist* 31, no. 3 (2004): 392–405.

Roszak Theodore. The Making of a Counter Culture: Reflections on the Technocratic Society and its Youthful Opposition. Garden City, NY: Doubleday 1969.

Shaban. *Water Resources of Lebanon*. Springer International Publishing, 2020.

Shear, Boone W., Susan Brin Hyatt, and Susan Wright. *Learning under Neoliberalism: Ethnographies of Governance in Higher Education*. New York: Berghahn Books, 2017.

Sheppard, Sheri, Anne Colby, Kelly Macatangay, and William Sullivan. “What Is Engineering Practice?” *International Journal of Engineering Education* 22, no. 3 (2006): 429–38.

Shore, Cris, and Stephen Nugent. *Elite Cultures: Anthropological Perspectives*. London: Taylor & Francis Ltd, 2002.

Star, Susan. “The Ethnography of Infrastructure.” *American Behavioral Scientist* 43, no. 3 (1999): 377–91.

Stefanelli, Alice. “Beyond the Organic Intellectual: Politics and Contestation in the Planning Practice.” *City & Society* 32, no. 3 (September 8, 2020): 649–69. https://doi.org/10.1111/ciso.12340.

Stehr, Nico, and Reiner Grundmann. “How Does Knowledge Relate to Political Action?” *Innovation: The European Journal of Social Science Research* 25, no. 1 (February 22, 2012): 29–44.

Stensrud, Astrid B. “‘You Cannot Contradict the Engineer’: Disencounters of Modern Technology, Climate Change, and Power in the Peruvian Andes.” *Critique of Anthropology* 39, no. 4 (January 7, 2019): 420–38.

Steyerl, Hito. “A Thing like You and Me - Journal.” e-flux Journal, April 2010. https://www.e-flux.com/journal/15/61298/a-thing-like-you-and-me/.

SVALASTOG, ANNA-LYDIA, and STEFAN ERIKSSON. “You Can Use My Name; You Don't Have to Steal My Story - A Critique of Anonymity in Indigenous Studies.” *Developing World Bioethics* 10, no. 2 (July 8, 2010): 104–10.

Swanson, Heather Anne. “Why Railroads Now?” *Transfers* 10, no. 2-3 (December 1, 2020): 270–82.

VON SCHNITZLER, ANTINA. “Traveling Technologies: Infrastructure, Ethical Regimes, and the Materiality of Politics in South Africa.” *Cultural Anthropology* 28, no. 4 (November 2013): 670–93.

Water Resources Investigations for the Nahr Ibrahim Basin, Lebanon: Reconnaissance Report. Beirut: United States operations mission to Lebanon. Natural resources division, 1957.

Water Resources Investigations of the Nahr Ostouene, Nahr Arka, Nahr El Bared, Nahr Abou Ali, Nahr Ibrahim, Nahr El Kelb, Nahr Beirut, Nahr Damour, Nahr El Assi Basins, Lebanon: Summary Report. Beirut: United States operations mission to Lebanon. Public works division, 1958.

Whitington, Jerome. “Fingerprint, Bellwether, Model Event: Climate Change as Speculative Anthropology.” *Anthropological Theory* 13, no. 4 (November 15, 2013): 308–28.

Winner, Langdon. 1980. Do artifacts have politics? In Teich, Albert H. (ed.) 2003. Technology and the future. Belmont: Wadsworth. pp. 148-164.

Workman, Cassandra L., Maryann R. Cairns, Francis L. de los Reyes, and Matthew E. Verbyla. “Global Water, Sanitation, and Hygiene Approaches: Anthropological Contributions and Future Directions for Engineering.” *Environmental Engineering Science* 38, no. 5 (2021): 402–17.

حاوي، زينب. "جبران باسيل بطل (حتى في) الشرائط المصورة". جريدة الأخبار، بيروت 8 أيار 2013

عبد العال، إبراهيم. المجموعة الكاملة لأعمال إبراهيم عبد العال. جمعية أصدقاء إبراهيم عبد العال. بيروت 1994.