

AMERICAN UNIVERSITY OF BEIRUT

THE INTERPLAY BETWEEN POLITICS, POLICY AND
ECONOMICS: THE CASE OF ENVIRONMENTAL POLICY IN
LEBANON

by

NOUHAD GHAZI AWWAD

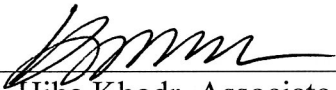
A thesis
submitted in partial fulfillment of the requirements
for the degree of Master of Science in Environmental Sciences to the Interfaculty Graduate
Environmental Sciences Program (Environmental Policy Planning)
of the Faculty of Arts and Sciences
at the American University of Beirut.

Beirut, Lebanon
April 2016

THE INTERPLAY BETWEEN POLITICS, POLICY AND
ECONOMICS: THE CASE OF ENVIRONMENTAL POLICY IN
LEBANON

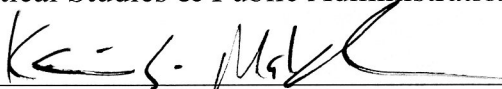
By NOUHAD AWWAD

Approved by:



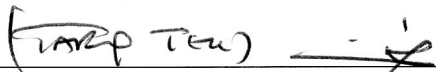
Dr. Hiba Khodr, Associate Professor
Political Studies & Public Administration Department

Advisor




Dr. Karim Makdisi, Associate Professor
Political Studies & Public Administration Department

Member of Committee



Dr. Tariq Tell, Assistant Professor
Political Studies & Public Administration Department

Member of Committee



Dr. Nadim Farajalla, Associate Professor
Landscape Design & Ecosystem Management Department

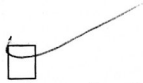
Member of Committee

AMERICAN UNIVERSITY OF BEIRUT

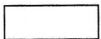
THESIS, DISSERTATION, PROJECT RELEASE FORM

Student Name: AWWAD NOUHAD GHAZI
Last First Middle

Master's Thesis Master's Project Doctoral Dissertation



I authorize the American University of Beirut to: (a) reproduce hard or electronic copies of my thesis, dissertation, or project; (b) include such copies in the archives and digital repositories of the University; and (c) make freely available such copies to third parties for research or educational purposes.



I authorize the American University of Beirut, **three years after the date of submitting my thesis, dissertation, or project**, to: (a) reproduce hard or electronic copies of it; (b) include such copies in the archives and digital repositories of the University; and (c) make freely available such copies to third parties for research or educational purposes.

Nouhad
A

May 4, 2016

Signature

Date

HOUDA

Beloved MOM,

Who, through lifelong sacrifices,

Raised and educated me

To YOU MAMA,

Everything Beautiful in MY LIFE

ACKNOWLEDGMENTS

Firstly, I would like to express my sincere gratitude to my advisor Prof. Hiba Khodr for the continuous support while writing my thesis. Her guidance helped me at all times. My gratitude continues to the committee members: Prof. Karim Makdisi, Prof. Tariq Tell, and Prof. Nadim Farajalla for their patience, motivation, and immense knowledge. Special thanks for the people who accepted to be interviewed and made this thesis possible.

AN ABSTRACT OF THE THESIS OF

Nouhad Ghazi Awwad for Master of Science in Environmental Science
Major: Environmental Policy Planning

Title: The Interplay Between Politics, Policy and Economics: The Case Of Environmental Policy In Lebanon.

In Lebanon, people have been highly dependent on natural resources in an unsustainable way. This, in addition to the lack of governmental regulations, led to environmental degradation mainly in the hydrosphere and forestry. This environmental degradation is partly due to the lack of environmental awareness. In addition, the Lebanese environmental movement has not been doing much to change the situation; thus, it is portrayed as a dormant movement. In this paper, I am studying the path to having an applicable environmental policy in Lebanon. I argue, using the Institutional Analysis and Development framework (IAD), and the Common Pool Resources theory (CPR), that the science-based approach adopted by Ricardus Haber in his case studies will lead to a better environmental situation in Lebanon. Quantitative and qualitative methodologies were used to identify the causes of the retreat of the environmental movement in Lebanon. Many Lebanese environmental issues are examined by comparing the different processes used to handle them. Comparison is done to study the actors and action arenas in environmental policy planning in Lebanon, what hinders it, and how to improve the current environmental situation. Presenting some contributions from fifteen interviewed activists and academics, this work attempts to promote a stronger practical orientation in environmental movement in Lebanon, which seeks to

make influence in solving existing problems, and develop significant changes in environmental policy. The research concludes that Haber's strategy is mostly successful and recommends ways to adopt it and improve the current environmental situation.

KEYWORDS: environmentalism, science-based approach, political ecology, environmental awareness, science-based approach, conservation, environmental protection.

CONTENTS

ACKNOWLEDGEMENTS.....	V
ABSTRACT.....	VI
LIST OF ILLUSTRATIONS.....	X
LIST OF TABLES.....	XI
Chapter	
I.INTRODUCTION.....	1
A. Problem Statement.....	5
B. Environmentalism in the World.....	7
C. Environmentalism within the Lebanese Context.....	23
C.1 Political Structures.....	37
C.2 Administrative Structures.....	38
II. RICARDUS HABER AS A SCIENTIST.....	42
III. CONCEPTUAL FRAMEWORK: INSTITUTIONAL ANALYSIS AND DEVELOPMENT (IAD) FRAMEWORK.....	61
A. Research Question.....	76
B. Methodology and Data Collection.....	76
B.1. Case study.....	77
B.2.Interviews.....	80

IV. CASE STUDIES FROM LEBANON.....	82
A. Ramlet Al Bayda	87
B. Al Dalieh.....	91
C. Al Sannayeh Garden.....	93
D. Toxic Waste.....	101
E. Education and Environment in Bentael Natural Reserve.....	113
F. Media and Environment in Lebanon.....	115
V. ANALYSIS AND FINDINGS.....	128
A. Action Situation.....	129
B. Physical/Material Conditions.....	130
C. Rules-in-use.....	131
D. Analysis of the Policy Making Arena.....	139
E. Evaluative Criteria.....	142
F. Stakeholders.....	143
G. Reporting.....	156
H. Corruption.....	157
I. Recommendations.....	160
VI.CONCLUSION.....	169
APPENDIX.....	179
BIBLIOGRAPHY	202

ILLUSTRATIONS

Figure	Page
Figure 1: The IAD framework is a multi-tier conceptual map.....	40

TABLES

Table	Page
Table 1: Relationship between the politicised IAD Framework and (adaptive) comanagement.....	42
Table 2: The properties document (al wathiqa al ikariya) for the Sannayeh Garden.....	66
Table 3: The Factors That Affect Public Areas in Lebanon.....	86
Table 4: This table presents the statistics done in 1999 and 2000 to measure the indicators for biodiversity targets.....	104

ABBREVIATIONS

CAS: Central Administration of Statistics
CDR: Council for Development and Reconstruction
CNRS: National Council for Scientific Research
CoM: Council of Ministers
CPR: Common Pool Resources
DGUP: Directorate General for Urban Planning
EIA: Environmental Impact assessment
EPI: Environmental Performance Index
GoL: Government of Lebanon
HCUP: Higher Council for Urban Planning
IAD: Institutional Analysis and Development framework
LCEC: Lebanese Center of Energy Conservation
LIBNOR: Lebanese Standards and Norms Organization Institute
MPAs: Marine Protected Areas
MoE: Ministry of Environment
MoEW: Ministry of Energy and Water
MoI: Ministry of Information
MoIM: Ministry of Interior and Municipalities
MoF: Ministry of Finance
MoSA: Ministry of Social Affairs
NEAPS: National Environment Action Strategies or/and Plans
NGO: Non-Governmental Organization
PPP: Polluter Pays Principle
PPPs: public–private partnerships
PRS: Poverty Reduction Strategies
SDNP: Sustainable Development Networking Programme
SDNP: Sustainable Development Networking Programme
SEA: Strategic Environmental Assessment
SELDAS: Strengthening the Environmental Legislation, Development & Application System in Lebanon
SOER: State and Trends of the Lebanese Environment
UPP: Unit of Planning and Programming
WWF: World Wide Fund for Nature

CHAPTER I INTRODUCTION

“What's the use of a fine house if you haven't got a tolerable planet to put it on?”

— *Henry David Thoreau, “Familiar Letters”*

Growing up in the mountains of Byblos, I have learned to appreciate nature. As I look around, it hurts me to see how nature is being radically ruined, and its features disfigured. Some civil society organizations have been trying to take action to save natural resources, but the public is careless, the issue hardly concerns them. The environment is not considered a crucial part of their lives; they would rather concentrate on earning a living whatever the cost may be.

This situation raised a lot of questions in my head. I started reading about the issue and discovered a new world of social and environmental movements. So, I decided to do my thesis about this subject to answer the questions I had.

Choucri (1993) defined environmentalism as a “process which stresses how human influence and alters nature and, in the domain of the economic and the political, how this influence is detrimental to social relations, both national and international.” In this thesis, the concept of environmentalism is understood as an ideology that seeks to prevent the degradation of the environment by human activity, and environmentalists as people who have environmental behavior. Bern & Simpson (2009, p.81) had defined environmental behavior as “the actions actually taken based upon particular attitudes”. Environmentalism is a concept that emerged in the academic literature on the onset of the 19th century with Thoreau, a philosopher, calling to maintain the natural world for its beauties and spiritual insight (1845). This spiritual call for preserving nature for the sake of nature initiated the conservative movement in environmentalism. From there, the preservationist movement started, a school that gave the natural world worth for its intrinsic values rather than for its practical use, as the utilitarian resource management

theory advocates. This utilitarian theory defines conservation as "the greatest good for the greatest number in the long run" (Keith and Gifford, 1946).

This thesis will present many theories of environmentalism, describe environmentalism in Lebanon and will end up in recommending the best strategy to have a sound environmental policy in Lebanon.

Ricardus Haber is named "The Father of Environmentalism in Lebanon". Taking his activism as a base for studying the environmental movement in Lebanon, I will present how other environmental activists' advocacy differ or meet with his strategy. After stating Haber's story and two successful environmental issues he tackled, I will analyze why this type of environmentalism succeeded and why it is now absent on the national level. Haber tackled the issue of natural resources by zoning and establishing protected areas as part of an ecological plan.

I compared successful to unsuccessful environmental case studies at three levels: at the macro level by studying the government's environmental policy; intermediate level

by studying NGOs' environmental advocacy; and local level by studying the community's response to the new environmental projects. I conducted fifteen interviews with individuals in the environmental field such as academics, environmentalists, and researchers who were involved in environmental actions in Lebanon.

At the macro level, this thesis asks how the scientifically based environmentalism that Haber adopts finds its way into policy, how and why scientific environmental knowledge

gets established in policy, and whether the laws enacted in the case studies were due to political interests, the product of a discourse, or actions of actor-networks?

At the intermediate level, the research will show the types of NGOs that Haber influenced. Moreover, it will present how the mobilization of activists and citizens in the environmental movement occurred, and the rationale behind it.

Finally, at the local level, there will be an analysis of the participatory approaches used by Haber to involve locals.

A. Problem Statement

Environmentalists are disappointed by the environmental organizations in Lebanon. The purpose of the study is to identify what type of environmentalism is suitable in the Lebanese context.

I will be using the Institutional Analysis and Development framework (IAD) and the Common Pool Resources theory (CPR) to explain the current situation of the

environmental movement in Lebanon. IAD and CPR were both introduced by Ostrom (2009) and use the political opportunity structure, collective identity, and micro-mobilization contexts as concepts of analysis. My analysis will focus on the strategy used by Haber (1992), taking into consideration political opportunity structures that the environmental movement used, in addition to the different identities, frames and protest forms used by environmental activists. The permanent underlying question of this thesis is: ‘what tools are there to better tackle environmental problems?’ The first chapter of the thesis is an introduction to the topic with the research questions and methodology. The literature review on Ricardus Haber’s life and the cases he was involved figure in chapter two. Chapter three presents the theoretical framework of the thesis. Chapter four is a comparative analysis of different case studies that happened in Lebanon. In chapter five, an analysis of the current Lebanese environmental situation is presented by identifying the action arena and the different actors, in addition to a strategy to better

environmentalism. Chapter six offers a conclusion, which will summarize the findings of this research, and will provide suggestions for future studies as well.

B. Environmentalism in The World

Thoreau (1845) considered nature as an integrated system in which people are a part (Conard, n.a). He has called to maintain the natural world for its beauties and for its spiritual insight. This spiritual call to preserve nature for the sake of nature initiated the conservative movement in environmentalism, giving way for the preservationist movement, which gave the natural world a value for its own rather than for a practical use as the utilitarian resource-management advocates. Pinchot (1908), a utilitarian scholar had defined conservation as "the greatest good for the greatest number in the long run." He tried to have a long-term management of forests by prohibiting short-term interests instead of mining and timbering (Naylor et Pinchot, n.d).

Thus, the basic aims of environmentalism are the preservation and conservation of

nature. Preservationists who are the advocates of deep ecology insist that no one has the moral or legal right to dominate nature. They tend to preserve nature in its original form and keep it wholly untouched. Conservationists, however, allow the use of nature with the least degree of harm and aim to provide the coming generations with natural resources and healthy ecosystem.

When these conservation and preservation are combined with societal norms and other criteria, they become politicized (Palmujoki, 2006). It is not easy to draw the line between the two in the political arena as they are used as an analytical tool.

Carson (1962) proved that we, human beings, are disrupting nature's balance. The damage to the environment is sure to cause us grief in the long run. Her idea of rendered people environmentalists after they become aware of the grave importance of working in order to stop the continuous damage. Many researchers say that the initiation of the modern environmental movement is due to Carson's work. In addition to Carson's work, two reports affected the increase of environmental awareness within the public,

“Our Common Future” (1987), and “Limits to Growth” (Club of Rome, 1972). These publications and others argued the importance of changing the current global free market economy (Albrecht Et Gobbin, 2001).

In the 1970s and the 1980s the interest in environmental issues was broadened on the national level as well as on the international level. Green Peace was initiated in 1971 (Greenpeace, 2009) while Friends of the Earth International started in 1971 (FoEI, n.d.). In Lebanon, Haber initiated Friends of Nature (FON) in 1972 (Ricardus M. Haber, 2007). In 1970, Senator Gaylord Nelson announced the 22 of April as the Earth Day (Earth Day Network, n.d).

Bell (2004) found that there are links between the ideology of environmental concern, the changes in the environment, the material standard, and the level of environmentalism. This can be seen in underdeveloped or developing countries where the wellbeing of people is wholly dependent on natural resources. While in the North, in the developed countries, the material condition of the society affects environmentalism;

paradigm shifts since the current ideologies do not reflect environmental degradation.

Liberal environmentalism appeared as a halfway solution of the South's pressing demand to develop, and that of the North's to save its investment and open trade while preserving its image as an environmental problem solver. It was the best way to identify each interest (Bernstein, 2002), or in another word, it appeared as a solution between the environmentalism of the rich and that of the poor.

The environmentalism of the rich protects the nature for its purity while that of the poor uses the nature sustainably to meet the poor's needs. This tension will shape the fate of environmentalism as suggested by Lemos and Agrawal (2006). The environmentalism of the poor emerged as an ecological movement to find peace and justice in the process of restructuring man's relationship with nature. Ecological movements are concerned with maintaining nature's balance for the sake of humans' means of survival. This type of movement is hampered by three major conflicts; the economic conflict, the technological conflict, and the scientific conflict. The

environmental social movement of the poor is considered part of environmentalism since the poor strive to attain the ecological requirements of life as part of their livelihood. They attempt to dissociate natural resources from market values and categorize it under the ecological economy. In another way, they are conserving natural resources (Journal of Development, 2012). Ecological movements are increasing and varying in their characteristics, as there is more exploitation of the natural resources. In India, Chipko movement rose in 1973 for the struggles of the dispossessed, the marginalized, the victims of discrimination, among who can be counted women, tribal and the non-commercial farmer. In Kenya, the Green Belt Movement saw light to put an end to soil erosion and deforestation in the Karura Forest, which was persistently and pervasively injurious to Kenya's long-term human and environmental prospects. For both the Kenyan and Indian movements, active reforestation became the main representative symbol for their civil disobedience. Unlike the global north disobedience strategies (sit-ins, tree hugging, or chaining oneself to a tree), the Kenyan and Indian

activists protested against deforestation went beyond these ways (Nixon, 1995).

Looking at international NGOs such as The Nature Conservancy, and those called BINGO, and how they work and how they partner with international institutions such as International Monetary Fund (IMF) (Chapin 2004), we find that they work on commodifying natural resources and promoting natural economic activities and decentralization by giving locals and NGOS the authority over resources, and on increasing the privatizing of natural resources (Spinage 2002). The neo-liberal approach followed nowadays tends to privatize land's use rights of natural resources and other areas. For them, this is the best way to protect the environment since public governance had failed to do so. This concurs with the statement of Dempsey and Robertson that neo-liberalization treats nature as a service or commodity and that it is considered as a part of the natural capital. Nature is becoming a business entity and most of its constituents are undergoing financial transaction. This new frame distorts the usual access to natural resources, which results in modifying property rights (Dempsey et

Robertson, 2012).

Many researchers saw that the neoliberal approach is accompanied with problems. Levine (2002) recognized decentralization as a problem for the environment since it allows international agencies and big corporation to take over the resources rather than locals or NGOs. Vayda et Walters (1999) held their research on one of the most pressing environmental problems in Bais Bay and Banacon Island, Philippine, that is the mangrove forest cutting for wood and fish/shellfish products. This specific type of trees found in these areas is a habitat for many wildlife animals and fisheries. The action causes erosion on the shoreline.

In order to study Philippine's development, it is important to investigate the power relations. One of the interesting things is that Philippine's government had shifted to decentralization. Authority is in the hand of locals rather than in that of state agencies and big businesses. Locals cut mangrove trees using an old process that dates back to the 1940s when elites used large areas to raise milkfish, and to the 1980s when areas

were used to farming pawn during the blooming boom. This export-oriented and capital-intensive economy of farming had increased the problem. Moreover, poor fishermen had claimed small areas near their homes to plant fish corals through eras. By the time the study was conducted, the wood was mostly used to build houses and as bunsod (fish coral).

The above reasons are the ones usually investigated by political scientists, who were unable to study the true reasons behind the mangrove destruction. On the other hand, science-based environmentalists knew that a natural biophysical reason is a major cause for the decrease of mangrove planting in Bais Bay; for example, floating seaweeds or pest infestation can destroy the small mangrove plants.

Thus, following the science-based environmental approach allowed the researchers to know all the reasons lurking behind the problem. Conversely, the political ecological approach failed to encompass the environmental problems since its ecologists overstressed the importance of concentrating on political and economic reasons with

favoring the first. Vayda and Walters proposed an event ecology approach rather than political ecology approach. They held the poor and the rich responsible for mangrove destruction. For them, a political ecologist explains events on biases and prior judgments, a thing that proved to be quite obvious in the case study of the mangrove when they missed the biophysical events that prevented the mangrove planting. In Lebanon, some scientists use political ecological approaches while others depend on science-based approach. This case study lights on a third approach that can be used which is event ecology approach. In addition, it shows that political ecological approach failed to explain environmental phenomena's where science is needed. A combination of both in case studies might help.

Beilin (2006) states that commodification might lead to more exploitation and accordingly to the degradation of the natural resources, especially if the local values for the resources were altered (Beilin, 2011). This was clear in the fishing case study in Indonesia.

Mullins (2004) used a political ecology approach in order to study the impact of sustainable development on the coastal region in Indonesia, Mendahara Ilir (Jambi, Sumatra) village. He investigated the way villagers access marine resources, by studying the relation between different stakeholders. His findings were that sociocultural conditions have affected law implementation. He also found that global issues as El Nino and the global financial crisis had their effect on the fishermen and the controlling of resources, which means that global situation and local eco-social environment are connected.

The political ecological approach helped him determine who had control over the village resources. He also found that a researcher should examine the unequal power relations of stakeholders in order to understand clearly the relation between environment and human beings.

The development strategy followed by the government aims to alleviate poverty by allowing people to fish causing a drastic increase in the fishing boats. Officials were

keen in implementing laws and allowed people to use nature as a source for their livelihoods.

After the global financial crisis, there has been a cut off in the budget, lessening the number of surveying boats; and giving way for an increase in the rate of illegal activities in protected areas. This increase in extraction intensity decreased the available resources and led to conflicts among the population.

Some of the main findings, which are similar to the current situation of Lebanon, are:

- 1- Lack of trust in the government.
- 2- Most of the laws are being violated except those that have a direct benefit.
- 3- A fisherman is required to register him or herself and get a working permit in order to prevent open access.
- 4- There is no implementation of regulations on the traditional fishing grounds.

- 5- Lack of governance.
- 6- The local economic, cultural, social, and political structures determined the effectiveness of the governmental regulation of environment-human interactions.

Disfranchising raises human rights concerns regarding the quality of life of these people who might be displaced (Chapin 2004). An example of disfranchising marginal communities from their resources under the title of development and liberal environmentalism has occurred in Bali.

Cole had studied the water-tourism nexus in Bali in which tourism has increasingly flourished contributing to 80% of its annual economic resources. For hundreds of years, the Bali society had distributed water resources equally. A new water management mechanism has replaced this system, which created a problem of unequal water distribution. The sustainable development approach under the patronage of the government and the funding of foreign investors had led to unsustainable development

(Cole, 2012).

Many Balinese works in tourism and agriculture at the same time yet many who work for the government has shares in the tourism business. The political ecology approach was able to manage the situation. It helped in discovering the politics and historical situation that led to the growth of tourism. It helped to identify different stakeholders and to study the effect of the growth of tourism on the hydro-social level. Most importantly is that this approach helped in identifying the barriers for equal water distribution on the island.

The liberal science-based environmentalism that allowed the privatization of a part of the piped water supply in Bali was not able to solve the gap between the financial abilities of business and poor people. The local business and international ones were able to reach the underground water on deep levels which led to saltwater intrusion in some wells owned by poor people, and others to be completely exhausted. These marginalized people are not able to afford bottled water, as tourists are, which leaves

them in a stressing need of water. Cole's study showed that people who are affected the most are the marginalized ones.

On the other hand, the political ecology approach showed that the environmental, political, and social factors are behind the water crisis, and showed how mismanagement has affected marginalized people especially women who are responsible for providing the household with water. This approach shed the light on the ignorance of the government, tourists, and business owners. Thus, the privatization, discussed above in the tragedy of the commons as part of the environmentalism of the rich led to an increase of the inequality of water distribution.

To solve this crisis, conflicts arose among villagers who fought each other instead of uniting against the power holders. However, the author had a different view to solving the problem, he suggested having public education campaign and following rights-based approach. As a conclusion neoliberalism is criticized for inducing political, economic and social inequality (Harvey, 2007).

Conserving biodiversity has been linked to neoliberals and has been seen as bio power (Foucault, 2007). Under this title, the interventions of the environmental managers are excused since they are sustaining different lives forms including humans. Also, they aim to protect the largest area and preserve most types of species especially endangered ones.

Liberal environmentalism, is concerned mainly with saving species. One of the endangered species that some of the liberal environmentalists in Arizona tried to save is “threatened fish - a 3” native minnow called the Spikedace in Verde River in central Arizona (World Press, n.d).

Assumed that grazing along the river is the cause of the extinction of these fishes, they successfully worked and pushed towards stopping it. This led to an ecological change and Spikedace have extirpated rather than being protected. Then they suggested poisoning the river to kill Spikedace predators that killed also spikedaces prey; now the river has no spikedaces. Some of the government scientists noted this and proposed to

do a study on the grazing relation that was met by failure since one of the biologists who had the political authority to stop the proposal fully opposed grazing. Scientists were harassed and the study was not done.

Liberal scientists have failed in solving the problem. The scientific methods they used were not sound and not proven. Instead of saving spikedaces, they altered the habitat and changed the food chain. Up till now, they are not held responsible for the already discussed damage.

On the other hand, neoliberal theories do not, as shown in the spikedaces case study, perform environmentality in natural resource policy. They provide motivations where there are general economic incentives for locals to take part in the conservation. They have discussed this in an economical way and have based their studies on cost-benefit analysis. To conclude, neoliberal and conservation policies aim to boost economic growth in parallel to having social justice under the conservation policy.

C. Environmentalism within the Lebanese Context

The outspreading consumerism temperament has a major role in the environmental tension locally and globally. Maalouf found that the solution to this issue lies by returning to the low consumption, the old lifestyle of our ancestors (Maalouf, 2010). Hynes argued, “That green consumerism reduces people to consumers. Their power to influence society is reduced to their purchasing power, and the value of goods is reduced to people's willingness to buy them. Those who have more disposable income will have greater purchasing power, and therefore their consumer demands will count the most” (Beder, 2009). Makdisi asserted the effect of the new economic pattern internationally and nationally. He stated that the short-lived environmental movement in Lebanon is due to donors' influence, elite-controlled sectarianism, and to the neoliberalism approach done by “Harrism movement” (Makdisi, 2012).

Sectarianism in Lebanon founds its support from the constitution. It addresses a religious quota for different sects (the president is Maronite (Christian), the prime

minister is Sunni (Muslim), the house speaker is Shia (Muslim) (The Lebanese Constitution, 1995). They are known as “the troika”. This political representation of different sects was also mentioned in AL- Taif agreement that ended the civil war where deputies were divided between Muslims and Christians (The Taif Agreement, 1990). After the Taif, they started calling Lebanon the Second Republic. Even grade A workers in the public level are divided according to what it is known as “6 and 6 *mokrrar*” which means half for Muslims and half for Christian (Abu Rjeily, 2010). This confessionalism (*Muhassasah taifiyya*), had increased sectarianism (especially after the civil war).

This sectoral nature of the Lebanese political institutions was the main reason to have a limited structure reform capacity. The Taif aimed to maintain peace by allowing sects in Lebanon to hold the important decisions and vetoing others; on the other hand, the Taif lead to a “paralysis in public institutions and decision making, at the expense of social and economic development” (Berthélemy et al, 2007).

So every individual willing to work in the public sphere should have a good network with the leaders of his sect. A sectarian identity determines the level of success on individual bases and on societal bases. For that, different NGOs have their connection with sector leaders.

The divisions had proceeded to divide on the affiliation of nationhood between Lebanese. According to Makdisi (2000), sectarianism is a phenomenon constructed in the nationalist paradigm. He finds that sectarianism is a noticeable aspect of Lebanon. He stated that Lebanese view sectarianism as ‘... depicted as a monolithic force, unchanging in the face of history while the nation-state has been viewed as the culmination of history’ (2000,166). Makdisi (2000) states that sectarianism is not due to civil war but it is rooted from the ninth century where there was a tussle between France, Egypt, Britain and weak Ottoman Empire. At the same time, it was the beginning of the struggle between peasants and landlords. “For a sectarian politics to

cohere, for it to become hegemonic in a Gramscian sense, it would have to become an expression of everyday life; it would have to stamp itself indelibly on geography and history” (Makdisi 2000, 78). Sect and class are both social structures in the same system, of exploitation and control; they are a complex network of interaction and disengagement, mutual influence and competition, on the grounds that both are frameworks for engaging in the battle for domination and the acquisition of the social surplus. So sectarianism is explained in politics and understood by social structure in which “interests” in sectarian behavior and loyalty are obvious (Traboulsi, 2014). In this thesis, it will be obvious how sectarian forces are an important power in civil society. I will try my best to avoid decreasing civil society into just NGOs.

Kingston found that Lebanese politicians had promoted environmentalism to increase their sovereignty. Political elites had infiltrated the civil society by having their own representatives and building their own networks. He added that the elites are responsible for the weakening of environmental movement since they used their intra-

alliance in order to prevent strict environmental rules. Not only this but also this affected advocacy negatively and allowed them to green their clients' network. These actions transformed activists from environment supporters to a tool in the hands of elites (Kingston, 2013).

In Lebanon there is no strong environmental movement, rather there are successful individual stories. This is because activists are not fighting the patron-client relationship initiated by political elites. Their retreat leads to this devastating situation (Kingston, 2013). An example of this situation is that in 1940 there was a governmental department “*Maslahat*” for paper collection that collected papers and cardboards from household for recycling and pays for households in return (Al Safa, 1940b) and Beirut municipality took a decision to transfer municipal solid waste that used to be dumped and thrown near the sea to compost (AlBayraq, 1943b). While at the end of 2015, Lebanon had a garbage crisis. The 'Polluter Pays Principle' (PPP) is not yet implemented in Lebanon although it was agreed in 1972 (OECD, 1992).

In the 20th century, city parks such as “Al-Sannayeh Park” appeared for the first time in Beirut city. Summer camps, outdoors activities as rappel, wildlife sanctuaries, birds and other endangered animal species protection saw the light. In the 1940th, there was a One-lira fee on every Lebanese goat to protect the forest (AlBayraq, 1943a). In Lebanon, calls to return to the nature to enjoy its beauty had started by the 1940s by the time the French mandate was about to end (Al-Bashir, 1943b). Before this, in the 1930th and 1940th Lebanese used to celebrate Tree Day on December, five of every year. Celebrations are done in different places and activities were mostly afforestation ones (Dimashkiya, 1943) (Lisan Alhal 1931). In 1942, In celebrating the tree day, youth from Lebanon planted on 5000 m² near Antelias and some other different areas; In addition, to planting cedars in the mountains (AlBayraq, 1942). The tree was the symbol of agriculture, which was the dominant lifestyle. The tree day was a gesture to ovate the significance of nature. At those days, a way of revenge was cutting the trees of the opponent (AlNidaa, 1937). For that the first recorded environmental NGO in Lebanon

is The Friends of Tree association (*Jamaet Asdiqa al shajara*) that used to celebrate Tree day by a big celebration in Beirut and afforestation activities all over Lebanon (Dimashkiya, 1942). Not only this but also citizens were required to get a permission if they want to get trees and whoever cut a tree should plant three instead (For afforestation, 1927) (Albashir, 1943b). Under the French mandate, the government had a tax on every tree (AlSafa, 1940a). The tree day is still celebrated till today but a celebration that was in the 1930th and that no longer exists is Eid AlZohour, the flowers festival (Albashir, 1938).

Haber, a Lebanese ecologist and a celebrated pioneer in environmentalism, had succeeded in creating two natural reserves in the north of Lebanon, Palm island reserve, and Horsh Ehden reserve, in addition to establishing the Friend of Nature (FON) NGO. He was influenced by the work of John Muir and Robert Baden Powell and worked on promoting camping and hiking. He described his work as non-political since he was not affiliated with any political party (Seeding, 2006). Researching the work done by Haber

will help discover the role of scientific knowledge in shaping policy, and explore the relation between various approaches to nature's conservation in the Lebanese context. This thesis will focus on the work done by Haber before the civil war and correlate it to our situation nowadays.

The environmentalist movement in Lebanon has retracted since the civil war started in 1975. At that time, activists in the environmental movement only took action regarding emergency accidents, as in 1987, when powerful militants imported toxic waste from Italy and dumped it in different sites in Lebanon (Hamdan, 1996). Some claim that the environmental degradation is due to civil war. Mezher found this irrelevant since the environmental conditions in Lebanon have not improved during the six years following its cease (Mezher, 1997).

In the 1990s, we had two green movements that resulted in more professionalism. Most of the new NGOs did not deal with environmental issues as a concept; they tried to solve specified technical problems as birds or wastewater. This

new movement toward environmentalism and sustainable development led to green business innovations.

NGOs in Lebanon were not able to produce a significant effect, which resembles the announcement of “death of environmentalism” in 2004 by Shellenberger and Nordaus who reasoned their decision by declaring that environmental organizations had failed to take a governmental action in response to the threat of global warming. This declaration, in addition to green consumerism and anti-consumerism, had led to an identity crisis in environmentalism (Shellenberger et Nordaus, 2004).

Non-Governmental Organizations in Lebanon such as the Lebanese environmental non-governmental organizations (LENGOs) had flourished after the civil war (1975-1990). LENGOs have been powerful in creating awareness and demanding regulation to enhance the wellbeing of the Lebanese people. By July 2001, one hundred twelve LENGOs were duly registered; most of them operating at the local grassroots level (MoE, 2001). Some of the LENGOs have been able to raise funds and implement

environmental projects at both national and international levels. The Ministry of Environment, MoE, offers small grants for LENGOs to promote environmental education and to fund awareness campaigns.

The activities of LENGOs are directed mainly towards creating awareness on the environmental problems that the Lebanese have overlooked for over a decade and a half. While these activities are not well documented, it seems that the future is relatively promising in regards to awareness increase about environmental issues. The coalition of LENGOs led to mobilizing supporters; some coalitions are official as The “Lebanese Environment Forum” (LEF), (LEF, n.d) which comprises of forty-six LENGOs. According to Kingston (2013), LEF is an ineffectual association that weakened advocacy efforts. The Lebanese Environmental Forum (LEF) was instituted in 1993; by the year 2005, there were about one hundred fifty associations that joined LEF. It was hard to bring all the associations together with all their different orientation, sects, political parties and affiliation; it was a successful first step in the journey of a thousand

mile. NGOs were either green (conservative approach) or brown (sustainable development approach). Merging these two concepts improves environmentalism in Lebanon. A study identified three frameworks for sustainable development in Lebanon: National Environmental Action Strategies or/ and Plans (NEAPS), Poverty Reduction Strategies (PRS), and local level initiatives (Local Agendas 21) (Gulmez, 2010).

The relation between development and environment is based on three variables: resources (R), technology (T) and population (P). Our population is higher than the available technology and resources. In order to have sustainable development, we should have advancement in technology to exceed the population. Resources are a constant variable in both. In Lebanon most technologies used are to fix the problems end of the pipe- rather than to prevent the problem. The technology triangle in Lebanon consists of the private sector, government and education (Toufic et al, 2006).

Djoundourian had tackled the issue of LENGOs in the post-war era. She did a review for the post-war press and found that reforestations were a dominating

phenomenon in most Lebanese villages. The second finding was that there were a lot of seminars and workshops tackling environmental degradation and ways of combating the problems (Djoundourian , 2007). A good example of this is what took place in 1994 when a total of 168 activities dealing with various aspects of the environment were held: 24% dealt with planting tree ceremonies in various regions, and 21% dealt with organizing workshops and seminars. These numbers have been fluctuating around an annual mean of 28% and 25%, respectively over the past ten years.

The cultural aspect must be taken into consideration when trying to solve the environmental problems in Lebanon. The elites are identified according to their position in the structural affairs of domination. In the name of reconstruction, Lebanese national elites have exploited both nature and people after the civil war.

Thus, the government or state presents the interest of the elites rather than being a mediator among different stakeholders. The government uses the capitalist mode of functioning adopting various mechanisms and strategies to upkeep the development of

the global capitalism model. Being a part of the neoliberal government, the Lebanese elites took part in commoditizing nature; this is called the elitist conservation movement (Makdisi, 2012). The Ottoman registries have used the (*musha'a*) as the description of the communal land. Some elites were aware of the development plans and transformed it into public land then into the private land (Fawaz et Peillin, 2003). There are a lot of civil society activities as “*Horsh Beirut*” or “*Haza al Bahr li*” or “*Masha'a*” that asks for the rights of people to access public areas. For them, public areas belong to the people.

Government property is a state-owned property as a legal entity but customized for the public benefit, whether they are handled by state or were handled by other people. Franchising activities from the 1920s preceded today's privatization. Saleem Bayk Shaker had a franchise over Al Asal spring, honey spring, in Aachqout while he used to live in Egypt and come to Lebanon on visits (Lisan Alhal, 1925). The franchise was dropped by a governmental decree on December, four of 1937 (AlNidaa, 1937).

Another franchise was given for Sheikh Yousef Kasbar to have a hydroelectricity water generation station on Abo Ali River in Qadesha in the north of Lebanon (Lisan AlHal, 1927).

Based on the literature reviewed above, one can conclude that laws are poorly enforced due to, but not restricted to, the following factors:

- 1- The lack of human and financial resources for law enforcement.
- 2- The lack of political will.
- 3- The poor communication between different governmental sectors.
- 4- The inappropriate regulation and procedures.
- 5- Blurred lines, which allow officials to interpret laws to their advantages.
- 6- The patron-client relation gives benefit to both parties. The client mainly offers their loyalty in exchange for a reward.

Environmental governance is a unique political process. This process dealt with biodiversity and other natural assets in addition to the human factor. Myint (2003)

addressed this term and found two underlying parts in which the first part depends on the second. The first is that the governmentally proposed solution for environmental problems should be compatible with the bio- geophysical systems they tackle. The second is whether the administration regulations that are planned to serve human needs fit the political, social and economic context in the political settings they are found in. As a result, environmental governance should address biogeophysical systems and human systems, which makes it a hard task. I will try to break down and analyze the governance process between national and local layers.

Many of the environmental problems are connected to the failure of governance administrations (Nixon, 1995). Environmental issues are complex so the way forward is to define the issues characteristics and level management strategies to tackle these characteristics rather than discounting them.

1. Political Structures

The first Lebanese republic was declared in 1926 and named the Great Lebanon. At that time, Lebanon was under the French mandate that lasted from (1920-1942). The Lebanese current political system was established in that era. Lebanon has three bodies: the legislative body presented by an elected parliament of 128 deputies, the executive body presented by the government chosen by the president and the deputies, a judicial body. Many of presidential roles were taken from the presidency and given to the council of ministers that represents different sects in Lebanon.

2. Administrative Structures

The administration in Lebanon is centralized. The country is divided into six governing areas called *muhafazat* divided into twenty-six quarters called *qadaa*. The head of the *muhafazah* is called *mohafez*, mayor, and the head of the *qadaa* is called *caim-maqam* and both are appointed. Under the *qadaa* there are municipalities; citizens of each municipality elect the members of the municipality council, which they elect the mayor; Beirut municipality is an exception and its mayor is appointed (CIB, n.d).

The institutions involved in the field of environmental policy planning in Lebanon are: Ministry of environment, The Council for Development and Reconstruction (CDR), The Ministry of Social Affairs (MoSA), The Ministry of Interior and Municipalities (MoIM), The Ministry of Economy and Trade (MoET), The Ministry of Agriculture (MoA), The Ministry of Public Health (MoPH), and the Ministry of Energy and Water (MoEW) (ECODIT, 2015) (UN, 2000). The environment was addressed in the different Council of Ministers' statements for the vote of confidence in the parliament. You can find the table of statements in Annex 1.

According to Choucri and Mezher (1994), there are various elements that contribute to the environment deterioration and hindering economic development.

- 1- There is a deficiency in technical skills, professional skills, and managerial skills in different organizations.
- 2- The access to capital is constrained.
- 3- Manufacturing sector is still using outdated technologies that are not

efficient.

- 4- The infrastructure is deteriorating.
- 5- The education system is old and there is no strong link between science and technology.
- 6- Corruption and patron-client relationship.
- 7- The Vocational schools are not well developed.
- 8- There is no cooperation between different governmental bodies.

Most of these problems can be solved by the cooperation of different stakeholders. Employing advanced technology and cooperation in the Technology Triangle is an effective priority in development. According to EPA, there is a crucial need to evaluate continually the development strategy to sustain the environmental quality (Roba, 2012). In addition, there is a need to raise public awareness and public participation by disseminating information needed. Since there are no available research studies on the public participation

and public environmental awareness in the developmental process in Lebanon, I found it as a window to fill this gap. I will be using the IAD framework to do so.

CHAPTER II

RICARDUS HABER AS A SCIENTIST

The scientists use a science-based approach to the problems they face. Ricardus Haber was a botanist and an ecologist. He surveyed, recorded and classified the flora of Lebanon. He also discovered the presence of species that were not recognized before (Seeding, 2006). He did various studies on the ecology in Lebanon. Haber has an interest in protected areas. He had a special interest in preserving wildlife and worked on preserving biodiversity. He tried to gather people and raise their affection toward nature by creating a sense of wonder toward different creatures. As a marine biologist he worked for nineteen years in marine science; in addition, he had a tremendous work on botanicals. He was classified as eco agronomist since he talked about agriculture issues from the perspective of an ecologist (For Economic Support, 2006).

He tried excessively to show the unseen things in a simple narrative as his studies on *Salvia fairuziana* and *Ballota byblensis* when he discovered new flora not

known before and published it in a way readable by different educational levels (Botanist & Plant Author, 2006). Please refer to the table in annex 2 (Books & Writing, 2006) for the works of Dr. Haber. His interest in the environment led to the establishment several NGOs. He had a deep appreciation for natural systems and mainly wildlife. He was working hard to create protected areas in Lebanon.

Some claim that Haber is the father of environmentalism in Lebanon just like people named Rachael Carson as the mother of environmentalism in the USA. However, if one reads newspapers published in the 1930s and 1940s in Beirut, he will find that there was an interest in the environment from that time since it was considered a source of income for farmers, an attraction to tourism, and a place for rest and enjoyment. For example, the government used to test the quality of water in the areas that received tourists (AlSafaa, 1940).

Carson and Haber were biologists fighting human arrogance toward nature. They promoted the institution of grass root movements whose members are citizens

from the general public. Haber like Carson solved environmental problems technically; for more information on how did Haber solved things technically; refer to annex 2 on the section “For Decision Making” from Haber research. Carson used the same methodology in studying the effects of pesticides. At that time, several scientists in the world were affected by Stockholm convention and environmentalism start rising as a moral call. Books were written in that time include “Feminine Mystique” for Betty Friedan, “Unsafe at Any Speed” for Ralph Nader, “Other America” for Michael Harrington, and “Death and Life of American Cities” for Jane Jacobs (Berman, 2000)

Haber was a recreationist. He had widely participated in outdoor recreation activities in areas where nature was untouched and high in biological diversity. He pushed people to discover the purity of nature without harming it. He had preserved the intrinsic value of nature with a degree of instrumentalism.

Haber is one of the pioneers in environmentalism, which can be traced far beyond this in the Lebanese contest. Makdisi (p217, 2012) stated that the pioneer

environmentalists were professional middle classes that are western educated. This pioneerism had ceased over time; now environmentalists no longer work in a holistic perspective. Instead, they react toward problems as they happen rather than working to prevent it. We lack such work on environment and scientists that are the pioneer to work in environmentalism. This is evident especially in the case of climate change since until now the issue did not persuade the environmental movement in Lebanon to mitigate or adapt to climate change.

Haber started his environmental work as a scout in Bhamdoun, his village. From his childhood, he liked nature and used to hike and explore different nature components. He used to collect different soil types and plants seeds; these seeds were planted in other places he could reach (Mirna Semaan, 2015 interview). He organized several camps that some were for one week in villages in north Lebanon where he lectured about different ecosystem entities (Agro-Ecological Camps, 2006). Makdisi (p217, 2012) said that Haber was influenced by scouting and mainly “traditional, and largely apolitical,

scouting virtues based on the exploration of the outdoors and frontiers.” He was affected by the ideas of Robert Baden Powell (In the Troops, 2006). Powell, the founder the Scout association, said, “By continually watching animals in their natural state, one gets to like them too well to shoot them” (Sandell, 1993). Powell had shown that being in contact with nature leads to environmentally friendly behavior, a behavior appeared in Haber from his adolescence.

Haber finished school and continued his studies at the American University of Beirut where he earned a BS in Biology in 1972 (AUB, 2006). At the same time, he was mobilizing a group of friends and established the Friends of Nature NGO (FON) (An NGO, 2006). He established it on Tree day (Abou-Haidar, 1997) and it started at AUB with a big celebration. It was one of the most important celebrations in terms of lobbying and promoting the environment, more than presenting it as a cause or opportunity for recruiting (Mirna Semaan, 2015 interview). The principles of FON were

affected by John Muir ideas so they somehow resembled Sierra Club principles. He remained FON's secretary general from the year of establishment (AUB, 2006).

In 1977, he graduated from AUB with masters in biological sciences with a specialty in marine sciences. Then in 1981, he got his Ph.D. from AUB (AUB, 2006). He started teaching at different universities as AUB, Saint Esprit University, Balamand University, Lebanese University, and Lebanese American University in subjects of ecology, environmental sciences, plant and marine sciences (AUB, 2006). Haber used to take his students on hiking trips. He started the hiking initiative in Lebanon and he inspired having The Lebanon Mountain Trail (LMT) (Mirna Semaan, 2015 interview). Hikes were often organized and it was an exclusive venture to hike with FON and discover remote areas in Lebanon (Abou-Haidar, 1997).

After establishing FON, he started pushing to establish a Ministry of Environment. Under the presidency of Elias Sarkis, Haber had good connections with the politicians at that time (Mirna Semaan, 2015 interview). In 1981, there was the Ministry of State of

Environmental Affairs headed by Kaysar Nasr (MOE, 2012). It was only a one-person ministry. This was established due to the hard work of Haber. The policy window was an “empty chair”. They did not know whom to allocate in the ministry at that time. Haber had circulated the file to different political parties. At that time Pierre Al-Gemayel ¹ had proceeded in the initiative; he did so not because he is the one who was contacted since everybody was contacted but because the Kataeb political party did not

¹ Founder and leader of the Lebanese Kataeb Party and father of two Presidents of the Lebanese Republic, the late President-elect Sheikh Bashir Gemayel and the former President Sheikh Amine Gemayel. (Sheikh PIERRE GEMAYEL, 2014)

have a minister from their party in the new government and they wanted to assign one. Kataeb party took over the file and suggested to have the ministry (Mirna Semaan, 2015 interview).

Haber worked in the field for twenty years. He did a lot of activities and worked continuously on public awareness. When Haber was working, funding was not available as nowadays. Although people did not have environmental consciousness, the damage was minimal. Now there are more NGOs and people care more but the damage is widespread. It was the first time these environmental issues were tackled and the questions raised by people were always. Why? Why are you fighting for the environment? To answer this question, Haber explained the basics for each person. He talked about every opportunity he can. He created the idea. He did awareness campaigns to explain his ideas and his aim was on a national level. He entered a lot of schools and some on a yearly basis to do awareness workshops as Sagesse School and Collège Notre Dame de Nazareth. Although there was a war, he did not stay in one area. He attended

approximately all the schools in all Lebanese areas. (Mirna Semaan, 2015 interview). In 1983, he did a workshop for the women in the “Green Hand club” titled “Planning and implementation to improve the environment in Lebanon”. He found that Green Lebanon is no more green and many of Lebanon’s natural resources are either being polluted or lost. He concluded that the way to get out of this and improve the environmental situation is by educating individuals and raising people’s awareness (Falof, 1983).

Not only he did public awareness but also, he trained the trainers. He trained teachers on public awareness and the use of reserves, social workers on awareness activities, members of Apiculture and fishermen on apiculture and environment, Eco guides on Lebanon flowers and much other training (Traning of Trainers, 2006). He was living in Yasou Al Malak area and went to Tripoli, Bekaa, Zgharta and many other areas. Furthermore, he used to take his visuals, projector, and prepared slides, in his suitcase with him when the use of projector was rarely used. The slides presented biodiversity in different Lebanese areas. He used to take his camera with him wherever

he went, shoot photos of natural elements, documented them it to tell people about the importance of biodiversity and he used to send them to media (Mirna Semaan, 2015 interview).

On April 2, 1993, law 216/93, founded the Ministry of Environment (MOE, 2012) whereas Horsh Ehden had become a reserve in 9/3/1992 by law 121 (MOE/UNDP/ECODIT, 2011), a year before even founding a ministry. This was due to the huge efforts of Haber; this was not haphazardly. Haber made the prototype on the ground and involved the local community in addition to many other steps. In the 1990s, Haber started the constituent step by making a strategy. As a result, Lebanon started having natural reserves (Mirna Semaan, 2015 interview).

The strategy for declaring on Horsh Ehden a reserve was on three levels:

The first step was by working on the ground; researching. Haber did a survey on all the natural assets and biodiversity because he knew how important. Haber hiked most of the Lebanese area. He covered all the expenses from his own pocket. No banks

or international organization used to fund environmental projects as Nowadays. Haber used to go every Saturday to Ehden and study the ecosystem there (Mirna Semaan, 2015 interview) (Two first Reserves. 2006).

The second step was the involvement of local community by awareness campaigns. In an interview with Mirna Semaan Al Haber, Haber's wife, she discussed her husband work and said that Haber started to be present more in Ehden since one of his students had hosted him. Haber did extensive awareness campaigns in which everybody in the community was approached. Haber went to church, schools, cafés and contacted old people and politicians. Local community became aware of the importance of the Horsh they have and the devastating effects of their previous actions. This shows how environmental work in Lebanon should be done. "The Lebanese in general are not responsible, not responsive and committed" (Mirna Semaan, 2015 interview). To reach an end, an environmentalist should persist, insist and keep working in order to create an initiative in people. We are not as other communities that follow what scientists say. For

this it was a long journey and a lot of work was done; it took them one year and a half. People started seeing that they were doing a good thing for them and started wondering who these people who came from another area to talk to them about their area were; they started listening.

After his campaign, people started being more aware of the nature that needs to be preserved. Not because they did not see it before but because it started to have a meaning for them. They started seeing the Horsh as a natural fortune (Mirna Semaan, 2015 interview).

In Ehdén, every summer, café owners used to cover the outer space of their restaurants with a roof made from the twigs of cedars. This was usual and done on a yearly basis. Anyone can go to Horsh and cut as many cedars as they want. Haber spoke with each restaurant owner to understand that the cedar is a fortune for him/her. They used to call the trees *Picea* (tnoub) and did not believe that they were cedar trees. It was evident that people had wrong information. Haber provided them with the right info.

Semaan said, “We say in Lebanon that people who raise goats are the toughest people. They don't care and they don't listen to anybody” (Mirna Semaan, 2015 interview). Haber worked with them to convince them that the Horsh is a treasure that they should protect. He gave them other alternatives for places to graze so they can keep the source of their livelihood; they were ready to cooperate. Their reply was: “Please decide on the important area and we graze in other areas.” Haber decided on the area that should be reserved which was later named as Horsh Ehden. People cooperated with this and promised to reserve before having a law. If there was a law and they were not convinced, they will graze. (Two first Reserves. 2006) (Mirna Semaan, 2015 interview).

Haber decided that he should do further steps. Haber worked with civil society, which can be in the long term. To secure the long term reserve of the Horsh should have a legal base. Thus, the third step was legislative conservation (Two first Reserves. 2006). There was no description where and how to submit an environmental law. Haber worked and prepared a law draft. It had the requirements that are wanted today; it

included the survey of biodiversity, preambles and law draft; this was the package. Preambles were not required but Haber worked on it. The draft law was submitted to the ministry of justice. It was the first law draft to protect a natural area in Lebanon; here started the conflict and suffering. Haber started calling the ministry's employees every two days asking for the fate of the file. Some employees did not understand the issue of natural reserves and threw the file in the trash. Haber repeatedly submitted it several times. After six months, the Minister of Justice Khatchig Babikian heard Haber shouting in the ministry and came to investigate after which he knew about the file and took it (Mirna Semaan, 2015 interview).

Babikian had seen Serengeti ecosystem in Kenya (First Nature Reserve, 2006). Its' area is double of Lebanon's area. He knew the importance of natural reserves, which is why he took the issue seriously. Then Babikian passed it to the council of ministers then to the parliament (First Nature Reserve, 2006). Haber started talking to the ministers and lobbied them. Most of the deputies were lobbied in order not to reject the law. The law

was issued in 1992 as Haber wrote it; nothing was changed (Mirna Semaan, 2015 interview). His work typically is the work that is done after RIO. Laws and institutions are being developed as a response to serious environmental problems. Liberal environmentalism institutionalizes norms and this is what we find in Haber case study. Haber way of protecting the environment, promoting it, planning for long-term maintenance, making a law and maintenance of a liberal economic order.

Not only did he work on Horsh Ehdan Reserve, but also he pushed for Palm Island Nature Reserve which was included in the same law; Law 121. He lobbied for both. He followed the same scientific procedure for identifying and preserving the Palm Island (Mirna Semaan, 2015 interview). Palm islands are three islands named Nakhel (Rabbit island), Sanani and Ramkin (MOE, 2006b). Haber researched the islands and the nearby seawater. He studied the flora and recorded his findings. After researching the inhabitants, he started his awareness campaign to show the real value of the island to the general public. The same procedure of using audiovisuals used in Ehdan was used in

Palm islands. He targeted the general public and school students (Two First Reserves, 2006).

His dedication to his work attracted the youth to be involved and convinced the citizens on the importance of cleaning the island's beach from garbage. In addition, he worked on the reduction of rabbits' population, which ruined one of the islands' ecosystem. At the same time, Haber prepared the preambles with the Attorney Zakhia and the files were submitted with those of Horsh Ehden as one document to the Ministry of Justice. This was the reason for having them both declared in the same law (Two First Reserves, 2006).

His work did not include only having natural reserves, public awareness and hiking with FON but also he took preventive measures as cleaning campaigns for sea and forests (Mirna Semaan, 2015 interview). "For 20 years he had created public awareness; for that, he is the father of environmental movement in Lebanon" (Mirna Semaan, 2015 interview). Qannoubine valley was the ninth site to be registered as

World Heritage Cultural Landscape in UNESCO. Haber had dedicated two full months to photograph it and prepared audiovisuals in which he presented at the ‘World Heritage Global Strategy Natural and Cultural Heritage Expert Meeting’ that took place in Amsterdam from 24 to 28 March 1998. He negotiated and showed that the valley fit the criteria. Accordingly, other countries’ delegates were convinced and the classification of the valley was approved (Holy Valley, 2006).

He worked on eradicating *Thaumetopoea Wilkinsoni* Tams from pine trees. It was a scientific campaign that gave positive results. His method was to open the worm nest during a certain time in the year so the caterpillar would die. He taught people how to get rid of it rather than shooting it. Some areas were hard to clear during the first year since there were a huge number of *Thaumetopoea Wilkinsoni* Tams worms. Worms on high twigs were hunt while infected lower twigs were cut. There were people taking part in these campaigns, which used to investigate sites and knew that the campaign succeeded (Mirna Semaan, 2015 interview). Haber used to do sit in to stop cutting trees.

Before, in 1985, there were Eucalyptus trees on both sides of Al Daoura highway. They wanted to cut them so he arranged a sit in on the highway.

His dedicated work built people's trust in him. They started to come to him for help. For example, in 1992, people of Batroun Caza approached him to communicate with the government on environmental hazard threatening their health; in addition, locals of Hardeen and Beit Kassab consulted him to know the impacts of a quarry project that was planned to be built in their area (Decisive Reference, 2006). In 2005, the locals of Kfarhata village approached Haber to stop timber cutting in the oak forest in their village. Haber gathered information on the forest's biodiversity and documented it by photos then lectured the village about the importance and value of the forest. He saved the forest and saved the future of the people there (Awareness Case-Related, 2006).

Haber had huge expectations about the scientific approach's ability to be objective. For him, science was the information source for decision making in the

management of natural resources. Haber refused to take any political position even though he was offered to be the Minister of Environment. He refused to be used as a cover for their agreements. He lived and died as a scientist (Mirna Interview, 2015).

CHAPTER III

CONCEPTUAL FRAMEWORK: INSTITUTIONAL ANALYSIS AND DEVELOPMENT (IAD) FRAMEWORK

Ostrom had worked hard on the commons' topic. Her work was not merely concerned with economic aspect, but also, she had an ecological consideration. Her work was a challenge to neoliberalism and a reference to different case studies from around the globe. She showed that cooperation tends to fail as a counter argument to neoliberals who view corporate ownership as an ideal state. She also presented the new approach that the society and economy can be controlled democratically, which is a challenge for neoliberals who permit privatization only. She insisted on the importance of culture and institution, and that one can find from both alternatives to neo-liberalism. Although Ostrom's ideas are radical and pragmatic, her focus was on practical problems rather than theories. She made an eight-designed feature to apply on commons. She called for the participation of cooperators in the formulation of the rules meant to construct the commons. Participation in making rules will make individuals regulate

their use of common resources and respect the rules. Rules can be implemented if they are clear, and the implementing institutions are transparent. Ostrom promoted the seven-generation rule of indigenous Americans to support her argument on the necessity of having ecological sustainability through implementing the concept of social-ecological systems (Ostrom, 2009).

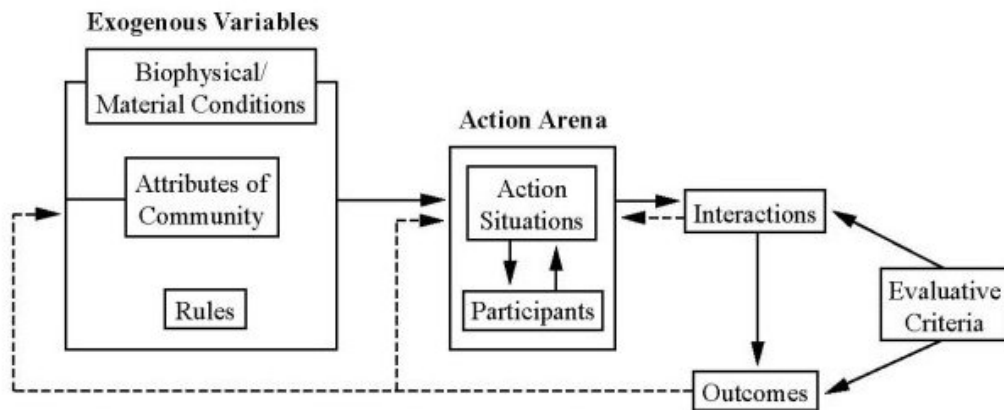
Hardins (1968) example of common pool resources shows that people are doomed and prisoned in the social game. Since researchers assumed that no one owns common pool resources, it was concluded that the government is responsible for saving these resources from destruction.

IAD framework will help to identify the common variables in the case studies to be discussed (Ostrom, 2009). IAD framework defines institutions as: “who use the term to refer to the rules, norms, and strategies adopted by individuals operating within or across organizations” (Ostrom, 2010, p2). Thus, they are invisible and shared concepts

rather than a concrete entity. This means that a researcher needs to utilize various disciplines when using this framework.

This framework allows the researcher to study the cases on different levels as a puzzle. The problem is divided into parts, analyzed and then the pieces are put together. The macro level focuses on constitutional structures and the micro level focuses more on operational-level decisions (Ostrom, 2010). This framework is able to study different variables such as government agencies, markets, NGOs, and households in different institutional settings (Ostrom, 2009). The figure below illustrates the IAD framework for institutional analysis.

Figure 1: The IAD framework is a multi-tier conceptual map.



The first step will identify the action arena, which embraces actors and the action situation. The action situation is determined by seven groups of variables: participants, positions, outcomes, action-outcome linkages, the control that participants exercise, information and the costs and benefits assigned to outcomes.

IAD allows us to test the hypothesis about the actors' behavior in various situations and on multiple levels. Individuals can make decisions on operational situations or other levels that affect the decision-making process. The incentives that the individual has, affected the resulting outcomes (Ostrom 2010) (Ostrom et al, 1994).

Researchers had used the IAD framework to analyze a vast number of common pool resources case studies worldwide. IAD helped them also to understand human interactions and outcomes. This helps us predict the outcomes of any conflict on common pool resources and predict how to solve it which will allow us to set a hypothesis about the type of environmentalism that suits Lebanon. Studying the following helps in predicting: characteristics of the actors' involved, available information, action options, and cost-benefits analysis (Ostrom 2009) (Ostrom et al, 1994).

This framework helps us in performing meta-analysis for the common pool resources case studies in Lebanon. It will act as a guide to understanding the collective actions decisions. The IAD will allow us to identify variables that capture the political processes and the relation between them (Warner, 2015). This framework is ideal to study the policy option of the two natural reserves case studies. It acted as a guide to understanding the collective actions decisions and helped to define the rules used by

Haber to have authority to impact collective decisions. The IAD framework helped in understanding how the governance system in Lebanon allows individuals to solve the environmental problems. The literature review and the accumulation of empirical studies helped in the assessment of the environmentalism in Lebanon. In Beirut greater area there is a tremendous increase in land price after the war. At the same time, people have been receiving social services from outside the government especially political parties. This makes them affiliated with these parties that are from their sect. Moreover, the move of large groups to Beirut to take part in the development work after the war led to an increase of lower middle class and poor people in the city which lead many people to use Masha' common property and increased the problem of land property in Beirut. At the same time, the government has adopted a neoliberal policy making which increased the gap between the elites and citizens. So between “placemaking” and the “right to the city” the case studies discussed are stuck.

The one-size-fits-all approach to environmental governance had many shortfalls (Ostrom 2007). The awareness sessions and bureaucratic attempts to manage environment have been reactive and unable to cooperate in different circumstances. To solve this, we can have comanagement, an approach that link centralized and decentralized forms of governance (Whaley et Weatherhead, 2014).

The table below presents the Relationship between the politicised IAD Framework and (adaptive) comanagement. It is adopted from a study done by Whaley et Weatherhead (Whaley et Weatherhead, 2014).

Table 1: Relationship between the politicized IAD Framework and (adaptive) comanagement.

Exogenous Variable	Description of Variable	Relationship of Variable to (Adaptive) Comanagement
Biophysical and Material	Ecosystem conditions, resource attributes, and forms of technology. In the action situation this	Environmental feedback caused by changes in ecosystem or resource dynamics can trigger

	variable affects what actions are possible, what outcomes can be produced, and what is contained in the actors' information sets.	collective action, where certain properties of the resource and the presence of technology are known to affect the ability of actors to self-organize. Particular forms of infrastructure, e.g., large and centralized or decentralized on an appropriate scale, are also indicative of the type of governance arrangement, e.g., top-down or polycentric, and thus the potential for comanagement to emerge.
Political-economic	A contextual variable concerned with the overall political economy of the system in which the action situation is embedded. In particular this variable positions participants in the action situation, and shapes their values, norms, and preferences. It	Comanagement networks are embedded in the wider political economy, which shapes power relations, structures cross-scale interplay and network characteristics, and influences the forms of power sharing, trust building, and rule crafting

	strongly influences the distribution of power between stakeholders.	that emerge. These attributes in turn affect processes of problem solving and social learning. The structural influences of the political economy do not affect local environmental conditions directly but are mediated through the institutions and organizational characteristics of the comanagement arrangement in question. The political economy is a “slow variable” that strongly shapes overall system trajectory
Discourses	Gives meaning to the physical and social world, and can be used to sustain or challenge existing power structures. In particular, this variable positions participant in the action situation, and	Environmental crises, which often serve as a trigger for comanagement, are not an objectively definable state of the world but instead are constructed and negotiated by stakeholders through

	shapes their values, norms, and preferences.	the use of particular discourses. Discourses also operate to sustain or challenge power relations between participants as certain discourses become normalized or are undermined, and by positioning the actors in the action situation according to particular storylines. They are also vital for developing and maintaining the institutions that enhance collaborative and learning-based approaches. Discourses therefore provide a critical approach to understanding power-sharing arrangements between participants in the comanagement process.
Rules-in-use	The set of rules “to which participants would make reference if asked to justify and explain their	Rules can operate to make a system of resource governance rigid and vulnerable to change, or

	<p>actions to fellow participants” (Ostrom 2005:19). Rules-in-use both enable and constrain human behavior by stating what actions are required, permitted, or forbidden. They affect all elements in the action situation.</p>	<p>flexible and dynamic by facilitating communication, negotiation, conflict resolution, problem solving, and joint learning within and between scales of organization. Enabling legislation at higher levels can encourage selforganization and the process of adaptive comanagement, while locally devised rules can enhance social learning, tighten environmental feedback loops, and increase the adaptive capacity of resource users. Rule changing allows participants to alter a system’s trajectory and to institutionalize social memory.</p>
Attributes of Community	Physical attributes of the community, such as the number of participants,	Physical attributes of the community affect the ability of stakeholders to

	<p>and their gender, race, and age. Cultural attributes, including the systems of norms, values, and beliefs that structure the participants' understanding of the world.</p>	<p>selforganize; for example, the size of a group alters stakeholders' incentives to act collectively, and differences in race and gender may affect power relations and levels of trust between participants. Particular functions of individuals, including acting as leaders, knowledge carriers, or networkers, are known to affect the process of adaptive comanagement. Furthermore, cultural differences or similarities can greatly influence the ability of a comanagement arrangement to emerge by undermining or enhancing trust and social capital, and the ability of participants to communicate, jointly learn about, and act in response to changes in social or environmental</p>
--	---	--

		<p>circumstances. This variable also allows the analyst to explore the relationship between comanagement networks and the larger cultural systems in which they are embedded.</p>
--	--	---

Analyzing the political-economic context shows how power is distributed between different actors in management arrangement. The analysis also helps in developing trust and power sharing. Defining the action situation according to management activities draws attention to organizational level responsible for decisions. The main concern is the action situation is where management decisions take place, which is with the participation of actors at the collective-choice level (Ostrom, 1992).

After using the IAD framework to determine the elements and the relation between them, a theory is needed to identify which elements are relevant to the discussed case studies. Common pool resource theory (CPR theory) is a micro level theory compatible with IAD framework (Ostrom, 2009). Much of the empirical and theoretical work under

the IAD framework was done using the CPR theory (Ostrom, 2009). Researchers had formulated CPR theory as ‘package of knowledge’, (Saunders, 2014, p 638) for natural resource management. The theory had guidelines to community-based natural resource management, which support policy interventions. The CPR theory helps researchers understand the types of rules that make institutions successful; moreover, it helps in understanding why individuals get involved in collective actions that support institution to cope with common pool resources problem (Ostrom, 1990, xv).

Scholars had identified variables that IAD framework had developed or built upon in the process of assessing the conditions that raise the collective action on common pool resources. Ostrom (2009, p90) identified eight design principles for successful CPRs governing institutions: clearly defined boundaries, congruence between appropriation and provision rules, collective-choice arrangements, monitoring, graduated sanctions, conflict-resolution mechanisms, minimal recognition of rights to organize, and nested enterprises. Ostrom (1990) stated that she derived the principles of

commons institutions from the endogenous institutions since the latter were able to manage common pool resources successfully. From the angle of public policy, the focus will be on design principles. The advocates of CPR theory debated that spending more time in drafting better rules helps in managing it (Ostrom 2002). This theory is a powerful tool to be used because it informs policy. The unit of analysis is the individual. It tries to control or explain the rational choices of the individual (Saunders, 2014). Since using common pool resource is done by a group of people or an individual, this makes it hard to eliminate beneficiaries from using the resources. CPR theory stresses on a voluntary change that supports collective action. The challenge is to be able to find individuals that are ready to volunteer their resources and time to set the rules that coordinate the use of common pool resources. Appropriators then revise, advise, implement and enforce these rules. CPR theory hypothesizes that a collective action at the local level can be achieved if rules were designed properly. Change can be done without challenging the power structure of the country (Ostrom, 2009).

This thesis used CPR theory in investigating the features of a successful natural resource management of the common pool resources case studies in Lebanon; in addition, building upon Ostrom Design principles to operationalize the characteristics of the management of the case studies to generalize it on the national context.

A. Research Question

To meet the objective of the study in identifying the type of environmentalism that is suitable to the Lebanese context, the following research questions are asked: what are the different types of environmentalism? Which of these types have been applied in Lebanon? What is the best approach that was used in Lebanon?

After identifying Haber's environmental approach as the best one, the following questions were raised: To what extent has Haber's liberal science-based environmentalism succeeded or shaped the environment in the case of Lebanon? How did Haber affect the environmental movement in Lebanon? Why was this kind of environmentalism successful?

B. Methodology and Data Collection

B.1 Case study

Yin's (2003) defines case study as "an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident" (P.13) Yin (2003,) describe the case study method by "The case study is preferred in examining contemporary events but when the relevant behaviors cannot be manipulated". (p. 7). Stark and Torrance (2005) propose that case studies "engage with and report the complexity of social activity in order to represent the meanings that individual social actors bring to those settings and manufacture in them" (p. 33).

The case studies I choose demonstrate the beginning of environmentalism in Lebanon in addition to two recent ones. They help in exploring the settings and discourses that affected the environmentalists' capacity to affect the planning decision.

Case studies can either generate or test a theory. I am using this method to generate a theory concerning the path to environmental public policy in Lebanon. George and

Bennett (2005)² propose “for most qualitative researchers, the development of a coherent theory itself is of primary concern, not necessarily whether the findings challenge hegemonic wisdom or whether findings adhere in all or even most cases at the time they are studied” (Baxter, 2010). Flyvbjerg (2006) stated that a researcher could generalize from a case study if it was well chosen. The chosen case studies will help us in generalizing the broad idea about Lebanon.

² Cited in Baxter, 2010, p. 95.

A case study method articulates various instruments to answer the research question. It can use the survey instrument and the collected data as part of the case study database (Flyvbjerg, 2006). The researcher following this strategy does not have control over the case study events. Yin (2003) stated three conditions to choose the suitable approach: type of research question, the extent of the researcher control over the event, and the time in which the event had occurred.

The two cases done by Haber will be discussed in details in the next chapter. The researcher has no control over the events of the cases. This research studies the environmentalist's participation in the planning decision-making processes and environmentalism in Lebanon. This is new to the literature in the Lebanese context.

I described different case studies in a separate chapter in order to compare them. The case studies helped in identifying the governance patterns in Lebanon. The analytical focus on the case studies is horizontal, between sectors. It shows the collaboration and communication between diverse managerial levels, and the

involvement of local stakeholders during decision-making processes.

B.2 Interviews

The interview method helps in grasping the theme and ideas discussed in the literature by seeing how it is applied. At the same time, the life experience of the interviewee is added which widens knowledge and allows knowing how really things are working on ground (Zhang et Wildemuth, 2009).

This is a qualitative study that relies on data collected from semi-structured interviews with people involved. I conducted fifteen in-depth interviews with people who were engaged in the case studies, environmentalists, Haber's friends, academics, and researchers in the domain and policy area.

The questions were asked to understand each interviewee point of view in regard to environmentalism current situation in Lebanon; in addition, participants explained case studies they took part in and their evaluation for the implementation and outcome; these were the evaluation criteria. Questions asked about decisions made and outcomes

relating to policy planning were inspired by the rules from the action arena in the IAD framework. Participants were asked about their experience with the discussed case studies. In each case study, interviewees were from different sectors, which allowed seeing the subject from different perspectives; they were not classified per case study. Questions about their knowledge on other case studies and their overall evaluation were asked. Interviewees were non-governmental and from governmental organizations

Clearance from the American University of Beirut IRB was obtained prior to interviews. E-mail addresses for the interviewees were gathered from the Internet in addition to a snowball technique that was used to get more interviewees by asking interviewed people for additional contacts. Interview candidates received an e-mail outlining the research, ethics clearance, and their participation, in addition, to an attached flyer to be circulated.

The interviews were audio recorded and transcribed, permission from the interviewees was obtained previously. In this thesis, data collection was from the series

of qualitative expert interviews and from the research of primary and secondary documents.

CHAPTER IV

CASE STUDIES FROM LEBANON

The sea area in Lebanon undergoes the article 23 of the Legislative Decree No. 144/25 which states " Public domain of the State of Greater Lebanon and the State of Alawites include all the things prepared by its nature for the use of the public or for the use of public interest. It is not sold or gaining ownership over time" (Legal agenda, 2015). If someone infringes on the public area then the public prosecution will be

responsible for accusing him of a crime, and thus subject to the Criminal Code, in particular, articles 257 and 737 and 838 (Maalouf, 2010). Legislative Decree No. 15403/1964 (amended Article 23 of Decision No. 144/1925) applies to the public domain of the State. It provides that, for each category of properties, decrees shall determine penalties due in the event of a violation of regulations applicable to the public domain. It also provides that the State is entitled to compensation in addition to the destruction of works undertaken illegally.

An estimation of 876 thousand square meters of public property area is operated by 94 private entities as companies or institutions or individuals, which is illegal. In 2009, the council of ministers agreed on a “comprehensive plan for land use” but still it is not implemented. This is due to non-agreement on a national level (Maalouf, 2010). For example, a Lebanese private company has contracted to invest in the St. George port for 50 years (Thabat, 2014). Going back by history, you can find a project for of land reclamation (sea) from Al Mdawar till the Beirut capital from the direction of

Beirut River (Al Bayraq, 1943c). So there is a historical accumulation that needs a holistic solution.

The problem remains in the lack of a national agreement expressed within constitutional frameworks in the Council of Ministers. Council of Ministers in its resolution number 48 dated 12/22/2005 tasked the Council for Development and Reconstruction to seek funding for the preparation of a master plan for the Lebanese Beach in collaboration with the Ministry of Public Works and Transport. The Council had prepared since 2006, in coordination with all the departments concerned, according to Council sources, reference controls for the preparation of this master plan and continued with several parties to find funding for this study. Many entities promised to follow up the work and secure continuous research and funding but nothing is working on ground (Maalouf, 2010).

Here are some of the provisions in the ministerial statements on public areas in

Lebanon:

- 1- To reconsider the subject of investment in public lands, particularly the marine ones (from the ministerial statement, 1992) (Solh, 1992).
- 2- The increase in imports by improving taxes collection ... and working allowances of public property (from the ministerial statement, 1992) (Hariri, 1992).
- 3- The government will work to address the encroachment on the maritime public property (From the ministerial statement, 2004) (Karami, 2004).
- 4- Given the importance of maintaining the Lebanese coast, which is great wealth for Lebanon, the government will seek cooperation with the Parliament to reorganize so as to ensure the rights of the Lebanese people, and to address the problem of irregularities on the public marine property (from the ministerial statement, 2008) (Siniora, 2008).

- 5- Maintaining the Lebanese coast and take measures to address the problem of irregularities and infringements on sea property in order to preserve the rights of the Lebanese (from the ministerial statement, 2009) (Saad, 2009).
- 6- Benefit from the property such as oil, water and marine and fluvial public property and the country's resources ... and work to speed up the approval of a project addressing infringements on sea property law (ministerial statement, 2011) (Mikati, 2011)

During the Lebanese civil war, many infringements on public areas occurred and some continued after the war (Legal Agenda, 2015). The most famous cases on the marine public property are Ramlet Al Bayda and Al Dalieh.

A. Ramlet Al Bayda

People from the poor suburbs of Beirut and from Palestinian refugee camps go to Ramlet Al Bayda Beach, especially on Sundays. It is the last free public place in Beirut and people may lose it (LBCI News, 2012). Ramlet AL-Bayda beach is constituted of three real estates that have an area of 28 thousand square meters. These real estates have been sold several times and the latest owners asked to build a fence to protect their property (Majid, 2014).

Ramlet Al Bayda is a sandy beach located within the "Tenth Region", which is a natural area rich in biodiversity and cannot be built on (Daliet Beirut social, environmental, legal aspects, (n.d.)). The beach became public in 1983 by a municipality decree during the governing of Shafiq Alwazan (Dictaphon, 2012). Decree 4810 was a way to benefit privately from beaches and this was finding loopholes in laws (Dictaphon, 2012). Now, Ramlet Al-Bayda Beach is considered a private property, which is against the law that classifies sandy beaches as a public area. Rafic Al-Hariri

had bought most of the real estates on the beach in order to built resorts (LBCI News, 2103) (Dictaphon, 2012). Hariri suggested solving the problem between the government and the private owners of the real estate by renting it and if the state needed these lands for any reason it can own it (Legal Agenda, 2015). Having the whole area owned by a businessman that is a politician and an elite will allow having a big investment project and people will not have the power to stop this (Dictaphon, 2012).

Municipality owned one real estate, in that area, and it is suspected that Hariri had bought it since it was the only part he still did not own and if he did not buy it he would be unable to build his project. There is no proof of this purchase since the real estate department did not allow them to get a real estate description for that real estate (Dictaphon, 2012). According to the executive director of the Nahno Association, Mohammad Ayoub, “80% of the Ramlet Al-Bayda area is a private property” (Al-Akhbar, 2014). Ayoub talks about the worries of losing it as a public and free area since the Lebanese cannot know when the owners decide to invest in this area and none can

prevent them (Nahle, 2015). On the other hand, Al-Askar, a member of the Beirut Municipality Council confirms, “Building is not allowed on the beach of Ramlet Al-Bayda and that any investment of private land must obtain a license from the municipality” then he added “that private property should not negatively affect the utility of the public" (Al-Akhbar, 2014).

In February 2014, Nahnoo launched a “Ramlitna Bayda” campaign, in which they asked the Municipality of Beirut to act quickly to correct what went wrong in selling the beach real estate by compensating those who by having the municipality re-own it because it is a public area. The head of Beirut municipality attended Orbaat Ayoub in 2015, which is an annual festival for the people in Beirut celebrated on Ramlet Al Bayda, and announced that the municipality is trying to buy the real estate and return it to the people (Farfour, 2015). Khattar, a lawyer, asked to follow the legal process from the beginning, trace how this public land transformed to private land, and the type of legal papers owned. For him, it is prohibited to own these areas privately.

Njeim, an activist sees that the private owner should hold the responsibility of buying the land since he knows that he is buying an area that it cannot be owned privately.

In a Ketab, legal letter, from the Mohafez Shabib to the engineering department at Beirut municipality on 06/08/2015, Shabib refers to the first article of Legislative Decree No. 144 / Q on 10.06.1925 that determine public property as «all things that by its nature prepared to the use of public or for the public interest, cannot be sold or gained ownership over by time », and according to Article 2 of the Act the area of the beach that is covered by sea water is considered a public property. On the other hand, Urgent matters Judge in Beirut, Zalfa Hassan issued on 04.09.2015 two decisions under the legal provisions that govern the issue of individual and private property protection to close the entrances of three properties in Musaytbeh real estate area (one related to the closure of the entrances of the two properties 4026 and 4027 and other related closure of the entrances to the property 2369). These properties constitute a large part of the popular free public swimming area at Ramlet Al Bayda beach, and, therefore, that the

closure of these entrances will prevent people from free access to the beach, a right enshrined in laws and regulations (Farfour, 2015).

Till now the issue is not solved, neither the municipality re-owned neither it nor the private owners were able to build on *it*.

B. Al Dalieh

AL Dalieh is a small land between Ramlet Al-Bayda and Al Raouche. For 50 years, it was used by fisherman to secure their livelihood and by poor people as a free entrance to the sea. In 2007, in one day, the Al Bahr Al Ikari Company owned by Rafic Hariri bought all the shares of the Real estate number 1113 (AL Daliyeh) so it became the monopoly owner of the area there. Rafic Al-Hariri had bought most of the real estates on the Dalia in order to built resorts (LBCI News, 2103). NGOs and activists

formed “The Civil Campaign for the Protection of Dalieh el Raouche” (Daliet Beirut social, environmental, legal aspects (n.d.)).

Recently they put a fence near the Dalieh, one of the last open public areas in Beirut. The president of the municipality of Beirut said that the area is privately owned and they have no control after the handrail since it is under the Lebanese government’s authority (Majid, 2014). According to the real estate description from the 1940s, it is not allowed to build on the Dalieh. Under the article 19 in decree 14914, the allowed rate of investment is 1% and restricted to sport and entertainment infrastructures that should be less than 4 meters high. The network of businessmen and politician led to having two articles in the laws that approve big investments in the area. The first is that the ratio of investment, one percent, increases to ten percent if a company makes investments. The second lies in the 402 Act of 1995, which allows doubling the investment factor if the area exceeds of 20 thousand m² (Dictaphon, 2012). In other words, any investment on

Beirut beach must exceed tens millions of dollars which mean only big investors with big projects are allowed to benefit from the area.

The activists are still fighting to get the Dalieh back but till now the fence is not removed. In a comparison between Ramlet Al Bayda and Al Dalieh, the activists were able to protect the Ramlet for the meantime since none knows what might happen after while they failed to do *in the Dalieh*. Laws were amended, decrees were issued and they protected infringements on public areas. This shows the corruption effect on environmental policy planning in Lebanon.

C. Al Sannayeh Garden

Al Sannayeh garden is a twenty-two thousand meters square green area in at the middle of Beirut. It has a nice fountain, walking and running trails, benches, children playground, which make it suitable for all ages (Fleifel, 2009). Al Sannayeh Garden is also called René Moawad Garden (Salameh, 2014).

The ottoman Sultan Abdel Hamid (1876-1909) respected the citizens of Beirut, liked them and used to ask the magistrate of Beirut to take care of them. Therefore, he asked his magistrate Khalil Basha (1904-1908) to manage with Beirut municipality and some public entities to have a school that teaches Beirut's citizens careers, music, accounting, languages and other subjects. 35.842 meters square were cut from the area for the garden that was built in 1907 and magistrate Khalil Basha planted the first Willow tree in the garden in 1907 (Halack, 2014) (Tawk, 2014). The garden got its name from the nearby vocational school. Some of the real estates were donated to the garden while others the ottoman government had taken it forcefully from its owners (Halack, 2014). For example: in 1908, Al Tabbara donated some land to the garden, (Al Kantar, 2009) (Fleifel, 2009).

Since some lands were taken by power by the Ottoman Empire, some owners had raised a case against the Lebanese Republic (Halack, 2014). The court's decision around the ownership of a real estate in Al Sannayeh garden stated that Mr. Anton

Sayyour owns it during the Ottoman era to the years of the French mandate. Then the ownership was transformed to his heirs who sold this property during their stay in Germany in 1919 for a German man named Horst Wenber, who sued the Lebanese Republic to recover the property. But it turned out to the reading of the second judge in Beirut that the court decision did not deny the Wenber ownership; it stated that the Lebanese government owned the real estate for one reason which is that the heirs and Horst Wenber did not follow the case in the court and applied a review or a rejection during the five years after the court decision. Thus based on the laws, after the five years, all the disputed property that the owners do not follow is owned by the State of the Republic of Lebanon (Halack, 2014).

Below is the properties document (al wathiqā al ikariya) for the garden (Halack, 2014).

Table 2: The properties document (al wathiqā al ikariya) for the Sannayeh garden

Real estate Al Sannayeh garden - Property area (21.894 m2). It was obtained on 07.23.2013	
Property Description	Garden containing two ponds and two rooms of residential stones.
Property Type	Land based
Right of utilization and Easement	Easement planning for the benefit of municipal public property.
Number and date	2474 Date of 06/15/1936.
Ownership	The basis of the property (ownership, disposal, and a judge's decision) real estate property under the judge's decision No. (2474) June 15, 1936 is owned by the

	Lebanese state Republic, (2400) shares.
--	---

So AL Sannayeh garden is owned by the Lebanese republic and utilized by the municipality of Beirut.

Al Sannayeh garden appeared in many literature works. There was a play by Rogeh Assaf and a novel named Matelda building (binayet Matelda) for the writer Hassan Daoud based on a real story happened in the garden when a man called Ibrahim Taraf killed a woman called Matelda El Helou and her son, cut them into pieces and threw these pieces near the garden. At that time, people got angry and the criminal was hanged in the garden (Al Kantar, 2009) (Fleifel, 2009). The Al Hamadiya fountain of Sannayeh garden was the settings of a story written by May Manasseh; accordingly, people started throwing the Manasseh flower in the fountain's water, a tradition that is

still living to these days (Salameh, 2014). This shows that Al Sannayeh was a muse to many intellectuals.

Al Sannayeh is important in Beirut not only for its historic value but also for its beauty and for being the only green between cement buildings. Trees and flowers are from the outer fence which is from Hawthorn trees with its red fruits to the Al Hamadiya fountain where there are floating flowers. In May, the Bonsayana trees bloom its red flowers and Jacaranda trees with its violet flowers grow in October. (Al Kantar, 2009). The Jamiat Al Hadaeq, the gardens association, had maintained Al Sannayeh and administered some works in it (Fleifel, 2009). The garden beauty is attractive to many activities.

A lot of activities started taking place after 1992. In 1993, The Lebanese Association for Plastic Arts, Ashkal Alwan was initiated there. Between 2000 and 2005, the Khiam Rehabilitation Center for Victims of Torture used to do gatherings in it on the day of Monahadat Al Ta'zeb, Against Torture. Daily, old men played board games, lovers met

in the garden, (Al Kantar, 2009), people listened to music near the fountain where there were ducks swimming (Fleifel, 2009), children rent bicycles from a nearby shop and rode it inside the garden, schools did planting activities in it and Scouts did festivals (Al Kantar, 2009). From all ages, people came to the garden since they found serenity in it. In 2006, the Israeli started a war on Lebanon and people were displaced; three hundred people lived in the Sannayeh garden.

In 2009, Beirut municipality decided to transform a big part of it to a cars parking (Al Kantar, 2009) (Fleifel, 2009). People used social media as Facebook to communicate their opposition to transforming the park into parking. They scheduled a demonstration that they later canceled after the municipality council stopped the transformation project. Abdel Moneam Aris, the previous head of Beirut municipality, said: “they will take locals’ opinions before thinking seriously of other options

regarding the garden.” He added that the municipality would work in maintaining all the gardens and increasing the green areas in Beirut (Fleifel, 2009).

The garden and due to its deteriorating situation, it was renovated by a private company called Azadea funded Azadea Group Holding (Salameh, 2014). It was opened on May 31, 2014. Most of the garden is built for children activities (Khalifeh, 2015). It was transformed into a new garden on the European standards (Azar, 2014). Some of the old trees were kept. A larger number of new trees were planted and some of them are not found in other gardens in Lebanon as Alparkin Sanyo, Jacaranda, Aalrterana and Aolcaccia (Khalifeh, 2015). The first part of the project was restoration and the second is maintenance (Azar, 2014). The renovation project’s cost was \$ 2.5 million, (Salameh, 2014), and the cost of maintenance is 200 000 dollars per year. Azadea will maintain it to for ten years but the garden is under the supervision of the municipality (Tawk, 2014). All that can cause damage to the garden as barbecue, hookah, cutting flowers and trees or swimming in the water fountain is prohibited. The garden will be

closed at night, as it becomes difficult to control security at that time (Azar, 2014). Now the garden is open to different social and educational activities. It now has safe playgrounds, tracks for running and tracks for bicycles (Salameh, 2014).

The civil society used social media and succeeded in saving a public area. A significant transformation was done to the garden and it remained an open public area. The government was unable to maintain and it is under the control for a private company. The owner of this company is the son of the previous Prime Minister Fouad Al-Siniora. The civil society was able to benefit from the elites and politicians network for the benefit of the public. Hopefully, the coming years don't hold surprises.

D. Toxic Waste

Some people made money by importing toxic waste to the country in the civil war. According to Darwish, the Normandy, which is a domestic landfill, contains toxic waste. Solidere, a private real estate company that operated in Beirut center, now owns

this landfill. Rizk states that Linor, dumping area in the north of Beirut, contains poisonous and domestic waste (Chevallier, 1998).

The Lebanese forces party had been paid twenty-two million dollars to dispose of 15,800 toxic waste barrels in Lebanon. Barrels were buried in landfills and dispersed in different areas in Mount Lebanon. This led to many cancerous cases and deaths.

In 1987, Al-Hashem, the health minister, asked some scientist to form a team and investigate the case in which Dr. Pierre Malychef, Dr. Wilson Rizk, and Dr. Milad Jarjoui were members. Their investigation proved that barrels of toxic waste were dumped and burned in public waste sites (Sidahmed, 2015).

In 1987, Malychef was responsible for examining 2,400 tons of toxic waste that were sent by an Italian company to be dumped in Lebanon. There was an estimation that the company paid between twelve and twenty-two million dollars for dumping

them. He found barrels with marked "Seveso Italia" and contain clothes, which Malychef believes, were worn during the decontamination of Bhopal (Chevallier, 1998).

The political elites did not take serious steps concerning the disposal of toxic waste. Waleed Jumblatt, a Lebanese politician and the Leader of the Druze sect, said, "There are (waste) barrels on land and in the sea. Lebanon, like all Third World countries, is a garbage dump". Saade also bought a piece of land in Laqluq in the Kisrwan Mountains to dump more barrels if needed. Even Samir Moqbel, who was the minister of environment and a member of the Higher Relief Council, was accused of covering the scandal. He ignored all the reports and no research on the ground was done properly. Deputy Michel Al-Murr, a member of the Higher Relief Council at that time said that the fuss in the country is more a psychological problem within the Lebanese community rather than a waste problem. Prosecutor Said Mirza had stopped a TV show on toxic waste in 1995 since he claimed that the producer is disseminating wrong information (Hamdan, 1996). Mohammad Khalifeh, the previous minister of health

from 2004-2011 in Lebanon, said that in the area where the barrels were dumped, there is between 7000-8000 people diagnosed with cancer per year, numbers not found in industrialized countries (Baydoun, 2009). Several studies showed that people living in the intoxicated areas have a higher rate of cancer and kidney failure (Chevallier, 1998). In 2009, OTV, a TV channel affiliated with The Free Patriotic Movement (FPM) had done a report on the toxic waste; people of Benshaa village refused to talk since it has political implications (Baydoun, 2009). In an interview with a previous Lebanese forces fighter, he claimed that he was fighting in the mountainous area of Oyoun Al-Seman and if any toxic waste was disposed he will see it. He added Malychef had received millions of dollars to take part in this scandal and there were no proofs on the issue. He added that the Syrians were behind the scandal and that the explosion that happened

was not due to toxic waste; it was chemical weapons sent by Saddam Hussein to the Lebanese forces fighters.

Six members of the Lebanese Forces party, which is responsible for the toxic waste shipments, were accused of causing an “environmental disaster” and a “mass killing” in Lebanon and found guilty. Since there was a civil war, they got out after one week by a bail and then they were cleared from their accusations under an amnesty law (Sidahmed, 2015). Rizk and Hamdan claim that there is no more toxic waste from the Italian shipment in Lebanon but that doesn't mean that there is no toxic waste from other sources not dumped in Lebanon (Sidahmed, 2015). Malychef was elected in UNDP's "Global 500 Honor Roll" in 1988 as an “A Lebanese pharmacist and ecologist who has documented rare medicinal plants and is active in pollution control, afforestation and general engineering of high yield wheat varieties (Global 500, 1988). Malychef was an ecotoxicologist and a pharmacologist. He had stirred the issue in the media, which had major repercussions on his personal life. He was beaten, jailed, and

his pharmacy was blown up twice; even there was an attempt to assassinate him but it failed (Chevallier, 1998) (Sidahmed, 2015). He had documented his investigations by photos and published reports in journals (Sidahmed, 2015). Malychef was again appointed on 1988 and 1994 to investigate toxic waste in different areas in Lebanon (Chevallier, 1998). He found a mixture of highly toxic chemicals: dioxin, Agent Orange (the defoliant spread by U.S. troops in Vietnam), as well as Bhopal poison, and methyl isocyanate were leaking from thousands of broken barrels into the Jounieh area aquifer (Chevallier, 1998). His documentation did not help him when he was accused as a false witness. In 1994, Mansour al-Bon, an MP, asked to reopen the case of Italian waste because there were nine barrels dumped in Kesrwan area. Malychef, on the occasion said on T.V that toxic waste was dispersed all over Lebanon. He was then accused of false testimony and jailed for two weeks (Sidahmed, 2015). Then he was freed due to public pressure and his health conditions (Chevallier, 1998). After he was arrested for false testimony, Malychef did a photo campaign that showed fingers pointed on the barrels as

evidence. Many others joined his campaign by producing similar photos to document the existence of toxic waste (Khazrik personal interview, 2016).

Although the Italian barrels took most of the media attention, hundreds of barrels of paint from Canada and crushed plastics mixed with chemicals from Germany and Belgium were still being imported as late as 1996 (Khazeik interview, 2016). The common thing in all barrels imported was that they as labeled as raw material to appear in compliance with the Basel Convention on waste trading. In 1996, some officials had shipped twelve containers with seventy-seven tons of toxic waste from France (Hamdan, 1996). According to Elrich, companies from Germany, Canada, and Belgium had dumped toxic chemical in Lebanon during 1996 year. This was a one of the reasons of polluting underground water in Lebanon (LOE, 1998).

Rizk echoes Elrich that there is a toxic waste dumped in various Lebanese areas and that ground water and rivers are contaminated with toxicants (LOE, 1998).

However, Canada and Belgium were forced to repatriate their containers last December 1997 after a campaign done by environmentalists (Chevallier, 1998).

Greenpeace had worked on the issue of toxic waste and published a detailed report in 1995. Then the government pushed out Greenpeace ship "Altair" and Greenpeace was prevented from following the issue. They kicked it since Pierre Pharaon, the Minister of Environment at that time, claimed that the ship was in Israel while it was in Cyprus according to Greenpeace. In addition, he claimed that there is no toxic waste in Lebanon although the Burgeap report indicated that there is a high suspicion that there is toxic waste in the quarry. They took samples in May 1995 and tested it; it was proved that toxic waste existed in Shanir quarry and polluted ground water. The toxic substances found resembled the substances of the Italian toxic waste imported to Lebanon in 1987. Burgeap found contamination by toxic chlorinated substances in Zuq Mosbeh. MoE at that time did no further steps on the findings. The Lebanese government did not publish Burgeap report; so Greenpeace did and showed

its readiness to cooperate on the issue. The “cooperation” happened and lasted for eight months only. Mr. Pharaon refused to publish all the details related to the 1987 Italy deal and rejected to decontaminate the quarry of Shnanir. Some said that Italians paid for waste and others said Lebanon is paying for it (Hamdan, 1996).

Hamdan claimed, "There is money at stake behind every environmental scandal". Ten years after the incidents and they were still trying to shut him. Hamdan and Darwish had been arrested and accused of being spies and offered incentives to leave their advocacy. Lebanese environmentalists used to face threats if they continue with their campaign (Chevallier, 1998). According to Hamdan, the Italian toxic waste mafia had shipped toxic waste barrels to Syria between 1981 and 1987. This was the main reason for the Syrians to cover the issue and to ship the remaining amount in Lebanon in a secret way to France to be incinerated (Sidahmed, 2015).

According to Wilson Rizk, out of the fifteen thousand barrels of toxic waste were shipped in 1987 to Lebanon, in which six thousand barrels were shipped back to

Italy according to an agreement between the Italian and Lebanese government. The other barrels' fate is unknown (Baydoun, 2009). Khazrik assures that 10,000 barrels remained in Lebanon with unknown fate (Khazrik interview, 2016). Some claimed that Italy threatened to stop development aid if Lebanon decided to return the waste to Italy, according to Pierre Pharaon, Lebanon's environment minister from 1995-96 (Chevallier, 1998), the Italians had shipped all the toxic waste to their country. While green peace claims that only 5,500 of the 15,800 barrels were removed (Sidahmed, 2015).

An amendment to the Basel Convention came into force in January 1998, prohibiting the export of toxic waste outside OECD countries, regardless of whether the waste can be used as raw material for another industry. The states parties to the Convention must now agree on an export-prohibited waste list. Lebanon's problems with toxic imports are probably not yet over. There is no more toxic waste imported but

the previously imported ones are not followed up and the issue is in the dark (Chevallier, 1998).

Dr. Pierre Malychef, Dr. Milad Jerjoui and Dr. Wilson Rizk had risked their life for facing importing toxic waste in Lebanon (Chevallier, 1998). Malychef and Rizk who were the scientists involved got tired from this issue that was too political. “After a while [one sees] there is no result from working on this. Nothing changes. They don’t listen. So I left it and went to work at St. Joseph University, Rizk recalled. In March 2015, after about eighteen years of the toxic waste scandal, Speaker Nabih Berry filed a lawsuit against toxic waste merchants (Sidahmed, 2015).

Many people admired and were fascinated by the work of Maychef. One of them is Jessika Khazrik (Sidahmed, 2015). In 2013, Khazrik, an artist that lived in Kesrwan near an area that the barrels were buried in got so passionate about the issue and did an exhibit and performance on toxic waste at the Beirut Art Center (Sidahmed, 2015). In 2014, Khazrik formed the Society of False Witnesses, with the main goal to re-

investigate the buried trade of toxic waste originally investigated in the 1980s by Malychef. Malychef had taken photos of the toxic and solid waste, and the spaces they inhabited in Lebanon as quarries, landfills, sea, etc., as well as photos of plants and flowers cultivated in the area. Khazrik borrowed some of the images and documents stored in Malychef's laboratory and did her artistic works: performance of "The First Repository", the dance performance "Instead of a Turret on Top" (ICA - Boston, 2015) and the radio play "I Hate the Past but It Seduces Me" at Izhe'et Lebnen. In addition, she plans to open Malychef's lab as a research center and she is preparing for an online photography project (Khazrik interview, 2016).

In a question about the end of this study, Khazrik finds that following an interdisciplinarity approach rather than concentrating on a single angle will help in solving the environmental problem in Lebanon since people tried different things, especially that we have the notion of "public secret" in which everybody knows but no one moves. Her artistic approach will be online which will be considered as a public

awareness project and as a way to bring justice to a scientist accused of being a false witness. She said that there is a legal approach going on in which attorneys trying to take to court the people involved (Khazrik interview, 2016).

We politicize what has become obvious as daily corruption. Ten thousand barrels are buried in Lebanon and the government is denying this. This makes us unable to apply Basel convention.

E. Education and environment in Bentael Natural reserve

Dr. George AlMurr, the head of The Center for Educational Research and Development (CERD) had linked education to environment and did workshops on this. School nature trips connect pupils to environment from their childhood and establish an emotional relation. By the time, these students can become scientists in the field if they had the opportunity to do so. The CERD has printed out books about the environment in three languages, Arabic English and French in the environment, as *Alinasan w moheteh, and Alttaelim Alrrifi Fi Lubnan* (Annahar, 1983).

Haber had succeeded in having a law for the reserve before having a ministry. At that time, there were other reserves that did not have a law. In 1983, Bentaël reserve was announced in the presence of Dr. George Tohme, the president of the Lebanese university at that time, and his wife Heneret Tohme. Both had helped in making the brochure for the reserve. Tohme saw the reserve project as a sign of Lebanon modernity despite the war. After 15 years, Law No.11 on February 25, 1999, created The Bentaël Nature Reserve (MOE, 2006).

The Lebanese university did research which made it possible to plan and implement such a project. The main reason is to save environment and nature in Lebanon. They believed that the occupation and war will come to an end and we should preserve the nature preserved for our children. They had a plan to expand the reserve that costs twenty-five million Lebanese Liras.

The Lebanese university did studies on the plants and animals in the reserve. Pere Istafan Sakr demanded increasing awareness on environmental issues and columns in newspaper and journalists specified in environmental issues (Annahar, 1983).

F. Media and Environment in Lebanon

At the macro level, the main tool for creating environmental awareness is media (Katerji, 2009). Ricardus had given media an important role in spreading the word and considered them a crucial element for public awareness. He used media to achieve his goals, from inviting them to cover the activism events, preparing press releases that inform or clarify environmental issues, and to writing into radio and television appearances.

According to Ricardus Haber Website, Haber did several media appearances some of which are: "a bi-weekly 15 minutes public health awareness program broadcasted in 1978 for one year; a weekly 30 minutes ecological awareness program broadcasted in 1982 for one year; a weekly 30 minutes botanical program titled: "A Tree From Lebanon" broadcasted in 1986 for six months; a weekly 30 minutes

ecological program titled: "Nature of Lebanon: A Dwindling Resource" broadcasted in 1986 for six months; a weekly 30 minutes environmental awareness program titled: "Environmental Issues in Lebanon" broadcasted in 1986 for 18 months. Ricardus has written, produced and presented a 15 min series for the TV titled: 'An Outing in Nature' introducing nature sites, their assets and significance to teach the public to appreciate the beauty of Lebanon's nature and incite its protection." Before having environmental journalism, Ricardus had given a huge space for media and considered it a pillar in public awareness. He considered them the soldiers that can monitor the application of projects and shed light on environmental problems. They can mobilize people around an environmental cause, which make significance on a national level.

Enhancing the capacity of media people increases their involvement and ability to investigate and report on environmental issues (Press and Media, 2006). To achieve having aware journalists, FON under the guidance of Haber organized seminars in the eighties and nineties for people working in the media; a two-day congress project was

funded by Friedrich Ebert Stiftung in which media reporters were acknowledged on the role of scientific verification in media coverage for environmental issues. His work was a cornerstone for today's written press on the environment (Press and Media, 2006).

On the fourth foundation festival of the Lebanese Federation to Preserve the Environment, Nasr, the previous Minister of Environment, had asked the federation activists to work on social and media levels (Annahar, 1983b). In 1983, the Center for Educational Research and Development (CERD) produced thirteen educational episodes on TV and radio for general public and specifically targeting students to help them discover the environment around them and have the capability to adapt (Annahar, 1983).

According to the Ministry of Interior (MOI), it is difficult to have a specialized journalist in environment and journalists lack the needed capacities to present or produce programs in a creative way. Most of the journalists are not specialized, which disseminate their time and attention (MOI 2006). Maalouf, on the contrary, said that

there are specialized journalists but the media bodies do not report on green economy initiatives and sustainable development (Topalian, 2014). In August 2014, the MoE and the Ministry of Information, MoI, had signed a memorandum of agreement to face environmental challenges. The two ministers had agreed that media is not covering environmental issues as it should. Mr. Ramzi Greg, the minister of the environment, had accused the media institutions of the partial coverage of the environmental issues. “Media institution are presenting limited attention and covering conferences, seminars, workshops related to the environment while they should contribute actively to educate people about the importance of environmental issues. Media duties are to push people to collaborate with the political power to preserve environment” (Topalian, 2014).

Some Lebanese TV channels claim that they are unbiased but the material presented shows that they have their own hidden agenda; each has a propaganda working on. A study by UNDP had asked the media in Lebanon to become more transparent and accountable (MOI 2006). The politicizing of the Lebanese media is not

new. A monitoring study by EU EOM on some of the Lebanese TV channels and newspapers regarding election coverage shows the discrepancy and the difference between the political affiliation of the media institutions and shows the extent in which media in Lebanon is politicized (Gharabi, 2012).

Since our media is politicized, a journalist finds difficulty addressing environmental issues that contradict with the interest of the political leaders who support the institution they work in since they might lose their job. This can be solved by having journalists that know how to work across the barriers and are specialized as an environmental journalist. At the same time, environmentalist should get into mainstream media intelligently even if it was politicized; Mostly they work online and this is not sufficient.

Table 3: The Factors That Affect Public Areas in Lebanon

	External factors	Internal Factors
Legal	<ul style="list-style-type: none"> The laws are old; Ottoman Law on Associations (adopted on 	<ul style="list-style-type: none"> High number of organizations

	<p>August 3rd of 1909) remains the principal law</p> <ul style="list-style-type: none"> • Founding an association needs only notification (easy to form). (Article 2) (Liberal law) • In 2002, a law on the protection of the environment was issued. It clearly affirms the right to obtain environmental information. • Land Register Law states that each citizen has the right to access information. • There are no laws for work on development (social, political and economic.) • Before 2005, the notification system was more an authorization regime. • Not delivering the receipt, which is the only legal proof of formation, is a hinder. 	<ul style="list-style-type: none"> • Duplication of services • Unclear concept of development. • Many organizations limited to charity works. • Most of organizations are lead by one or few number of individuals. • Usually all responsibilities as management, funding, the same person holds governance.
--	---	---

	<ul style="list-style-type: none"> • No mechanism for monitoring • No minimal limits of members • No recognition for the added-value of civil society organizations in policy-making processes • Unfortunately, some information are not for public by law as the deliberations of council of ministers or the parliament or municipalities except if the attendee of meetings decided otherwise. • Article 15 of Public Employees Law prohibits them from giving info in media before getting an authorization. 	
Administrative	<ul style="list-style-type: none"> • The Lebanese security forces are incompetent in handling properly peaceful protests. • Government attitude is unpredictable since each 	<ul style="list-style-type: none"> • NGOs have a continuous contact with public, which made them better

	<p>minister adopts a different attitude towards organization under his ministry patronage.</p> <ul style="list-style-type: none"> • Lack of cooperation between government and organizations. • Sectarian system increases Clientelism. • In environmental sector, there is only still minimal political influence over the relation between MoE and NGOs • Bureaucracy hinders the ease of work and access to information • Bribery affects performance and image. • The interrelation of public institutions • Article 3 of the Law n°216119, defines a National Council for the Environment which increases the cooperation between government and civil society. 	<p>to evaluate the needs of citizens.</p> <ul style="list-style-type: none"> • Coalitions and networks contributed in easing disparities. • Coordination between organizations is temporary and have a limited scope • Boundaries between civil society and the political sphere are vivid • More focus on campaigns/ less focus on the ability to engage in policy planning. • The civil society is not organized or specialized.
--	---	---

	<ul style="list-style-type: none"> • Politicians are taking part in some campaigns which make it easier for organizations to access governmental institutions. • Political and sectarian environment does not allow permanent formation of coalitions. • Article 6 of the Law on Associations designate that the organizations' administration must notify the MoI of any changes in the administration of association • Investigations on the statue of the founders of civil society till 2006 where it was reduced. • Most professionals are from the elites so they tend not to work in civil society. 	<ul style="list-style-type: none"> • Organizations have weak capacities which lead to poor cooperation with the government • Lack of trust in public institutions • No clear and common vision of their mission and role. • A member of the civil society is always present at the National Council of the environment (choose the appropriate member to have better presentation an reach the goals). • Some organizations have a low
--	---	---

		<p>degree of transparency and accountability which affects credibility</p> <ul style="list-style-type: none"> • The ruling elite directs some organizations. • NGOs are managed by old and non-specialist people (need for new blood and professionals) • No incentives for professionals
Technical	<ul style="list-style-type: none"> • Most of the cooperation system is contractual on yearly basis. • Many governmental documents are still paper documented rather than computerized. 	<ul style="list-style-type: none"> • Sometimes information is not accessible. • Some NGOs workers do not search for info while many are present on the ministers websites and booklets.

		<ul style="list-style-type: none"> • Lack of expertise and specialists. • NGOs need to use social media more effectively
Financial	<ul style="list-style-type: none"> • No restrictions on getting foreign funding • Clientelism and corruption are widespread in granting governmental funds • No clear criteria for government grants • General salaries weak • Registering an association does not cost more than 300\$ • Donors trust civil society more than government • The foreign funds affect sustainability • Decree No. 14865, adopted on July 1st, 2005 states that the MoE will give 800000\$ (10% of annual budget) to organizations. It is pending since no national 	<ul style="list-style-type: none"> • The civil society is not empowered which make her unable to impose its priorities. (Unbalanced relation). • Organizations can access different funding resources (government funding, self funding, and foreign funding) • Salaries weak • NGOs work according to the agenda of the donor rather on local needs • Annual subscription fees

	<p>budget for the past couple of years.</p> <ul style="list-style-type: none"> • Local funding (public and government funding) concentrates on humanitarian and social causes. • Decree No. 10830 dated 9/10/1962 lists in its Article 7 that organization had to submit periodic reports and other financial statements: <ol style="list-style-type: none"> 1- An income statement 2- The current year's draft budget 3- The names list of the members who paid their fees. • Organizations are allowed to do activities that generate revenues but it should not be distributed on stakeholder. It should be used in other activities. • Each ministry have its own funding system 	<p>for volunteers is a minimal resource</p> <ul style="list-style-type: none"> • Self donation provides minimal resources • Some organization are not neutral which makes them non credible. • Most are Non-profit organizations
--	--	---

	<ul style="list-style-type: none"> • The Ministry of Social Affairs (MoSA) make contracts with organization and pays 70% of the cost. • Exemption of paying profit taxes • Private companies are exempted by 1/1000 if they donate to civil society organization (no tax incentive) • No stability in the country which decrease investment • Indirect taxes as VAT 	
--	--	--

As shown, media and education play a major role in the action arena of the environmental policy-making. In the next chapter, stakeholders, and their respective roles will be analyzed.

CHAPTER V

ANALYSIS AND FINDINGS

The impacts of these case studies on the environmental movement are understood; the institutional process and stakeholders that produced the success or failure of these cases will be analyzed in terms of functions or actions that led to such conclusions.

There was no specific concentration on one institution despite a slight focus on the MoE. Different stakeholders' interactions that led to the success or failure of environmental policies were analyzed. The analysis was extracted by looking at the action arena of the policy making. Since the environment is holistic, some actions appeared in multiple action arenas and analyzing them ended up being a troubleshooting mission.

The action arena is divided to action situation and actors. The following is an empirical analysis in which evaluative criteria are used to analyze the observed interactions and outcomes with a given implicit models used by actors. The focus is on how specific combinations of rules affect incentives.

Analysts usually conceptualize action situations and the participants according to the rules used by participants to organize their relationships, the characteristics of the biophysical world, and the structure of the general community in which the arena is placed (Kiser and Ostrom, 1982). The rules, the biophysical world and the nature of the community work together to affect the types of actions that individuals can take, the costs and benefits of these actions and potential outcomes.

A. Action Situations

The action situations are constituted of the nature of the resource (physical conditions), rules-in-use (institutional arrangements) and attributes of the community (social and cultural context).

In the cases of Haber, two action arenas have led to the success of his stories, process, and regulations. The process that Haber followed to have the protected areas, and the regulations as a law in 1992 allowed governing the process and the different economic choices that were available to locals.

B. Physical/Material Conditions

In the Horsh Ehdén case, people who are grazers, who collect herbs for food, or who make charcoal of trees and some others, had been deprived of their source of livelihood. The changes might lead to a decrease of income in addition to displace people. On the contrary, the awareness campaign that Haber did in Horsh Ehdén resulted in people accepting the changes after a year and a half. These results have several factors that are equity: equity is when the grazers were allowed to graze on a nearby area without approaching the reserve. The people who used to benefit only from resources inside the Horsh were allowed to have small shops for selling food near the reserve in addition to working as guides and recreational activities' experts. Tourism

increased in the area but this benefits only some locals, which is against equity principle in general but might be ongoing with it if the ones deprived from their livelihoods got the benefit. Another form of equity is that environment does not differentiate between people so environmental protection benefits everyone.

The equity and the limitation of the protected area are results of environmental governance. Other results are the sustainability of the natural reserve, the increase in its environmental services and the level of public participation. These results, the level of environmental awareness, and their practices are in the action arena of regulations. We can add the attitude of Haber and the people working with him toward the locals, this helps in determining to which extent Haber tries to involve locals in the decision making process.

C. Rules-in-use

Before having MoE, different legislation used to address environmental issues as Ehden reserve. A step allowed Lebanon to conserve and preserve its resources and

take part in different international treaties and conventions. Lebanon is the only country that has two political parties devoted to the environment, the Lebanese Environmental Party established in 2005 and The Green Party of Lebanon founded in 2008. The GoL sectoral plans (ex. water supply and sanitation, electricity, telecommunications, and roads and highways) are not guided by any national or regional land use plans. Although CDR is mandated to draft the overall framework for land use and urban planning, no such framework has been developed. The following laws had been recognized by CoM: The Environmental Impact Assessment (EIA) decree, the draft law on the environmental public prosecution, the draft law on protected areas, the draft law on integrated solid waste management, The draft law on the protection of air quality, The Strategic Environmental Assessment (SEA) decree, The decree for Environmental Compliance for Establishments, and The National Council for the Environment decree. These decrees have been published in the national gazette in 2012 and they are enforced by the law (GoL, 2013). EIA study is a requirement for projects in Lebanon. There are

some cases in which the law was not applied or the EIA study did not approve the project but it was carried out. In general, the law is applied partially. Developers who don't carry an EIA may face a year imprisoned or a fine that can reach two hundred million Lebanese Liras (Al Azar, 2002). There was a change in MoE practices; previously the ministry issued decrees without consideration for other ministries while now MoE coordinates with other entities in preparing and issuing decrees.

Charbel Nahhas, the former minister of labor, disagrees on the notion of neoliberalism that is discussed in the literature review and states that Lebanese politicians are rather pragmatic; he believes that politicians in Lebanon are not linked to any theory. He added that there is no political will to have a good administrative decision. (Nahhas interview 2015). The Law No. 444 / 2002 was enacted on Environmental Protection and Law 690/2005 amended the mandate of the MoE. Nahhas finds that the environmental protection law was enacted because between 1997 and 2002, there was a very serious financial crisis that touched everybody. At that time,

politicians had agreed on several steps as the law of electricity in 2002 to get out of the situation. After that time, everyone returned to his position and agenda (Nahhas interview 2015).

We should understand the rules and incentives that govern the relation between different stakeholders. Incentives have monetary value and nonmonetary value; they range from value system to cultural factors to financial means. Incentives are the motivations that people respond to. The incentives for behavior change should be studied and incorporated in environmental policy planning.

Rules are regulations or formal laws that establish relationships between different stakeholders and identify the nature and function of these relationships. Other rules that are not written are called “rule of the game” according to which politicians

function; these are the ones that determine what happens on the ground and these rules can help us understand why a law is not implemented or a law is not enacted.

There are many existing laws that are not applied as the law of hunting. There are laws on protecting diversity but they are only applied in the areas where there are natural reserves. In the case of Haber, he was able to push for a law. The implementation of the law did not have a huge impact on people's life since people participated in protecting the area from the beginning of the process. The more the public participation in policymaking, the more it is legitimate. In the case of toxic waste, the law did not take the international agreement into considerations and still the case is not solved. The laws concerning the Dalieh are not yet implemented although the implementation of the law of protecting public areas has a social and environmental impact on the inhabitants that use these areas. The coastal zone includes some ecosystem reserve that should be protected from the human. So this area goes under the national and international law both in which should be implemented. A long-term solution is needed, in which

international rules and regulations incorporated in domestic legal systems. Solution can be by choosing the least number of measures that would have the largest marginal impact on growth.

Three gaps in the governmental work were identified: a jurisdictional gap, an information gap, and an implementation gap. As in the case of Haber, even after locals participated and agreed to protect the area, the second step was having a law to preserve. In the case of Dalieh, the private companies might agree with civil society to use the area and do green projects in others places. An agreement is not enough and there should be regulations and laws with penalties. This will prevent infringement in other places. Having unimplemented regulations will lead to the tragedy of the commons.

Several barriers can be identified in the case studies discussed: adaptation cost in the toxic waste case, cooperation in Dalieh and Al-Sannayeh cases, and few incentives to upstream users in most of them. Creating a forum in which different stakeholders can

work on national and international levels can fill the jurisdictional gap. There should be nationally applicable laws and implementation of international treaties. Analyzing data related to policy arena solves the information gap. Matching interests and commitments fills the implementation gap.

The existence of a jurisdictional gap allows the crimes toward environment to go unpunished. There should be a zero-tolerance policy toward serious infringement on natural resources committed by citizens. Failing to hold accountable those who violated the environmental laws and giving them impunity as happened in the toxic waste case study was an assault to the collective consciousness. Holding criminals accountable for their acts restore the faith and trust in the government. Note that having a criminal accountability and enforcing it are two separate matters.

Better reporting on the infringements occurring will help in understanding the problem and thus solve it.

The subsidiarity principle of the common property theory used in this thesis stresses on managing NR on the local community level, least governance level. This was in Haber's case studies but it was the opposite in other case studies where it was highly political and followed the top to bottom approach. For example, the Dalieh case study had the top to bottom approach without enough work on public awareness. It appeared like a gathering of intellectuals. Civil society involved should do workshops in the suburbs of Beyrouth to involve a wider section of people. It is important to raise awareness since the laws don't allow owning this land so such information should be disseminated to prevent further buying. This will pressure the government to act to the benefit of people. Unfortunately, in the last one thousand days, the parliament only met once which makes it difficult for any improvement regarding public areas access and which make people reluctant to join any action. The status quo of the parliament and the idea of National Interest Government enhanced people non-involvement in civil society activities.

To improve the situation, three things should be done:

- 1- Capacity building for NGOs and government's employees.
- 2- Researching for needed information and analysis to illustrate the problems, follow up on trends, and pinpoint interests.
- 3- Foundation of a policy "space" for environmental discussion and negotiation.

D. Analysis of the policy-making arena at the central level

In all the case studies discussed, it was noted that decision-making power was centralized and located outside the local community. The centralized governance structure has arisen as a combination of a colonial past that favored decentralization with a dispersed and low population spread over large distances (Bergh 2012). Bergh agrees with Makdisi (2012) on the effect of neoliberalism in Lebanon since the new socio-economic challenges were in favor of the elites and politicians that used them at the expenses of low and middle classes. These challenges increased the centralization

notion. This led in these cases and in others as well to an accountability problem between different governments' agencies and with citizens.

Planning is at central level and cases discussed showed that public agencies are dysfunctional and corrupt. The centralization and the ongoing speech of politicians on decentralization had led to decentralized practices with a dominance of centralization. This was clear in Al Dalieh and Rawsheh cases where there is a huge role for the municipality of Beirut. In the case of Rawsheh the municipality stood with the protesters and in the case of Dalieh it was against them since for it, Al Dalieh is a privately owned land and dealing with it is not from its terms of reference. So the municipality doesn't have a hand on everything and central agencies have more power in some cases. Corruption is less at the municipal level than the governmental one although the members of the municipal council are affiliated with the same political parties; on the municipal level, there are still checks and balances.

In a divided country like Lebanon, decentralization increases the power of local leader or the sectors' leaders. This may lead to more corruption and block development. Having local leaders connected to the ones in the central government will lead to a selective implementation of laws since the later will overpower the former. In some areas that are dominated by certain parties, there are violence threats for the ones who don't accept the ongoing "rule of the game".

In an interview with Rawan Kharfan, the president of Ecovive NGO, she sees that civil society is neither accountable to the local administration as municipality nor to the central government. This is the case of most NGOs in the current governmental structure.

On one hand there is the civil society in which environmental NGOs operate and the government. To regulate more, there is should be clear rules for NGOS and auditing from the government. There should be a middle solution between decentralization and centralization, as mentioned in chapter 3. Comanagement helps in solving the environmental problems.

E. Evaluative Criteria

The evaluative criteria are the patterns and outcomes of interactions. Three important features are transparency, accountability and choice (adaptability). The government lacked transparency in the case studies discussed above, and researchers tried to hold it accountable. Contracts help in maintaining transparency and accountability. The contracts are being made between the service providers by funders, and the MoE; there are also contracts being made among the suppliers. In Haber case, non-written contracts were made between Haber and the locals. In toxic waste case study, the contract was between the scientists and the government. The contracts are related to the choice feature, meaning, if someone does not perform the needed actions, another can be chosen.

There should be a mechanism that allows a feedback within each agency, and another on the relationship between agencies. This will help us identify the actors that are involved in the action arena, and those that are able to influence others. On the long run, this will allow us to monitor and control, to a certain extent, the actors' performance. At

times, the deficiency in needed governmental services is due to the lack of feedback; at other times, this is due to patron-client relationship that policy makers use in order to promote the services that allow them to benefit economically or to gain more voters.

The discussed criteria are broad, but they allow discussing different case studies and analyze their action arena. These criteria might be universal since they allow identifying the relationship among different stakeholders and its failures.

F. Stakeholders

The major environmental problems in Lebanon can be summarized by the following: groundwater pollution, seawater intrusion, air quality deterioration, water quality deterioration, soil erosion, ecosystem deterioration, deforestation, marine pollution, solid waste accumulation, hazardous and radioactive waste handling, and urbanization. The key players in the knowledge-policy nexus are NGOs, civil servants, and international agencies. Their efforts do influence policy making, but there are other actors as political parties, media, and think tanks that affect it as well. Non-state actors

face barriers to taking part in the input due to the low level of participation in policymaking processes. The following are the stakeholders in the Lebanese government:

1. The Central Administration of Statistics (CAS) is a public body under the presidency of the council of ministers, and it mainly collects information from different Lebanese public entities and generates data and indicators on different subjects in which environment is one. It is organized according to decree 1793/79 and decree 2728/80 (UNDP, 2010). CAS generates statistics and posts them online for the public; the latest one on the environment was in 2012. The following table is retrieved from the website <http://www.cas.gov.lb/index.php/mdg-en>

Table 4: This table presents the statistics done in 1999 and 2000 to measure the indicators for biodiversity targets.

Target	Indicator	1999	2000
--------	-----------	------	------

<p>7.B: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss</p>	<p>7.1 Proportion of land area covered by forest</p>	<p>25</p>	
<p>7.C: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation</p>	<p>7.8 Proportion of population using an improved drinking water source</p>		<p>95</p>
	<p>7.9 Proportion of population with access to improved sanitation facility (total)</p>		<p>96.9</p>

1. Health Councils at the *muhafazah* level. The syndicate's committees and health council in *muhafazah* do not collect data but help in mainstreaming the environment in all sectors of the economy.
2. Regional Industrial Permitting Committees in which MoE is present
3. The Ministry of Public Works and Transport (Directorate General of Roads and Buildings / Department of Environment and Traffic).
4. The National Council for Scientific Research (CNRS) under the CoM president. The government council is for all science and technology issues and is responsible for scientific research programs in the country in addition to the formulation of the national technology and science policy. The CNRS has specialized centers in which it conducts researches on the environment, land cover, and other issues in collaboration with the different concerned ministries. The National Council for the Environment facilitates

coordination and cooperation among different agencies concerned with or impacting, the environment.

5. Parliamentarian Committee for Environment

6. Council for Development and Reconstruction. (Department of Land Use Planning and Environment)

7. The Lebanese customs. The ministerial decision 71/1 of 1997 states that customs should cooperate with MoE by providing information on the imported hazardous waste; this information do not include the importing party which makes it harder to identify the responsible. The quantity and type of waste are not identified, which makes the process of handling them hard (Basel Convention, 2005).

8. Ministry of Environment, which was established under Law No. 216 / 1993. Then there was Amendment Act No. 216 issued on 2/4/1993. The environment law 444/2002 which is now followed, includes eleven environmental principles: precaution,

prevention, polluter-pays principle, biodiversity conservation, prevention of natural resources degradation, public participation, cooperation between central government, local authorities, and citizens, recognition of local behavior and customs in rural areas, environmental monitoring, economic incentives to encourage compliance and pollution control, and EIA process to control and mitigate environmental degradation. For a law to be applicable it needs decrees, a thing that renders it only partly implemented after fourteen years. Then the restructuring of the ministry was enacted by decree 2275 (dated 15/06/2009).

9. Intergovernmental agencies in which MoE is present (MOE/UNDP/ECODIT, 2011):

- The Higher Council of Urban Planning (member).
- The National Council for Quarries (chaired by MoE).
- The Higher Council for Hunting (chaired by MoE).
- Lebanese Standards and Norms Organization Institute (LIBNOR).

- Unit of Planning and Programming (UPP).
- Sustainable Development Networking Programme (SDNP) which helps facilitate information exchange among different ministries.
- National Council for the Environment, which facilitates coordination and cooperation among different agencies concerned with, or impacting the environment.
- The Directorate General for Urban Planning (DGUP)
- Higher Council for Urban Planning (HCUP)

Note: The work of DGUP and HCUP is difficult to implement since there is no overall land use plan.

There is an overlap and inconsistencies when it comes to the roles of governmental stakeholders. There is a duality between operational and strategic level as well. This is due to the Lebanese politician's plans for the long term that are: deregulation, and privatization plans (Nahhas interview, 2015).

Non-governmental stakeholders are:

1. NGOs
2. Individual efforts
3. Academic groups
4. Private sector
5. Environmental committees in different syndicates in Lebanon since there is no syndicate for environmentalists.
6. Civil society

Stakeholders are being identified according to three categories: users, service providers, and enabling agencies.

In the list below, one will find the different stakeholders along with their roles and responsibilities in the discussed action arena. These responsibilities are assigned according to laws, decrees, the capacity to perform, the assigned mandates. One will find, as well, the contrast between what these stakeholders promise to accomplish and actually do get done by the end of the day.

The most important action arena in the case study of Haber is the arena that steered the policy makers to take action, brought the environmental issues' profile to a place where it was possible to pass a law on natural reserves and to raise awareness on environmental protection among individuals.

Haber considered himself as an enabling agency (Mirna Semaan Al Haber, 2015). In reality, he served a provision function, not only did he influence the policy

agenda by raising the problem of environment, but was engaged in environmental research and played a huge role in establishing two natural reserves as well.

At that time, the Ministry of Environment was yet to be founded, and none was responsible for the protection of the environment. After that, a minister of State of Environmental Affairs was assigned, and then in 1992, the MoE was founded. MoE can be considered as an enabling agency in the other discussed case study but not in Haber's. It's the stakeholder's responsibility to protect the environment by issuing laws and decrees for this.

In the case study of Haber, and due to MoE absence, the Minister of Justice, who carried out the issue, is considered as an individual actor rather than an agency

shaping the action arena. In the other case studies, policy makers are the enabling agencies.

In the other case studies, the additional stakeholders are the funders that may be international as World Wide Fund for Nature, WWF, or bilateral as the Italian embassy. These funders may play a dual role at the same time: enabling agency and service provision. They have different interests that vary depending on the case studies.

Users in the Haber action arena are: tourists visiting the reserves, people who benefit from the environmental awareness sessions, grazers, herb collectors, guides, recreational activates providers, small shop owners, bungalow owners and society on a

larger scale. In other case studies as Dalia and Rawsheh, users are fishermen, activists, swimmers, and the public.

The following institutional context defines how the action arenas performed.

The institutional context of the political leader in the area of Ehden made the case study successful. Haber approached Franjeih and convinced him to establish Ehden natural reserve, as it follows, the supporters of the *Beik* were convinced. The institutional

context in the case studies of Dalia, Rawsheh, and toxic waste is the cultural values that assert the right of the people to swim and live healthily.

The Dalieh, Rawsheh, and toxic waste case studies had proved that under the governance of a weak state or at the time of a crisis, a greater participation does not lead to a greater influence or a greater use of evidence.

As a wrap-up, the roles of the stakeholders are:

- MoE: policy setting, planning, awareness, legislation, monitoring.
- MoIM: finance, operation
- NGOs: raise awareness, lobbying, monitoring
- Academic groups: technical assistance, research, and education
- Private sector: investment, contracting, operation, and supervision

A set of institutional, biophysical and economic factors responsible for the outcomes in the cases studies were identified using the IAD. A future step would be discovering the exogenous factors that affect the action arena.

G. Reporting

Inspecting the reporting of environmental data reveals that there is a lack of transparency and that Lebanon has no legal reporting system. Information is not available unless requested officially; there is no database except for a published book on environmental laws titled “*wade nizam aistisdar alttashrieat albiyyat watatbiqiha fi lubnan*”. The website of the Ministry of Environment contains some laws and news; the information is not mapped correctly, however.

There are different stakeholders in environmental issues especially when it comes to toxic waste and property rights. Responsibilities are dispersed between different entities, and boundaries are blurred which makes it hard to follow up on issues

and hold those who are responsible accountable. MoE carried out a number of projects, yet others were left unaccomplished due to the lack of resources and personnel. In addition, the position of MoE is still advisory.

There are laws for every sector, however, they are outdated and fail to follow a specific scientific approach. Other reasons for not applying the laws is the shortage of resources, the lack of trust people have in the government, and the incompetence of the police forces.

On the international level, reporting under Basel convention for hazardous waste had stopped and Reporting under Stockholm convention is left undeveloped.

H. Corruption

There is no definite dividing line between the political complications in Lebanon and environmental problems. A huge sum of money was spent to solve these problems,

however, the situation is still deteriorating. This is either due to the governmental structure or to corruption, or both.

In the latest Corruption Perception Index of Transparency International dating December 2015, Lebanon ranked 123 / 168 on the international level. Researchers in Yale and Colombia found that there is a strong relationship between environmental results and good governance (Esty, Daniel C. et al, 2006). This may clarify why Lebanon has an overall Environmental Performance Index (EPI) of 69.14, ranking at 94 in a pool of 180 rated countries (MoE, 2016), not to overlook the gaps of information on the national level.

Lebanon had globalized its economy and built it on free-market principles. The neoliberal economics of Lebanon allowed imported products to dominate the local market. The neoliberal approach concentrates more on the briber taker rather on the briber. In the case studies discussed it was shown that the briber are individuals with sufficient wealth and influence to corrupt and get covered. This is the worst type of

corruption since rulers practice it and impact greatly social and economic situation of the country. We called it “*wasta*” in which rulers gain billions of dollars at the expense of the public.

The socio-economic mobility in Lebanon demonstrates itself through sectarian representation. In the case studies of Dalia and Ramlet Al Bayda, Rafic Hariri a previous prime minister and a businessman showed that money could buy power. The power of money showed that the elites are hostile towards legislation. The ineffective environmental movement shows that bourgeoisie are connected to the president of republic, parliament, and council of ministries and have reliance and close ties with sectarian leaders “zuama”.

With Rafic Hariri arrival, businessmen start being more presented by themselves or by their lawyers. The economic and political balances of power after the civil war differed from those before. After the war, the sectarian-political arena generated new forces that affect the socio-economic situation. The after war social dynamics altered

the balance of political power and new social forces appeared. This renewal of economic and political elite intensified the political power in the hands of certain people as it was before war and after the war in the hand of the troika.

Upon having a look at accountability and transparency law, we find them opaque and unable to fight corruption. For example, The Bank Secrecy Law. Another law, The Illegal Enrichment Law requires paying 25 million Lebanese lira (16,000 dollars) in the central bank to raise a case against corruption. In addition, if someone wants to uncover a corruption are subject to greater threats under The Slander and Libel Law (Article 387 of the Publications Law).

The example of two coastal property case studies is a clear conflict of interests. The quantity of corruption is high. The politicians are making a legal cover for their activities by changing the laws or other acts.

I. Recommendation

Given that human resources at MoE are humble, and many are recruited through UNDP, and that most of the work is paper based, a follow-up proves to be a rather hard task to carry on with. To have a better a follow-up, the points below should be taken into consideration:

- Initiate a reliable, automate, and internet-based information system that integrates data from different institutions, and for sharing mechanisms as well.
- Increase the production of qualitative data and make it available for the public in centralized and decentralized centers. Moreover, these will be a reference for the work of municipalities and the ministry for future projects.
- Map governmental and nongovernmental stakeholders in action arenas as a crucial step in solving environmental problems, since it will render future coordination between them possible.

Lebanon had received fund from different international donors due to ratifying international treaties. In 2003, Strengthening the Environmental Legislation,

Development & Application System in Lebanon (SELDAS) project worked to strengthen the capacities of the institutions dealing with environmental legislation development and application, and trigger environmental law education. It cost 666,400 €. It was with the University of Balamand and lead to raising awareness. (MoE, 2009) I was unable to find more information about its aims and objectives online. Having more projects like this one and disseminating the findings will help the government and the NGOs in their work.

Recommendations

- Rethink sustainability. As previously shown, sustainability is based on social, environmental, and economic aspects. Thus, mainstreaming these aspects increases the ability to have successful environmental movements.
- Change the way of thinking. Taking land as a commodity, that is, something that can be bought and sold is one way to view colonial legacies. Environmental movements are affected by this and use it. This inherent way of thinking should

be abandoned; instead, civil society and governmental authorities are to reassess the concept of land and land trading.

- Have moral respect for the earth. As Leopold indicated, plants, animals, and humans should be included in the concept of humanity.
- Let the affected people speak for themselves. One of the main problems that should be solved is having a privileged class of political and business elites speaking for the mostly poor people who are directly affected by environmental issues.
- Create an adequate provision for enforcement. Work on community development and diversify actions to rural areas rather than urban ones.
- Concentrate on our local problems. Create solutions tailored for our local problems. Have local goals and work to achieve them.
- Have a holistic approach. Such an approach should combine social justice with conserving the environment. Increase the participation of locals and make policy

making a bottom to top approach.

- Connect feminism to environmentalism. Empowering women and having ecofeminism approaches helps in conserving the environment and increases social justice.
- Build on previous case studies. Learn from the experience of activists and researchers who worked on environmental cases. Avoid repeating the same mistakes, and use the successful cases as models to build on.
- Reform environmental governance in Lebanon. The lack of funding to the MoE should be solved by allocating more budgets by CoM, and by applying to international donors for funding. The money should be allocated to strengthen environmental inspection and environmental laws enforcement, in addition to supporting NGOs and increasing the collaboration with them.

- Recruit educated people in the public sector. Thus, solve the problem of government agencies that are inadequately staffed for environmental management.
- Create environmental units in ministries. No line ministry has an environmental unit.
- Change the role of MoE from advisory to a powerful ministry. This reform should be based on a law enacted by the parliament and specified by decrees from the CoM to have an official change and to increase the ability to implement it.
- Enact laws that ensure roles separation and continuous coordination to solve poor coordination between institutions.

- Throw away the notion of “natural capital” and human capital. The first gives monetary value to environmental entities, and the second gives economic value to human beings. Adopt the social philosophy “ Buen Vivir”.³
-

³ “Buen Vivir or Vivir Bien, are the Spanish words used in Latin America to describe alternatives to development focused on the good life in a broad sense. It is a plural concept with two main entry points. On the one hand, it includes critical reactions to classical Western development theory. On the other hand, it refers to alternatives to development emerging from indigenous traditions, and in this sense the concept explores possibilities beyond the modern Eurocentric tradition” (Gudynas, 2011).

- Publicize community-oriented projects. There are ongoing projects in Lebanon like the project of the ideal street in Faytroun that was initiated and carried on by the Women Association of Deir AlAhmar. The citizens of the street segregate waste, and produce compost on household level in which all family members are involved. These community-oriented projects should be helped and taken as a model. People want to live healthy but they need the initiative and the support of the civil society and the government (Dunia AlKhoury interview, 2015).
Transition villages should be done in different areas in Lebanon.
- Adopt de-growth philosophical mentality promoted by Maalouf 2010. The advocates of this mentality call for de-growth and going back to basics. Maalouf calls for the use of old ways of hunting and against the passive consumption of new technologies. He suggests a different approach from that of economic growth or that of the new notion of sustainable development. It might be successful if people who had excessive growth adopted it.

- Enhance the cooperation between civil society and the government. Have a strategy to monitor environmental NGOs and the way they are spending the money. There is a network of Marine Protected Areas (MPAs) in MoE; however, one can still see infringement on marine lands and effluents discharged in the sea. MoE should work with the civil society to have an integrated plan or strategy for coastal zone management and protection, and to apply the protocols of Barcelona Convention that requires the protection of the Mediterranean Sea and reporting on it. Monitoring and reporting on management effectiveness should be done.

CHAPTER VI

Conclusion

This thesis followed an interdisciplinary approach to tackle a social and natural issue, the natural resource management in Lebanon, in an attempt to have a more transparent governance of it. There is a shortage of information in the investigated cases that required extensive work to get reliable data. The time constraint was a major limitation of the research since it had to be done in six months. The number of people interviewed was 15, which may not be completely representative of the total number of points of view. Having a bigger sample was difficult and required more time and resources. Some of the people involved in the case studies were not accessible especially those who were involved in the activism in the 1970s and 1980s. Thus, data was extracted from literature, and accessible academics and activists.

This study offers the best solution for environmental policy planning in Lebanon through studying the type of environmentalism followed by Haber. However, the economic aspect was not searched extensively. Further studies can be done on other types of environmentalism and their associated economical angles.

Advanced studies can be built on the results of this thesis. This might include looking at which ecosystem area should be prioritized for conservation, the relationship between human wellbeing and ecosystem services, and the change in the dynamics of the ecosystems' services over time.

The research made it clear that the lack of reporting and the unavailability of a connective and coherent database were major restraints for having adequate environmental management programs. Most of the available information was deemed to be incomplete or unreliable since many of the environmental related topics do not have a database in Lebanon.

This thesis offers some policy recommendations that might assist in alleviating and addressing some of the raised concerns. These include:

- *Work on enhancing environmental monitoring* since there is no legislative framework that organizes or obliges data sharing among different stakeholders. There is a lack of cooperation between stakeholders, which leads to a misunderstanding of environmental qualities. Although some of the stakeholders are active, working alone prevents efforts' mainstreaming.

- *Fund programs to encourage and foster a culture of research* that develops initiatives. Universities and think tanks collect data for their academic research that end up published online and only accessed by a few readers. Think tanks and academics have an important role and should mainstream research on decision-making and institutional change.

- *Develop a national database* since there is a deficiency in information or its quality and reliability. One can find inter-institutional cooperation more present since

different ministries and various agencies hold environmental responsibilities. Most of the information held by ministries is not public and people should photocopy papers at their expenses if they want it. Some papers on water integrity are considered to be confidential although they contain very simple information (Zeina Majdalani interview, 2015). This causes problems in transparency and accountability. Even MoE does not get the environmental information easily, which means it is harder for other entities to do. Sometimes data is not available due to several reasons including the lack of human resources to gather the data. Mostly, data is not online which make it harder to access.

- *Improve the governance level.* The management process can be improved if the institutions develop polycentric governance. Moreover, they should have capacity building initiatives with a supporting, monitoring and feedback strategy. Different stakeholders' roles should be emphasized.

- *Enhance public–private partnerships (PPPs).* The environmental movement can be revived if there is a long-term collaboration of all actors within the country.

Public participation can be enhanced by institutional support. Using institutional goodwill can help engage the citizens in developing strategies to manage natural resources. In most of the case studies, public involvement was limited to consulting and informing citizens about the actions of the government. It will be useful if people affected by and related to each environmental issue would be authorized to participate in making or amending the environmental laws.

The importance of understanding the current situation of the environmental movement helps in understanding the failure of the governance structure. In Lebanon, it is mainly an issue of political interference and corruption.

The politicians in Lebanon and the big corporations had benefited from both. Politicians and elites had built a big network and used the patron-client relationship; in addition, they benefited from the overlapping roles and uncoordinated environmental efforts of different agencies by passing laws and loop holing some regulations. The Lebanese politicians had huge investments in clientelism; this was obvious in the case

study of Haber where they “created” a minister. Clientelism nowadays is like a mafia system in which violence occurs on who opposes the leaders.

We can see that photos raised awareness in the cases of Haber and they are bringing justice to Malychef in the case of toxic waste. Henceforth, public awareness through pieces of evidence is a key to environmental movement. One should not depend on the foreign fund to act, one should have the high will and get trained for skills instead.

The door to having an applicable policy is coordinating with key line ministries. The best way to follow is the Haber strategy in these steps:

1- Research: gathering data and information scientifically. Living in the area one is targeting is essential to a better understanding of its people and environment.

2- Public participation: making a strategy for awareness campaigning.

3- Gain grassroots support

4- Involve key personnel that are mainly political or religious.

5- Follow up with people that took part in the awareness campaigns and different activities in the grassroots support.

6- Work on legislative issues in parallel to the awareness campaign. Things to be made are: preparing preambles and all the needed documents, and hiring a lawyer (this can be a second step if there is no capacity to do both at the same time).

7- Lobby for the cause to get the law enacted.

8- Don't get affiliated with any party, have connections and relations with all.

Haber's strategy was successful in enacting two laws but his method did not survive; it was successful at his time. His holistic liberal scientific method is not used by NGOs nowadays. They are mainly specialized in certain issues and more concerned about their public image. Simply his approach was not successful and did not live because morals have changed. The passion of Haber and the spirit of faithfully giving all to the environment are rarely found today. Haber is a model to follow; he opened the gate to preserve what remains of our biodiversity. Real environmentalists push for

things and lead to change. Within the last twenty years, there were a lot of international agreements, so activists, instead of thinking globally and acting locally, were thinking and acting globally to promote themselves. A key point to be successful is to have ecologism as an ideology.

Environmentalism in this thesis appeared to be a collection of managerial approaches that involve state and non-state stakeholders. Haber was able to solve the environmental problems by applying the liberal science-based approach to environmentalism. Haber put science on display in contrast to the radical claims stating that science treats nature in an instrumental way. He presented science as a tool to preserve nature, as a method to conserve, and as a helpful approach to grassroots. Environmental NGOs and their civil society NGOs can use scientific data to push for placing environmental problems on the political agenda. As Haber did, they can ground holistic views in science. By Science “I don't mean that science is only biology, science can be social or cultural” (Dr. Farajalla interview, 2015). So case studies and

interviewee view science as "... a very wide range of activities [and] a definition of it needs to be general; it certainly needs to cover investigation of the social as well as natural worlds; it needs the words "systematic" and "evidence"; and it needs to be simple and short" (Sample, 2009).

Environmental problems have physical realities that cannot be denied; post-positivism had taken the other approaches' reservation on the scientific one by stating that science does change. It is true that all theories are revisable but this does not mean to discard science. In addition, there are scientific facts that are undeniable, for instance, numbers and rates of pollution (Dr. Farajalla interview, 2015). By looking at climate change negotiations, one can figure out that science was also involved in the precautionary principle so this busts the changing claim. The liberal science-based approach had proved its accuracy in environmental policy planning.

The environmental movement in Lebanon will improve by time and it will be successful. I believe that they will start researching and raising awareness to reach the

place that the movement deserves. Everything will be better and the civil society will do a vast work. They cannot do this in a short time since getting new legislation or a new adapted government strategy is a lengthy and time-consuming process where evidence and political will need to be built up over long periods.

APPENDIX

Annex 1

Table 1 Environment in the different Council of Ministers' statements for the vote of confidence in the parliament adopted from the Ministry of Environment release (MOE, 2012) (PCM, 2014).

Council of Ministers (Period, Decree)	Environmental Statement
4/12/1998- 26/10/2000 Decree No. 4 dated 4/12/1998	Setting a national environmental policy based on the cooperation between the public and private sectors.
	Developing a plan of action depending on a scale of priorities.
	Finding a mechanism for coordination between different public institutions and municipalities concerning the decisions and projects with environmental impact.

26/10/2000- 17/4/2003 Decree No. 4336 dated 26/10/2000	Setting a modern management system for water and rationalization of its use, and the cooperation with the Ministry of Environment for this purpose.
	Setting a strategy to valorize water and benefit from it through:
	Establishing projects for the use of surface water such as dams, lakes, and completing the Litani River project and its implementation in the best way, as part of protocols for the transfer facilitator held with friendly countries and institutions.
	Developing a plan to expand and upgrade water networks in the framework of cooperation with the private sector to provide water to all areas and neighborhoods of Lebanon.
	Expanding public transport over the entire Lebanese territory, including trains, which contributes to improve the economic cycle and reduce fuel bills and reduce environmental pollution.
	Encouraging investment in the tourism sector and preserve our touristic and environmental wealth

	Developing an explicit environmental policy and an action plan bound with a timeframe.
	Conservation of groundwater and its protection from pollution.
	Establishing a national scientific environmental institution, aiming at conducting research and specialized studies and setting standards. This will facilitate informed decision making in setting 2 environmental policies rather than devising reactive and first aid policies the impact of which does not exceed, at best, postponing the problem, or moving it from one place to another.
	Implementing a comprehensive public awareness plan aiming at providing our generations with the environmental principles based on informative, educational and civil programs.
	Mainstreaming environmental management in all sectors.
	The coordination between the Ministry of Environment and other ministries will ensure finding proven solutions to the quarries
	The operational measures of the environmental policy to which we aspire

	should not be limited to sanctions and deterrence of offenders. It is essential to use incentives as a key part of any modern policy to encourage individuals and institutions to adopt environmental protection measures giving them financial support and tax breaks, in addition to fining polluters.
17/4/2003- 26/10/2004 Decree No. 10057 dated 17/4/2003	The Government will work to activate and strengthen the role of the Ministry of the Environment by working on issuing laws and implementing decrees relating to its planning, executing and oversight role and issuing laws with regard to quarries, beaches, parks and protection of springs, and others. - The government will pay special attention to this matter in order to preserve the health of citizens and water resources and to protect our touristic, agricultural and industrial economy.
26/10/2004- 19/4/2005 Decree No. 13621 dated 26/10/2004	The Government would seek to encourage direct investments into rural areas, giving some incentive to preserve the environment and to stabilize the rural people in their areas The government will also work on re-designing policies on public services

	<p>equipment and urban planning laws to be in line with the “national land use master plan” which established an evolving concept of Balanced Development and allocated functions for each of the Lebanese areas depending on the nature of their resources and in consultation with local authorities and civil society 3 organizations</p>
	<p>The Government will address infringements on public coastal properties.</p>
<p>19/4/2005- 19/7/2005 Decree No. 14233 dated 19/4/2005</p>	<p>Our government would not lavish promises of proposed projects for implementation during the short period of its mission.</p>
<p>19/7/2005- 11/7/2008 Decree No. 14953 dated 19/7/2005</p>	<p>The government will work to develop a practical framework for cooperation between relevant ministries, including the Ministry of Environment on the one hand and civil society organizations and environmental NGOs on the other.</p>
	<p>The government will give special importance to the reforestation of Lebanon and to stop desertification in parts of its land and maintain the water table.</p>

	<p>The government will work on the one hand to develop a national plan to address the problem of solid waste in all its aspects, and to implement it on the basis of effective coordination between relevant ministries and in partnership with the municipalities,</p>
	<p>The government will work on addressing the issue of wastewater through a comprehensive scheme, based on what was implemented and what is required to connect wastewater networks and wastewater treatment plants benefiting from regional assistance and soft loans on the basis of scientific and international standards adopted in this regard.</p>
	<p>The Government views that care for the environment and its protection requires planning, setting legislation, programming and implementation of policies aimed at integrating environmental policies in all development sectors.</p>
	<p>It also requires the strict enforcement of laws and the implementation of decisions, and cessation of power relations and the dismantling of networks of interests that do not heed to the</p>

	environment and the interests of the nation and the future of the citizens.
11/7/2008	The Government will commit, in cooperation between the Ministry of Public Health and the ministries concerned, to work on establishing a unified body to oversee this work in order to avoid duplication and chaos in the control of water, food and environment
4 9/11/2009 Decree No. 18 dated 11/7/2008	<p>The government will also prepare a number of privatization projects and partnership with the private sector, including preparation of draft laws needed in the sectors of transport, wastewater treatment, oil refining and public parking, and others.</p> <p>The government will follow the ten-year plan and the “national land use master plan” to reinforce the concept of integrated water management aiming at taking advantage of rainwater, snow and springs and the prevention of water waste through surface storage in dams and mountain lakes, because of the limited availability of water resources in Lebanon and the ever-increasing water demand. - The Government will also</p>

	<p>work on replenishing groundwater aquifers and prevent their contamination and ensure water, social and food security and continue to establish wastewater networks and treatment plants for to protect the environment and prevent pollution of surface water and groundwater. - The Government will complete the merge of the four water institutions and improve their performance through modernization of management tools and continuous training of human resources to secure the best water distribution services for citizens and provide irrigation water and dispose wastewater at the lowest cost.</p>
	<p>The Government will seek to achieve sustainable environmental development through strengthening the partnership between the public and private sectors locally, regionally and internationally, and the integration of environmental principles in the policies and programs of all development sectors, and activating the legislative, monitoring and guidance role of the Ministry of the Environment. - The Government would pursue the international application and the</p>

	<p>conclusion of treaties, environmental conventions and protocols, aiming at the same time at following up the implementation of international resolutions on the oil spill on Lebanese shores, and complementing the progressive and leading role played by Lebanon at the regional level in hosting the Arab Environment Facility. - Locally, the government will push forward the implementation of the national integrated solid waste management plan and integrated sanitation projects, through better organization and increased spending on environmental services in those sectors in addition to the encouragement of clean development mechanisms projects in these two sectors and in the industry, energy, transport and agriculture sectors as a contribution in economic development. - The Government will seek to expand green areas through the activation of disaster management and fire prevention and control, and through afforestation, land rehabilitation, and protection of the national water wealth, which is an essential economic resource. - The</p>
--	--

	<p>Government will support the Ministry of the Environment by seeking the issuance of laws and regulatory decrees that will develop their specialized human resources and ensure sustainability of their experience, and activation of proliferation in all governorates to promote decentralization for the service of the citizen, and moving towards the creation of the environmental police for better enforcement of laws and regulations and the dismantling of power relations, in addition to attracting international contributions to stimulate investment in the environmental sector. - The government will strengthen the bonds of communication between the Ministry of Environment and other departments and bodies in order to engage them all in environmental issues in order to achieve environmental reforms in the three pillars of sustainable development.</p>
	<p>In the transport sector: - The government will pursue efforts reached to adopt the policy of the road transport sector, passenger, cargo and maritime transport sector policy after it is discussed by the</p>

	<p>Council of Ministers. It will also work on the development and adoption of a similar policy for the air transport sector is based on the principle of open skies. The main objective of these policies is to define the general framework for the development of the transport sector in all its elements and components, and improve the reality and upgrading its services, particularly passenger transport sector, including ensuring citizens the means of transport safe, reliable and affordable, especially in light of the high prices of transport and the cost of fuel and the escalating risks of environmental pollution.</p>
	<p>- In the agricultural sector: Better utilization of agricultural resources of arable land, water and human efficiencies. Enable the Green plan to play a more active role in the construction of agricultural roads and the establishment of mountain lakes, which contribute to the raise of the level of groundwater.</p>

	<p>- In the energy sector: Increase energy production, including the rehabilitation of Zouk, Jieh power plants and the establishment of new production plants and to study the potential for partnership with the private sector to ensure higher efficiency in operation and reduce waste resulting from the infringement of the distribution networks and billing and collection and treatment of pollution problems, particularly coming from Zouk power plant and secure the needed funds for this purpose.</p>
<p>9/11/2009- 13/06/2011 Decree No. 2839 dated 9/11/2009</p>	<p>Environmental Protection - Form a national committee to follow up the issues of climate change and desertification. - Establish green spaces in cities and towns, promote natural reserves, re-forestation of two million trees a year in all areas, prevent forest fires and reduce the clutter of quarries. - Find quick solutions to the illegal waste dumps located on the Lebanese territory and proceed in the adoption of appropriate means and methods for waste management. - Launch a practical plan, including incentives, to replace existing</p>

	<p>taxis with others that are fuel- efficient. - Develop a mechanism to encourage the use of clean technology and renewable energy.</p>
	<p>Water - Improvement of water distribution and the completion of the extension network. - Benefit from surface water through the implementation of the necessary dams and lakes. - Stop the pollution of groundwater and accelerate the construction of wastewater networks and treatment plants. - Complete the implementation of the Litani project and clean the Qaraoun Lake. - Address the water problem in an integrated manner starting from water depots and sources to rationalization of water demand, good distribution, reuse and underground replenishment. - Identify priorities for implementation of the 10-year plan and secure the necessary funding, and the development of this plan based on the “schema directeur de l’amenagement du territoire libanais” and 7 the water resources conservation plan. - Rationalize water use without considering it as a free good and punish those who cause its pollution. - Conservation of water</p>

	<p>resources through the achievement of balance between the use of groundwater and surface water resources. - Stop leakages from water networks establish water treatment stations and monitor them. - Claim compensation for losses suffered by the oil spill caused by the Israeli hostilities. - Implementation of the Regional Centre for Water Sciences (Information bank and training).</p>
	<p>Energy - Rationalize energy consumption and encourage the use of solar heaters and energy-saving lighting. - Development of the oil law. - Reducing demand through energy conservation and use of renewable energy, finding financing mechanisms targeting renewable energy technologies, encouraging investment in these technologies, completing the Wind Atlas of Lebanon, and benefiting from waste incineration to produce energy. - Rehabilitation of old power plants and reduction of their environmental harm (Zouk & Jieh) and stop using those with high costs while only maintaining them for emergencies. - Institutionalization of the Lebanese Center for Energy</p>

	<p>Conservation and the adoption of a national road map based on modern environmental concepts (Green Energy) and relying on renewable energy sources to reach about 12% reduction of energy consumption by year 2020.</p>
	<p>Public works and transport - Upgrade and organize the public transport sector and encourage citizens to use it. - Conserve the Lebanese coast and take action conducive to the address the problem of infringements on the public maritime domain, in order to preserve the rights of all Lebanese.</p>
	<p>Agriculture - Strengthening agricultural guidance, animal and plant quarantine, monitoring and laboratories. - Strengthening the role of the Agricultural Research Institute and the Green Plan.</p>
	<p>Tourism 8 Concentrate on the development of eco-tourism and rural, religious, medical, cosmetic and cultural tourism.</p>

<p>13/6/2011- Present Decree 5818 dated 13/6/2011</p>	<p>Environment The government is keen on activating the role of the Ministry of Environment and reconsiders its mandate for a just and comprehensive enforcement of the laws and regulations that protect the environment. The Government will work on the adoption of environmental education, and be strict in preserving the natural wealth of Lebanon, and managing natural and environmental risks through prevention and treatment. The Government will strengthen the institutional partnership with non-governmental organizations and regional institutions and international bodies for environment and development, and consolidate relations with international companies to stimulate investment in the environment sector. The government will also work to implement policies and plans related to solid waste, and the master plan for quarries and expanding to Lebanon's green cover through the activation of the national strategy for forest fire management and follow-up on afforestation works and activate the environmental management of basins and protect natural reserves.</p>
---	--

	<p>Energy - Follow up the implementation of the "policy paper of the electricity sector" adopted in 2010 in order to reform the sector and secure electric supply and stability (24/24) and the financial balance of the EDL after empowering it with human and financial resources to achieve financial savings on the national economy and citizens.</p> <ul style="list-style-type: none">- Linking Lebanon internally and externally with oil and gas networks through the initiation of the natural gas coastal line and its related liquid gas marine station during year 2011, and the adoption of all the available alternatives - especially gas - in the areas of transport, industry, electricity and domestic use to reduce costs.
--	--

	<p>Water The Government will work on the development, adoption and implementation of the "National Strategy for the water sector" based on the principle of integrated management and prepared by the 10 Ministry of Energy and Water, including the implementation of wastewater, dams, mountain lakes plans and the launch of a number of them in 2011 and empower the Ministry and water establishments with needed human and financial resources, legislative and regulatory frameworks, to keep up with this strategy and guarantee the conditions of sustainability.</p>
<p>Policy Statement National Interest Government Dated on 20-4-2014</p>	<p>The national interest government will pay special attention to the energy file and commits to continue and speed up the oil exploration and extraction licensing process. It insists on Lebanon's right in its water and its wealth of oil and gas and is committed to accelerate the necessary procedures to delimitate Lebanon's exclusive economic zone maritime borders.</p>

Annex 2

Work Tittle	Year	Description (copied from Ricardus Haber Website)
Published books		
Nature of Lebanon: Humans' Environment: Resources on the Way to Extinction	1992	It is the first book of Ricardus and the first book written in Arabic on environmental problems of Lebanon. It exposes the roots of the problem and their impacts.
Lebanon, Land of the Four Seasons	1995	It is dedicated to expose the beauty of Lebanon and the richness of its nature in awesome sceneries and landscapes. It is an insight to respect and protect the precious natural wealth, for Ricardus believes that if we know this country and love it enough, we will protect it.
Orchids of Lebanon	2009	A kaleidoscopic compilation of the orchid taxa over 35 years of

		surveying the fields of Lebanon.
Floral Enchantment to Lebanon	2009	Portrays most of the flowers named after Lebanon and narrates short biographies of the botanists who named them and their stay in Lebanon.
<u>Support for Decision Making in Studies</u>		
Comprehensive study	1982	A comprehensive study to the President of the Republic of Lebanon explaining the nature of environmental problems in Lebanon and the reasons for their aggravation. The study concludes with practical suggestions to remedy the situation.
Study	1982	A study to the President of the Republic of Lebanon dealing with ecological development and the necessity for the conservation of natural resources and biodiversity. It includes an exposé of

		environmental issues that require urgent attention.
Investigatory study	1982	An investigatory study to the President of the Republic of Lebanon regarding the mass killing of fish in the Kalb River and the water-works station at Dbaye. It describes the reasons behind the unfolding problem and its public health hazards, as well as suggestions to prevent its recurrence.
Study	1982	A study to the President of the Republic of Lebanon dealing with the scientific, ecological, paleontological, historical, cultural, agricultural and touristic importance of Ibrahim River Valley and Watershed. The study pleads for the vital conservation of this site as a natural reserve.

The Organization of Bird hunting in Lebanon	1985	An organizational executive project study. It includes an exposé of the existing situation of Lebanese wild fowls and suggestions to amend the obsolete laws regarding hunting in Lebanon.
Executive study	1987	An executive study dealing with the ecological, agricultural and economic aspects of the actual grasshopper pest problem, suggesting urgent methods of control that would not cause environmental backfire.
Scientific study	1993	A scientific study to the Ministers of Interior, Tourism, Agriculture and Environment concerning the ecological problems of Hadeth Cedar Forest.
Scientific study	1993	A scientific study to the Ministers of Interior, Tourism, Agriculture and Environment concerning

		the ecology of the High Juniper, <i>Juniperus excelsa</i> , and the need for its protection and rehabilitation as a National Tree
Scientific studies	1993	Three scientific studies to the Ministers of the Interior and of the Environment regarding the problem of quarrying in general, and its pertinent health and economic hazards in Mizyara, Shahtoul, Nahr Ibrahim and the Msaylaha Archeologic Site.
Reports	1994	Several reports to the Ministers of Environment and of Agriculture regarding certain ecological problems in Lebanon such as forest fires, bird massacres, goat grazing, destructive rock and sand quarrying, etc.

BIBLIOGRAPHY

1. Al Albashir. 9-7-1943b. wizarat alzziraeat waqatae alahraj Albashir Newspaper. AUB Jafet library Archives.
2. Al Basheer Saturday 21-august-1943. eud 'iilaa alttabiea. Al Basheer Newspaper. AUB newspaper Archives.
3. Al Bayraq Thursday 10-12-1942 issue 6754 alshshabibat allubnaniat fi eid alshshajara. Al Bayraq Newspaper.
4. Al Bayraq. . Thursday 14-1-1943a. issue 6779 sianat alaihraj allubnania Al Bayraq newspaper. AUB Jafet library Archives.
5. Al Bayraq. 15-1-1943b. nifayat bayrut tatahawwal 'iilaa samad Al Bayraq. Al Bayraq newspaper. AUB Jafet library Archives.
6. Al nidaa newspaper 21-5-1937. qate al'ashjar aintiqamaan min 'ashabuha. AUB Jafet library Archives.
7. Al Safa newspaper Thursday 20-6-1940. fahs miah alyanabie fi 'amakin alaistiaf.
8. Al Safa. 5-5-1940a. Al Safa newspaper. daribat alshshajar qayd alddars fi dar alaintidab. Al Safa newspaper. AUB Jafet library Archives.
9. Al-Akhbar. July 21, 2014. alrrumlat albayda' fi khatir 'aydaan. Al-Akhbar Newspaper. Retrieved from <http://www.al-akhbar.com/node/211042>
10. *Al-Binaa*, August 26, 2014, accessed December 3, 2014, <http://www.al-binaa.com/?article=12993>.
11. Albashir 28,29 August1938. Eid Alzohor. Albashir Newspaper AUB Jafet library Archives.

12. Albashir. Saturday 21-august-1943a . eud 'iilaa alttabiea. Albashir Newspaper. AUB Jafet library Archives.
13. AlNidaa. 21-5-1937. Nabaa alasal between Almatn and KISRwan. Issue 956 AlNidaa. Newspaper. AUB Jafet library Archives.
14. AlSafa 18-5-1940b. la tattalif alwaraq alqadim. AlSafa newspaper. AUB Jafet library Archives.
15. Annahar, 24-2-1983 alhifaz ealaa albiyat mutamaraan dakhmaan. P13. Annahar Newspaper
16. Annahar. 6-12-1983. p13. almarkaz alttarbiwi yahtafil bialbiya. almr: dirasat wahalaqat tilfizyunia. Annahar Newspaper.
17. AUB, (February 2006). IN MEMORIAM. The AUB Bulletin Today
18. Aymann Ghrabi, "Lebanese Media Today," November 1, 2012, accessed November 3, 2014, <http://lebanonglc.wordpress.com/2012/11/01/lebanese-media-today/>.
19. Ayyad, Sami. 24-2-1983. mahmiat lubnan lajnat wajamieat muneataf min alttafkir albiyyi alwajh lubnan wamaealimuh wajamaluh. Annahar newspaper.
20. Bassam Al Kantar, May 30, 2009. hadiqat alssanayie <<dkhalat marratan fi jininat>> retrieved from <http://www.al-akhbar.com/node/83486>
21. Baydoun, Maha. (2009). 'iisabat surtaniat ghamidat waimtinae maswuwlin ean alttaeliq. Al Saffir Newspaper. Retrieved from www.centre-catholique.com/newsdetails.asp?newid=33203
22. Berman, Paul. "The Patriot." Los Angeles Times. July 2, 2000. Accessed October 30, 2015. <http://articles.latimes.com/2000/jul/02/books/bk-46875>.
23. CGGL, 2008. Bias in the Lebanese Media, an international observation report. Campaign for Good governance in Lebanon. The Center for Democracy and the Rule of Law ("CDRL"). Retrieved from <http://www.cggl.org/publicdocs/euro-report.pdf>
24. Chevallier, Michel. (6/16/98) Lebanon Housing Built on Toxic Waste Sites.

- Retrieved from www.monitor.net/monitor/9806a/copyright/lebanonhousing.html
25. Daliet Beirut social, environmental, legal aspects. (n.d.). Retrieved 2016, from <http://dalieh.org/index.html#>
 26. Dictaphon group. December 7, 2012 alhariri yashtari shaati alrrumlat albayda' walddalia. Al-Akhbar Newspaper. Retrieved from <http://al-akhbar.com/node/173143>
 27. Dimashqiya, Badr. 30-11-1943. Tree Day. Al Bashir Newspaper. Issue 6994. . AUB jafet library Archives.
 28. ECODIT Friday, 27, Feb. 2015. Legal And Institutional Framework For Environmental Management. United Nations Environmental Program. P181-196. Retrieved from http://www.unep.org/dewa/westasia/Assessments/national_SOEs/west%20asia/Lebanon/Chap12Institutional.pdf
 29. Falof, Alinor. 22-1-1983. albiyat kam yabqaa minha lahiatina? habar yuhkiha sawda' lilshshabat. P12. Annahar newspaper.
 30. Firas khalifeh 28 May 2015. dakhalna marratan 'iilaa janinat alssinayie. Al-Akhbar newspaper. Retrieved from <https://www.al-akhbar.com/sites/default/files/pdfs/20150528/alakhbar20150528.pdf>
 31. For afforestation. 7-september 1927. fi sabil alttahrij. Lisan ALhal Newspaper. AUB Jafet library Archives.
 32. Ghrabi, Aymann. "Lebanese Media Today." November 1, 2012. Accessed November 3, 2014. <http://lebanonglc.wordpress.com/2012/11/01/lebanese-media-today/>.
 33. Global 500. (1988). Pierre Malychef. Retrieved December 10, 2015, from <http://www.global500.org/index.php/thelaureates/online-directory/item/638-pierre-malychef>
 34. Gulmez,, S. B., Mr. (2010, July 2). Support evidence for the rapporteur and the debate at the meeting of the ARLEM's commission for Economic, Social and

Territorial Affairs on 2 July 2010. Retrieved October/November, 2015, from <http://cor.europa.eu/en/activities/arlem/Documents/67af3098-e86f-430c-9966-91d54459b3c3.pdf>

35. Habib Maalouf. 13/07/2010. mataa wade khuttat mutakamilat li'iidarat alshshati alllubnani wahimayat almawaqie alttabieia? Al-Safir Newspaper. Retrieved from <http://www.centre-catholique.com/newsdetails.asp?newid=40803>
36. Hadel Farfour. 12, June, 2015. <<qda' alejl>> yuqfl shati alrrumlat albayda'. Al Akhbar newspaper. Retrieved from <http://www.al-akhbar.com/node/235366>
37. hadiqat alssanayie taeud bhllt jadidatan misahatan aistithnayiyatan tudahi alhadayiq al'uwruubbia. Retrieved from <http://www.ucipliban.org/%D8%AD%D8%AF%D9%8A%D9%82%D8%A9-%D8%A7%D9%84%D8%B5%D9%86%D8%A7%D8%A6%D8%B9-%D8%AA%D8%B9%D9%88%D8%AF-%D8%A8%D8%AD%D9%84%D9%91%D8%A9-%D8%AC%D8%AF%D9%8A%D8%AF%D8%A9-%D9%85%D8%B3%D8%A7%D8%AD%D8%A9-%D8%A7/>
38. Halack, Hassan. May 21, 2014. hadiqat alssanayie yuead aiftitahuha fi 31 'ayar baed tajdidiha wal suyur yarfaeun daewaa didd aljumhuriat alllubnaniat liaistieadat aleaqar. Annahar Newspaper. Retrieved from <http://newspaper.annahar.com/article/135057-%D8%AD%D8%AF%D9%8A%D9%82%D8%A9-%D8%A7%D9%84%D8%B5%D9%86%D8%A7%D8%A6%D8%B9-%D9%8A%D8%B9%D8%A7%D8%AF-%D8%A7%D9%81%D8%AA%D8%AA%D8%A7%D8%AD%D9%87%D8%A7-%D9%81%D9%8A-31-%D8%A3%D9%8A%D8%A7%D8%B1-%D8%A8%D8%A3%D9%8A%D8%A7%D8%B1-%D8%A8%D8%B9%D8%AF-%D8%AA%D8%AC%D8%AF%D9%8A%D8%AF%D9%87%D8%A7->

- [%D9%88%D8%A2%D9%84-%D8%B3%D9%8A%D9%88%D8%B1-%D9%8A%D8%B1%D9%81%D8%B9%D9%88%D9%86-%D8%AF%D8%B9%D9%88%D9%89-%D8%B6%D8%AF](#)
39. Hamdan, Fouad. Waste Trade In The Mediterranean – Toxic Attack Against Lebanon. Case One: Toxics From Italy. Lebanon Campaign. Greenpeace Mediterranean. Retrieved from http://www.fouadhamdan.org/cms/upload/pdf/ItalianToxicWasteInLebanon_FouadHamdan_GreenpeaceReport_ENGLISH_May1996.pdf
 40. Hardin, Garrett. (December 1968). The Tragedy of the Commons. Science 13. Vol. 162. no. 3859, pp. 1243 – 1248. DOI: 10.1126/science.162.3859.1243 Retrieved from <http://www.sciencemag.org/cgi/content/full/162/3859/1243>
 41. Hariri, Saad. November 2009. Ministerial statement of the Government of Prime Minister Saad Hariri. Retrieved from <http://www.pcm.gov.lb/arabic/subpg.aspx?pageid=3630>
 42. Hariri, Rafic. November 1992. Ministerial statement of the government of Prime Minister Rafik Hariri. Retrieved from <http://www.pcm.gov.lb/arabic/subpg.aspx?pageid=3638>
 43. Hassan Halack, 21-May 2014. Al.Nahhar Newspaper. hadiqat alssanayie yuead aiftitahuha fi 31 'ayar baed tajdidiha wal suyur yarfaeun daewaa didd aljumphuriat alllubnaniat liaistieadat aleaqar. Retrieved from
 44. Hiyam Tawk, 22 May 2014. hadiqat alssinayiei.. eawdat 'iilaa alzzaman aljami. Al Mustaqbal Newspaper. Retrieved from <http://www.almustaqbal.com/v4/Article.aspx?Type=NP&ArticleID=618118>
 45. <http://newspaper.annahar.com/article/135057-%D8%AD%D8%AF%D9%8A%D9%82%D8%A9-%D8%A7%D9%84%D8%B5%D9%86%D8%A7%D8%A6%D8%B9-%D9%8A%D8%B9%D8%A7%D8%AF-%D8%A7%D9%81%D8%AA%D8%AA%D8%A7%D8%AD%D9%87%D8%>

[A7-%D9%81%D9%8A-31-%D8%A3%D9%8A%D8%A7%D8%B1-%D8%A8%D8%A3%D9%8A%D8%A7%D8%B1-%D8%A8%D8%B9%D8%AF-%D8%AA%D8%AC%D8%AF%D9%8A%D8%AF%D9%87%D8%A7-%D9%88%D8%A2%D9%84-%D8%B3%D9%8A%D9%88%D8%B1-%D9%8A%D8%B1%D9%81%D8%B9%D9%88%D9%86-%D8%AF%D8%B9%D9%88%D9%89-%D8%B6%D8%AF](#) and from <http://aliwaa.com/Article.aspx?ArticleId=174787>

46. Journal Of Development. (October 12, 2012). Environmentalism of the Poor: Who led the environmental movements – elites or community? Retrieved from <http://journalofdevelopment.wordpress.com/2012/10/12/environmentalism-of-the-poor-who-led-the-environmental-movements-elites-or-community/>
47. Karami, Omar. October 2004. Ministerial statement of the government of President Omar Karami . Retrieved from <http://www.pcm.gov.lb/arabic/subpg.aspx?pageid=3633>
48. Katerji, Omar. (Oct. 09, 2009) UNESCO conference looks to strengthen media role in protecting environment. Daily Star. Retrieved from <http://www.dailystar.com.lb/News/Lebanon-News/2009/Oct-09/55075-unesco-conference-looks-to-strengthen-media-role-in-protecting-environment.ashx#axzz3GCTqTvCQ>
49. Kennedy, John. (September 25, 1961). *Address by President John F. Kennedy to the UN General Assembly*. Retrieved from <http://www.state.gov/p/io/potusunga/207241.htm>
50. LBCI News, 24 Jun 2012. shati alrrumlat albayda'. Retrieved from <https://www.youtube.com/watch?v=pw57enjO-cw>
51. LBCI News, 3 Oct 2013. siadu mina' alddaliat fi bayrut: In nughadir hdha albahar <https://www.youtube.com/watch?v=55fVj-8qtYM>

52. Legal Agenda. 9 March 2015. <<alkhttt alshshamilat litartib aistiemalat al'aradi>>alamlak albahriat fi lubnan: masharie qawanin wulidat maytatan. Retrieved from <http://www.legal-agenda.com/article.php?id=1025&lang=ar>
53. Lisan Alhal 10-June, 1925. sahib aimtiaz nabe aleusal. Lisan ALhal newspaper. AUB Jafet library Archives.
54. Lisan Alhal 20-1-1931. yawm alshshajarat fi lubnan. . Lisan ALhal Newspaper. AUB Jafet library Archives.
55. LOE, 1998. Lebanon: Toxic Waste Dumping Ground. Air Date: Week of September 11, 1998. Living on Earth. Retrieved from <http://loe.org/shows/segments.html?programID=98-P13-00037&segmentID=2>
56. Makdisi, Ussama. *The Culture of Sectarianism: Community, History, and Violence in Nineteenth-Century Ottoman Lebanon*. Berkeley, CA: University of California Press, 2000
57. May Fleifel. November 2, 2009. Oyouon Beirut magazine. Number zero. Retrieved from <http://www.oyoonbeirut.com/images/magazine0.pdf>
58. Mikati, Najib. July 2011. Ministerial statement to the government of President Najib Mikati. Retrieved from <http://www.pcm.gov.lb/arabic/subpg.aspx?pageid=4917>
59. MOE, Thursday 12-January 2012. Environment in the different Council of Ministers' statements for the vote of confidence in the parliament 1998-2011. Retrieved from <http://www.moe.gov.lb/getattachment/The-Ministry/Council-of-Ministers-Policy-Statement/Council-of-Ministers-Policy-Statement/Environment-in-the-different-Council-of-Ministers.pdf>
60. Naaman, Jihad. November 14, 2015. tunbih liman yhmmh al'amra!. Al Liwaa newspaper. Retrieved from <http://www.aliwaa.com/Article.aspx?ArticleId=266159>

61. New Franchise. 7-10-1927. Imtiyaz jaded. Lisan ALhal Newspaper. AUB Jafet library Archives.
62. Nohad Topalian, "Journalists in Lebanon Discuss Improving Media Coverage of the Environment," Al-Shorfa, May 1, 2012, accessed November 23, 2014, http://al-shorfa.com/en_GB/articles/meii/features/main/2012/05/01/feature-03.
63. Pascal Azar. 22 May , 2014. Annahar newspaper
64. PCM, 20-3-2014. Policy Statement National Interest Government. Presidency of Council of minister webpage. Retrieved from <http://www.pcm.gov.lb/Library/Files/Policy%20Statement-en.pdf>
65. Pioneer Environmental Activist. 2006. Ricardus Haber Webpage. Retrieved from http://www.ricardushaber.com/index.php?option=com_content&task=view&id=45&Itemid=1
66. Presidency of the Republic of Lebanon. "THE LEBANESE CONSTITUTION." 1995. Accessed December 3, 2014. <http://www.presidency.gov.lb/English/LebaneseSystem/Documents/Lebanese%20Constitution.pdf>.
67. Press and Media. 2006. Ricardus Haber Webpage. Retrieved from http://www.ricardushaber.com/index.php?option=com_content&task=view&id=55&Itemid=1
68. Rayan Majid. 12/09/2014. alsyaj tuhasir bahr bayrut waramluha wskkanha. NOW News. Retrieved from <https://now.mmedia.me/lb/ar/%D8%AA%D8%AD%D9%82%D9%8A%D9%82%D8%A7%D8%AA/563447-%D8%A7%D9%84%D8%B3%D9%8A%D8%A7%D8%AC-%D9%8A%D8%AD%D8%A7%D8%B5%D8%B1-%D8%A8%D8%AD%D8%B1->

- [%D8%A8%D9%8A%D8%B1%D9%88%D8%AA-%D9%88%D8%B1%D9%85%D9%84%D9%87%D8%A7-%D9%88%D8%B3%D9%83%D8%A7%D9%86%D9%87%D8%A7](#)
69. Ricardus M. Haber. (2007). Retrieved January 12, 2016, from http://www.nhmedit.com/index.php?option=com_content
70. Sheikh PIERRE GEMAYEL. (2014). Retrieved January 12, 2016, from http://kataebonline.org/PIERRE_GEMAYEL.html
71. Sidahmed, Mazin. Mar. 21, 2015. Toxic waste scandal rekindles 20-year-old memories. Daily Star. Retrieved from <http://mideastenvironment.apps01.yorku.ca/2015/03/toxic-waste-scandal-rekindles-20-year-old-memories-daily-star/>
72. Siniora , Fouad . July 2008. The ministerial statement of the Government of Prime Minister Fouad Siniora . Retrieved from <http://www.pcm.gov.lb/arabic/subpg.aspx?pageid=3616>
73. Solh, Rashid. May 1992. Ministerial statement of the Government of Prime Minister Rashid Solh. Retrieved from <http://www.pcm.gov.lb/arabic/subpg.aspx?pageid=3637>
74. Traboulsi, Fawwaz. (2014). Social Classes and Political Power in Lebanon. Heinrich Boell Foundation - Middle East. Retrieved from https://lb.boell.org/sites/default/files/fawaz_english_draft.pdf
75. Thabat. “Hitan Almal Tbtla Sht Beyrot.” May 28, 2014. Accessed November 1, 2014. http://www.athabat.net/news/index.php?option=com_content&view=article&id=13578:%D8%AD%D9%8A%D8%AA%D8%A7%D9%86-%D8%A7%D9%84%D9%85%D8%A7%D9%84-%D8%AA%D8%A8%D8%AA%D9%84%D8%B9-

http://al-shorfa.com/en_GB/articles/meii/features/main/2012/05/01/feature-03

76. Topalian, Nohad. "Journalists in Lebanon Discuss Improving Media Coverage of the Environment." Al-Shorfa. May 1, 2012. Accessed November 23, 2014. http://al-shorfa.com/en_GB/articles/meii/features/main/2012/05/01/feature-03.
77. Toufic, Meshar, Walid Nasrallah, and Aref Alameddine. "Int. J. of Arab Culture, Management and Sustainable Development." *Technology Management for the Global Future, 2006. PICMET 2006* (1, no. 1 (2008): 5-22. 10.1504/IJACMSD.2008.020486.
78. Warner, B. (2015, May 11). Sustainable adaptation and the institutional analysis and diversity (IAD) framework. Retrieved June 17, 2015, from <http://blogs.umass.edu/bpwarner/2015/05/11/sustainable-adaptation-and-the-institutional-analysis-and-diversity-iad-framework>
79. Whaley, L., and E. K. Weatherhead. 2014. An integrated approach to analyzing (adaptive) comanagement using the "politicized" IAD framework. *Ecology and Society* 19(1): 10. <http://dx.doi.org/10.5751/ES-06177-190110>
80. Yara Nahle. 20-7-2015. "shaty rumlat albayda": lays liddawlat man yudafie eanha. Al Modon electronic newspaper Retrieved from <http://www.almodon.com/society/180e41ea-e000-4f27-87f2-5003f1f2c6ea>