

# Climate Change and Environment in the Arab World

April 2015

## The Way Forward to Safeguard Water in Lebanon

National Water Integrity  
Risk Assessment

Nadim Farajalla, Silva Kerkezian, Zeinab Farhat,  
Rana El Hajj and Michelle Matta

Research Report

# Climate Change and Environment in the Arab World

Research Report | April 2015

## The Way Forward to Safeguard Water in Lebanon

### National Water Integrity Risk Assessment

The Climate Change and Environment in the Arab World Program aims to understand the climate change and environment policy process in the region and define the most appropriate policy recommendations by linking development in applied sciences on issues related to climate change and environment to social sciences.

Nadim Farajalla Faculty Research Director  
Rana El Hajj Program Coordinator  
Silva Kerkezian Project Coordinator  
Zeinab Farhat Research Assistant  
Michelle Matta Field Assistant

**Nadim Farajalla, Silva Kerkezian, Zeinab Farhat,  
Rana El Hajj and Michelle Matta**

Published by the Issam Fares Institute for Public Policy and International Affairs, American University of Beirut.

This report can be obtained from the Issam Fares Institute for Public Policy and International Affairs office at the American University of Beirut or can be downloaded from the following website: [www.aub.edu.lb/ifi](http://www.aub.edu.lb/ifi)

The views expressed in this document are solely those of the author, and do not reflect the views of the Issam Fares Institute for Public Policy and International Affairs or the American University of Beirut.

Cover image ownership rights belongs to Montaser Othman

**Beirut, April 2015**

**© All Rights Reserved**

# Contents

---

<b>Preface</b> .....	<b>4</b>
<b>Acknowledgements</b> .....	<b>5</b>
<b>List of Acronyms and Abbreviations</b> .....	<b>6</b>
<b>List of Tables</b> .....	<b>7</b>
<b>List of Figures</b> .....	<b>7</b>
<b>1. Why a Water Integrity Report</b> .....	<b>8</b>
1.1 Stakeholders and Institutions of the Water Sector .....	8
1.2 National Integrity Processes .....	14
1.3 Water Integrity Processes .....	19
<b>2. Identified Challenges to Water Integrity in Lebanon</b> .....	<b>20</b>
2.1 Fragmented Legislation with Weak Enforcement.....	20
2.2 Overlap in Roles and Responsibilities within and between Institutions .....	21
2.3 Irregular Permitting of Well Permits, Illegal Connections and Over-Abstraction .....	21
2.4 Lack of National Water Information and Data .....	21
2.5 Absence of Budgeting .....	23
2.6 Discrimination and Other Problems in Human Resources .....	23
2.7 Procurement and Public Works .....	24
2.8 Inequitable Distribution and Privatization of the Water Sector.....	24
<b>3. Achieving Water Integrity</b> .....	<b>25</b>
<b>4. Conclusion</b> .....	<b>27</b>
<b>Bibliography</b> .....	<b>28</b>
<b>Appendices</b> .....	<b>30</b>
Appendix 1 - Laws and Regulations of the Lebanese Water Sector.....	30
Appendix 2 - Analytical Framework for Water Integrity Risk Assessment in Lebanon.....	33
Appendix 3 - List of stakeholders interviewed: .....	40

# Preface

---

IFI's Climate Change and Environment in the Arab World Program, launched in 2008, aims to use the technical expertise of academics to answer socially driven questions on climate change and the environment in a multidisciplinary approach in order to fill policy gaps in Lebanon and the Arab world.

The Program has conducted several research studies, including mapping studies, such as the "Country-Specific Studies on Climate Change and the Policy-making Process in the Levant" and national studies such as the "National Economic, Environment and Development Studies (NEEDS) for Climate Change Project" with the Lebanese Ministry of Environment. The latter was selected by the United Nations Framework Convention on Climate Change (UNFCCC) secretariat for presentation at the Conference of the Parties to the convention (COP15) in Copenhagen. More recent studies include the "Impact of Population Growth and Climate Change in Lebanon and Egypt on Water Scarcity, Agricultural Output and Food Security", "Lebanon's Water-Energy-Food Nexus: Policy and Institutional Analysis", "Climate Change in Lebanon: Higher-order Regional Impacts from Agriculture" and "A Window into the Future: The Cost of Doing Nothing – The Drought of 2014 in Lebanon".

In 2014, the Program was selected to be the national partner in the "Capacity Building Programme on Water Integrity for the Middle East and North Africa region", implemented by the Stockholm International Water Institute and partners, including UNDP Water Governance Facility, Global Water Partnership - Mediterranean, Integrity Action, International Union for Conservation of Nature – Regional Office of Western Asia, and the Arab Integrated Water Resources Management Network, with the financial support of the Swedish Government. The objective of the program is to develop capacities of various water sector stakeholder groups at different governance levels to improve transparency, accountability and participatory practices in water management in the MENA region. The program is simultaneously implemented in Jordan, Palestine, Morocco, Tunisia and Lebanon.

This unique assessment report was conceived within this capacity-building program, and it aims to provide a general overview of the integrity and corruption risks surrounding the various management and governance aspects of the Lebanese water resources and sector. It is a national study that identifies and analyzes the main water integrity and corruption risks in Lebanon with a mapping of stakeholders and institutions of the water sector, as well as the existing integrity processes in the country. The study then delves into identifying risks of water integrity in the country from information collected from more than 60 semi-structured interviews with the majority of the main stakeholders. The assessment concludes by proposing some policy needs and recommendations.

This publication is the compilation of work conducted over the last two years. This work provided a better understanding of the water integrity risks in Lebanon, and identified the urgent need for a national anti-corruption strategy together with a legislative reform of the water sector to tackle these integrity risks.

We hope that this report will be seen as a useful tool in identifying and confronting corruption risks in the water sector and in securing water integrity.

## **Nadim Farajalla**

Faculty Research Director of the Climate Change and Environment in the Arab World Program  
Issam Fares Institute for Public Policy and International Affairs  
American University of Beirut

## Acknowledgements

---

This report is based upon work undertaken at the Issam Fares Institute for Public Policy and International Affairs at the American University of Beirut within the “Capacity Building Programme on Water Integrity in the Middle East and North Africa” implemented by the Stockholm International Water Institute and partners, with the financial support of the Swedish Government.

We would like to express our gratitude to H.E. Mr. Arthur Nazarian, Lebanese Minister of Energy and Water for supporting the project and this report. Further, we would like to thank Ms. Randa Nemer and Ms. Suzy Hoayek for reviewing and vetting various aspects of the report.

We would also like to thank the following colleagues from IFI for contributing to the completion of this report: Ms. Patricia Haydamous, Mr. Alex Aghajanian, Mr. Michael Huijjer, and Ms. Nermin El-Horr. Design was executed by Ms. Donna Rajeh.























































## Appendix 2 - Analytical Framework for Water Integrity Risk Assessment in Lebanon

Governance Process	Risk Area	Detailed Risk	Causes	Actors Involved	Proposed Measures
Policy-making Legislation Regulations and Enforcement	Absence of legislative process for allocation of water rights between different sectors (residential, industrial, touristic and agriculture)	<p>Inequity in the distribution of water between the different economic sectors (agriculture, industry, tourism, households) as well as between rural and urban areas</p> <p>Lack of monitoring from the government's side on the usage of water by consumers</p>	<p>Lack of exact information on the needed water quantities for each sector</p> <p>Absence of legislation regulating the distribution of water</p> <p>Lack or weak enforcement of the existing laws regulating the water sector</p> <p>The application of outdated laws</p>	<p>MPs</p> <p>Council of Ministers</p> <p>MoEW</p> <p>MoT</p> <p>MoA</p> <p>MoIM</p> <p>MoPH</p> <p>Research centers such as the Lebanese Agricultural Research Institute (LARI), National Council for Scientific Research (CNRS) and Universities for Data WEs</p>	<p>Trainings on legislation writing</p>
	Lack of distribution of water in a fair, equitable manner	<p>Inequitable and unsustainable water distribution to households (in terms of water quantities)</p> <p>Water distribution is inequitable due to availability of the resources in some areas compared to others</p>	<p>Old and deteriorated infrastructure</p> <p>Political interference through providing the means in having access to water for specific communities; this is mainly to showcase the good deeds that politicians implement</p> <p>Use of money to divert water to rich areas away from less well-to-do areas</p>	<p>MoEW</p> <p>WE s</p> <p>MPs</p> <p>Council of Ministers</p> <p>Judiciary system</p>	<p>Awareness campaigns on water rights</p>



Governance Process	Risk Area	Detailed Risk	Causes	Actors Involved	Proposed Measures
Policy-making Legislation Regulations and Enforcement	Roles and responsibilities among agencies are overlapping	<p>The presence of more than one enforcing governmental body and the absence of coordination between these bodies</p> <p>Very general legislation which leads to overlaps in responsibilities and therefore ambiguity in accountability</p>	<p>Lack of operational decrees for the implementation of existing laws, such as Law 221</p> <p>The application of outdated laws which do not clearly specify the distribution of the responsibilities</p>	<p>MoIM</p> <p>MoEW</p> <p>MoA</p> <p>MoE</p> <p>MoPH</p> <p>WEs</p> <p>Judiciary system</p> <p>MPs</p> <p>Council of Ministers</p> <p>Experts in the Lebanese legal framework and legal water issues</p> <p>End users</p> <p>The public</p>	
	Weak participation of the public in the formulation of water sector policies, legislation and regulations	<p>Low levels of trust between the citizens and the governmental bodies</p> <p>Lack of laws concerning data sharing between institutions, and between the public institutions and the community</p>	<p>Political and personal interests are above the public's interest</p> <p>Abuse of power and positions</p> <p>Political influence</p> <p>Corruption in management</p> <p>Lack of accountability to the public in delivering services</p> <p>Unequal enforcement of the law: enforcement of the law on some users while others are considered above the law</p> <p>Absence of participatory processes at the policy planning stage</p> <p>Governmental bodies are not offering solutions to public problems; the private sector or civil society rather plays that role</p>	<p>The public</p> <p>End users</p> <p>Public administrations</p> <p>MoEW</p> <p>MoA</p> <p>MoE</p> <p>Law enforcing bodies such as the MoIM</p>	<p>Appealing employment in the public sector through competitive salaries and benefits, career development and continuous development of professional skills</p> <p>Development of clear environmental laws and regulations</p> <p>Setting a timeframe for voting on laws</p>

Governance Process	Risk Area	Detailed Risk	Causes	Actors Involved	Proposed Measures
Policy-making Legislation Regulations and Enforcement	Enforcement of pollution legislation	Lack of enforcement and implementation of the environmental laws, even though according to some experts, the Lebanese environmental law is one of the best	New laws that are in the pipeline to be voted on by the Parliament or to be ratified The long process (or the delays) for ratifying laws by Parliament and the cabinet	MoEW MoA MoE MoT MoI MoIM MoET WEs Research centers Civil society Experts End users	
		Lack of inspection and control of the water resources	Weak legal prosecution		
		Environmental law 444, is not enough; there is a need of additional legislation that regulates more specific environmental conditions	Insufficient human and financial resources in enforcing regulations		
		Lack of application decrees of existing laws	Lack of public awareness		
		Poor coordination between relevant ministries which sometimes leads to deadlock and halting of large water related projects			

Governance Process	Risk Area	Detailed Risk	Causes	Actors Involved	Proposed Measures
Policy-making Legislation Regulations and Enforcement	Issuance of well permits	<p>The increasing number of illegal wells (number of illegal wells is three times the number of the legal wells)</p> <p>Laws related to wells are very broad and outdated</p> <p>Weak monitoring capacities of the existing wells</p> <p>Ignoring relevant guidelines when issuing permits</p> <p>Bribery to cover up illegal drilling of wells</p>	<p>Lack of coordination between the stakeholders or public institutions responsible for monitoring wells</p> <p>Corruption (bribery) of the responsible parties</p> <p>Lack of accountability</p> <p>The nonexistence of a sole enforcing, monitoring, and holding accountable unit</p> <p>Weak capacities of the institutions in monitoring bribery</p> <p>Lack of knowledge – thus ability - of setting up monitoring networks</p> <p>Lack of implementation of the laws governing wells</p>	<p>MoEW</p> <p>MoIM</p> <p>End users</p> <p>WEs</p>	<p>Development of an open access database for wells</p> <p>Well metering</p>
	Over-abstraction of groundwater resources	<p>Drying out of communal springs traditionally used by communities, due to over-abstraction of groundwater by private wells</p> <p>Over-abstraction leading to intrusion of sea water</p> <p>Unlicensed water suppliers over-abstracting water (selling water as a source of financial income)</p> <p>Bribery of water supervisors (responsible of distributing water) by the consumers in order to obtain more water</p> <p>Political influence in backing well owners</p>	<p>Lack of monitoring of existing wells (legal or illegal)</p> <p>Lack of accountability</p> <p>Personal financial interests by selling water without the required permits</p> <p>The perception of water as a right, not a service</p>	<p>MoEW</p> <p>MoIM</p> <p>Farmers</p> <p>WEs</p> <p>End users</p>	<p>Well logging</p> <p>Training on how to set up monitoring networks and how to operate and maintain these.</p>

Governance Process	Risk Area	Detailed Risk	Causes	Actors Involved	Proposed Measures
Planning and Budgeting	Planning	<p>Lack of implementation of plans</p> <p>No clear vision in the modifications and amendments of legislative texts</p> <p>The exclusion of some institutions in the design phase of strategies and in decision-making processes, while these institutions play a great role in monitoring and implementation</p> <p>Lack of continuity - Plans are set according to each minister's priorities; this affects the continuity of plans, resulting in inefficiency</p> <p>Lack of political will to implement plans</p>	<p>Turnover of ministers, leading to a shift in projects and plans and priorities. This is usually visualized when some big infrastructure projects such as dams are stopped due to political influence of ministers. Lack of scientific data</p> <p>Reliance on old data</p> <p>Lack of participatory approach</p> <p>Plans set according to personal interests rather than the public's benefit</p> <p>The slow bureaucratic system which resort to bribery to speed up the process</p> <p>Lack of coordination between the different governing bodies</p>	<p>MPs</p> <p>MoEW</p> <p>Council of Ministers</p>	<p>Trainings on writing water sector strategies</p>
	Budgeting	<p>Ministries working on the last presented budget to the government in 2005</p> <p>Lack of financial resources</p> <p>Old budgets, set according to certain priorities</p> <p>Old budgets do not take into account the yearly price inflation</p> <p>Donor agencies regulating and restricting projects according to their agendas rather than it being needs-based</p> <p>For NGOs: Acquisition of funds in an unsustainable way, (according to the funding themes) leading to the discontinuation of projects, for example the shifting of funds to the Syrian crisis</p>	<p>Lack of transparency in obtaining and employing funds</p> <p>Lack of accountability</p> <p>Political standoff concerning the national budget</p> <p>Low collection rates in some regions denying the WEs to be financially independent</p>	<p>MoEW</p> <p>MoA</p> <p>MoE</p> <p>MoIM</p> <p>WEs</p> <p>LRA</p> <p>Council of Ministers</p> <p>MPs</p> <p>International funding agencies</p>	<p>Trainings on development of annual budgets</p> <p>Trainings on development of futuristic budgets</p>

Governance Process	Risk Area	Detailed Risk	Causes	Actors Involved	Proposed Measures
Human Resources Management	Nepotism in recruitments	<p>Appointment of personnel based on the demands of decision-makers, instead of qualifications</p> <p>High vacancy rate (MoEW 80% vacant)</p> <p>Low hiring rate</p> <p>Little growth in human capital</p> <p>The quality of the work is not up to professional standards</p> <p>Establishments contacted by phone to offer jobs to people who are not qualified but have a political connection</p>	<p>The Civil Service Board is responsible for recruitment but is influenced by political decision-makers</p> <p>Lengthy hiring process</p> <p>Employees hired according to connections, and not based on qualifications</p> <p>Persistence of employees in public service, who mostly do not have the expertise and up-to-date technical skills in water resources management</p> <p>Insufficient qualified personnel</p>	<p>Civil Service Board</p> <p>Ministries</p> <p>Decision-makers</p> <p>Public servants</p> <p>Media</p>	<p>Accountability measures</p> <p>Creation of a reward system</p>
	Payments for promotions and transfers	<p>Demotivated employees</p> <p>Less qualified employees trained because ministries cannot afford not having these employees present</p>	<p>Imbalance between public servants and IGO employees merged within ministries with regard to salaries and benefits</p> <p>NGOs and private companies offer higher scales of compensation</p> <p>Job applicants to the public services are mainly of lower qualifications, as higher qualified experts are attracted by the more lucrative benefits offered in other sectors</p> <p>Lack of trainings and training budgets</p> <p>Lack of clear job descriptions</p>	<p>Civil Service Board</p> <p>Ministries</p> <p>Decisions-makers</p> <p>Public servants</p>	<p>Trainings on new technologies</p> <p>Trainings on good governance practices</p>

## Appendix 3 - List of stakeholders interviewed:

### 24 interviewees from the governmental sector:

- Advisor to a Minister (1)
- Engineers (4)
- Environmental focal point (1)
- Heads of Departments (10)
- Head of Municipality (1)
- MPs (3)
- Minister (1)
- Senior Environmental Advisor (1)
- Project Manager (1)
- Project Officer (1)

### 36 interviewees from the non-governmental sector:

- Assistant Professor (1)
- Consultants (3)
- Country Director (1)
- Directors of NGOs (6)
- Environmental Engineers (2)
- Farmers (6)
- Hydrologist (1)
- Journalists (3)
- Local Sales Manager in a water selling company (1)
- Professor (1)
- Program and Project Coordinators (3)
- Regional Advisor (1)
- Senior Water and Sanitation Specialist (1)
- Students (4)
- Treasurer of an NGO (1)
- Water Resource Manager (1)

**The Issam Fares Institute for Public Policy and International Affairs (IFI)**

American University of Beirut | PO Box 11-0236, Riad El Solh 1107 2020, Beirut, Lebanon  
Tel: +961-1-374374, Ext: 4150 | Fax: +961-1-737627 | Email: [ifi@aub.edu.lb](mailto:ifi@aub.edu.lb) | Website: [www.aub.edu.lb/ifi](http://www.aub.edu.lb/ifi)