

**EXPLAINING WATER GOVERNANCE IN EGYPT: ACTORS, MECHANISMS  
AND CHALLENGES**

A thesis submitted by

**WESAM MAHMOUD MOHAMED LASHEEN**

To the University of Exeter as a thesis for the degree of

Doctor of Philosophy in

Politics

January 2019

This thesis is available for Library use on the understanding that it is copyright material and that no quotation from the thesis may be published without proper acknowledgement.

I certify that all material in this thesis which is not my own work has been identified and that no material has previously been submitted and approved for the award of a degree by this or any other University.

(Signature)

.....

بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِیْمِ  
"وَ عَلَّمَكَ مَا لَمْ تَكُنْ تَعْلَمُ ۚ وَ كَانَ فَضْلُ اللّٰهِ  
عَلَيْكَ عَظِیْمًا"

صدق الله العظيم

سورة النساء الآية-113

"And Allah has revealed to you the Book and wisdom and has taught you that which you did not know. And ever has the favor of Allah upon you been great".

SURAH AN NISA 113

## **Dedication**

I dedicate this thesis to my beloved husband, my greatest supporter, my strongest motivation, Ahmed. Without your devotion and selflessness, I could not have done it. I could not be more proud to be your wife. I also dedicate this thesis to my wonderful children, Adham, Sara and Hazem without whom, I could have finished this thesis two years earlier!

## Abstract

This thesis adopts a governance theoretical framework to analyse and explain the complex and non-linear nature of water governance arrangements in Egypt. Drawing on empirical data collected from fieldwork with key water stakeholders in Egypt, and using a documentary analysis of the major water policy documents, the thesis examines the interplay dynamics between water agents and structures at national, regional and international levels. The work rests on the observation that water governance arrangements in Egypt have changed over the last two decades to denote an ever-growing role for non-state actors. The historic domination and monopoly of state actors in water policy decisions is no longer suitable for addressing the emerging water challenges. Consequently, the water crisis in Egypt is perceived as a governance issue that calls for the collaboration of state and non-state actors.

In order to inform the ontological, epistemological and methodological basis of the thesis, the governance analytic framework is combined with theoretical insights from structure-agency accounts. By combining theoretical and empirical enquiry, this work attempts to contribute to and advance beyond the existing literature in three ways. First, it offers one of the first attempts to organise an empirical in-depth case study analysis of the water governance arrangements in Egypt using a multi-level structure-agency framework. Second, it provides a systematic examination and mapping-out of the new water governance systems in Egypt. Third, it presents a rigorous evaluation of the impact of water governance regimes at the regional and international levels on water policy decisions at the national level.

Following on from the case study analysis, and guided by the developed theoretical framework, this research has concluded that the Egyptian water governance is dominated by powerful and influential government water bodies. Therefore, any attempt to change existing governance arrangements has to be very carefully planned, taking into account the interaction between water policy agents and the existing water structure. Thus, this thesis will appeal to a diverse audience, including public policy and water governance scholars as well as water experts and policy makers.

**Key words:** water governance, water policy-making, Egyptian water sector, water governance in Egypt.

## **Acknowledgements**

After thanking Almighty Allah for the completion of this work, I would like to thank all the people who contributed in some way to the work described in this thesis. First and foremost, I would like to express my immense gratitude to my academic supervisors, Professor Andrew Massey and Professor Clair Dunlop, without whose knowledge, continuous support, and input, this project would have not been possible. Through their guidance, my supervisors have allowed me to further develop my thoughts and build my knowledge on the subject matter of my research. I owe my deepest gratitude to my husband and my children for their patience, understanding, support and encouragement throughout my PhD journey. I am also indebted to my mother and my father, who taught me the value of education, knowledge and hard work.

## Table of Contents

Dedication .....	3
Abstract.....	4
Acknowledgements.....	5
List of Acronyms and Abbreviations.....	11
List of Figures .....	13
List of Tables.....	14
CHAPTER 1: INTRODUCTION AND RESEARCH OUTLINE.....	15
1.1 Research Background .....	15
1.2 Research Questions and Methodology.....	17
1.3 The Theoretical Framework of the Study.....	19
1.4 Water Governance Reforms in Egypt (The Case Study) .....	22
1.5 The Organisation of the Study .....	26
CHAPTER 2: GOVERNANCE: AN ANALYTICAL FRAMEWORK.....	28
2.1 Introduction .....	28
2.2 The Concept of Governance.....	29
2.3 'Good Governance' Defined .....	32
2.4 Conceptualising Multi-Level Governance .....	37
2.5 Defining Global Governance.....	45
2.6 Administering Global Governance: The Architecture and Mechanisms ..	52
2.7 The Dialectical Relationship between the Concepts of Governance .....	55
2.8 Conclusion.....	57
CHAPTER 3: WATER GOVERNANCE: CONCEPTION AND MECHANISMS	60
3.1 Introduction .....	60
3.2 Governance and the Water Predicament.....	60
3.3 Understanding Water Governance .....	64
3.4 Institutional Components of Water Governance Systems: Water Laws, Policies and Administration.....	73
3.4.1 Water Laws.....	74
3.4.2 Water Policies.....	75
3.4.3 Water Management .....	76
3.4.4 Relationships between the Institutional Components of Water Governance Systems .....	78

3.5 Strategic Issues in Water Governance .....	79
3.5.1 Water Governance and Sustainability .....	80
3.5.2 Water Governance and Gender .....	83
3.5.3 Water Governance and Poverty .....	89
3.6 Conclusion .....	92
<b>CHAPTER 4: THE GOVERNANCE OF POLICY TRANSFER: A STRUCTURE- AGENCY PERSPECTIVE .....</b>	<b>95</b>
4.1 Introduction .....	95
4.2 The Agency-Structure Dilemma and Policy Analysis .....	96
4.2.1 Agency, Structure, and Policy Analysis: A Conceptual and Theoretical Background .....	97
4.2.2 Bridging the Agency-Structure Divide: Uni-Dimensional and Dialectical Approaches in Policy Analysis .....	102
4.2.3 The Significance of Structure-Agency Debate to Policy Analysis .....	108
4.3 Theories of Policy Transfer: Structures, Agency, and Change .....	111
4.3.1 Policy Transfer Governance: Clarifying the Concepts .....	112
4.3.2 Policy Transfer Governance: Unpacking Transfer Processes .....	115
4.3.3 Agents, Structures and Policy Transfer .....	119
4.3.4 The Limitations of Policy Transfer .....	122
4.4 Conclusion .....	124
<b>CHAPTER 5: DATA AND METHODS .....</b>	<b>127</b>
5.1 Introduction .....	127
5.2 Research Design and Strategy .....	127
5.3 Selecting the Analytical Approach: Why Qualitative Research? .....	130
5.4 Selecting Research Methodology: Why Case Study Analysis? .....	133
5.5 Data Collection .....	135
5.5.1 Collecting Secondary Data .....	135
5.5.2 Collecting Primary Data .....	136
5.6 Data Analysis .....	146
5.7 Conclusion .....	147
<b>CHAPTER 6: WATER GOVERNANCE IN EGYPT: THE HYDRO-POLITICS OF TRANSBOUNDARY GOVERNANCE IN THE NILE BASIN .....</b>	<b>150</b>
6.1 Introduction .....	150
6.2 Water Resources and Governance in Egypt: Contextualizing the Debate .....	150

6.2.1 The Political Regime.....	151
6.2.2 The Egyptian Economy.....	151
6.2.3 Geography and Demographics.....	153
6.2.4 Water Availability .....	155
6.3 The River Nile’s Transboundary Governance: The Institutional Context .....	157
6.3.1 The Hydro-Politics of the Nile Basin .....	158
6.3.2 The River Nile’s Transboundary Governance: Regional Dimensions	160
6.3.3 The River Nile’s Transboundary Governance: International Dimensions .....	165
6.4 Implementation Challenges and the Effectiveness of Water Governance Institutional Arrangements.....	167
6.5 Future Scenarios for Transboundary Water Governance in the Nile Basin .....	171
6.6 Conclusion.....	173
<b>CHAPTER 7: WATER REFORMS IN EGYPT: THE NATIONAL LEVEL GOVERNANCE .....</b>	<b>176</b>
7.1 Introduction.....	176
7.2 Water Sector Reforms in Egypt: An Overview .....	177
7.3 Drivers of Water Governance Reforms in Egypt.....	183
7.4 The Water Sector in Egypt: The Legal and Regulatory Environment....	186
7.5 The Water Sector in Egypt: The Institutional Framework.....	191
7.5.1 The Ministry of Water Resources and Irrigation (MWRI) .....	192
7.5.2 Ministry of Water and Wastewater Utilities (MWWU) .....	197
7.5.3 Ministry of State for Environmental Affairs (MSEA) .....	198
7.5.4 Ministry of Health and Population .....	199
7.5.5 Ministry of Agriculture and Land Reclamation (MALR) .....	201
7.5.6 The Egyptian Water/Wastewater Regulatory Agency (EWRA) .....	202
7.5.7 Other Water Stakeholders .....	205
7.6. Conclusion.....	207
<b>CHAPTER 8: THE EGYPTIAN WATER GOVERNANCE SYSTEM IN PRACTICE: THE INTERPLAY DYNAMICS BETWEEN AGENTS, AND STRUCTURES .....</b>	<b>210</b>
8.1 Introduction.....	210
8.2 Assessing Water Governance Functions in Egypt.....	211
8.3 Regulatory Design, Rationale, Power, and Transfer Mechanism.....	217



8.4. Why This Model? The Rationale behind the Regulatory Design.....	219
8.5 Assessing Water Decision-Making and Coordination Mechanisms: a Good Governance Perspective.....	221
8.5.1 Participation in Water Decision-Making .....	222
8.5.2 The Transparency of Water Decisions.....	223
8.5.3 The Accountability of Water Decisions .....	225
8.6. Water Governance Issues and Challenges in Egypt.....	226
8.6.1 The Trans-Boundary Nature of Water Governance and the Challenge of Upstream Infrastructure Developments .....	227
8.6.2 Natural Monopoly, Economic Regulation and the Challenge of Excessive Subsidisation and Water Pricing .....	231
8.6.3 The Fragmentation of Agricultural Land and the Challenge of Efficient Water Utilisation.....	235
8.6.4 The Climate Change Impacts and the Challenge of Water Availability and Security.....	239
8.6.5 The Environmental Pollution and the Challenge of Controlling Water Quality .....	241
8.6.6 Poor Water Infrastructure and the Challenge of Involving Water Private Companies .....	246
8.6.7 The Fragmentation of the Policy Environment and the Challenge of Institutional Coordination .....	248
8.7 Conclusion.....	251
CHAPTER 9: CONCLUSIONS AND POLICY RECOMMENDATIONS.....	254
9.1. Introduction .....	254
9.2. Water Governance, Structures, and Agents: A Synopsis of the Theoretical and Analytic Framework .....	256
9.2.1. Understanding Water Governance: Theoretical, Conceptual and Substantive Issues.....	256
9.2.2. Understanding Water Governance: A Structure-Agent Perspective.....	257
9.2.3. Understanding Water Governance: Water Governance Arrangements in Egypt.....	258
9.2.4. Understanding Water Governance: The Methodological Drivers .....	260
9.3. Understanding Water Governance: the Major Contributions of the Study .....	261
9.4. Implications and Policy Recommendations for Water Policymaking and Water Governance Practices in Egypt .....	266

9.4.1. Implications and Policy Recommendations: Water Institutions .....	267
9.4.2. Implications and Policy Recommendations: Water Management and Operation .....	270
9.4.3. Implications and Policy Recommendations: Legal and Regulatory Environments .....	275
9.4.4. Implications and Policy Recommendations: National and Regional Water Governance Settings .....	280
9.5. The Limitations of the Research and Opportunities for Future Studies...	285
APPENDICES .....	288
Appendix1: Interview Question Guide.....	288
Appendix 2: certificate of ethical approval .....	290
BIBLIOGRAPHY .....	291

### List of Acronyms and Abbreviations

AGOSD	Alexandria General Organization for Sanitary Drainage
AMCOW	African Ministers' Council on Water
AWGA	Alexandria Water General Authority
BOT	Build-Operate-Transfer
CAPMAS	Central Agency for Public Mobilization and Statistics
CAPW	Construction Authority for Potable Water and Wastewater
CDKN	Climate Development Knowledge Network
CFA	Cooperative Framework Agreement
CIDA	Canadian International Development Agency
DoP	Declaration of Principles
EEAA	Egyptian Environmental Affairs Agency
EMA	Egyptian Meteorological Authority
EU	European Union
EWRA	Egyptian Water Regulatory Agency
GERD	Grand Ethiopian Renaissance Dam
GOGCSD	General Organization for Greater Cairo Sanitary Drainage
GOGCWS	General Organization for Greater Cairo Water Supply
GOPW	General Organization for Potable Water
GOSSD	General Organization for Sewerage and Sanitary Drainage
GOSSD	General Organization for Sewerage and Sanitary Drainage
GWP	Global Water Partnership
HCWW	Holding Company for Water and Wastewater
IAG	International Advisory Group
IIIMP	Integrated Irrigation Improvement and Management Project
IR	International Relations
IWRM	Integrated Water Resources Management
IWRMP	Integrated Water Resources Management Plan
KPIs	Key Performance Indicators
MALR	Ministry of Agriculture and Land Reclamation
MDGs	Millennium Development Goals
MDWSF	Ministry of Drinking Water and Sanitation Facilities
MHUUD	Ministry of Housing, Utilities, and Urban Development
MOEE	Ministry of Energy and Electricity
MoF	Ministry of Finance

MoHP	Ministry of Health and Population
MoPIC	Ministry of Planning and International Cooperation
MSEA	Ministry of State for Environmental Affairs
MWRI	Ministry of Water Resources and Irrigation
MWWU	Ministry of Water and Wastewater Utilities
NBI	Nile Basin Initiative
NBTF	Nile Basin Trust Fund
NEAP	National Environment Action Plan
NGOs	Nongovernmental Organizations
NOPWASD	National Organization for Potable Water and Sanitary Drainage
NWQCU	National Water Quality Conservation Unit
NWRP	National Water Resources Plan
NWRP-CP	National Water Resources Plan Coordination Panel
OECD	Organisation for Economic Co-operation and Development
PPPs	Public Private Partnerships
SAPs	Subsidiary Action Programs
SCA	Suez Canal Authority
SVPs	Shared Vision Programs
TNCs	Transnational Corporations
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Program
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WB	World Bank
WUAs	Water Users Associations
WWAP	World Water Assessment Programme

## List of Figures

Figure 1.1: Actors Involved In the Water Governance System in Egypt.....	24
Figure 1.2: The Organisation of the Study .....	26
Figure 2.1: The Logic behind Good Governance .....	32
Figure 2.2: Multi-Level Governance's Analytical Space .....	44
Figure 2.3: Governance as Global Multilevel Concept.....	56
Figure 3.1: Water Governance as a Political Process.....	71
Figure 3.2: Conceptualisation of Water Governance .....	72
Figure 3.3: Institutional Linkages within a Water Institution .....	78
Figure 4.1: Modelling the Process of Policy Learning .....	113
Figure 4.2: Policy Transfer Pathways .....	120
Figure 7.1: MWRI Organizational Structure .....	195
Figure 7.2: EWRA's Organogram .....	204
Figure 8.1: NWRP Coordination Platform for follow-up of the implementation .....	250

## List of Tables

Table 2.1: Criteria for Good Governance .....	36
Table 2.2: Types of Multi-Level Governance.....	41
Table 4.1: Structure-Agency Relationship from Different Theoretical Perspectives .....	103
Table 4.2: Policy transfer variables .....	121
Table 4.3: Factors constraining transferability.....	123
Table 7.1: Key actors responsible for water and wastewater management ...	179
Table 7.2: The Legal Framework of the Egyptian Water Sector.....	188
Table 8.1: The Functions and Sub-Functions of Water Governance Systems .....	212
Table 8.2: Water and Sanitation Investments as Per the National Master Plan .....	247

## **CHAPTER 1: INTRODUCTION AND RESEARCH OUTLINE**

Water governance permeates all aspects of human activity, and affects the availability of water which in turn has a significant bearing on a country's developmental plans. Inadequate water supply has been identified by many international organizations including UNESCO (2009) as one of the determining factors that can interfere with a country's ability to form and implement sound agriculture, health, energy, and industrial policies. Consequently, many developing countries including Egypt have infused water reforms and altered the existing water governance arrangements in order to allow more participation of water stakeholders. New water governance models were borrowed from other countries and successful water reforms worldwide have been presented by international donors as blueprints for reforming water governance. In this context, it can be argued that a comprehensive understanding and explanation of water governance reforms and the change in water policies in countries like Egypt calls for a multilevel governance framework within which the relationships and interaction between water policy actors and existing water structures at national, regional, and international levels can be examined. Such an understanding of water governance reforms would contribute to the current policy debate on water sectors' reforms by allowing a more in-depth and comprehensive treatment of the water crisis. Additionally, framing the water crisis from a governance perspective would help exploring the role of non-state water actors in water policy decisions. This in turn may open new horizons to address the issue of water scarcity in a more collaborative and innovative way.

Following on from the above, this introductory chapter provides an overview of the research. The background of the project will be presented first, followed by an explanation of the research questions and the methodological underpinnings of the study. The analytical and theoretical framework of the research is discussed in section three. Section four focuses on the empirical case study and aims to provide a short introduction to water governance in Egypt and to identify the key actors involved in the policymaking and implementation processes. The chapter concludes with an outline of the organisation of the rest of the study.

### **1.1 Research Background**

Water has increasingly become a scarce resource. Such scarcity has been even more complicated by environmental issues, including climate change and

droughts in many parts of the world (Golia, 2008). This has raised many concerns regarding how efficient water governance and regulatory regimes should be to overcome the challenges associated with water scarcity. Coordination between different stakeholders involved in water policymaking and implementation appears to be one of the major issues that requires immediate action to enable a water governance system to function properly.

In response to these demands, water governance and regulation systems have witnessed major changes in their structures and functions over the last three decades. A shift has occurred away from what was known as the traditional mode of water government wherein governments and their apparatus were in full control of service provision as well as regulatory issues towards a new model in which the state plays the role of the regulator and rule-maker while services provision has become the responsibility of the private sector in collaboration with other state and non-state actors. These changes have resulted in new arrangements between governments and private actors. In this context, the water sectors in many countries, including Egypt, have experienced the growing role of private sector participation in service provision. Public Private Partnerships (PPPs) as an enabling tool provided by the neo-liberal ideas of reform, have become a common practice in building new water projects (Pollitt and Bouckaert, 2004).

A matter of concern in the recent reforms in water governance and regulatory regimes is the degree of similarity between developed and developing countries with regard to the adopted institutional arrangements and regulatory functions. A universal model of reform based on more empowerment and inclusion of private actors as well as a clear separation of service provision and regulatory functions has swept the world. This issue raises fundamental questions about the driving forces behind these reforms and the way in which such models of reforms have been transferred from the developed to the developing countries. Another important issue is the relevance and suitability of the transferred models to the new environment and context wherein they have been transplanted (Dolowitz and Marsh, 2000; Rose, 2002).

Following on from these observations, this study argues that to fully understand why and how models are transferred among countries and to be able to explain disparities with regard to the ways in which these models work across the world,



we need to investigate the structure-agency interplay dynamics (Giddens, 1984; Hay, 2002; Weaver and Gioia, 1994). In other words, structures in terms of existing contextual factors, as well as agency, as reflected in the roles played by global and domestic actors in policymaking and implementation, should be fully considered for the reason that the interplay dynamics between these two elements (structures/agency) determine, to a large extent, the channels of transfer in addition to the ways in which the transferred models work in practice. As Common (2010: 53) puts it, 'even where powerful policy transfer mechanisms are at work through international agencies and consultancy activity, at best, policies are partially adapted to suit local political, economic and social contexts'. From this perspective, in order to understand how water governance and regulation work in Egypt, and why Egyptian policymakers are adopting the existing model, we need first to unpack the impact of global governance structures and to identify the major players in these systems. Then, we need to look at the domestic level to find out how national structures are constructed in the light of global governance structures and whether policymakers at the national level learn from their counterparts or simply imitate and copy best practices from other contexts. Investigating the interplay of dynamics between national and global levels will help our understanding of whether what is going on in the water sector in Egypt is a matter of structure, agency, or a mix of these two elements.

## **1.2 Research Questions and Methodology**

Using a governance perspective on the water crisis and applying a multilevel structure-agency framework of analysis, this research examines water governance and regulatory reforms in Egypt. The main research question is how to explain water governance arrangements in Egypt through the analysis of existing water structures as well as relationships and interaction between water structures and water agents? In this context, the study is primarily driven to address the following questions:

- What dynamics drives the reforms in water governance and regulatory regimes in Egypt?
- Why and how has the claimed universal model mentioned above been transferred to Egypt?

- How relevant is the new model of reform to the Egyptian context?
- What are the challenges facing the reform model, and how may these challenges be overcome?
- What lessons can be learnt with regard to service delivery and good governance in the Egyptian water sector?

To investigate these questions, a set of qualitative research method techniques was utilised (Neuman, 1997; Hartley, 2004). Given the novelty of the study and the particularity of the case under examination, the water sector in Egypt was analysed as a single country case study. One of the main reasons for this is that the project aims at providing an in-depth analysis and a vivid picture of governance and regulatory regimes in this sector in order to identify their roots in addition to the recent changes and how they were enacted by policymakers (Yin, 1981; 2003). More methodological justifications for focusing on a single-case and not a multiple-case approach are provided in the methodological section of the study. Furthermore, the obvious limitations of the single-case approach in terms of the ability to generalise the results are also discussed. Existing water governance arrangements in the Egyptian water sector were examined from a structure-agency perspective in an attempt to underline the interplay dynamics between the current water structures and agents. The contention here is that the way in which water agents interact within the established water structures affect water policy decisions including those related to hosting certain water reform models.

Documentary analysis was another methodological tool to investigate the case under consideration (Neuendorf, 2002). Official policy documents produced by the Egyptian government, as well as other state actors (e.g., regulatory agencies, ministries, competition authorities), were collected and analysed to find out the official position regarding the driving forces of reform and the justifications for adopting a specific model. Documents produced by other non-state actors, including private sector institutions and international organisations (e.g., OECD, EU), were also examined as another source to check and counter-check the data gathered from the official governmental documents.

In order to triangulate the data collected and to get a complete picture about the dynamics of the governance and regulatory regimes in the Egyptian water sector approximately 32 semi-structured elite interviews were conducted with different

stakeholders (Weiss, 1992). These included representatives from the ministries involved in regulating the sectors, the regulatory agency, the private service providers, and the civil society organisations working in the water sector. The semi-structured elite interview technique was used in order to give the respondents the chance to fully reflect on the discussed issues. Shorthand notes were taken during the interview and then they were fully elaborated in extended reports straight after each interview. Over the following few months, the researcher worked on establishing contacts in the mentioned organisations as well as building up and deepening the theoretical framework of the study.

### **1.3 The Theoretical Framework of the Study**

This study adopts a structure-agency framework of analysis to explain the recent reforms in the water sector in Egypt (Giddens, 1984) (see chapters 4, 7, and 8). The water crisis and associated policy decisions and reform initiatives are conceptualised and analysed as from a governance perspective (see chapters 2, 3 and 6). New governance systems and the associated trends towards liberalisation and privatisation of the utility sectors have been introduced to help public organisations to better run their business and exploit their resources. Although it is quite understandable to see such models spreading and transferring from one European country to the other because of the similarities among those countries, the diffusion of these modes of governance and their tools in the context of the developing countries required more investigation (Rogers 1995, Gilardi, 2010, Badran, 2012). We needed to understand first how the overall contextual and structural factors have facilitated the transfer and the diffusions of these models (Stone, 2001). We also needed to understand the level of agency in this process by reflecting on the role played by policymakers at the national level as well as the interaction between the structural elements and the agency, which may result in a process of policy learning.

In this context, the study provides an exploration of the dynamic linkages between governance structures, policy agents and water reforms with a concentration on the recent reforms in the water sector in Egypt. Using a governance perspective and a structure-agency framework assisted in emphasising the dialectical interrelationship between the studied factors. It also helped to achieve the theoretical and empirical objectives of the research. At a theoretical level, the study aims to provide an explanation of the structure and

agent relationship that is useful for public policy analysis in general and for the analysis of policy transfer and utility reforms in particular. At a more practical level, the study attempts to produce a framework of analysis that will offer some guidelines for more systematic empirical research. In other words, the empirical objective of this study is to develop a model for analysing the crucial attributes of the structure and agents in the Egyptian water sector, which will assist in explaining the process of policy transfer from other countries as well as the extent to which the new model fits the Egyptian reality.

For the abovementioned purposes of the study, water reforms in Egypt are conceived as a governance structure that includes new arrangements and relationships between governmental and nongovernmental actors. These new arrangements provide new market orientated mechanisms, and tools in an attempt to change the culture as well as the performance of water utilities. Taken together, these elements provide a new paradigm for public management and a new governance system that acknowledges the growing role of private actors in the process of policymaking. Many of the suggested elements can be seen in the context of water reforms in Egypt. The water policymaking model in the Egyptian water sector is gradually moving away from the sole dominance of government water actors to allow an increasing level of participation by private water stakeholders. Market mechanisms are emphasised and competition has been gradually introduced in a more decentralised fashion of making water policy decisions (see chapters 7 and 8).

As is the case with all definitions in social sciences, the concept of governance has no authoritative definition. Stoker, (1998:18) for instance, has highlighted five different meanings of governance: Governance as a set of institutions and actors from within and beyond governments; governance as a means to demarcate the blurry boundaries of accountability and responsibility between state and non-state actors when dealing with social and economic problems; governance as a reflection of power relations and power dependence among actors and institutions working collectively to address societal issues; governance as a new mode of governing relying on independent, self-steered networks of actors; And finally, governance as a manifestation of the growing roles of non-state actors and the inadequacy of the traditional command-and-control approach of government. As put by Bevir (2013:1) governance refers to 'all processes of

governing, whether undertaken by a government, market, or network; whether over a family, tribe, corporation, or territory; and whether by laws, norms, power, or language'. As such, governance goes beyond the limits of governments and their apparatuses to include all forms of societal rules and practices.

In the context of this research, governance is conceptualised in accordance with the World Bank's definition as 'the manner in which power is exercised in the management of a country's economic and social resources' (World Bank, 1992: 1). In this sense, understanding the notion of governance and how it has evolved is a prerequisite to unpacking and understanding the reform processes in public utilities and to reflect on the role of the actors involved in forming and implementing policies in these sectors. It is worth mentioning in this regard that the global dimension of governance is as important as the national dimension. At the global level, governance can be regarded as 'a multilevel system in which local, national, regional, and global political processes are inseparably linked' (Dingwerth and Pattberg, 2006: 192). Reforms in the water sector in many countries, including Egypt, are primarily driven by the agenda of international actors such as the World Bank, the IMF, the OECD, and others. This is why it is crucial to understand how national and international levels of governance interact and how such interactions can facilitate or hinder the policy transfer processes (Dolowitz and Marsh, 2000; Rose, 2002).

In this context, an important question to examine at the meta-theoretical level would be this: could agency change structures? In other words, to what extent can the process of policy or model transfer from one context to another be explained based on structural elements and how free policymakers are in adopting certain models. The work of Giddens (1984) provides a critical account of the concepts of structures and agents as well as the dialectical relationship between these two terms. This debate will be highlighted in more detail in the theoretical section of the study; however, for now the structure can be understood as patterns of relations between policy actors at national and international levels and agency is conceived as the freedom of those actors to act and to take decisions within the existing structures.

As noted by Evans and Davies (1999), the question of policy transfer is a question of structure and agency. They argue that the policy transfer approach operates at the meso-level, but in order to develop valid conclusions, such an

approach should be linked with questions at the macro and micro levels. As such, using the policy transfer approach links the discussions of water governance at national and international levels with the role of structural and agency variables. It also connects such theoretical and conceptual discourse with the process of policy transfer in the examined empirical case of water governance in Egypt. In this context, policy transfer is conceived as the conscious adoption of a public policy from another jurisdiction. This, according to Dolowitz and Marsh (1996, 2000), includes processes such as policy diffusion, emulation, policy learning and lesson drawing. These processes are sometimes confused with policy transfer itself; however, a distinction should be made between them. Rogers (1995: 11) defines diffusion as ‘the process by which an innovation is communicated through certain channels over time among the members of a social system’. That means, policy diffusion can occur without any policies being adopted but policy transfer becomes an observable process once organisations and actors pick up a policy idea or model.

The main theoretical drivers of the study (governance, structure-agency dilemma, and policy transfer) briefly discussed in this section will be fully examined and elaborated on in the chapters to follow (see chapters 2, 3, and 4). With the main concepts of the study identified, the next section of this short outline will shed light on the case study and reasons it was selected.

#### **1.4 Water Governance Reforms in Egypt (The Case Study)**

The water governance reforms in Egypt are examined by analysing the Egyptian water sector as a single case study (see chapter 5). Considering the limitations of single case research in terms of the ability of the researcher to generalise the results, in the context of this project, the single case approach was particularly useful taking into consideration the novelty of the reforms in the Egyptian water sector and the need to produce in-depth analysis and thick description of the water governance system in Egypt (see Geertz, 1973). To this end the literature on research methods indicates the single case approach can be a useful tool.

The water sector itself is important especially if we consider the challenges facing water resources in Egypt. Over the years, the increasing population as well as the growing gap between the water demand and the supply sides have complicated the water governance system and called for new ways to manage the scarce water resources available to Egypt. The picture is even more complex

if one considers the characteristics of the water resources system in Egypt and its high dependency on one source, which is the River Nile. According to the 1959 treaty between Egypt and Sudan, Egypt's share in the River Nile water is 55.5 billion cubic metres per year. This treaty denoting Egypt's share of the water is challenged by other countries in the Nile basin namely Ethiopia which face water challenges and increasing demand for water (see chapter 6). The high rate of the population growth in the region in general, in addition to other challenges faced by individual countries such as civil wars in Sudan and Burundi, famines in Tanzania, besides regional and internal conflicts involving countries such as Eritrea, Ethiopia, Rwanda, and Uganda, have pushed the Nile basin countries to call for reducing Egypt's share of water, which adds to the challenges facing the Egyptian government (El-Fadel et al., 2003).

The recently announced project by the Ethiopian government in 2013 for the establishment of a massive dam on the River Nile, known as the 'Grand Ethiopian Renaissance dam', that was planned to be completed by 2017<sup>1</sup>, adds to the challenges facing water governance in Egypt as it will certainly reduce Egypt's share of the Nile River water. Such a great challenge calls for more effective and efficient ways to deal with the increasingly reduced share of the Nile water and requires that the Egyptian government revise the existing governance system and design new governance mechanisms to rationalise water management practices (Paisley and Henshaw, 2013; Tawfik, 2016). In spite of the technical difficulties which resulted in a delay in completing the dam on time, the threat is still there for the Egyptian water policy-makers as it is a matter of time until the full completion of the project in 2021-2022 (Getachew, 2018). Consequently, efforts to reform current water governance arrangements should be continues in order to face future water challenges.

In response to water challenges, a reform process of the water sector has been enacted and new governance measures adopted to improve the way in which water policies in Egypt are made and implemented. The following figure provides a visualisation of the active actors involved in the process of making and enforcing water policies in Egypt:

---

<sup>1</sup> Due to technical difficulties, the project is now expected to be completed in 2021-2022, 5 years beyond the original accomplishment date.

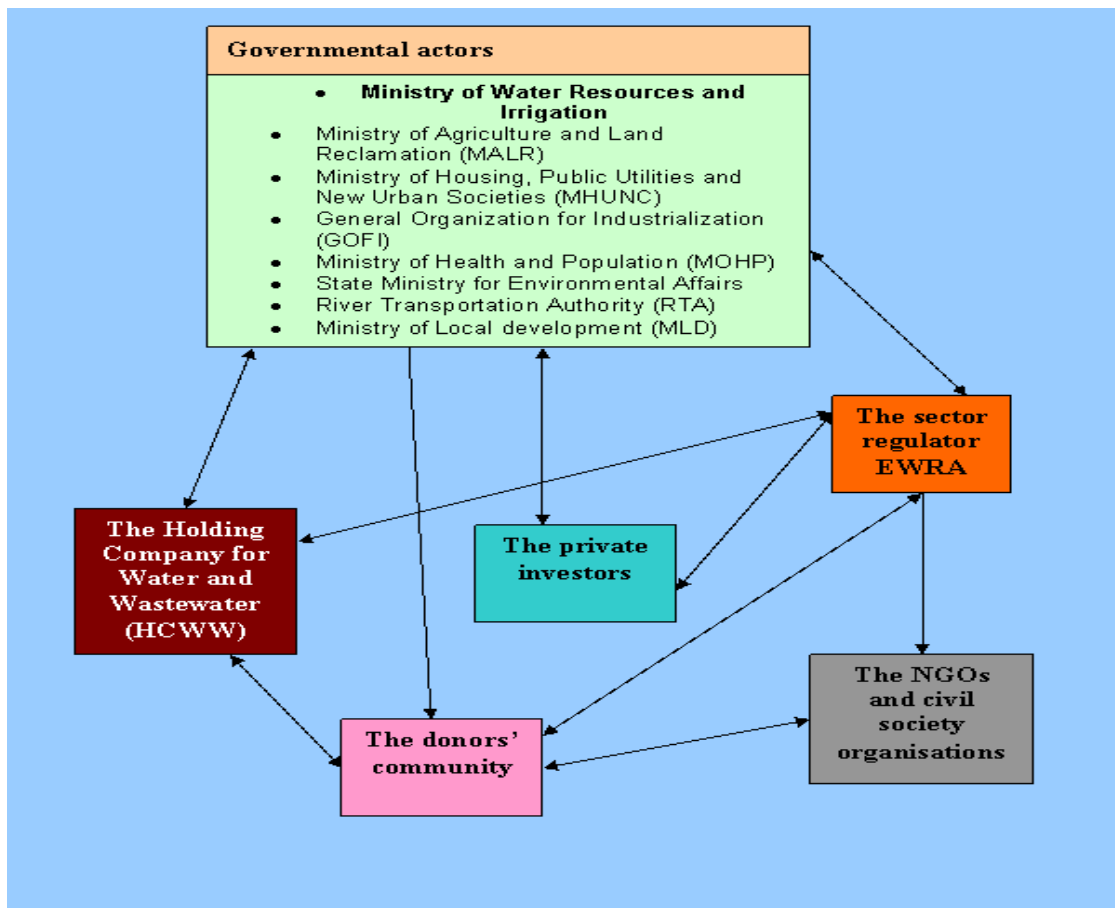


Figure 1.1: Actors Involved In the Water Governance System in Egypt

As the figure indicates, the new governance arrangements are more complex and involve different governmental and non-governmental actors. The role of the donor community is crucial to understand the driving forces behind the reform process. The whole process was triggered by the donors' dissatisfaction regarding the performance of the sector. This issue will be discussed in full detail in the chapters to follow (especially chapters 7 and 8).

The reforms highlight the importance of market-oriented mechanisms such as the liberalisation of the sector and the introduction of competition among its players. In this respect, the institutional framework has been changed and a separation between policymaking and policy implementation processes, along with another separation between technical/service delivery and regulatory functions, was adopted as a method to improve water policy and the governance system in Egypt. A Holding Company for Water and Wastewater (HCWW) was created in 2004 and an economic regulator of the sector was instituted under the name of the Egyptian Water Regulatory Agency (EWRA) in 2006.



These new reforms have put more emphasis on the role of the private sector as a crucial partner in service delivery and policymaking. In this respect, the government has created a designated unit under the name of the Public-Private Partnerships (PPPs) Central Unit in the Ministry of Finance. The main objective of this unit is to promote private sector participation and investments in infrastructure projects. New wastewater treatment plants in Cairo and Alexandria were built based on Build-Operate-Transfer (BOT) agreements between the government and the private sector. The new regulatory agency has also been assigned duties to encourage private investment in the sector's infrastructure.

At the policymaking level, greater emphasis has been placed on the importance of adopting a participatory model which acknowledges the legitimate role of all interested stakeholders, not only consumers. To this end, the government has established Water Users Associations (WUAs) to look after the consumers and to make sure that their rights are not violated by the private companies.

A great deal of similarity can easily be spotted between the reforms in the water sector in Egypt and water sector reforms elsewhere in the world including in developed and industrialised economies such as the European countries (El-Bedawy, 2014). Given the differences in the contextual factors (socio-economic, political, and legal) between Egypt and these developed countries valid questions then would be why and how have these reform models been transferred into the Egyptian context and what are the possibilities for these models to succeed in a different context. To answer this question the study adopts a multilevel governance analytic framework that looks at the water crisis in Egypt as a governance issue which calls for the collaboration of state and non-state actors at national, regional and international levels. Such a theoretical framework has been enhanced by including insights from the structure-agency theory. The reason for this is that a comprehensive understanding and explanation of water governance arrangements and reforms in the context of importing countries such as Egypt requires a full investigation of the interaction and relationships between water policy agents and existing water structures at all levels. This treatment of water governance would help understanding the ways in which water reforms and governance arrangements were transferred into the context of the importing countries including Egypt in addition to the roles played by water policy agents and decision-makers at all governance levels. This

line of thought is further explicated throughout the different chapters of this work as indicated in the next section.

## 1.5 The Organisation of the Study

The study is divided into a theoretical framework and an empirical case study analysis (see Figure 1.2).

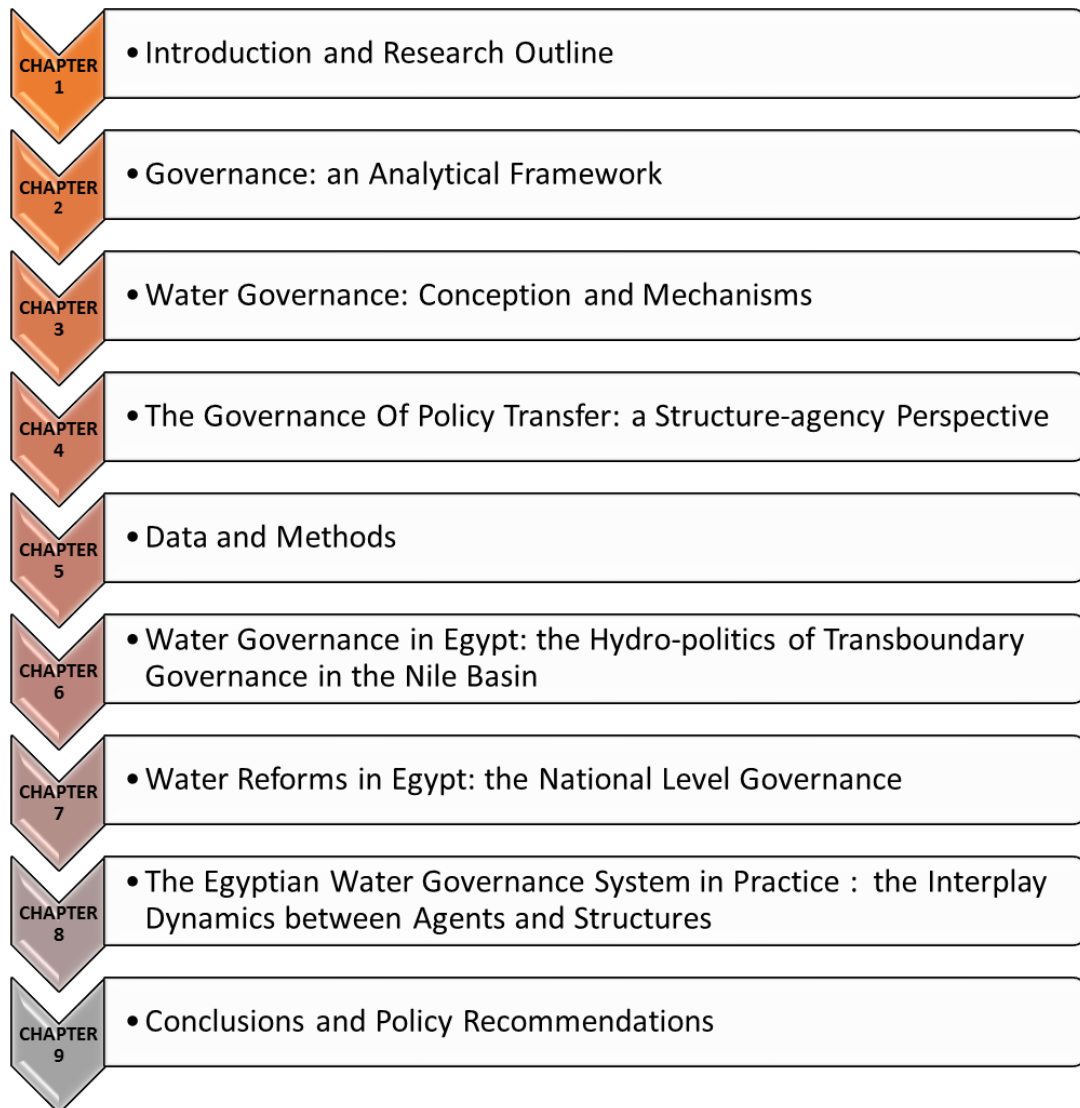


Figure 1.2: The Organisation of the Study

As the figure indicates, the theoretical framework consists of four chapters covering the theoretical and conceptual building blocks in this thesis. The introductory chapter provides an overview of the study and gives the reader a quick snapshot about the statement of the problem, the research question and the methodology of the research. These research elements will be further explored and discussed in chapter five on data and methods. The following three chapters are divided thematically to cover the different issues related to

governance in general and water governance in particular, including policy transfer and structure-agency discourse. The aim is to define the theoretical and conceptual underpinnings of the research. In this context, chapter two investigates the notion of governance and explains the added value of the governance approach as an analytical framework.

Chapter three is devoted to discuss the applications of governance in water sectors. The discussion covers several important and strategic issues in water management and governance as a matter of introduction to understand why effective water governance systems are important for managing such a vital and scarce resource. Chapter four explicates the long-standing dilemma of structure-agency interrelationships. Unpacking and analysing such a debate is important if we are to fully capture the story behind how policies are transferred from one context to another and how water policy decisions in the Egyptian context are made in the light of existing water structures. Policy transfer will be framed as structure-agency phenomena. Such a conceptualisation of policy transfer will help explain the role of free agency and the extent to which the transfer of water reforms and regulatory practices is governed by existing structures. Answering this question is extremely helpful in understanding the mechanisms via which the transfer of the existing water governance system has taken place in Egypt. Taken together, chapters two, three and four provide the theoretical and analytical context of the project.

The theoretical and analytic framework leads and guides the analysis in the empirical part of the study. Chapter five will detail the research design and strategies for data collection and analysis. In order to contextualise the empirical case study, chapter six will present the recent developments and reforms in the water sector in Egypt. Chapter seven will focus on governance arrangements in the Egyptian water sector and will discuss the main actors involved in policymaking and the roles they play. Chapter eight will examine the relationship between existing water structures and the role of agency in making water policy decisions. This will be followed by a concluding chapter that summarises the main results of the analysis of the water governance in the Egyptian context and provides policy recommendation of how policymakers should learn from the experience of other countries.

## **CHAPTER 2: GOVERNANCE: AN ANALYTICAL FRAMEWORK**

### **2.1 Introduction**

Following on from the research outline provided in chapter 1, the aim of this chapter is to set the first building stone in the theoretical framework of the study by providing a critical review of the literature available on governance as an analytical framework. Such an analysis is essential for developing a better understanding of the concept of water governance (see chapter 3). Examining the analytic power of governance is also helpful in understanding and explaining water governance reforms in general and the reforms of water governance in the Egyptian case in particular (see Onwuegbuzie et al., 2011). In that sense, such a critical review is an important step in contextualising the debate about water governance and structuring the argument of the study. The review will be guided by three main questions: what does governance mean? What is the difference between governance and the traditional government approach of policymaking? What is the analytical and explanatory powers of governance regarding water policy-making and implementation? The underlying assumption here is that using a governance approach to water policy research can contribute to an improved understanding of water policy processes, institutions, and actors in addition to the ways in which those elements interact around water policy issues.

The major concepts of governance, good governance and multi-level governance will be explored first. Understanding the debate about governance is an essential step to highlight the changing nature in the relationships between state and non-state actors involved in water governance processes. At the outset, a clear distinction between two different models of water policymaking can be made: the traditional state-led model and the governance model. The first model emphasises the dominant and influential role of governments and their apparatus while the governance model underlines the growing role of other stakeholders, namely non-state stakeholders, in water policymaking and policy implementation. The distinction between these models will help in identifying new complex governance arrangements including the New Public Management, which entails new demarcations of the boundaries between the state and the private sectors. The private sector in the context of this study will be used in its broad sense to include all non-state actors whose roles in governance processes is ever growing.

## 2.2 The Concept of Governance

In policy research, governance has become an important focus of attention for many policy scholars who have tried to utilize the concept to describe and analyse the shift in making and implementing public policies (Hufty, 2011: 403). Nonetheless, governance is still regarded as a slippery concept with no agreed definition. The concept is as old as human civilization (Al-Ahsan, 2017). However, in its modern utilisation the term governance has been coined to denote the birth of a new model in which the role of the state in society has changed from being the dominant and sometimes the sole actor in policymaking and policy implementation processes under what is known as the welfare state to becoming an actor among other non-state and non-governmental players. A shift has occurred in the role of the state from being a direct provider for a wide range of goods and services to being a regulator and rule maker responsible for monitoring policy games and making sure that all players in different governance systems are playing according to the rules (Majone, 1997).

In spite of these general characteristics of governance, different scholars use the term in different ways to refer to different phenomena. The way in which the term is used depends to a great extent on the context in which authors use it. Rhodes (2007: 1258) has highlighted this issue by describing the manner in which people understand governance as being 'too parochial'. The conceptualisation problem is even more complicated as a result of the widespread utilisation of governance in different scientific disciplines including public policy, public administration, international relations, and international law, wherein scholars tend to follow different traditions and use different methods.

A glance at the literature of governance illustrates that the term governance is being used in two different fashions: narrow and wide. From a linguistic perspective, governance is described as 'act, manner, office, or power of governing; government', 'state of being governed', or 'method of government or regulation' (Kuma, 2011: 65). This linguistic definition focuses basically on the governance mechanisms as a mode of governing and regulating relationships. It says nothing about the nature of the actors involved in the governance processes or the roles they play in steering the governance systems. In the same vein comes the definition presented by the World Bank (2008:3), which views governance as '[T]he traditions and institutions by which authority in a country is

exercised'. This definition is close to the concept adopted by the same institution that looks at governance as 'the manner in which power is exercised in the management of a country's economic and social resources'. The focus here is on the authority and the way in which such an authority is being used, most likely by governments to allocate resources in the society. The same meaning is reflected in the definitions adopted by other international organisations including the United Nations Development Programme (UNDP) and the Organisation for Economic Co-operation and Development (OECD) (see Weiss, 2000).

The major problem with this narrow treatment of the concept of governance is that there is always an implicit assumption about the dominant role of the governmental actors and the way in which those actors use the existing mechanisms, processes and institutions to direct and control policy processes and in turn resource allocation in the society (Pierre, 2000; Weiss, 2000). In this sense, governance is conceived as controlling, commanding, enforcing, and sometimes imposing policy options and solutions to solve societal problems. This narrow vision of governance has been challenged by scholars such as Rhodes (1999), who emphasises that this narrow conceptualisation with its focus on the role of the governmental actors is important but not sufficient for capturing and understanding the nature of the emergent governance arrangements between state and non-state actors.

Many scholars have supported Rhodes's reservation about the narrow treatment of governance and underscored the fact that governance is not only about governments and the way in which state actors control policy processes. For instance, Finkelstein (1995: 367) has argued that 'governance does not mean government or we would say that instead'. Based on these insights, Dingwerth and Pattberg (2006: 188) have defined governance in a wider sense to refer to 'a specific mode of social interaction whose logic differs from that of both markets and governments'. As a social form of interaction, governance reflects a collaborative process of steering policy processes to resolve societal issues. This steering process includes state and non-state actors working side by side. This more cooperative view of governance processes highlights the interdependent nature of governance systems within which governmental and non-governmental players work together to meet society's economic and social demands. As Stoker

(1998:34) puts it, governance indicates a new way of distributing power in society, 'both internal and external to the state'.

Rhodes (2007: 4) summarises the conceptual debate about governance by stating that 'in much present-day use, governance refers to: a new process of governing; or a changed condition of ordered rule; or the new method by which society is governed'. Interdependence between state and non-state actors is the name of the game. No single actor can fully control interactions and manage relations in complex governance situations. Policy outcomes and results are shaped and reshaped in game-like interactive processes. No clear boundaries between governmental, private or other non-governmental actors. Policy networks are prime manifestations of the new mode of governance, wherein policy actors attempt to self-manage and self-regulate themselves with little or no intervention from the state (Rhodes, 1999: 7-8).

The aforementioned discussion of the concept of governance indicates that it goes beyond the simple one-dimensional governing processes, which are normally controlled by state actors. It is a holistic academic and practical construct, which includes varieties of arrangements and a wide array of relationships between state and private actors. It is a marriage between the public and the private spheres, which embraces government institutions, but it also subsumes informal, non-governmental institutions operating within the public realm (Weiss, 2000). It includes, in addition to the way in which decisions are made and implemented, a completely new rationale based on the crucial role played by interdependence among state and non-state actors in shaping policy outcomes and solving the problems of the society. In the words of Dingwerth and Pattberg, governance is 'the sum of myriad-literally millions of control mechanisms driven by different histories, goals, structures, and processes' (Dingwerth and Pattberg, 2006:192).

In this sense, governance comes at the heart of the state-society relationship and captures interwoven interactions between state and civil society. The legitimate and growing role of non-state actors has been acknowledged and in many cases encouraged by governments. Consequently, 'societal actors have become influential over policy and administration and have done so in ways that were unimaginable in earlier times' (Peters and Pierre, 1998: 224). In this context, governance can be perceived as 'the sum of the many ways individuals

and institutions, public and private, manage their common affairs' (Weiss, 2000: 796). In other words, governance is a system formal and informal institutions built on the interdependence among state and non-state actors working in the public sphere. Interactions and relationships among actors involved in these governance systems are the core mechanism to solve societal problems.

### 2.3 'Good Governance' Defined

The discussion about 'good governance' is primarily of a normative nature. That means there is a value judgment involved in defining what constitutes 'good' governance and in turn what is considered as 'bad' governance practices. Hence, the first question it is: how can we judge governance? And what are the criteria upon which a government system can be classified as good or bad?

Before answering these questions, it might be helpful if we first explain the logic behind the idea of good governance and the reason it is so attractive. The logic behind good governance is quite simple; good governance equates with good policy outcomes (see Figure 2.1).

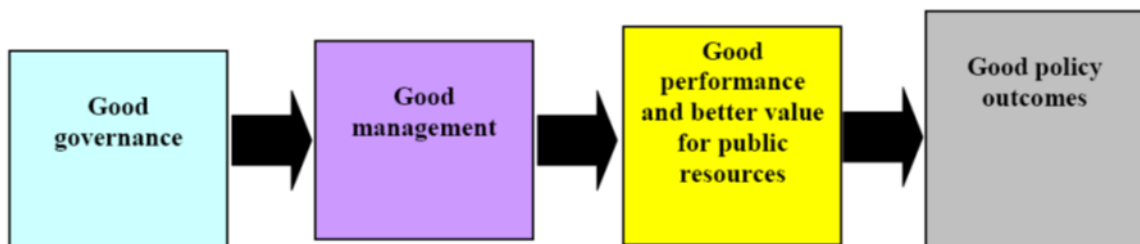


Figure 2.1: The Logic behind Good Governance

As the figure shows, good governance in theory should lead to better management and more efficient and effective managerial strategies (Cornforth and Chambers, 2010: 9-11). This in turn will result in performance improvements and providing better value for the utilised public resources. Allocating and using public resources in an effective and efficient fashion using state-of-the-art managerial practices will facilitate achieving policy goals and realising intended policy outcomes. It is a straightforward rationale that one can hardly argue against. The applications of good governance, however, particularly in the context of the developing countries tell another story.

International organizations such as the United Nations (UN), the OECD, and the World Bank (WB) have made strenuous efforts to identify the features of a good



governance system. According to the OECD, good governance 'encompasses the role of public authorities in establishing the environment in which economic operators function and in determining the distribution of benefits as well as the relationship between the ruler and the ruled.' (OECD, 1993; 18) The core issue is to have agreed-upon ground rules between the ruler and the followers or the ruled. These rules define the playing field and the way in which actors interact in the governance system. They also provide a framework for accountability, according to which actors can be held accountable for their actions.

The WB defines good governance as 'epitomized by predictable, open and enlightened policymaking (that is, transparent processes); a bureaucracy imbued with a professional ethos; an executive arm of government accountable for its actions; and a strong civil society participating in public affairs; and all behaving under the rule of law.' (World Bank, 1994:7). The WB's definition of good governance highlights the importance of transparency and openness in policymaking and implementation processes. It also underlines the important role played by professional civil service and other government institutions, which perform their duties in an accountable manner according to the rule of law. Another important element in the WB's definition of good governance emphasises the role of civil society organisations in conducting social affairs.

The definition provided by the UNDP emphasises the previously mentioned qualities of good governance, but it also highlights the importance of the fairness and effectiveness as two major features of good governance systems. From this angle, good governance is participatory, transparent and accountable. It is also effective and equitable. In addition, it promotes the rule of law. Good governance ensures that political, social and economic priorities are based on a broad consensus in society and that the voices of the poorest and the most vulnerable are heard in decision-making over the allocation of development resources. (Johnston, 2006: 2-3). According to this view, a good governance system provides equal opportunities for all parties in the society to participate in decision-making processes and to determine the way in which resources are allocated. Special attention is given in this regard to the weak and most vulnerable, whose priorities should be heard and responded to by policymakers.

The aforementioned characterisation of good governance indicates that the aim of a good governance system should be to provide the enabling environment

within which different economic and societal actors can participate in defining and solving social and economic problems. To this end, transparency and accountability are cornerstones. Playing according to the agreed-upon rules in the governance system should provide the foundation for establishing trust in the relationships between participating actors. Such a trust building process is quite important for improving the performance of the governance processes and the quality of policy outcomes. Trust in governance systems is like the cement which holds the different parts of the system together. On the other hand, the lack of trust among involving actors would encourage opportunism, which may lead to a deterioration in the relationships between actors and reduce the efficiency of the governance processes. The poor performance of governance processes may render the whole governance system dysfunctional (The Independent Commission on Good Governance in Public Services, 2005: 17).

Measuring good governance has become a major concern for many international bodies and academic scholars. Several measures have been developed with different criteria, each looking at good governance from a certain perspective. According to the UN, a good governance system should reflect the following criteria: a high level of participation, a high level of consensus among actors, a high level of system accountability, a high level of system transparency, a high level of responsiveness, a high level of effectiveness and efficiency, a high level of fairness and inclusiveness and finally, following the rule of law. These indicators of good governance systems ensure that the system is effectively fighting corruption and minimising corrupt practices. They also guarantee that weak voices and opinions are expressed and reflected in policy choices in a sustainable manner, which takes into account the rights of future generations (UNESCAP, [www.unescap.org](http://www.unescap.org)).

The World Bank has focused most of its efforts in the area on capacity building for public organisations and enhancing accountability, transparency and rule of law (World Bank 1991:87). These issues are very important, especially for the developing countries. Strengthening the capacities of the public-sector organisations is a prerequisite for achieving economic development. In this regard, a package of reforms has been introduced to improve the performance of the public sectors. Most of these reforms have been in the areas of financial management, human resources, and economic efficiency. Restrictions have

been imposed on the ability of public organisations to borrow and restructuring proposals have been put in place to improve the financial as well as the overall performance of government organisations. On other occasions, competition has been introduced in the public sector by liberalising state monopolies in different economic sectors and privatising previous incumbents and state-owned enterprises. These reforms have been introduced to all economic sectors including water sectors in developing countries. In Egypt, water reforms have been driven by the elements of neo-liberal agenda including the withdrawal of the state from monopolizing water decisions and opening up the water sector for the participation of the private sector in developing water infrastructure projects in addition to following a more participative mechanisms for making water decisions that enable the involvement of all water stakeholders (see chapters 7 and 8).

Increasing accountability in public organisations in terms of holding public officials answerable and responsible for the results of their organisations has been another major concern for the WB. In this regard, new contractual relationships have been developed to replace the old bureaucratic hierarchical relations in governments. According to these contracts, public managers are responsible for delivering pre-identified objectives and in case they fail to do their jobs, they might be sacked from their posts. In addition to accountability, a good governance system from the viewpoint of the WB should be predictable and transparent. The system procedures should be standardised, institutionalised and publicly announced to all actors. A set of objective rules applicable to all participants without any discrimination reflects another important feature of good governance systems. The absence of these rules increases the chances of corruption, favouritism, nepotism, and other forms of misconduct.

The European Commission's White Paper on Governance (2001) indicates that five principles that underpin good governance. These principles are: openness, participation, accountability, effectiveness and coherence. By focusing on public service, the Independent Commission on Good Governance in Public Services (2005) has identified six major criteria for measuring good governance. These criteria are summarised in table 2.1. As the table illustrates, good governance is first and foremost about the clarity of objectives, roles, responsibilities and processes. The concept also calls for a change at the level of organisational

cultures towards more participatory and transparent decision-making processes with a broad involvement of stakeholders.

<b>Criteria</b>	<b>Indicators</b>
Clear purpose and outcomes for public organisations	<ul style="list-style-type: none"> <li>• Identifying clear goals and objectives</li> <li>• Delivering high quality service</li> <li>• Delivering value for money for taxpayers</li> </ul>
Clear distribution of roles, functions, and responsibilities	<ul style="list-style-type: none"> <li>• Identifying clear functions for involved actors</li> <li>• Identifying clear responsibilities of each party and monitoring their implementation</li> <li>• Demarcating relationships between state and non-state actors</li> </ul>
A new organisational culture built on shared ethos	<ul style="list-style-type: none"> <li>• Upholding organisational values and norms</li> <li>• Leading by example</li> </ul>
Transparent decision-making processes	<ul style="list-style-type: none"> <li>• Explaining how decisions are taken</li> <li>• Communicating high quality information</li> <li>• Developing and implementing an effective risk management system</li> </ul>
Capacity building	<ul style="list-style-type: none"> <li>• Focusing on the required skills, knowledge and experience</li> <li>• Allocating responsibilities and evaluating employees' performance</li> <li>• Striking a balance between continuity and renewal in membership of governing bodies</li> </ul>
Stakeholder participation and accountability	<ul style="list-style-type: none"> <li>• Considering formal/informal forms of accountability</li> <li>• Constructing a dialogue engaging effectively with the stakeholders</li> <li>• Holding staff responsible for their actions</li> </ul>

Table 2.1: Criteria for Good Governance

Source: the Good Governance Standard for Public Services (2004: 7-23)

This discussion of good governance reveals that in spite of the differences in the ways different measures look at what constitutes a good governance system, the majority of these measures agree upon criteria such as transparency, accountability, stakeholder participation and rule of law (Anokye, 2013). With these principles in place, governance systems are expected to effectively and efficiently allocate the resources available in order to resolve societal issues. The prioritisation process of these issues and the way in which societal problems are defined does not necessarily reflect the objectives of dominant actors but it takes into account the demands and inputs of less represented and institutionally vulnerable actors. By representing the unrepresented and by taking account of the needs of the weak groups in the society, governance systems are regarded as superior models for resource allocation, achieving economic efficiency and fighting corruption and other forms of misconduct.

## 2.4 Conceptualising Multi-Level Governance

As Stubbs (2005: 66) notes, 'the concept of multi-level governance has become extraordinarily fashionable in recent years'. The aim of this section is to examine the notion of Multi-Level Governance (MLG) and to illustrate the diverse ways in which this concept is understood and utilised by scholars of policy studies. As a process, governance can occur at national, sub-national and supra-national levels. In this context, a distinction can be made between national governance and MLG structures, functions and processes. This is not to say that this study supports the superficial dichotomy between national and international politics but to consider MLG as a bridge which links governance processes and interactions at the national, sub-national and supra-national levels. Governance processes are by no means respective domains of unitary states. The image of nation states as sovereign and unitary units has given a way to the notion of differentiated polity in terms of 'various interdependent governments, departments, and agencies' (Bevir, 2007: 78). In this context, different state and non-state actors work together in autonomous, decentralised and networked forms of organisation to deliver diverse policy goals and provide a wide array of services (see Massey, 2004). This new reality of a differentiated polity denotes the growing and important role of non-state policy actors such as the civil society organisations in making and implementing policies water sectors in meta-governance contexts. As stated by Sørensen (2006: 98) '[G]overnance can no longer take the form of sovereign rule but must be performed through various forms of meta-governance, regulation of self-regulation'.

The literature of MLG shows that there is a plethora of terminology which is utilised by scholars to characterise this governance phenomenon. As noted by Hooghe and Marks (2004: 13-16), the new distribution of power among state and non-state actors at different levels has been accompanied by the emergence of new concepts trying to describe the reality of governance. In this context, concepts such as 'multi-tiered', 'multi-perspectival', and 'polycentric' governance in addition to Functional, Overlapping, Competing Jurisdictions (FOCJ) and fragmentation, and Spheres of Authority (SOAs) have become commonly used when describing the processes of governing at different levels. A common feature among all these concepts is their attempts to capture the dispersion of powers between different levels and among different forms of institutions.

In the European context, the early developments of MLG were closely associated with the European integration processes in the 1980s (Bache and Flinders, 2004). Such processes were mainly about the distribution of powers and authorities between the EU and the member states. In the words of Benz and Zimmer (2010: 1), such processes '[---] concern the shape of the European multilevel polity as a whole, in particular the way in which powers are allocated, delimited and linked between the different levels'. A new reality was materialising on the ground with no sufficient theorisation to understand it. The situation was puzzling and for some it was confusing as it represented a shift from order to disorder. Marks (1992: 221) has summarised the issue by stating that:

[I]nstead of the advent of some new political order, however distant, one finds an emerging political disorder; instead of a neat, two-sided process involving member states and community institutions, one finds a complex multi-layered, decision-making process stretching beneath the state, as well as above it; instead of a consistent pattern of policymaking across policy areas, one finds extremely wide and persistent variations. In short, the European Community seems to be part of a new political (dis)order that is multi-layered, constitutionally open-ended, and programmatically diverse.

Thus, the quest at this stage was to find new approaches that can capture the transformations that occur at the policy and politics levels between member states and the newly emerging entity. The influence of International Relations (IR) theories was obvious in the early treatment of EU governance. The reason for this is the way in which the EU at this early stage was characterised. During the early developments of the EU, it was perceived as a new form of international organisation, which could be studied and analysed using the traditional IR theories and analytic tools applicable to other international organisations.

An early attempt to theorise and to conceptualise the innovative EU reality was provided by inter-governmental theorists who underscored the central role of nation states and national governments as major actors in the transformation process (see for example, Moravcsik, 1993). According to this view, national governments were conceived as 'gatekeepers' who are capable of accepting or rejecting any changes and who are in control of the consequences of the transformation processes. As 'gatekeeper', the central states were expected to perform the following functions (Piattoni, 2009: 6):

- To effectively keep the centre-periphery gates (thus deciding which sub-national formations could be given the right to represent themselves in the EU political process as carriers of legitimately distinct interests);
- To keep the state-society gates (thus retaining the power to select which social groups could be chartered as legitimate carriers of private or collective interests);
- To keep the domestic-foreign gates (thus functioning as the sole legitimate representatives of domestic interests, whichever their level and nature).

From a state-centralism perspective, the role of other non-governmental institutions is first and foremost to facilitate inter-governmental interactions and to reduce transactions costs (Trnski, 2005). This point of view has been called into question by Marks et al. (1996), who argued that the gatekeeping capacity of central states has been over estimated. The polity of the EU shows that in many situations, central states can be bypassed by non-governmental and non-state actors who play growing and influential roles in decision-making processes.

A more dynamic account of the European integration was provided by the neo-functionalists scholars who studied the role of the nation state as interdependent actors interacting at the national and supra-national levels (see Stone and Wayne, 1997). The major contribution of the inter-governmental and the neo-functionalists approaches was their ability to explain the emergence of the EU and the way in which EU institutions work (Piattoni, 2010).

Upon the maturity of the experiment, the EU started to reflect new qualities which are more similar to the national political systems features than to those in classic international organisations. In other words, the EU had a higher status than international organisations but lower than nation states (Sbragia, 1992). These new qualities called for new methods and theoretical perspectives to treat the EU and its organisations. Consequently, a theoretical shift has taken place away from the IR field towards public policy and public administration disciplines. Such a theoretical shift has paved the way for the emergence of a new but incomplete theory of MLG. The new theory looks at the EU as a political system consisting of three layers: EU, regional, and sub-national. As a political system, the EU reflects some features of the traditional inter-governmental relations approach

with national governments vertically interacting with each other across the three levels as well as new features where actors from different backgrounds (public and private) horizontally interact across different sectors.

Building upon these theoretical insights, and considering the newly emergent power structures in the EU following the implementation of the Maastricht Treaty in 1992, the concept of MLG was developed and introduced by Gary Marks and other European integration scholars such as Liesbet Hooghe in the early 1990s. According to their view, MLG provides a suitable analytic tool that is able to capture and explain power structures and the way in which these structures interact. In this context, MLG has been conceived as 'a system of continuous negotiation among nested governments at several territorial tiers' (Marks, 1993: 392). The subject matter of these negotiations has focused on the ways in which powers and competencies should be transferred from the member states to the EU level. The results were a dispersion of powers and competencies at different levels. As stated by Benz and Zimmer (2010: 1), 'European integration was about the transfer of powers from the national to the European level, which evolved as explicit bargaining among governments or as an incremental drift'.

From this perspective, decision-making powers at national levels have been dispersed upwards to supra-national levels and downwards to sub-national. As a result of this process of authority devolution new forms of policy networks have emerged wherein supra-national, national, regional, and local levels are interacting together. While member states can directly intermediate relationships and interactions between sub-national and supranational levels before the implementation of Maastricht Treaty in 1992, 'regional and local government would act as a third territorial layer in EU policymaking' (Marks, 1993: 405). Consequently, the application of the treaty has resulted in new structures of powers at the EU and sub-national levels, which in turn have complicated the overall configuration of the governance system.

Following on from this conceptualisation, it can be noticed that the notion of MLG includes two main dimensions: vertical and horizontal. The vertical dimension of the concept is reflected in the 'multi-level' nature of the system. In this context, the multi-level feature of the governance system denotes the transfer of powers between the different levels of governments in a vertical fashion either upwards or downwards. At the same time, the horizontal dimension of the concept is more



associated with the term ‘governance’, which highlights the growing and influential roles played by non-state actors such as private and non-governmental institutions in policymaking and decision-making processes.

As Jessop (2004: 65) puts it, ‘a shift to governance can enhance the capacity to project state power and achieve state objectives by mobilising knowledge and power resources from influential non-governmental partners and stakeholders’. Rosenau (2004: 40) summarises these two dimensions of the concept by stating that ‘[T]he notion of multi-levels suggests governmental hierarchies and explicitly posits the various levels as vertically structured in layers of authority, whereas the mushrooming demands for governance are also being met in a host of horizontal ways’.

In an attempt to take the debate one-step further, a theoretical virtual space of MLG was created by Hooghe and Marks (2004), wherein different forms of inter-governmental relations can take place. In this regard, a distinction was made between two ideal types of governance: type I and type II. As noted by Piattoni (2010: 9), the goal of this theoretical exercise was ‘to theorize the unravelling of the state and the emergence of new patterns of relations between different levels of government that had traditionally been conceived as hierarchically ordered, or at least nested within one another, and that were now challenging or bypassing these established relations without, however, completely superseding them’.

The main features of type I and type II MLG can be summarised in Table 2.2.

Type I	Type II
<ul style="list-style-type: none"> <li>• General-purpose jurisdictions</li> </ul>	<ul style="list-style-type: none"> <li>• Task-specific jurisdictions</li> </ul>
<ul style="list-style-type: none"> <li>• Non-intersecting memberships</li> </ul>	<ul style="list-style-type: none"> <li>• Intersecting memberships</li> </ul>
<ul style="list-style-type: none"> <li>• Jurisdictions at a limited number of levels</li> </ul>	<ul style="list-style-type: none"> <li>• No limit to the number of jurisdictional levels</li> </ul>
<ul style="list-style-type: none"> <li>• System-wide architecture</li> </ul>	<ul style="list-style-type: none"> <li>• Flexible design</li> </ul>

Table 2.2: Types of Multi-Level Governance

Source: (Hooghe and Marks 2004: 17)

As the table illustrates, the type I vision of MLG conceives of the diffusion of powers and authorities as being distributed among a ‘limited number of non-overlapping jurisdictional boundaries at a limited number of levels’ while type II characterises ‘a complex, fluid, patchwork of innumerable, overlapping jurisdictions’ (Hooghe and Marks, 2004:15). The closest example of type I MLG is federal states where powers and competences are divided between a few

levels of governments which are given full jurisdiction to exercise these powers either on geographical or on functional grounds.

Compared to type I, type II appears more flexible and even more chaotic with actors being free to move from one jurisdiction to another without being strongly tied to organised and well-ordered systems of governance (Piattoni, 2010: 9). As such, type II governance is more likely to take place when the traditional governmental bodies find themselves bound by the rules of their stable systems and unable to respond in a flexible manner to the demands put on them to perform certain functions. As stated by Skelcher (2005: 94), 'Type II governance tends to flourish specifically when there is a need for a tailored governmental body to address an issue that is not susceptible to policy action by a type I organization, for example, in the international arena and when there are particular functional governance problems'.

At the same time, Conzelmann (2009) has noted that the first type focuses to a great extent on the role of nation states at different levels. The major concern, according to this view, is the way in which governments as 'general-purpose' jurisdictions interact and share powers. On the other hand, type II governance reflects a more complex picture where jurisdictions are defined based on functional and task-specific bases. In such a situation, 'the number of such jurisdictions is potentially huge, and the scales at which they operate vary finely. Moreover, there is no great fixity in their existence. They tend to be lean and flexible—they come and go as demands for governance change' (Hooghe and Marks, 2004: 17).

The two types of MLG coexist in the contemporary polity of the EU; however, under two different forms of legitimacy. On the one hand, type I governance structure acquires its own legitimacy from the way in which they were formed in addition to the rules and regulations governing their conduct and performance. On the other hand, the type II governance institutions attain their legitimacy in an indirect fashion from type I structures on the grounds of their specialisation as well as their organisational, professional, and managerial skills (Pierre and Peters, 2000; Piattoni, 2010).

This observation has implications for the notion of accountability and democratic values. While type I institutions are regarded as democratic (selected by people

via elections) and accountable, type II bodies are normally perceived as less accountable and less democratic. This issue was problematised by Skelcher (2005: 96) as follows:

Type I bodies are constructed, discursively in terms of their formal authority, as the government for that community of citizens. The body is embedded in a political process that makes it the focus of the expression and allocation of community values. There is an infrastructure of democratic rule by elected representatives that provides symbolic and substantive means for securing legitimacy, consensus and accountability. Type II bodies, by contrast, have properties that lead to weak 'democratic anchorage'.

The conceptual and theoretical discussions of MLG reveal that it is a dynamic and multi-layered concept. It has territorial as well as functional aspects. In this context, Conzelmann, (2009: 7) defines MLG as 'an arrangement for making binding decisions that engages a multiplicity of politically independent but otherwise interdependent actors – private and public – at different levels of territorial aggregation in more or less continuous negotiation/deliberation/implementation, but does not assign exclusive policy competence to any of these levels or assert a stable hierarchy of political authority'. Consequently, MLG is by definition a multi-dimensional phenomenon which encompasses different types of institutional arrangements among different types of actors (governmental and non- governmental) interacting in decisions and policymaking arenas at different territorial and functional levels.

The multi-dimensional aspect of the concept has been depicted by Piattoni (2010). According to his view, the conceptual and analytic space of MLG has been visualised as a three- dimensional phenomenon as reflected in Figure 2.2. X1 on the figure represents the centre-periphery dimension while the domestic-international dimension is represented by X2. The state-society dimension is represented by X3 and O symbolises the sovereign state. The figure denotes shifts at three levels and in three different directions: from the centre to the periphery; from national to international levels; and from state to non-state actors. The first axis (X1) symbolises the shift from central government structures towards more decentralised forms. This movement has been analysed by regionalist accounts.

At the same time, the second axis (X2) indicates the shift from sovereign/autonomous nation states towards more inter-governmental

cooperation at the international level. Finally, the change in state-society relationships and the growing role of non-state actors such as private, non-governmental, and civil society organisations is represented by axis X 3. From this angle, MLG could be understood in accordance with the definition provided by Piattoni (2010: 1) as ‘a three-dimensional concept that crosses and problematises three analytical distinctions: that between center and periphery, that between state and society, and that between the domestic and the international’. In this sense, the notion of MLG includes changes at three different levels: politics, policymaking, and structures.

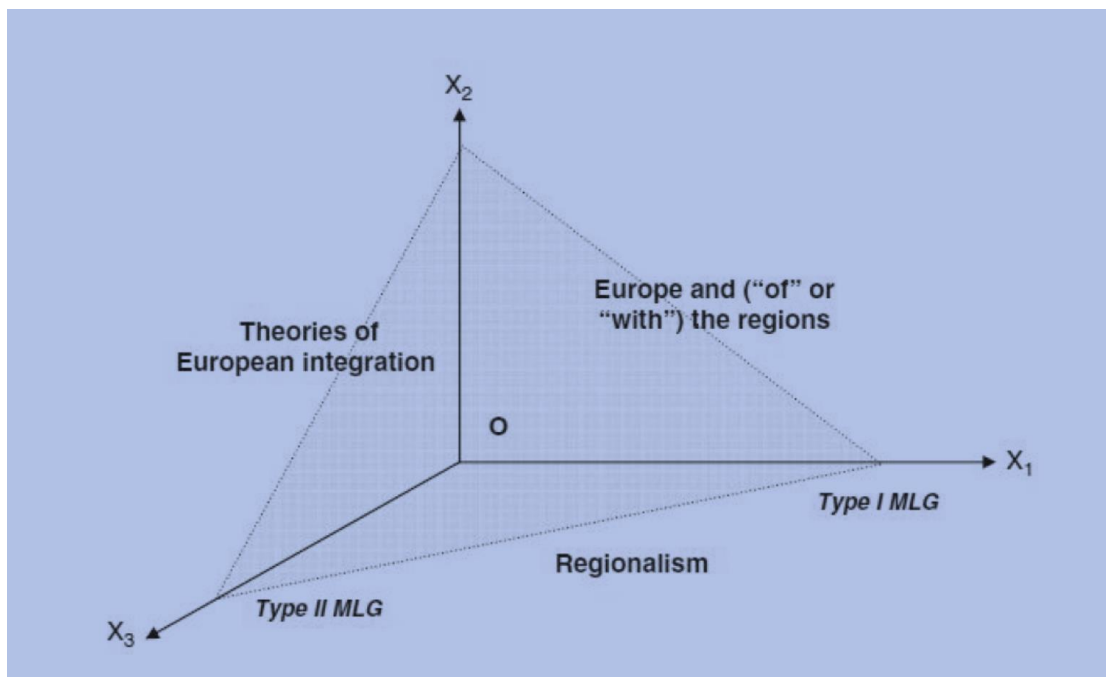


Figure 2.2: Multi-Level Governance's Analytical Space

Source: Piattoni (2010: 13)

To conclude this section, it is evident that the development and evolution of MLG are closely associated with the development and evolution of the EU. The concept has been presented as an analytic tool which helps to capture the vertical transformation and devolution of authorities and competencies from the centre national levels to sub-national and supra-national levels. The concept also captures the dispersion of such powers and competencies horizontally from state to non-state actors. To put it another way, the emergence and development of MLG can be regarded as a reaction to state-centrism and a movement away from state-centrist IR approaches towards more flexible and complex policy and public administration approaches. With the theoretical and conceptual debate about MLG highlighted and discussed, the question that emerges is what is the

difference between this concept and the concept of global governance? This issue will be further explored in the next section.

The notion of MLG as described above provides a suitable analytic perspective to empirically examine the water governance arrangements in Egypt. The transboundary nature of the River Nile in addition to the existing water institutions at the regional and national levels call for an MLG framework of analysis that allows for the investigation of water governance arrangements in the Egyptian context. Added to this, an MLG approach will help in improving our understanding of how national water governance arrangements within the Egyptian water sector are affected by the institutions and arrangements at the regional levels. The MLG framework will also allow the examination of the roles of non-state actors and shaping and implementing water policies at all levels.

## **2.5 Defining Global Governance**

The aforementioned discussion of the concept of MLG has argued that governance is a multi-level concept. It has the ability to connect different governance processes at multiple local, national, regional, and supranational levels. In this sense, the discussion of MLG can be further extended to include another form of governance at the global level known as 'global governance' or 'world governance'. As noted by François (2009), 'global governance' or 'world governance' is the latest version of the concept of governance. According to Duggett (2005: xi), 'global governance represents a new way of thinking about the world we live in'. It opens new horizons and provides new tools to examine and reconsider the role of international institutions such as the UN as well as underlining the influence of the new non-state actors including global NGOs. The endeavour of global governance as expressed by Argyriades (2005: xxiii) is 'to foster a new world order based upon the rule of law, the peaceful resolution of conflicts and disputes, compliance with treaty obligations and respect for democratic processes of multilateral decision-making'.

In spite of the apparent novelty of global governance, the concept is not completely new as it can be traced back to old multi-culture empires, which dominated and ruled vast areas all over the globe. The Roman and the Ottoman empires are clear examples wherein the rulers used to think of their powers and authorities as extending to cover the whole world (Argyriades, 2005; Massey 2005). Additionally, many of the issues which concern policymakers and policy

scholars nowadays have been a subject of vibrant discussion for hundreds of years. As Massey argues (2005: 4), 'the issues with which contemporary scholars and policymakers wrestle; the nature of government, the locus of legitimacy, power, and authority, the relationship of States to each other and to civil society, are the kinds of issues debated across different social and political systems for millennia'.

The major focus of global governance as a modern construct, however, is on the different forms of economic and political cooperation, integration and interaction taking place at the global level. Many global policy problems such as poverty and environmental issues go beyond the capacity of individual nation-states to handle (Farazmand, 2001: 449). The core idea is that under globalisation many policy areas have become a subject of interest for multiple state and non-state stakeholders (Farazmand, 1999: 509). Policy domains have become interlinked and interconnected to the extent that scholars and policymakers have described the process as 'global public policies' (Stone, 2008). In this context, the absence of a global government requires the establishment of a global governance structure in order to achieve policy goals. As François (2009:7) puts it, 'What is now at stake is to weigh collectively on the world's destiny by instituting a system to regulate the many interactions that are beyond the reach of states'. In other words, in order to deal with global policy issues at a global scale, national governments have involved other non-state actors in the process of policy formulation and implementation. As such, global governance can provide a method for understanding the numerous ways in which public policies and in turn, water policies are made and implemented (Massey, 2005: 4)

The notion of world governance as a form of state independence is therefore no longer sufficient to give a full description of global interactions or to account for the different impacts of globalisation on nation states. The ability of sovereign nation states to act individually to solve complex and transnational policy problems is severely constrained in a globalised interconnected world. Many changes at the global level have reinforced such doubts about the role of the nation states as the sole actors possessing decision-making powers. For instance, the formation of the European Union besides the regional integration in other parts of the world, including Africa has indicated the limits imposed on member states in such supranational entities. The emergence of these new

integrated entities is seen by Fraser-Moleketi and Kauzya (2005:108) as the only way out for African nations in order to collectively engage in the process of administering global governance. Such integration among nations, however, creates new challenges for the capabilities of individual states to form and enforce their respective policies independently from the rules and regulations that govern the actions of all other members. The role of multinational organisations, whether governmental or non-governmental, in addition to the increasing influence of international financial institutions and the multinational corporations, are other examples of the retreat of the state frontiers in favour of other national and international powers.

These emerging conditions have encouraged many scholars to argue for new global governance, wherein many of the authorities which used to be invested in the nation states are diffused to upper global governance institutions. Rosenau (1995: 13) describes the process as 'a pervasive tendency in which major shifts in the location of authority and the site of control mechanisms are underway on every continent, shifts that are as pronounced in economic and social systems as they are in political systems'. This process of relocation of authorities has been facilitated by different global forces that have paved the way for the emergence of global governance and created new opportunities for citizens and organisations to act across levels and boundaries. As stated by Murphy (2000: 796), '[A] world in which transformations in telecommunications have lowered the costs of political education and created opportunities for more and more subgroups to work with one another is a world of increasingly skilful citizens able to act both above and below the levels of traditional national politics'. Under such circumstances, and to respond to the new reality of the notion of global governance, the associated governance mechanisms have become paramount.

The new global governance system is meant to include all forms of formal and informal cooperative arrangements in both economic and political spheres among state and non-state actors. In the words of Massey (2005:3), these cooperative and governance arrangements 'cross the penumbra between the State and civil society weaving a seamless web between the two'. In this sense, a world governance system will 'allow collective problems to be managed collectively and will take into account the interdependence that today defines relations among all peoples' (Rocard et al, 2010:2). The details of the overall

picture of the new system are still blurred as no general agreement regarding how this system should look like has been reached by the interested parties. Consequently, Weiss (2000:808) has concluded that 'the conceptual and operational challenges of global governance are formidable'. Dingwerth and Pattberg (2006:185) share the same opinion with Weiss, stating that 'those who do ask, what is global governance? Are likely to come up with the result that global governance appears to be virtually anything.'

The challenging problem in this regard is how to move beyond the notion of sovereignty towards a global governance system without oversimplifying the situation by claiming that the era of nation states has ended. To answer this question is basically to identify the major contours of the global governance system. Current scholarship exploring global governance has identified three major models competing with one another as potential models for world governance (for more details, see Rocard et al., 2010). The first model discusses a multi-polar global governance system in which major global powers including the newly emerging powers of India, China, Brazil as well as the longstanding powers such the USA are taking charge of (and collectively addressing) the global issues. This model, as it stands, is very much power laden and based on the notion of the balance of powers. Nonetheless, the historical incidents inform us that this balance is unstable and it is deemed to be broken at some point because of the conflict over power among global actors (Rocard et al., 2010).

The second model is based on the idea of collective security as adopted by the UN. As noted by Blin and Gustavo (2009:3), 'Ever since it was established in the wake of World War II, the UN has asserted itself as one of the pillars of post-war world governance. It could even be said that at the institutional level, the United Nations constitutes the pillar of world governance: no other international organization comes anywhere near it in terms of size, legitimacy, and ambitions'. Despite being an influential actor in any form or shape of future global governance, the UN as it stands today is in a bad need for a deep reform to become more representative, more democratic and more capable of leading the world governance.

The third model of global governance is represented by the EU model, which reflects high levels of solidarity among its members. Duggett (2005: xvi) describes the EU experience by stating that '[T]he European Union is a world-



leading model that has redefined the language of public administration, since it is far beyond being an international organisation'. Although this sounds very appealing, the EU model is not problem-free. One issue the model is facing at the moment is the inability to accommodate new members. The enlargement of the EU poses many questions about the capacity of the existing bodies and institutions to accommodate new member states. Added to this, under the current financial crisis the possibility of the EU model becoming a global governance system has even become highly contested.

The vagueness of the concept, and the lack of agreement on its core components and mechanisms, have resulted in a plethora of definitions and conceptualisations of global governance. Reviewing these definitions, a general distinction can be made between global governance as a substantive issue and global governance as an analytic and methodological tool. At the substantive level, Weiss defines 'global governance' as 'collective efforts to identify, understand or address worldwide problems that go beyond the capacity of individual States to solve'. In this sense, the global governance system can be conceived as 'the complex of formal and informal institutions, mechanisms, relationships, and processes between and among States, markets, citizens and organizations, both inter- and non-governmental, through which collective interests on the global plane are articulated, rights and obligations are established, and differences are mediated' (Weiss cited in the UN Economic and Social Council, 2006:4).

According to Rosenau (1995: 13), 'global governance is conceived to include systems of rule at all levels of human activity—from the family to the international organization—in which the pursuit of goals through the exercise of control has transnational repercussions.' From this angle, global governance can be perceived as a system of control wherein power relations and modes of interactions among global policy actors are major concerns for policy analysis. Added to this, the multi-level nature of the concept has been underlined by including all forms of human interactions and activities directed to achieve certain policy goals and have global consequences.

Conceiving global governance in this manner means that the concept goes beyond the traditional international, interstate and intergovernmental arrangements to include the emerging dynamics between and among state and

non-state stakeholders. The concept also highlights the multi-layered nature of these new arrangements as they may involve actors across different national, regional, and global levels. In the words of Dingwerth and Pattberg (2006: 192), 'the term global governance conceives of world politics as a multilevel system in which local, national, regional, and global political processes are inseparably linked'. Relationships between nation states and other national and global actors are undergoing a fundamental change. A transformation has occurred from a model in which states control and govern other actors to a model in which states govern with, or in cooperation with those actors. This transformation process occurs at the national and global levels.

From an analytical and methodological point of view, global governance provides a new perspective to analyse and understand the global polity that goes beyond the classic international relational theories and analytic approaches. As Ziller (2005) notes, it is difficult to analyse global institutions as if they were simply a larger version of national ones, and to use national State-based categories for something that is not a State as such. Consequently, the major focus for politics scholars and policy analysts from a global governance perspective is how the different policy levels are interlinked and what the implications are of the interaction between national, regional, and global levels for making and implementing policies. In other words, applying global governance as an analytic tool calls for the expansion of the existing conceptual frameworks to reflect the interconnectedness of policymaking processes at different levels and among multiple actors. Such an expansion is crucial to be able to describe, analyse and understand what we used to call 'international relations' as the surrounding environment of nation states keeps changing at high speed.

The trouble with global governance as an analytic tool, however, is that the concept of governance itself is a multifaceted and multidimensional concept. Adding the global element to this concept has not made it any clearer. Quite the contrary, it has added to the vagueness and the fuzziness of governance. Therefore, the potentials of global governance as an analytic and methodical tool have been challenged on the grounds that 'governance' is still in need of more clarification before being used analytically to explain policymaking at the global level. As Kleinstuber (2004: 69) puts it, 'governance is a concept that is in an experimental phase and still has to prove its usefulness in a global context'. For

example, from an analytic perspective, Hufty (2009: 2-8) has distinguished between three different approaches of governance: governance as a synonym of government, governance as a normative framework, and governance as an analytic framework for non-hierarchical coordination systems.

The first approach discussed by Hufty (2009) regards governance as a method of control, particularly in a hierarchical fashion. Those who adopt this approach to governance do not make a distinction between governance and government. For them, the term is used to denote the mode of control in any form or shape of organisation. From a normative perspective, the second approach of governance focuses on the qualities and the features of good governing processes. The publications of the World Bank on good governance with the qualities previously discussed in this chapter provide good examples of this approach. The third approach of governance deals with the concept as a tool to solve coordination problems in non-hierarchical situations and it builds upon insights from organisational, international relations and political traditions. Such diversity in approaches and perspectives, as well as the associated analytic tools and methods, adds to the complexity of governance and limits its potential as a plausible analytic framework at the global level.

This is not to say the global governance concept is completely irrelevant as an analytic tool. Dingwerth and Pattberg (2006: 189) have noted that global governance has been used by scholars who have challenged the mainstream international relations accounts by highlighting the importance of new phenomena including: global social movements; civil society; the activities of international organizations; the changing regulative capacity of states; private organizations; public-private networks; transnational rule making; and forms of private authority. From an analytic point of view, Dingwerth and Pattberg (2006) suggest that the term 'global governance' can be seen as 'a heuristic device to capture and describe the confusing and seemingly ever-accelerating transformation of the international system' (p.191). In that sense, global governance adds to the traditional accounts in different ways:

*First*, instead of focusing on the nation states as the major actors in international and global arenas, global governance has emphasised the growing role and influence of non-state actors such as Nongovernmental Organizations (NGOs) and Transnational Corporations (TNCs).

*Second*, global governance as an analytic framework acknowledges the interplay dynamics between local, national, regional, and global levels. Unlike the international relations analytic approach, global governance argues that governance processes and interaction between state and non-state actors may take place on a multi-level scale, wherein it would be difficult to separate and analyse interactions among states in isolation from the overall environment.

*Third*, instead of focusing on inter-state bargaining and power relations, global governance recognises the very existence of different forms and systems of governance with no hierarchical logic to govern them.

*Finally*, a global governance analytic perspective admits the emergence of new forms of authority outside the traditional sphere of the state. The new forms of authority include diverse arrangements of public-private interactions to set standards and to put regulations in place.

As such, global governance represents a valuable analytic tool, which has much potential to go beyond the traditional existing accounts on international relations and to provide a rich description and a vivid picture of state and non-state actors' interaction in the world polity.

## **2.6 Administering Global Governance: The Architecture and Mechanisms**

The architecture and the mechanisms of the global governance system represent another debatable issue in the discussion of world governance. In order to steer, manage, regulate and collectively solve global policy issues, there must be steering mechanisms as well as deriving engines to take the lead and to organise the efforts of global actors. As Fraser-Moleketi and Kauzya (2005:117) (2005) argue, coherent strategies and structures at sub-national, national, regional and global levels are needed for administering global governance. The world governance steering mechanisms may come from different sources and they may also take different forms and shapes. Rosenau (1995:20-23) has distinguished between three main sources of control and steering mechanisms: state sponsored control mechanisms, non-state sponsored control mechanisms and jointly-sponsored control mechanisms.

Some of these mechanisms may exist at the sub-national levels while others can be found at the supranational levels. These mechanisms could be purely developed by the state and imposed on the rest of the participating actors in a

top-down fashion or they might be developed gradually by the non-state actors and in time, form patterns of interactions and become institutionalised. Added to these two forms of steering mechanisms, states may collaborate with non-state actors and jointly sponsor steering mechanisms at the sub-national and supranational levels. This multiplicity of steering and control mechanisms in world governance, in addition to the varying degrees of their institutionalisation denote that at present the global governance system is in a state of flux. The overall structure of the global governance as well as the architecture of the system is by no means a static construction. As characterised by Gustavo et al. (2011: 3), '[G]overnance architecture, however, is a complex, dynamic and contested series of spaces, institutions and ideas wherein multiple actors dispute the balance of power within constantly changing relations'. These characteristics of world governance, together with the fast-changing nature of interactions and relations among global actors make it difficult to precisely describe and agree upon the major contours of the global governance architecture.

Added to the aforementioned complexity of the structural design of global governance, many governmental as well as private global organisations are responsible for making and enforcing regulation and rules. On the one hand, organisations such as the International Accounting Standards Board (IASB), the International Organization for Standardization (ISO) and the World Wide Web Consortium (W3C) are examples of private non-governmental organisations responsible for making/enforcing regulations and standards at the global level in areas such as quality standards, accounting standards and computing. At the same time, other purely governmental organisations such as the World Health Organization, the World Intellectual Property Organization, and the Universal Postal Union are doing similar regulatory jobs (Koppell, 2007).

The very existence of these two types of organisations working side-by-side can lead to confusion around their nature and the functions they perform. On the surface, both private and governmental organisations are doing the same job of setting standards and making/enforcing regulations. Nevertheless, one of them is closely confined to the notion of 'governance' (non-governmental organisations) while the other is more related to the traditional notion of government. To better understanding of the way in which the global governance

system is regulated these two aspects of governance and government need to be disentangled.

The existing shortcomings of the current world governance has pushed many scholars to rethink and reconsider the global governance system and to call for reinventing the world governance architecture. This reconsideration requires a clearer identification of state and non-state actors as well as redefinition of the roles such global actors play. As put by Gustavo et al. (2011: 3), '[I]f we want to rethink the existing architecture of world governance and propose alternatives for new world governance, we need to identify the actors and spaces that are already at work in this domain'. Consequently, many projects and different vision have been put forward to envisage the shape and the features of the new future global governance.

Examining the qualities of the new global governance system as sketched by Stiglitz (2004), it can be argued that a future global governance system is expected to provide some remedies to the problems of the exiting one. According to his view, a new global governance system must be legitimate, democratic, and representative. To develop such a system drastic changes have to take place in the existing governance of global institutions including the World Trade Organization (WTO), the WB, the International Monetary Fund (IMF), and the UN. The role of the Economic and Social Council should be strengthened to be capable of dealing with the complex global economic issues. There should also be a move from the G8 to the G24 as more representative global institution. A new global governance system should also be able to better manage the global natural resources and to handle the environment issues in a more efficient manner as well as producing and protecting global knowledge. To such an end, a global legal infrastructure should be developed to govern the overall actions and interactions in the system (Blin and Gustavo, 2009).

Another proposal was presented by Gustavo et al. (2011). According to their views, the existing architecture of the world governance needs to be remodelled to become more capable of dealing with the new challenges of globalisation and to become more responsive to global policy issues. In this context, they have mentioned that '[W]hat is needed is to work together to devise responses to today's challenges, rooted in the contexts relevant to each person and each population. This involves recognizing the different forms of knowledge that exist

in all continents, among all peoples, without trying to impose one of them as the unquestionable reference.’ (p. 11). In other words, what is needed is a new governance system, which acknowledges the diversity of human culture and responds to the legitimate demands of the weaker parties in the same way it responds to the global powers. Representation, democratisation of governance processes, transparency, accountability, and legitimacy are all core values upon which the new world governance should be instituted (see Higgott, 2005).

## **2.7 The Dialectical Relationship between the Concepts of Governance**

As has been indicated, the theoretical and conceptual discussion of governance is a multi-level and multi-dimensional phenomenon. It represents ‘activities simultaneously located at several different governmental levels; that are local, national, regional and global’ (Massey, 2005: 3). Separating the different levels and several dimensions of governance is merely for analytic purposes. In practice, the three levels of governance (local, regional, global) as well as the multitude state and non-state actors involved in governance processes at these three levels are in a process of continuing interactions and are governed by dialectical relationships (see Figure 2.3).

As the figure shows, local governance, which means the processes of interactions among state and non-state actors at the state level and institutional frameworks governing these interactions, represents the first level and the ‘cornerstone in the architecture of the global governance. At this level, the everyday lives of citizens are played out and influenced by the very decisions and regulations made by public and private actors participating in the governance process via policymaking and decision-making processes. In spite of the importance of this local level of governance, national governance is not conducted in a vacuum. Different intervening global forces, factors, and pressures influence the daily interactions between state and non-state actors at the national level. The transnational features of problems such as migration, pandemics, climate crises and financial crises alongside the globalisation of many aspects of world politics have produced different sorts of pressures which interfere with the interactive governance processes at the state level and limit the ability of national players to pursue the course of action they prefer. As described by Gustavo et al. (2011: 4), ‘in an era characterized by increasingly accelerated

globalization, financial and trade flows and the circulation of people and information, the global dimension conditions daily life at the local level’.

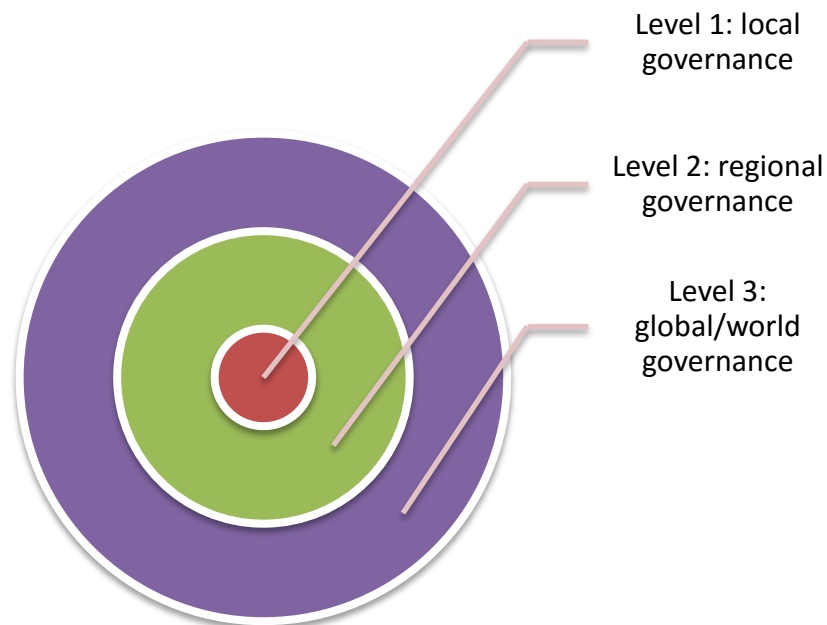


Figure 2.3: Governance as Global Multilevel Concept

In-between the local and the global levels of governance, there is an equally important level that the relationship between local governance and global governance, and that is regional governance. At the regional level, different organisational bodies come together and try to make regulations and decisions, which benefit the governance actors at the national level. To this end, the regional governance organisations interact with global and national governance actors at the same time. By doing so, regional governance agents work as the link which connects the national, and the global levels of governance.

To sum up, and considering the aforementioned characterisation of governance, it is evident that when we talk about governance, MLG, and global governance we are in fact talking about the same thing; an arrangement to share and distribute powers among state and non-state actors. However, this phenomenon takes place at different territorial and geographical levels. As a governing process, governance may take place at the national and sub-national levels within the same country. It can also pass this level of interaction between state and non-state actors to upper levels including regional or/and global scales. In this case, when governance processes transcend nation states to upper regional and global levels of interaction, one can talk about MLG wherein national, sub-



national, regional and global forces come into play and interaction between state and non-state actors determines the course of action to be pursued in order to deal with governance issues. Whether national or multilevel (global/regional), governance systems and processes can be characterised as being either good or poor. Good governance systems and processes are built on transparency, accountability, legitimacy, rule of law, professional integrity and efficiency of public services, responsiveness to civil society and overall democratic values (see Makrydemetres, 2005). The absence of these qualities and features either at the national or the supra-national levels means that the existing governance arrangements are poor and need to be improved to reflect the features of good national, global, or regional governance. One question remains: how can global governance be administered? There is not an easy answer to this question. As noted by Fraser-Moleketi and Kauzya (2005:106), answering this question and identifying the strategies needed to govern and administer global governance will be 'the most difficult assignment of the century'.

## **2.8 Conclusion**

This chapter has examined the different facets of the notion of governance as well as the steering mechanisms available for coordinating and steering governance systems. The analysis of governance as a framework of analysis has indicated that the concept has been firstly coined to underline the shifts in policymaking and implementation processes from state-centred modes to new modes, where non-state actors have become major players in policy design and delivery. This does not necessarily mean that moving to the new governance arrangements has been a smooth transition. The concept is more or less still challenged at different levels and different scholars are still using it in different ways to describe and analyse different phenomena. Nonetheless, governance stands at present as a major analytical approach which attempts to capture the transition from state-centred approaches to more private governance. Scholars have identified several indicators to measure good governance practices, which have proved to be quite useful in distinguishing poor governance practices. Additionally, different theoretical and analytical efforts have been made by scholars to refine the concept of governance and to explain its applicability for analysing policy issues in national, regional, and global contexts. The notion of global and MLG, for instance, is quite helpful in explaining how different territorial

and functional levels come together to solve policy issues and to harmonise policy practices. The EU is an example par excellence of MLG. The notion of global governance is also important for understanding the global challenges facing the whole world, such as the shortage of fresh water in addition to providing ways to improve existing policy practices and encourage innovations in policy implementation. In that sense, governance provides an analytic framework that goes beyond the mere description of the policy area under investigation to offer a methodological tool for investigating policy processes by focusing on actors, institutions and interaction from an integrated holistic perspective (Hufty, 2011: 418). In such a context, policy choices can be explained based on the existing institutions that govern the ways in which governance actors interact at all levels to solve and address policy issues.

To conclude, this research does not introduce governance as a remedy for all policy problems. Instead, the study looks at governance as an analytic and theoretical lens via which policy scholars can unpack and analyse complex policy processes and systems. In other words, the discussion of governance and multilevel governance in this chapter is meant to contribute to the conceptualization and the analysis of water policy issues to be discussed in the following chapters. From this perspective, governance provides a powerful analytic tool to understand and explain changes in water governance systems and arrangements in the context of specific countries such as Egypt. For instance, a governance perspective on water policies in Egypt should provide a better understanding of the growing roles of non-state actors in the Egyptian water governance. Additionally, the transboundary nature on the River Nile requires a multilevel water governance analytic framework in order to comprehend the water politics at the national and regional levels. Furthermore, the notions of multilevel and global governance as previously discussed in this chapter would allow for an investigation of the role of the international and global organisations in shaping water governance arrangements in Egypt and in the Nile basin countries. As such, governance provides a useful analytical framework for empirically investigating water governance in Egypt as fully explained in chapters 7 and 8.

Having said that, the next chapter will focus on the application of governance approaches to understand and analyse water policies and water governance

systems. Such an understanding is essential for conceptualising water issues in the examined case study. In this regard, the water crisis and the associated water policies and decisions will be perceived and discussed as a governance problem where water state and non-state actors interact at different levels to make water policy decisions in the light of existing water laws and regulations in order to address strategic water policy issues. This conceptualisation and understanding of water governance arrangements provides new insights into the ways in which water policy issues are handled in collaborative multi-actors settings. Governments cannot go it alone and designing and implementing water policies without taking account of the opinions and water problems' definitions provided by water stakeholders. This governance approach on water policies will be fully discussed in the next chapter to set stage for investigating water governance arrangements in Egypt in chapters 6, 7, and 8.

## **CHAPTER 3: WATER GOVERNANCE: CONCEPTION AND MECHANISMS**

‘There is enough water for everyone. The problem we face today is largely one of governance: equitably sharing this water while ensuring the sustainability of natural ecosystems. At this point in time, we have not yet achieved this balance’ (The United Nations World Water Development Report, 2006: 3).

### **3.1 Introduction**

The discussion of governance as an analytic framework in the chapter 2 has indicated that the concept is multifaceted and it is applicable to analyse different policy arenas at different levels. In this chapter, the relationship between governance and water management systems will be explored. The aim is to develop a better understanding of how water sectors are governed and the way in which water resources could be managed according to a good water governance system. The chapter starts with a characterisation of the water crisis as a problem of governance. Section two focuses on defining ‘water governance’ and the underlying relationship between governance and water management systems. In section three, a governance approach to dealing with the water crisis was devised. The ways in which governance along with the analytic tools this concept provides could be used to improve the process of water policymaking and service delivery will be discussed. Such a theoretical discussion of water governance is essential to understand and analyse the water crisis in Egypt and to provide new solutions to water issues (see chapter 6).

### **3.2 Governance and the Water Predicament**

The problem of water is first and foremost a problem of scarcity. Out of the overall total of the earth’s water, only 3% is fresh water. The remaining 97% of the earth’s water is in the oceans. The situation is becoming more problematic when we know that not all the 3% of the earth’s fresh water is accessible. Two-thirds of this amount are frozen and one-third is groundwater. As such, a mere 0.3% of the planet’s fresh water remains as accessible surface water (UNDP, 2015:11). Considering the growing world population and resultant increasing demand for clean and fresh water, it has become a necessity to think of better methods and improved ways for using this valuable resource. As reported by the UNDP, about ‘900 million people lack access to safe water and over 2.7 billion lack access to basic sanitation’ (UNDP, 2015: 1).

This lack of access to safe water and basic sanitation has proved to have negative consequences on socio-economic development particularly in the poorest areas of the world. The director of the UNDP Bureau for Policy Development, Olav Kjørven, highlighted this issue in 2009 by stating that ‘[T]here is growing recognition that we are facing a global water crisis - evident in widespread degradation of freshwater resources, increasing water scarcity, and vast inequities in access to water – that undermines human development. This crisis disproportionately affects poor people and is largely caused by failures of governance’ (Kjørven, 2009: 13). Additionally, the United Nations has raised the same concerns regarding the water crisis and its impact on socio-economic and environmental conditions by arguing that ‘Water is an essential component of security, and numerous key development issues influence water resources and the natural environment’ (United Nations World Water Development Report, 2006: 2). In this sense, the mismanagement and poor governance of water resources can potentially be a major source of instability, wars, conflicts, and environmental degradation worldwide. In other words, poor water governance may result in negative consequences for people at many different levels.

Thus, achieving effective water management and better water governance has become a global goal for different international actors including the UN. The issue has broadly been linked to the ability of countries and governments worldwide to achieve Millennium Development Goals (MDGs). In this regard, Kjørven (2009: 13) has noted that ‘[E]quitable and sustainable management of water resources is one of the keys to human development and human security’. Meanwhile, the United Nations World Water Development Report 4 Volume 1 (2012: 2) puts it another way by noting that ‘[M]anaging water well requires appropriate governance arrangements that move considerations of water from the margins of government to the centre of society’. In this context, the success in establishing effective water governance arrangements can be attributed to the ability of governments to work collectively with the rest of the societal actors in order to design and deliver water policy solutions. The fulfilment of that task will pave the way for the realization of the MDGs. An enabling environment wherein other societal actors, including civil society organisations and private companies, can undertake water delivery and treatment activities is a must for the full

mobilization and utilization of societal resources needed for addressing water issues (Solanes and Jouravlev, 2006: 8).

Following on from the above, it has become apparent that national governments alone are not capable of dealing with water governance issues in an effective manner. In other words, 'It is proving extremely difficult for many governments to effectively confront the many and intertwined issues concerning water' (United Nations World Water Development Report 2006: 2). Water governance issues are too complex and diverse to be handled and managed by only one societal actor. The effective management and governance of this vital and considerably limited resource calls for the collaboration of governmental and nongovernmental actors in all MLG settings including national, regional, and global contexts. Governments need to involve civil society organisations and the private sector in developing and delivering sound water policies and services. Added to this, such collaboration should not only take place at the national level but also at the international level. As stated plainly by the World Water Development Report (2006: 8), '[U]nless water concerns are integrated within broader national and international processes of trade, stability and more equitable governance, the chances of achieving the international water targets remain poor'.

This global recognition of the water crisis as a governance issue has been reflected in the position of different international organisations. For instance, in 2000 the Global Water Partnership (GWP) published a document entitled 'Towards Water Security: A Framework for Action' in which the GWP stated that '[T]he water crisis is mainly a crisis of governance. Working towards effective water governance requires an enabling environment and appropriate institutional structures that allow stakeholders to work together for effective water management' (Global Water Partnership, 2000: 17). Other organisations, including the United Nations, have emphasised the importance of governing water wisely and stopping unsustainable practices in using water resources. In this regard, the United Nations Millennium summit in 2000 highlighted the need for developing and implementing water management strategies at international, regional, national and local levels. Such strategies are expected to rationalise the way in which water resources are used and to end the unsuitable exploitation of this vital resource. To this end all countries have been invited to establish governance water systems and to embark on reforming their water sectors.

The World Water Assessment Programme (WWAP) initiated by the UN is another clear example of the global recognition of the importance of water problems and the need for developing a new governance system to deal with them effectively. The WWAP was established in 2000 upon the request of governments within the Commission on Sustainable Development in order to 'assist governments in developing and implementing their national water management plans' (The United Nations World Water Development Report, 2006: 2). The programme is hosted and led by UNESCO and seeks to coordinate 'the UN-Water agencies in their effort for gathering, processing and disseminating data and information about water resources management in the world, while supporting capacity building efforts and knowledge creation and sharing within this sector' (Minero, 2007: 2). The main goal is to 'influence leaders in government, civil society and the private sector, so that their policies and decision-making that affect water promote sustainable social and economic development at local, national, regional and global scales' (WWAP, [www.unesco.org](http://www.unesco.org)).

The World Water Development Report published by WWAP represents one of the most comprehensive assessments to date of freshwater resources. Since 2003, a number of reports have been published dealing with different aspects of water governance. Among these, the report of 2006 entitled '[W]ater, a shared responsibility' is of prime importance. In this report, the water crisis has been characterised as a governance problem and governance approaches have been introduced as a solution to deal with mismanagement of water resources. As the report puts it, '[I]ndeed, governance and politics are increasingly viewed as a part of the problem and therefore as an essential part of any solution to water crises' (WWAP, 2006: 7). The crux of the issues then resides in the way in which water decisions are made and the implications for such decisions for the wider community; for instance, deciding on who gets access to water, when and how has a great impact on the way in which this vital resource is allocated and used in a given context. These types of decisions raise a whole set of issues regarding equity, efficiency, and effective management of water resources. Without a sound and effective governance system in place there will be no guarantee that these decisions will be made and enforced transparently and accountably to serve the best interests of the wider population.

Framing the water crisis as a governance issue has allowed for broadening the water policy agenda and investigating issues such as corruption, democratization, power relations, and disparity between rich and poor countries. Consequently, this comprehensive view of the situation and broad formulation of the problem call for a participatory approach to tackle and solve water governance issues. There is no template or readymade recipe on how to proceed with collaboration and how to involve other stakeholders in water governance but as rule of thumb, governance arrangements in water sectors should facilitate interactive dialogues between interested societal parties including state and non-state actors. Institutional reforms, including the establishment of reinforcing dispute resolution mechanisms are a crucial step in this process. Additionally, the whole governance exercise should be undertaken in an environment characterised by transparency and within a clearly identified framework of roles and responsibilities of participating public and private parties. These features of water governance will be further discussed and explored in the section to follow.

### **3.3 Understanding Water Governance**

This section will unpack the concept of water governance in an attempt to identify its main elements and the underlying principles of the concept. Water governance is an under-researched area and the concept is still in the phase of formation. As noted by Karar et al., (2012: 1) there is a large body of literature on different aspects related to water governance including urban water delivery, rural water supply, irrigation management, basin level management and trans-boundary water governance and management; nonetheless, the concept of water governance per se has not had as much focus. At the outset, water governance can be regarded as the way in which water resources are managed. In this sense, water governance includes a host of political, economic and social institutions involved in the process of making and enforcing water policies as well as managing water resources. This group of actors is involved in an interactive process to decide upon water issues such as equity, economic efficiency and the balance between socio-economic and eco-system considerations. The concept of water governance also focuses on the way in which water policies and regulations are made and enforced. From this angle, different governments, civil society organisations, and private companies have different roles and different responsibilities in the governance process.



The literature of water governance indicates that different scholars and organisations focus on diverse elements of this concept in an attempt to provide a way in which water governance arrangements are established and implemented. Knight (2009: 350) define water governance as ‘the many kinds of intersecting human systems that define the nature of water as a resource, that determine water allocation among human uses, and that use social, political, economic and legal systems at multiple scales to control and enforce these precepts’. According to The Global Water Partnership, water governance refers to ‘the range of political, social, economic and administrative systems that are in place to develop and manage water resources, and the delivery of water services, at different levels of society’ (Rogers and Hall, 2003: 16). What can be understood from this definition is that water governance includes complex and multifaceted arrangements between actors working in different domains and at different levels. It also underlines a composite web of overlapping relations and interactions between different political, social, economic and administrative systems (see Karar et al., 2012). Thus, contrary to what appears to be the case at first glance that the concept of water governance is purely a technical issue, other societal aspects of this concept are as important as the technical ones. Put it another way, whatever technical solutions there are for water governance issues should be accepted at the societal level and should take into account the sustainability of developing and using this scarce resource. As a socio-political and developmental economic construct, water governance emphasises a number of principles including: decentralisation of decision-making and enhancing local governance; stakeholders’ participation; greater equity; liberalisation and involvement of private actors in service provision; public private partnerships; sustainability and meeting environmental concerns (Pollitt and Bouckaert, 2004; Anokye, 2013).

Rogers (2002:1) has defined water governance as ‘the capability of a social system to mobilize energies, in a coherent manner, for the sustainable development of water resources’. In this sense, water governance involves, among other things, the ability of national governments to design and to put in place socially accepted public policy water goals. To this end, it is imperative to encourage the participation of affected stakeholders at an early stage of putting these governance arrangements in place. In other words, affected stakeholders

should be involved in policy design as well as policy implementation (Anokye, 2013). They should not be regarded as merely implementation instruments because their input is quite important at the design stage in order to avoid any problems with implementation. The importance of stakeholders' participation has been highlighted by Loucks and Van Beek (2005: 294), who state that '[T]he relatively recent acknowledgement that stakeholders need to be fully included in the decision-making processes complicates the life of professional planners and managers. Important sources of information, however, come from discussion groups, public hearings, negotiations and dispute-resolution processes'. That means making water policy decisions following a participative approach could be more complicated and time consuming. However, the quality of water decisions made in such participatory platforms where water stakeholders may have a voice is better compared with individual decisions being made by governmental actors, who will be faced with a high level of resistance in the implementation phase. In a more detailed fashion, Minero (2007: 7) defines water governance. Three main functions are implied: to determine the roles and responsibilities of involved actors; to develop the right institutional settings; to establish coordination mechanisms. As such, effective water governance should have the right institutions and regulatory frameworks in place. Additionally, for water governance arrangements to be effective, power relations should be examined and any power asymmetries between state and non-state actors should be addressed through coordination mechanisms in an accountable and dynamic fashion.

From the policy and decision-making perspective, water governance can be defined in accordance with Solanes and Jouravlev (2006: 9) as 'the capacity to both generate and implement appropriate policies'. From the same angle, Hooper (2005: 1) has defined water governance as a 'suite of procedures that use the decision-making processes at different levels among different sectors, stakeholders, and jurisdictions to enact water resources management'. Accordingly, the degree of water governance within any society depends on the way in which people in this society perceive water governance issues and the way in which this image is translated by policymakers and politicians into concrete policies and action plans. Having the capacities and the skills required

to implement these policies in public and private organisations is another important factor in any effective water governance system.

From a practical point of view, Franks (2007) has noted that many practitioners do not make a distinction between governance and other similar concepts including government and management. According to his view, it is imperative to make such a distinction for creating any effective water governance system. A 'government' according to Franks (2007: 2) refers to 'an agency that controls territory and raises taxes' or as 'a political means of creating and enforcing laws, typically via a bureaucratic structure'. Government structures normally work at two different levels: central and local. At the central level, governments are preoccupied with making water policies and monitoring their implementation. Local authorities and other actors are responsible for service delivery at local levels. This emphasis on the 'agency' of government institutions in terms of their prominent role in making and implementing water policies becomes less important when we look at water issues from a governance perspective.

In spite of the prominent and undeniable role of governments and governmental agencies in making water policies and decisions, they can no longer act alone to solve water problems. They need to engage private and other non-governmental institutions. Having those non-state actors on board and including them in the decision-making processes will add to the complexity of these processes and further complicate the coordination problems that governments already face. However, the inclusion of non-state actors in policymaking processes is no longer avoidable if a country wants to build up a good water governance system. To put it another way, there are simple solutions to complex problems such as water issues, which by default call for the cooperation of different parties in the society. The United Nations World Water Development Report (2006: 2) has highlighted this issue by stating that:

It is proving extremely difficult for many governments to effectively confront the many and intertwined issues concerning water. Not only is it difficult for departments within national governments to collaborate effectively, but problems are compounded when many management decisions have to be taken at sub-national and community levels, as the linkage and cooperation between different levels of government is often tenuous at best. The challenges for government agencies to link to NGOs and the private sector for resolving water issues further complicate management and decision-making. The task of managing water becomes even more complex when

rivers flow from one country to another. The building of cooperative upstream-downstream relationships is becoming increasingly important with close to half of the world's people living in river basins or above aquifers that cross international borders.

In this sense, water governance implies, by definition, thinking beyond governments and governmental arrangements. It requires more flexibility in understanding water issues and the way in which these should be dealt with. Water governance also calls for the inclusion of a wide range of actors and their resources and initiatives not only the governmental players. For these reasons, governance and government are not synonymous and they should not be used interchangeably. As mentioned in chapter two, governance is more about differentiated polity wherein state and private autonomous actors work hand-in-hand in networked forms of organisation to deliver the intended water policy goals (see Bevir, 2007; Sørensen, 2006).

'Management' and 'governance' are not the same; however, scholars in the field in public and business administration nowadays tend to use 'governance' rather than 'management' to underline and discuss managerial and administrative issues. For example, Laegreid and Verhoest (2010) talk about governance of public-sector organisations to describe the recent changes in the way that public organisations are being managed, including the creation of new autonomous bodies and the impact of this on performance. In the same vein, Franks (2007) has noted that business administration scholars are more inclined these days to use 'governance' instead of 'management'. As he puts it:

[----] we can note the increasing use of the word 'governance' in a business context where only very recently the word 'management' would have been used. For example, we can now find references to 'risk governance' 'IT governance' and 'data governance', all instances where it seems likely that management is the more appropriate and relevant term. We should also note, in this connection, the use of governance in a business context where something more than management is being suggested, for example 'corporate governance' implying a degree of high level oversight designed to ensure that 'things are done right' and indeed 'project governance' with similar connotations. (p3)

Such confusion regarding the way in which 'governance' and 'management' are used should not lead us to treat these two concepts equally when water issues are dealt with. In other words, a clear distinction should be made between 'water governance' and 'water management'. While it is true that the idea of water

governance has been associated with ideas on how to use water wisely and efficiently, water management refers in particular to 'controlling the supply, distribution, use and disposal of water to achieve specific objectives' (Franks, 2007: 3). In this sense, water management is related to a specific aspect of water governance, which is the way in which water as a resource is being allocated in order to achieve certain goals.

This conceptualisation of water management comprises three main levels: operational, organisational and constitutional. At the operational level, water management is first and foremost about manipulating water resources at local levels using mechanisms such as channels, gates and pumps. Organisationally speaking, water management is more concerned with planning, allocating and distributing water at the basin level as well as constructing water facilities and monitoring the enforcement of water quality regulations. The constitutional level of water management is reflected in Integrated Water Resources Management (IWRM). According to Dixon and Easter (1986), IWRM refers to '[A] process of formulating and implementing a course of action involving natural and human resources in an ecosystem, taking into account the social, political, economic and institutional factors operating within the ecosystem in order to achieve specific societal objectives' (Dixon and Easter, 1986; cited in Born and Sonzogni, 1995: 170 ). Cardwell et al. (2006:9) define IWRM as '[A] coordinated, goal-directed process for controlling the development and use of river, lake, ocean, wetland, and other water assets'. As such, IWRM integrates land management and the management of water resources in addition to environmental and social impacts. The constitutional level of water management as reflected in IWRM is the closest to the idea of water governance. It not only focuses on organisational and operational concerns but it also covers the impact of actions and decisions taken in this regard related to the sustainability of the surrounding environment and human development. In short, water management can be conceived as actions and decisions taken to manipulate water resources while water governance refers to the system through which these actions are put in place.

Water governance has been conceptualised by some scholars as a political process (Grindle, 2004; Cleaver and Franks, 2008). The focus of this perspective is on the politics of water governance and the way that stakeholders are involved in decision and policymaking processes. Power relations and the way in which

stakeholders deploy the powers and the resources they have at their disposal to influence decisions and policy outcomes are of prime importance to the scholars who adopt this perspective. Grindle (2004) is concerned, for instance, with the way power is distributed among stakeholders. According to her view, the rules, which determine who holds power and the way in which authority is exercised, establish a level playing field for stakeholders participating in water governance. They provide certain actors with legitimacy and make their actions and decisions acceptable by the rest of stakeholders. A good example in this context would be the legitimate role played by governmental actors in making water policies and monitoring their implementation. At the same time, examining the concept of water governance from a political angle underscores the issue of accountability of participating actors and how this notion is translated into a concrete mechanism to hold actors responsible for their actions and decisions.

Cleaver and Franks (2006) have also acknowledged the political nature of water governance and the importance of power relations and negotiators processes. According to their view, '[W]ater governance works out through dynamic political processes of power and negotiation, particularly at the interface between service providers and users. General principles must be balanced with context-specific initiatives and there is a particular need to work at the messy middle between policy- making and local level practices' (Cleaver and Franks, 2006: 1). In this sense, water governance can be regarded as 'the systems and processes which society sets in place to manage its water resources and deliver water services'. This system is by definition of a complex nature and includes different types of actors as well as different forms of mechanisms through which those actors interact to deal with and to find solutions to water issues (see Figure 3.1).

As the figure indicates, water governance systems deal with a wide range of social, institutional, ecological, and economic issues. At the resources level, water governance is concerned with material as well as non-material resources, which limits to some extent the ability of stakeholders to form and put in place the appropriate mechanisms and arrangements in order to tackle water issues. The stakeholders involved in water governance systems have a major role to play when deciding on the ways in which water resources will be used. They are normally engaged in interactive and ongoing negotiations processes to produce knowledge regarding water policy issues and the solutions that need to be

implemented. Negotiations and interactions lead in most of the cases to decisions, which are translated at some point into actions. Decisions and actions taken by actors always have outcomes and implications for the wider community, particularly for the vulnerable segments of the society such as poor people and women. Water decisions and policies also have implications for the natural and environmental systems and these implications can be seen in the short and in the long term and need to be factored into the decision-making equation (Franks and Cleaver, 2008: 164-165).

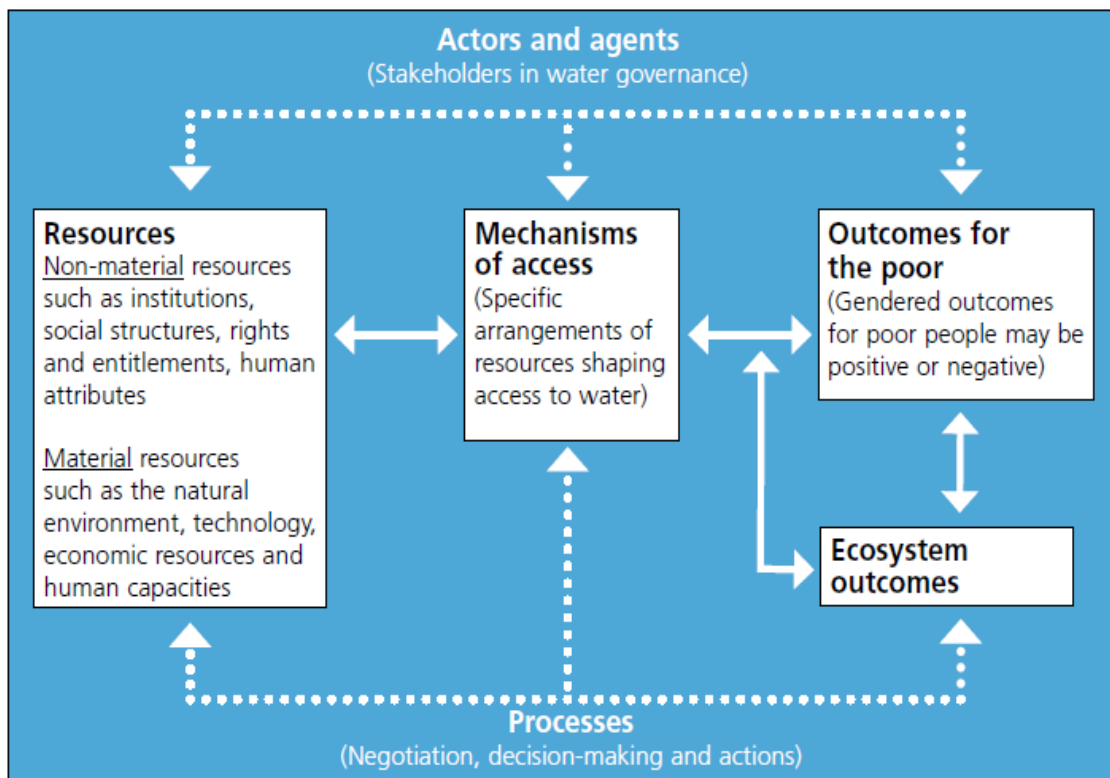


Figure 3.1: Water Governance as a Political Process

Source: Id21 insights 67 (2007:2)

In the context of this study, water governance will be understood as a political process. More precisely, water governance will be used to refer to ‘the system of actors, resources, mechanisms and processes which mediate society’s access to water’ (Franks and Cleaver, 2007: 11). This broad definition will be helpful in investigating the different components of water governance systems (institutions, structures, resources, etc) along with the way in which the involved stakeholders use these components during interactions and negotiations in order to achieve their goals and objectives. By doing so, the study will be able to go beyond the notion of good government and good management to capture the dynamic and interactive nature of water governance. Added to this, a political perspective on

water governance will help in understanding how competing influences and demands are balanced in water decision-making processes without jeopardising the strategic direction of water policy development and implementation. A political perspective on water governance will also help investigate the way in which the behaviour of the wide range of actors involved in decision-making processes is regulated alongside the corrective mechanisms to undo undesirable trends and distortions. Accountability relationships and mechanisms, which represent the core of any effective governance system, will also be examined from a political angle. This conceptualisation of water governance is depicted in Figure 3.2.

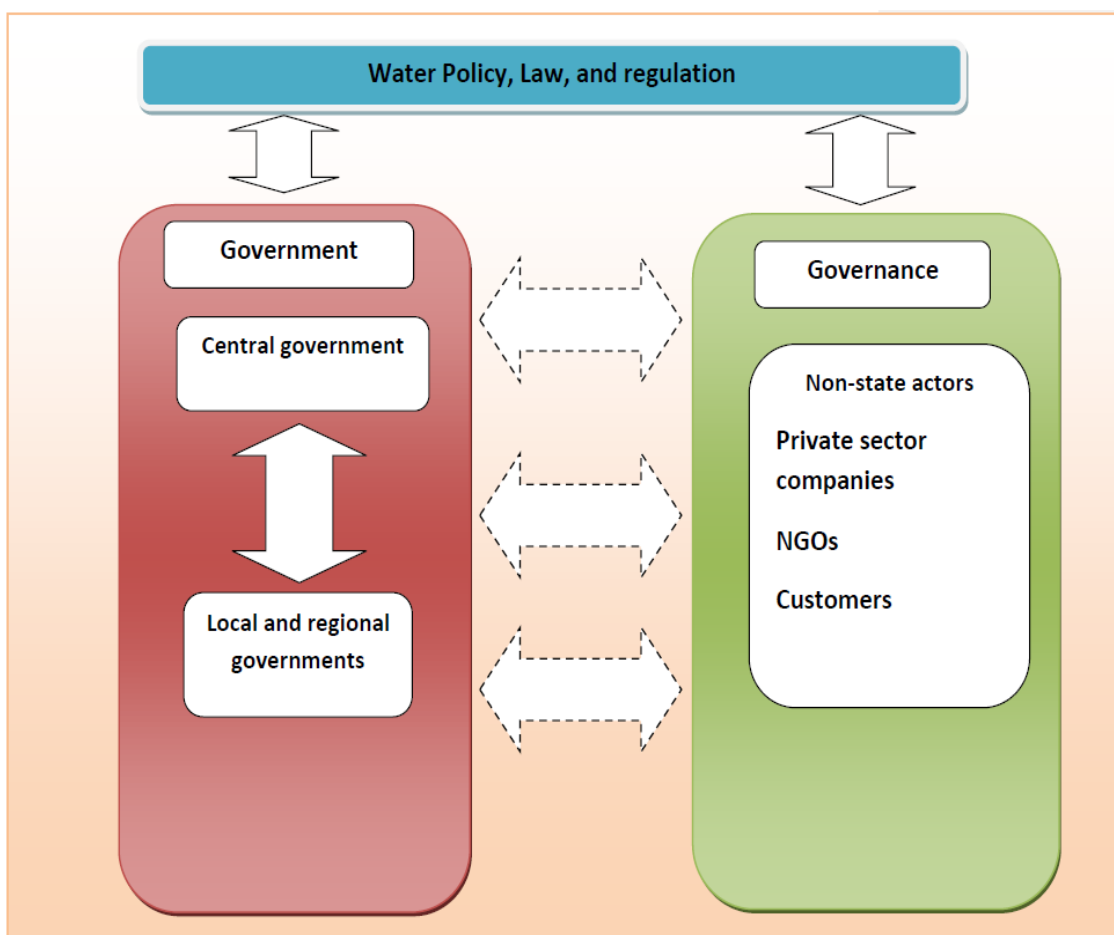


Figure 3.2: Conceptualisation of Water Governance

As the figure indicates, water policy, laws and regulations form the overarching institutional framework for all state and non-state actors involved in water governance. These actors are engaged in a two-level policy game. At the first level, they are participating in making and designing water policies, laws and regulations, which form the ground rules for interactions among them. At the second level, state and non-state actors are also involved in policy



implementation and have different roles and responsibilities in managing water resources and delivering water services. In this sense, state and non-state actors are engaged in dynamic and interactive policy processes to solve water issues. In this dynamic environment, different forms of arrangements are put in place in order to deliver the intended water policy goals. Many of these arrangements take the shape of partnerships between state and non-state actors. In partnerships, hierarchical steering mechanisms do not work perfectly. In order to steer effectively in such collaborative settings, state actors as well as the non-state partners should follow the network logic and search for new strategies to influence each other's decisions.

This understanding of water governance emphasises that water governance arrangements should not be regarded as an end. They should be seen as a means for achieving better, more efficient and more effective water management systems. In other words, water governance and the associated water management systems should guarantee optimal utilisation of water resources according to rational consumption patterns and behaviour. Costs and benefits should be distributed equally among stakeholders who should be able to access water resources as well as decision-making mechanisms in water sectors. All these governance arrangements and efforts must be sustainable in the sense that they keep the integrity of ecosystems (Iza et al., 2009).

With the concept of water governance so identified, the following section will focus on the institutional context of water governance systems in terms of: water policies, water laws and water management.

### **3.4 Institutional Components of Water Governance Systems: Water Laws, Policies and Administration**

The adopted definition of water governance suggests that different types of arrangements are found between state and non-state actors in water sectors. In this section, the overall institutional framework within which actors involved in water governance interact will be examined by focusing on three main components: water laws, water policies, and water management. Looking at these three elements and exploring the interplay dynamics among them is an important step to understand how water governance systems work and what factors may affect their performance. Added to this, the amalgamation of these three factors form what is called 'water governance capacity', which refers to 'a

society's level of competence to implement effective water arrangements through policies, laws, institutions, regulations, and compliance mechanisms' (Iza and Stein, 2009: 7). The lack of any of these three components will affect the overall effectiveness of water governance systems and arrangements. Water laws are needed in the first place to empower water policies. At the same time, sound water policies require an overarching legal and regulatory framework to guide the process of policy formulation and implementation. Effective water governance is also a function of the way in which water resources are manipulated and controlled by water management institutions and the capabilities of these institutions to achieve their intended policy goals and to enforce water policies and regulations.

### **3.4.1 Water Laws**

Water laws and regulations provide the legal framework for water policies and represent the underlying foundations for water management and administration. The main idea behind central governments designing and issuing these laws is to keep water resources under control and to provide the pillars for sound water policies and practices (Barreira, 2006). As stated by Iza et al., (2009: 18) water laws provide a legal framework, which 'levels the playing field, clarifies the rules, and sets a country on the route to good management'. In this perspective, water laws represent the cornerstone and the main foundation in any water governance system. They put in place the ground rules for all state and non-state actors and identify their roles and responsibilities in addition to accountability mechanisms. Consequently, a good starting point for analysing water governance arrangements in any given context is to examine water laws and regulations.

Water laws take different shapes in different contexts; therefore, it is expected that different water laws will be found in different countries. Nevertheless, in spite of such a diversity of water laws, there are some similarities among them all. For example, Saleth and Dinar (1999) have noted that water laws in different countries focus on issues such as the legal status of water conflict resolution mechanisms, water rights and regulations plus enforcement mechanisms. This observation has led scholars such as Gupta et al. (2013) to conclude that water laws in different countries provide water managers with the same menu. That means the options available for water managers to select from are more or less similar despite the difference in water laws and regulations (Gupta, 2011). For

instance, when it comes to types and forms of ownership as well as rights and responsibilities, a great deal of similarity can be noticed.

The quality of water laws influences the effectiveness of the overall water governance systems. Generally speaking, well drafted and designed water laws should offer 'predictability, and a precise yet flexible structure through which obligations are laid down, with rights which can be enforced and protected' (Iza and Stein, 2009: 7). To this end, and in order to avoid any form of overlapping and confusion, coordination mechanisms have to be set out clearly in water laws. These mechanisms help in dividing roles and responsibilities among state and non- state actors at all water governance levels (global, regional, national, and sub-national) (Gupta and Pahl-Wostl, 2013).

### **3.4.2 Water Policies**

Water laws and policies are normally in the background of any water governance discussion. They provide 'the skeleton that is fleshed out by institutions and management practices' (Iza et al., 2009: 18). In that sense, water laws and regulations are usually translated into more concrete objectives and goals in water policies. Water policy is defined as 'all efforts to define the rules, intent, and instruments with which governments manage human uses of water, control water pollution, and meet environmental water needs. It considers not only the legal and regulatory framework, but also the planning around water resource allocation and the implementation practices by water managers and other stakeholders in support of this framework' (Morrison et al., 2010: 7). Accordingly, water policies cover 'usage priorities, water tariffs, decentralisation or centralisation of competencies, participation, and coordination with other policies' (Saleth and Dinar, 1999: 5).

In addition to this, the scope of water policies may also extend to cover different water governance issues including: water supply and infrastructure development; water resource protection; water rights and allocation among sectors; water quality management; water pricing and economic instruments; operations and maintenance of water management systems; public participation in water governance and decision-making and environmental regulation, planning, and protected area management (Anokye, 2013). These policy issues and the general directions regarding how to deal with them are most likely to be defined at the central governmental levels. Nonetheless, the implementation of

these directions takes place at regional and local levels (Morrison et al., 2010: 7). In all cases, water policies should have strategic orientations that are built upon a vision of water sectors in the near future and in the long term. In this context, '[A] written water policy might contain a background section explaining the need for the policy, a statement of purpose, a vision statement, a statement of scope, a set of definitions, an effective date, one or more statements of policy, and a section on responsibilities regarding who will carry out the policies' (Iza and Stein, 2009: 7). This vision as well as the long-term policy goals set the directions for governance reforms in water sectors.

### **3.4.3 Water Management**

Managing water wisely and effectively is the essence of any water governance system. The way in which water resources in a given country are managed determines greatly how healthy the people in this country are, how successful its economy is, how sustainable its natural resources are, and how good its relationship with neighbouring countries is. As noted by Iza et al. (2009: 17):

Good water management can provide clean drinking water and sanitation, the basics of good health, while poor water management can increase disease and suffering. Good water management can bring hydroelectric power to homes and industry, irrigation for agriculture, and improve the economy, while poor management can mean lack of power, desiccated crops, floods and famine. Good water management allows water for wildlife to maintain biodiversity, and provides opportunities for recreation and tourism, while poor management can result in parched ground, dried-up lakes and silted harbours. Good water management can result in harmonious and mutually beneficial water agreements with neighbouring countries, while bad management can trigger tensions and conflict.

In this context, it is imperative to understand what water management is and how it affects the water governance arrangements. Water management is defined by Carrey (2011: 1) as 'the activity of planning, developing, distributing, managing an optimum use of water resources defined under water polices and regulations'. The scope and the way in which these activities are supposed to be undertaken are determined by water laws and policies. As noted by Iza and Stein (2009: 8), 'good water laws provide a structure for effective water management'. Ideally speaking, all the activities involved in water management are supposed to guarantee the efficient utilisation of water resources, equitable access and distribution of water among the different members of the society and the

sustainability of the existing water resources. As Iza and Stein (2009: 8) state, 'a modern legal regime for water is comprehensive and includes efficiency, equity and sustainability considerations'. In practice, however, these aims are hard to achieve. Growing populations, increasing demands from industries and the agricultural sector, as well as the uncertainty of water availability caused by the climate change effects are typical challenges facing water managers worldwide and call for more innovative solutions to water issues and problems (El-Rae 2009; Iza et al., 2009).

To further explicate the difficulty of achieving efficiency, equity and sustainability in water governance we need to underscore the fact that water management and administration processes take place at two different levels: policymaking and policy implementation. At the policy level, the main concern for water management activities is to effectively manage water resources. At the implementation level, the preoccupation for water managers is to direct and control the delivery processes. Some organisational actors may play more than one role in the water management system at both levels. In this case, it is crucial to separate functions in order to avoid any form of conflict of interests. For example, those who are heavily involved in policymaking should not be responsible at the same time for policy implementation and water delivery. The reason for this is that if one policy actor is responsible for policymaking and policy implementation at the same time this actor will most likely design policies in accordance with its own directions and competencies regardless of the benefit these policies may bring to the wider community (Iza and Stein, 2009).

The productivity committee in Australia (2003) has emphasised the importance of enforcement and monitoring mechanisms as core elements of effective water management. Another important managerial function in water management systems is to administer water rights in terms of issuing, modifying and approving water rights, which gives right-holder(s) a priority of access to water resources (Holland and Moore, 2003). Taken together, these institutional components are essential for understanding the notion of water governance. The general understanding of governance as presented in chapter 2 need to be anchored in the context of water crisis (see Bevir, 2013). As further explained in chapter 4, those institution provide the water 'structures' which limit or expand the ability of water agents to make water policy decisions.

### 3.4.4 Relationships between the Institutional Components of Water Governance Systems

Saleth and Dinar (2004: 102) have explained the link between these three institutional components of water governance systems (see Figure 3.3). According to their view, the overall performance of water governance systems depends not only on the functionality of their individual single components but also on the way these components are put together and integrated.

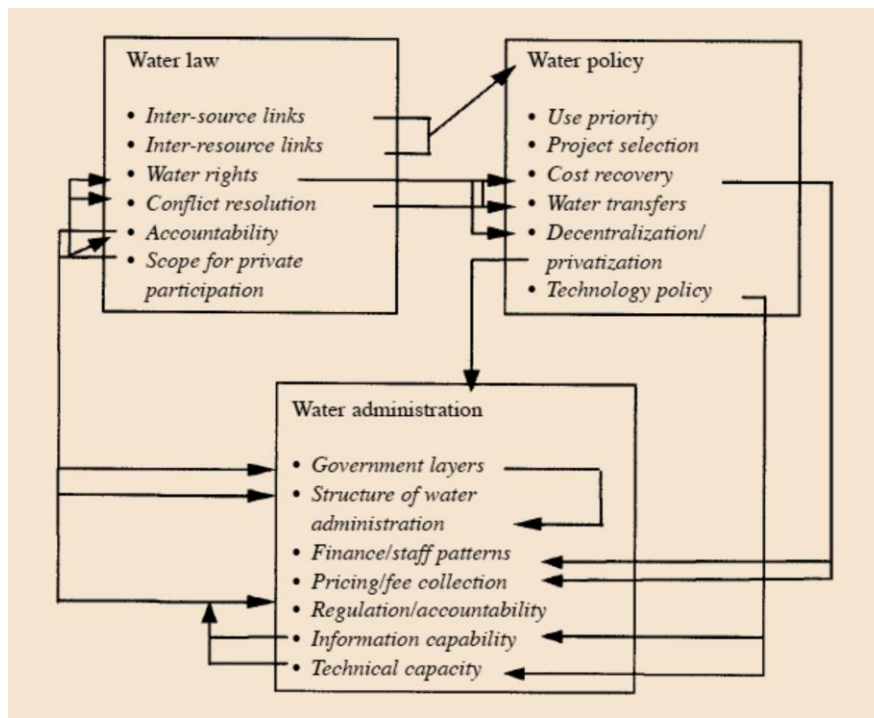


Figure 3.3: Institutional Linkages within a Water Institution

Source: Saleth and Dinar (2004: 102)

From an inter-institutional perspective, the linkage between water policies, law, and administration is quite important for understanding the way in which these components interact and the impact of this on the overall performance of water governance systems (Saleth and Dinar, 2005). In an ideal situation, water laws should guide and empower water policymaking. This is not to say that water laws always precede water policies as they may come as a part of an overall reform initiative in water sectors (see chapter 7). Regardless of which comes first, water laws or water policies, the link between these two elements is obvious. On the one hand, water laws provide overarching guidance for water policies. On the other hand, water policies represent a translation of water laws from a political economy perspective (Saleth and Dinar, 2000). Both water policies and laws determine the scope and duties for water administration. In this sense, water

policies and laws represent what Saleth and Dinar (2004) call the 'software component' of water governance while water administration provides the 'hardware component'.

At the outset, the performance of water governance systems can be affected by several factors. From an economic point of view, the performance of a water governance system is affected by the transaction costs involved in interactions among participating actors (Saravia and Chen, 2008). The higher the transaction costs, the less efficient the performance of a water governance system is.

The performance of water governance systems can also be influenced by the clarity of the implemented rules as well as the enforcement mechanisms (Barrett et al., 2005). The clearer the ground rules governing actors' interaction, behaviour, and the stronger the enforcement and monitoring mechanisms, the more efficient the performance of the governance systems. The level of formality of the rules in place is also an important factor as we need to bear in mind both formal and informal rules as particularly in many developing countries, informal rules may become more important than formal ones. The linkage between the different institutional components (water law, policy and management) and the way in which these components influence each other represents another important factor, which may interfere with the ability of water governance systems to achieve high performance (Bandaragoda, 2006).

### **3.5 Strategic Issues in Water Governance**

Water resources can be regarded as a critical enabler, or constraint, for achieving economic development and meeting social needs (Muller, 2012). Hence, developing an effective water governance system is not an end in itself; it is a means to effectively handle and wisely manage different strategic policy issues in water sectors. In other words, the development of water governance systems is meant to address resilient water issues such as sustainability, climate change, poverty reduction and development in general. Dealing with such issues, which are described in this section as 'strategic', in the sense that any decision in these areas may have implications for the development of water sectors and the wellbeing of the people, is not an easy task. Decision and policymakers as well as water managers and practitioners are required to come up with new approaches and to use new tools in order to achieve the designed policy goals for water sectors. This task is even more complicated with two main

features of water sectors: uncertainty and complexity. These two characteristics render the traditional policy responses to water issues obsolete or at the best not effective enough to solve water problems. In the words of Head (2008: 103-104), many of the water issues have become 'wicked' in the sense that they have become complex and intractable with no final solutions. Therefore, the complex water governance issues call for new ways to address them and new tools for steering interactions among involved actors. This section highlights three main strategic issues in water governance: sustainably, gender, and poverty.

### **3.5.1 Water Governance and Sustainability**

Water is always regarded as a renewable source and therefore many people believe they should not worry about how much water they use. This misconception of water as a natural resource has led to the conclusion that sustainability has not been and will never be an issue when it comes to water usage. This section argues against this perception of water as a renewable source as well as de-linking water and sustainability. Conversely, in accordance with the conclusion of Knight et al. (2009), this section argues that water and in particular, fresh water should be regarded as a scarce resource and therefore it requires effective governance systems to ensure its sustainability. From this angle, the sustainability of water is regarded as a function of the way in which water is perceived as a natural resource and the way in which this natural source is managed and controlled. In other words, 'the nexus of water sustainability lies at the intersection of water availability in the physical sense and water governance' (Knight et al., 2009: 350).

In general terms, the concept of sustainability is normally used to refer to the current generation's commitment to take into account future generations' rights to enjoy the same amount of natural resources , if not a greater amount, when deciding upon the way in which these resources are deployed for the purpose of achieving economic development. The old resource intensive model of development based on the abundance of natural resources and the downplay of social and environmental costs in production processes has particularly resulted in the depletion of many natural resources in addition to the degradation of the environment in general. The need has become quite clear for a new model of development which is socially responsible and environmentally friendly; a model



that 'takes into account the adverse side effects of modernization and fundamentally redefines its own dynamics and workings' (Loorbach, 2010: 162).

The United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in 1992 was a manifestation of the internationally growing awareness that the old model of development was no longer acceptable and that environmental as well as social costs had to be correctly accounted for and reflected in the calculations of economic development decisions. The notion of sustainability has now become a paramount concern for the international community and sustainable development has become a framework of governance for national states at the national level. As Dernbach (1998: 3) states, sustainability and sustainable development represent 'an internationally recognized normative framework for guiding and evaluating the behaviour of national governments and other actors'.

In water sectors, sustainability has been perceived as 'the use of water that supports the ability of human society to endure and flourish into the indefinite future without undermining the integrity of the hydrological cycle or the ecological systems that depend on it' (Gleick, 1998: 574). This conceptualisation includes a commitment that 'we leave as many choices about fresh water to future generations as possible, making as few permanent, irretrievable commitments as possible' (Knight et al., 2009: 349). In this context, the notion of sustainability has been adopted by water managers and policymakers at national levels in order to reflect their commitment to the internationally developed and agreed upon model of sustainable development. Sustainable water has become a cornerstone in water governance systems and a widely mentioned goal for water policies. Knight et al. (2009: 349), for instance, regard sustainable fresh water as reflecting the 'long-term maintenance of adequate volumes of fresh water and commitments of fresh water to vital human uses, including recognition of water's place in the basket of fundamental goods and services that should be attainable by all humans as a right'.

In that sense, water sustainability is first and foremost an issue of good long-term planning and utilisation of water resources in order to meet the basic human needs. Nonetheless, this simple notion of water sustainability is challenged in reality by the very fact that some water resources such as the ground water are not themselves sustainable. Furthermore, there are competing demands for

water including the demands for economic and business activities which may result in distortions in the ways in which water is allocated and may divert water resources to these areas before meeting the fundamental human needs. As Karar et al. (2012:1) put it, '[W]ater resource allocation for a range of productive purposes, from agriculture to industry to ecosystem services, is typically inequitable. Often it is the comparatively powerless groups which are shut out not just to water itself but also to the processes where allocation decisions are made'. Climate change, and its impact on the predictions of future water availability, represents another factor that should be added to the equation of water sustainability as it adds to the uncertainty surrounding this scarce resource (El-Rae, 2009). In the words of Gleick et al. (1995), to address the issue of sustainability in water sectors is to answer fundamental questions including how are all competing values to be prioritized? What is to be sustained? For how long? What are the benefits? Who are the beneficiaries?

The challenges facing water sustainability call for developing new pathways and sustainability criteria to guide policymakers, water managers and the other participating actors in water governance regimes. Gleick (1998: 574) has identified seven criteria for sustainable water utilisation:

- A basic water requirement will be guaranteed to all humans to maintain human health;
- A basic water requirement will be guaranteed to restore and maintain the health of ecosystems;
- Water quality will be maintained to meet certain minimum standards. These standards will vary depending on location and how the water is to be used;
- Human actions will not impair the long-term renewability of freshwater stocks and flows;
- Data on water resources availability, use, and quality will be collected and made accessible to all parties;
- Institutional mechanisms will be set up to prevent and resolve conflicts over water;
- Water planning and decision-making will be democratic, ensuring representation of all affected parties and fostering direct participation of affected interests.

Following on from these criteria, any decision concerning water usage and allocation should take account of the basic human needs and health as well as the needs of the surrounding environments and ecological systems. Water managers and decisions-makers also need to make sure that the quality of utilised water meets a minimum standard that maintains human health and wellbeing. The issue of renewability of water resources should also be considered to make sure that today's decisions do not impact negatively on the long-term availability of water stocks and flows. Water decisions must be taken based on accurate, timely and up-to-date data. The quality of the decisions taken in this area depends to a great extent on the quality of the data used by decision-makers. From an institutional point of view, a sustainable water governance system should develop adjudication and conflict resolution mechanisms, which facilitate the solving of disputes among actors involved in governance processes.

As noted by Karar et al. (2012:1), people's participation and representation 'come at the centre of any biophysical-ecological intervention aimed at the use and sustainability of water resources'. The issues of participation and transparency are quite important to ensure the accountability of decision-makers and to enhance the legitimacy of water decisions. As eloquently summarised by Barbara Schreiner, Chair of the Board of the Water Research Commission (WRC) in the opening address of the International Conference on Fresh Water Governance for Sustainable Development, '[W]e cannot save the world as water managers, researchers and specialists alone' (Schreiner et al., 2011: 5). In other words, water should be brought into the centre of the development debate and all types of societal actors must be involved in such a debate in order to come up with innovative solutions to water issues.

Addressing the above-mentioned issues in water management and governance should eventually lead to the creation of a good water governance system which reflects the criteria for good governance discussed in chapter two. Such a system would ultimately produce more efficient strategies for managing water resources, which in turn will lead to the attainment of the intended water policy goals, and outcomes in an open, transparent and accountable environment (see chapter 2).

### **3.5.2 Water Governance and Gender**

Different societies manage their water resources in different ways. The experience and day-to-day practices show that some societies are more

successful in managing their water resources than others. One possible explanation for this observation is that societies and communities diverge in their historical relations and bonds to water resources as well as their traditions, cultures and habits. As reported by the International Network for Capacity Building in Integrated Water Resources Management and the Gender and Water Alliance, '[T]he bonds between people and water are primal and have a long history that spans both ancient and contemporary cultures. Bonds with water reflect the cultural values and social differences embedded in societies, including gender differences' (Muylwijk, 2010: 2).

Consequently, one of the main societal and cultural aspects across which societies may vary is gender. In a broader sense, the term 'gender' refers to 'the roles and responsibilities of women and men and the relationship between them' (Khosla and Pearl, 2003: 3). This understanding of gender underlines the fact that gender is not only about sex (male or female) but it is also about social roles, responsibilities and behaviour. This broad conceptualisation of gender, which focuses on the social dimensions of the term alongside its biological meaning, draws our attention to the fact that the way in which we perceive 'relations between men and women and how these shape access to resources, participation in decision-making and the exercise of power within households and communities' has several implications for water governance processes (UN DESA and DAW, 2005: 4).

Different societies hold diverse perceptions regarding the role and the ability of men and women to access, use and manage water resources. As noted by Karar et al. (2012: 5), '[A]ttitudes such as, 'Women should – or should not – do this and that' or 'Men are supposed to do this –but not that', may prevent either women or men from acting regarding water use, access or management'. Added to this, a number of misconceptions and stereotypes about the role of men and women in the society may add to the complexity of this situation. For example, there is a wide misconception that specific jobs such as farming and fishing are mainly dominated by men. However, the statistics show that in farming about 70% of farmers worldwide are women. Moreover, the FAO (2000) has reported that half of the world's food is grown by women farmers and it amounts to 80% in some African countries. When it comes to fishing, women undertake different activities including collecting shrimp and shellfish near the coast as well as drying,

processing, making and repairing nets and fishing in freshwater fisheries (Muylwijk, 2010: 7).

At the household level, there is a distinction and division of labour between men and women. Men work outside and women work inside the house and are supposed to look after the children and educate them. This vision of the roles of men and women is not acceptable for two main reasons. First, it downplays the role of men in educating their children about the good behaviour in using water resources. Second, it undermines the role of women's knowledge and experience in managing water resources. In many households, women are responsible for managing water resources and educating children about how to use water wisely and in matters of hygiene. Over the years, women in different societies have accumulated a great inventory of wisdom in these areas, which could be helpful for policymakers and water managers. Regrettably, water managers and policymakers are most likely to ignore women's potential contributions to water policies. As noted by Aureli and Brelet (2004: 6), 'women's considerable knowledge of water resources, including quality, reliability, and storage methods is too often not taken into account by decision makers who still ignore that this hidden chest of knowledge is one of the major keys to the success of water resources development and irrigation projects'.

Despite the tendency of policymakers in different countries to disregard the potential contributions of women in water policies, the evidence shows that sharing women's wisdom and experience in policy debates is quite important for achieving the development and implementation of sound and responsive policies. Women's participation in policy projects has also been associated with more effectiveness in running these projects and delivering the intended policy goals. As reported by the Interagency Task Force on Gender and Water (2005: 1-2), 'A study by the International Water and Sanitation Centre (IRC) of community water and sanitation projects in 88 communities in 15 countries found that projects designed and run with the full participation of women are more sustainable and effective than those that do not'.

The negative attitudes, perceptions, misconceptions and stereotypes about the tasks women should or should not do have implications for men and women as well as the broader society. They may result in unfair treatment to women and therefore limit their contributions to the society and reduce their benefits and

outcomes from developmental activities. Consequently, balanced and sustainable water governance systems should acknowledge the contributions of men and women and empower the latter to play their role in accessing, using and managing water resources. In this regard, the Interagency Task Force on Gender and Water in the UN (2005:4) has reported that 'The importance of involving both women and men in the management of water and sanitation has been recognized at the global level, at least since the 1977 United Nations Water Conference at Mar del Plata and during the International Drinking Water Supply and Sanitation Decade, 1981-1990'.

Since then, bridging the gap between men and women in relation to water governance has become the quest for many international conferences and a main goal for different global organisations. Karar et al. (2012: 4) note that 'Gender equality and women's empowerment goals are the cornerstones of the four Dublin Principles (1992), the UN Conference on Environment and Development, (1992), the 2000 Millennium Development Summit and the 2002 World Summit on Sustainable Development (WSSD)'. These international efforts have formed the institutional basis for empowering women and underlining their vital roles in water governance systems. The message has been very clear that all forms of social inequality and discrimination against women in relation to access to and managing water resources must be addressed by following a gender-based approach to water governance. To this end, arrangements should be established which ensure that '[W]ater resources management should be based on a participatory approach. Both men and women should have an equal voice in managing the sustainable use of water resources and sharing of benefits' (Ministerial Declaration of the International Conference on Freshwater, 2001: 11). As noted by Sülün (2018:3-4), the role of women in water-related areas needs to be strengthened via a gender approach to water governance that broadens their participation in water decision making processes.

The gender policy framework, which has been developed at the international level, is translated by national governments into policies, decisions and actions aiming at bridging the gender gap in water sectors. These policies and strategies have been specifically designed to address women's needs and enhance their roles in water governance systems. A gender-based approach to water governance is claimed to have different positive consequences including:

addressing the imbalance between men and women in accessing and managing water resources; sharing benefits from the use of water; making progress towards more sustainable use of water; and maximizing social and economic benefits from the sustainable use of water (Muylwijk, 2010: 7). In spite of these benefits, a gender-based approach to water governance is challenged on different grounds. Chief among these challenges is the notion of neutrality when it comes to policymaking, implementation and evaluation. Many governments worldwide claim that their policies, in general, and their water policies, in particular, are neutral in terms of their impact on men and women. This claim has been proven wrong in different situations, which has shown that women are much more vulnerable than men and therefore their needs have to be taken into account when making water policies and decisions. As Khosla and Pearl (2003: 3) point out, gender should be mainstreamed in the sense of 'assessing the implications for women and men of any planned action'. To put it another way, streaming gender in water policies implies involving women as well as men's experiences and concerns in the different stages of water policies: formulation, implementation and evaluation. This gender perspective on water policies is particularly important for achieving equality between men and women.

Gender equality has been addressed by the Interagency Task Force on Gender and Water (2005) at three main levels: equal access to water supply; equal access to land and water for productive use; and equal access to sanitation. The report emphasises the importance of achieving gender equality in accessing safe drinking water and underlines the fact that women should be freed from spending a long time collecting and fetching water. In this regard, the report states that '[A] 2002 UNICEF study of rural households in 23 sub-Saharan African countries found that a quarter of them spent 30 minutes to an hour each day collecting and carrying water, and 19 % spent an hour or more' (Interagency Task Force on Gender and Water, 2005: 4.). This situation has to change and women should spend more time in educating and training themselves in different areas to increase their potential contributions to the society.

In addition to gender, equality with regard to accessing drinking water and water supply women should also have equal rights to men concerning access to water for productive activities. Some of the major obstacles that are hindering the achievement of this goal are landownership laws. In some countries, such as

many Latin American countries, accessing water for productive use is associated with landownership and because many women do not have land ownership they also do not have access to water for productive use. Therefore, in these situations where accessing water for productive activities is linked to landownership, the legal framework must ensure that women have equitable rights to land ownership. This is a precondition for fully empowering women and helping them increase their contributions to the society and improve their lives.

With respect to sanitation, Fisher (2006: 6) has reported that the '[L]ack of basic sanitation and safe water is an acute problem for the women and girls who live in poor and overcrowded urban slums and in the rural areas of the developing world'. Inadequate sanitation and poor hygiene may have severe consequences for the society as a whole. Therefore, having equitable access to sanitation is quite important to improve public health and reduce the possibility of spreading diseases. Differences between men and women's needs in this area must be taken into account when designing and planning the locations of sanitation facilities. For example, it is very important to provide women and girls with the required privacy and to locate these facilities as close as possible to their houses so they do not have to travel a long distance and risk being a potential subject of violence. Other bad social practices such as using infested water for washing clothes - a role associated with women in different societies- must be banned because of their negative health implications for women and girls as they may lead to them developing water-related diseases such as urinary schistosomiasis (Khosla and Pearl, 2003).

Following on from the above discussion, it can be concluded that a gender-based or a gender-sensitive approach to water governance is essential for effective water management. Having the overall international institutional framework is a necessary but not sufficient factor for affecting and advancing gender concerns in water governance. In other words, translating international commitments into real practices on the ground takes a lot more than just signing international agreements (Appleton and Smout, 2003). It requires concrete actions on the ground to ensure that water policies and water management systems are gender sensitive and that they reflect the division of roles and labour between men and women in all settings related to water (Khosla and Pearl, 2003).



### **3.5.3 Water Governance and Poverty**

Poverty is a multi-dimensional concept, which encompasses different forms and shapes of deprivation and a lack of basic human needs. In its extreme form, poverty may threaten people's survival. Because of the multi-dimensionality of poverty, different scholars and international organisations measure it in different ways and by using different indicators. For instance, the UNDP's Human Poverty Index focuses on three basic dimensions of deprivation including a short life (the number of people expected to die before 40); the lack of basic education (the number of people who are illiterate); and the lack of access to public and private resources (the number of people without access to health services and clean water and the number of children under five suffering from malnourishment). Other poverty measures use different criteria by looking at the many things that poor people may be short of such as income, household and productive assets, entitlements, social connections and support networks, personal security, and empowerment to participate in the political process and decisions. Added to these material forms of deprivation some include humiliation and stigma as non-material indicators for measuring poverty (UNDP, 2004: 19).

The statistics on world poverty are alarming. The UNDP (2004: 17) has reported that '[O]ne in five people on the planet, two-thirds of them women, live in extreme poverty. Of the world's 6 billion people, 2.8 billion live on less than US\$2 a day and 1.2 billion on less than US\$1 a day'. Additionally, according to the United Nations Children's Fund (UNICEF) around 24,000 children die each day due to poverty (Pegram and Schreiner, 2010: 8). Water decisions and policies may have positive or negative impacts on poverty and the poor. The linkage between water and poverty is quite clear; water is an essential element in many industrial and agricultural activities. It has a great impact on countries' abilities to achieve economic development and in turn improve the economic conditions of their peoples and reduce the levels of poverty. As such, the well-being of poor people and their ability to improve their living conditions is heavily dependent on the enablers in the surrounding environment and more precisely, on their ability to access and exploit water resources. Any changes in the surrounding environment impact greatly on the poor rather than the rich in the society because the former are more vulnerable to changes in the ecosystems.

The Water Governance for Poverty Reduction report by the UNDP (2004) has identified three main dimensions of the relationship between poverty and water: health, livelihoods and vulnerability. Poor people tend to use water of a poor quality because they do not have access to clean water. Using contaminated water leads to a cycle of illness which impacts negatively on the ability of the poor to work and to earn their living. Moreover, poor people, particularly in rural areas, are dependent on using water resources for agricultural and food production. That means any changes in the ecosystem, including a lack of access to water resources or any contamination of these resources, will directly affect the ability of those people to produce their own food. Poverty makes poor people more vulnerable to environmental crises, conflicts over water resources, and the different forms of market failure in water sectors including inappropriate pricing. The poor are less likely to benefit from large-scale water supply or sanitation services in the areas where they live. That means they have to buy water in small containers, which costs them anything from between 4 and 10 times compared to that in the metered rich neighbourhoods (UNDP, 2004: 30).

The Millennium Development Goals (MDGs) consider water as a critical source for reducing poverty and death rates in addition to improving the living conditions for the poor. The aim was by 2015, the proportion of people whose income was less than one dollar a day as well as the proportion of people who suffered from hunger to be reduced by half. Meeting these targets would almost be impossible without developing and implementing pro-poor water policies, which deliberately target the poor in the society and attempt to improve their conditions by giving them access to water to be used for productive activities. From this perspective, an effective water governance system which provides an overarching framework for pro-poor water management and which guarantees the access and utilisation of water resources by poor people is a keystone in any initiative aiming at reducing poverty.

Pro-poor water policies and regulations are advocated on several grounds. Many of the provided justifications are closely linked to the living conditions of the poor in the society and the fact that they are worse off and their situation and lives must be changed for the better. Trémolet and Hunt (2006: 3-4), for example, have rested their case for pro-poor water regulations on the following grounds:

- Poor people are served by a wide spectrum often informal operators and more likely not to be connected to the network due to connection charges;
- When poor people are not connected, they often pay more for access to poor-quality water or intermittent services;
- It is often hard for poor people to get their voices heard by the regulator and their preferences vary widely.

For these reasons and because of the different forms of poor people's vulnerability at different levels, water policymakers, water regulators and water managers have to take their needs and concerns into account when designing water policies, enforcing water regulations and taking water decisions.

The aforementioned discussion begs the question of how to make water policies and regulations work for the poor. In simple terms, pro-poor water policy and regulations are particularly favourable to poor people. These policies and regulations are expected to improve the living conditions of the poor relative to those better off in the society. To this end, any regulatory and policy constraints to pro-poor service should be alleviated. As put by Schreiner (2010: 3-5), a pro-poor effort should aim to ensure that '(a) the poor have access to water for productive purposes; (b) that raw water quality is adequate, and (c) that access by the poor to goods and services provided by water resources is protected'. From this angle, pro-poor regulations and water policies are not just about making water available for poor people but they are also focusing on the quality of the provided water, which has an impact on the health of the poor. Pro-poor water policies should also protect the water-related products upon which poor people may depend for their food from being over-exploited by the rich.

In a detailed discussion of the relationship between water and poverty and the ways in which water policies and regulations can work for the poor, Cleaver and Franks (2005) have adopted a governance perspective and come up with Analytical Frameworks for Water Governance. In the provided framework, the authors make a distinction between three main components of water governance systems: resources, mechanisms and outcomes. Their quest was to answer the question of how to make water governance systems work for the poor. According to their view, water governance resourced in terms of institutional resources, social structures, rights and entitlements, and financial resources determine the outcomes of water governance systems in general and for the poor in the society

in particular including access, livelihood, social inclusion and political voice. Nevertheless, water governance resources are most likely to be mediated by factors such as formal and informal relations, technology, natural environment, etc which interfere with the impact of these resources on poor people. Consequently, for water governance systems to work for the poor we need to make sure that the available resources as well as the mechanisms in place are all working towards achieving this end.

According to Trémolet and Hunt (2006: 4), a pro-poor policy and regulatory framework should provide a framework for competition that allows the provision of a wide range of service solutions. Added to this, the dominant operators have to be incentivised in order to extend existing services while respecting basic quality requirements. A pro-poor policy and regulatory framework should also establish a tariff level and structure that encourage higher access to services without jeopardizing financial stability. All this must be done in a manner that benefits the poor in the society and guarantees the sustainability and the affordability of water services particularly for poor communities. To this end, the overall policy framework, as well as water regulations, should be flexible enough to accommodate the different forms of delivery methods, both formal and informal. Furthermore, quality standards should be tailored in line with local conditions and in a manner that reduces the cost of serving remote and scattered areas where most poor people live. Finally, the major criteria for the success or failure of pro-poor water policies is the extent to which these policies have contributed to improving the living conditions of poor people relative to those better off in the society.

### **3.6 Conclusion**

In this chapter, the water crisis has been presented as a governance issue that calls for the collaboration of state and non-state actors. The concept of water governance has been unpacked and the different components of this term have been explained and discussed. The conceptual discussion of water governance has indicated that this concept is still in the phase of formation. Different scholars, policymakers and water managers, in addition to other stakeholders have different meanings and understandings regarding water governance. Nevertheless, all these meanings and understandings share a common element, which is that the command-and-control and top-down approaches for water

management are no longer accepted and that water sectors are now open to the participation of state and non-state actors in making, enforcing, and evaluating water policies and regulations. The new model entails different roles and responsibilities for the participating actors. While state actors (e.g. water ministries and regulatory agencies) are responsible for developing the overall policy and regulatory framework for the entire sector and monitoring the behaviour of the rest of the stakeholders, private and other non-state actors are more involved in infrastructure development, service provision, and advocacy.

Based on such a conceptualisation of water governance, the discussion moved on to look in detail into the overarching institutional framework governing state and non-state actors involved in making, implementing and evaluating water policies. The three main institutional components of water governance systems (policies, laws and management) have been identified and analysed. The interplay dynamics among these three components have been highlighted and the discussion showed that these three components are linked in practice. Water laws and policies are always in the background of any water decisions made by water managers and practitioners.

The chapter has also concluded that managing water wisely comes at the heart of water governance perspectives. This means that developing water governance systems is not an end in itself but it is a means for addressing certain strategic issues in water sectors. The discussion in this chapter has focused on three of these issues: sustainability, gender and poverty. Effective water governance systems are required to deal with these 'wicked' water issues in the light of the existing complexity and uncertainty. Managing water wisely can be the way forward for achieving sustainability and sustainable development. Added to this, a gender-sensitive water governance system can help in reducing the gap of inequality between men and women and improving the living conditions of women in the society. It can also help women to capitalise on their experience and knowledge in managing water resources and to maximise their contributions to the entire society. The discussion of the strategic issues in water governance has also indicated that pro-poor water policies are needed to address the issue of poverty and to improve the situation of poor people. Compared to the rich, poor people are more vulnerable and more affected by changes in the surrounding environment upon which many of their aspects of lives are

dependent. They are also more vulnerable to market failures and changes in water prices. Those water issues are particularly important for the developing countries including Egypt. Consequently any just, sustainable, and equitable water governance system should have built-in mechanisms to deal with those policy issues. The reliance on handling and managing those water issues from a governance perspective should not be the responsibility of state actors. Private and societal water stakeholders should be regarded as partners and designing and implementing water solutions and decisions (Rhodes, 2007; Bevir, 2013).

With the meaning and main issues of water governance thus identified, the next chapter will focus on the ways in which policies, programmes, and governance systems are transferred from one context to another. The issue will be framed as a structure-agency dilemma to allow the investigation of the degree of freedom available to policymakers to adopt certain policies and models. Combining structure-agency insights with the notion of governance would help understanding the degree of freedom that water agents in general and water policy and decision-maker in Egypt in particular enjoy when they decide on water issues and reform initiatives.

## **CHAPTER 4: THE GOVERNANCE OF POLICY TRANSFER: A STRUCTURE-AGENCY PERSPECTIVE**

### **4.1 Introduction**

The theoretical and conceptual discussion of governance in chapters 2 and the conceptualisation of water governance in chapter 3 have indicated that all forms of governance include a process of interaction between state and non-state actors around a diverse array of policy issues. Such an interactive process is of political nature and determines policy outcomes and results, in many situations, in policy change. Nonetheless, the story is not as simple as it sounds; the question about policy change and what brings about such a change is a complex query that calls for a heuristic framework of analysis to help us understand how policy change takes place and what the role of 'agency' is in terms of the free actions taken by policy actors in motivating and initiating the change processes. To this end, and to continue the search for a deeper understanding of the dynamics of water policy processes and governance arrangements, this chapter adopts a structure-agency approach in an attempt to unpack water policy governance. The aim is to examine the limits imposed by water structures on water policy agents when they try to bring about water policy change in water governance settings. Examining the structure-agency relationship is particularly important to explain the decisions and actions taken by Egyptian water policy-makers and water stakeholders while dealing with the water challenges facing Egypt. A structure-agency perspective on water governance should also help underlining the limitations imposed on Egyptian water policy agents by existing national, regional, and international water structures (see chapters 7 and 8).

In that sense, this chapter provides the link between governance as an overall environment within which policies and reform models are transferred across countries and role of the governance structures and agency in facilitating or hindering this process. The chapter is organised in three sections. In section one, the structure-agency dilemma in policy analysis will be discussed in order to highlight what structures are, what constitutes an agency and how the two elements interact. Section two will focus on discussing the notion and the models of policy transfer in an attempt to distinguish policy transfer from other similar concepts including policy learning, lesson drawing, and policy diffusion. In section three, the policy transfer approach will be examined from a structure and

agency perspective in order to explain the role of structures and agency in bringing in policy change.

## **4.2 The Agency-Structure Dilemma and Policy Analysis**

The agency-structure dilemma is an ongoing challenge in political science and policy analysis. The debate around this issue raises many unanswered questions including: are policy actors free to make their own choices or is their freedom governed by whatever norms, values, and rules are imposed by social structures? Can policy agency change structures? If so, how and under what conditions does this happen? To answer these questions is to resolve one of the most problematic issues in social sciences in general and policy science in particular and that is the agency-structure dilemma. Different academics have different conceptualisations of what constitutes an agency and what can be regarded as structure. They also hold divergent perceptions concerning the relationship between these two social constructs. A structure-centred approach will tend to assume that individuals' actions are determined by social structures while an agent-centred account is more likely to assume that those individuals are free agents and their actions are not so determined (Stets and Burke, 2003).

My contention in this chapter is that a better understanding of policy phenomena requires a full consideration by policy analysts of the interplay between structure and agency. In other words, instead of conceiving agency and structure as being two opposing concepts or rather than reducing one feature of either domain to the other, a dialectical approach that focuses on agency-structure interactions is intuitively most compelling. The scope of this chapter is relatively limited in comparison to the challenges that the issue of agency-structure brings to policy analysis. Therefore, the aim of the chapter is two-fold: first, it seeks to highlight the major trends and academic contributions to the agency-structure debate by examining the different ontological, epistemological and methodological underpinnings of this debate, which in turn determine how different accounts conceptualise agency and structure and visualise the relationship between these two concepts. Second, and arguably more importantly, the chapter seeks to underline the significance and the implications of this debate for policy science and policy analysis.

To this end, the chapter is divided into three main sections. Section one provides a conceptual and theoretical background for the agency-structure debate as



reflected in social and policy literature. In section two, the relationship between agency and structure will be brought into sharper focus to find out how social and policy scientists have attempted to solve the dilemma of the priority of either individual agency or social structure. The chapter concludes with section three, which discusses the significance of the agency-structure issue to policy sciences and policy analysis.

#### **4.2.1 Agency, Structure, and Policy Analysis: A Conceptual and Theoretical Background**

The axiom 'structure-agency' is regularly used by scholars to denote a meta-theoretical debate about social science explanation (Weaver and Gioia, 1994). In this context, many policy analysts have emphasized the importance and centrality of structure and agency concepts for the notion of power and in turn, for the study of politics and policy analysis (Hay, 1995, 2002; McAnulla, 2002). In this respect, Hay (2002:3) has stated that a policy analysis is, then, one, which draws attention to the power relations implicated in social relations. The terrain of policy analysis should include all perspectives, whether consciously policy related or not, which might have something to say about the distribution and exercise of power. Consequently, the sphere of policy analysis is broad indeed, ranging from the narrow policy analysis of narrow policy variables to the sociology of structural inequality within contemporary societies. Hence, it is paramount from this perspective to conceptualise these two aspects of social reality in order to provide a deeper understanding of policy phenomena.

Nonetheless, defining what is meant by 'agency' and 'structure' in the agency-structure debate is problematic for several reasons: (1) both concepts are closely interrelated to the extent that focusing on one of them and trying to define it resembles focusing on one side of a coin and ignoring the other one or telling one part of a story and disregarding the other part; (2) different policy theorists take different standpoints which affect the way they describe each of these two concepts; (3) both concepts are quite abstract and mean different things to different policy analysts; (4) the debate about the conceptualisation of agency and structure concepts intersects with the discussion which has gone on for centuries in the form of a variety of dualisms (McAnulla, 2002). This discussion has varied according to the particular social science discipline or the philosophical stance of particular authors. In this sense, different variations of the

agency-structure debate can be identified under diverse names such as voluntarism vs. determinism, micro vs. macro, individualism vs. collectivism, subjectivism vs. objectivism, and holism vs. individualism (see Carlsnaes, 1992). Having said that, the purpose of this section is to provide a conceptual and theoretical background which paves the way for a more rigorous discussion of the agency-structure relationship and its implications for policy analysis.

Giddens (1984: 16-17) has noted that from a functionalist point of view, structure can be regarded as the 'patterning of social relations or social phenomena'. At the same time, a structuralist perspective on the same concept may present it as 'an intersection of presence and absence; underlying codes (that) have to be interred from surface manifestations' (Giddens, 1984: 16). In other words, structure can be conceived in terms of the social, economic, and policy contexts wherein action occurs (compare with Hay, 1995). According to Giddens (1984), neither functionalist nor structuralist perspectives are sufficient to capture the whole notion of structure and agency. While these perspectives focus primarily on the structure, they leave no room for agency. Following on from this observation and based on a distinction between the concept of structure and the concept of system, Giddens (1984: 17) has defined structure as 'an ensemble of formal and habitual rules and resources'. This definition of structure is useful in the sense that it is wide enough to provide a space for the analysis of agency and at the same time, it highlights the rules and the habits of the institutions and actors. Similarly, McAnulla (2002: 271) defines structure as 'the context or material conditions which define the range of actions available to actors'.

Based on such notions, structures are sometimes wrongly conceived as stable constructs just because they change at a slower pace than agents do. This misunderstanding has been underlined by scholars who have clearly indicated in their conceptualisations of structure the dynamic nature of these constructs and their tendency to change over time. A good example in this regard would be the definition of Cerny (1990: 4), who describes structures as 'the pattern of constraints and opportunities for action and choice'. In this sense, what constitutes a structural constraint for one agent can be seen as a conjectural opportunity liable to be transformed by another (Jessop, 1996: 8). As soon as structures develop, they tend to incorporate incremental changes and to reproduce themselves. Wearing the same analytical lenses, Sibeon (1999:142)

has defined structure as the 'relatively enduring though not immutable circumstances within which actors operate'. By focusing on the duality or the dualism of the structure and agency, Bourdieu (1991) has described structures as 'the durable set of dispositions which we carry around in our heads as social actors as a result of our experience in certain kinds of backgrounds and circumstances (class, language, ethnicity, gender and so on). This definition is very close in its nature and content to what Giddens says about structure. Both scholars conceive structure as the external social context of an agency's behaviour. In the same vein comes the definition of Sztompka (1993: 213), who regards structures as 'abstract social wholes of a super-individual sort, representing social reality sui generis (societies, cultures, civilizations, socio-economic formations, social systems, etc)'. Added to this, Layder (1994: 5) describes structure as 'the social relationships which provide the social context or conditions under which people act'.

A common feature among the above-mentioned definitions is that they provide broad conceptualisations of structures as 'context', a 'set of dispositions', 'social relationships', 'circumstances' or 'patterns'. From this angle, social structures can be everything that is not an agent. In an attempt to shape the concept in a more precise way, social scientists have controlled the use of language and tried to distinguish structure from other related concepts such as systems and social change (see Giddens, 1984 and Sibeon, 1999). Some other scholars have admitted to the difficulty of producing an agreed upon definition of structure and they have left this task completely to the agency as they see that agents are more capable of defining the structure wherein they exist (see for example Buller, 1999). Although it makes a lot of sense to leave the task of defining structures to the agents, following this line of thought may disregard the fact that social reality can be observed independently of the agents' perceptions which means that structure is real and should be defined (Lewis, 2000). Despite the fact that there is no universal definition of the concept of structure, the discussion thus far has shown that at least two main characteristics can be attributed to this concept: dynamisms and contextualisation. In other words, social structures should be regarded as dynamic constructs, which have the ability to change and to respond to agents' actions. They also should be conceived as wider frameworks and

contexts wherein policy agents interact and try to pursue their own goals and achieve their own interests.

As with structure, the term 'agent', has been used by different scholars to refer to different things. Some scholars used the term in a strict fashion to refer to individual human beings (Foucault, 1980; Layder, 1994) and some others have widened the meaning of this concept to include individuals and groups (Sztompka, 1993; Sibeon, 1999). Giddens (1976: 75) has defined agency as 'the stream of actual or contemplated causal interventions of corporeal beings in the ongoing process of events-in-the-world'. According to Layder (1994: 5), agency is 'the ability of human beings to make a difference in the world'. In this context, agency corresponds with action that individual agents take to achieve their goals. Scholars from the field of international relations have focused on the individual elite members who share the same international structure. From this angle, agency can be defined as 'the individual international elite' (Friedman and Starr, 1997: 16). Policy agents reflect this concept in practice through their 'willingness to act' in relation to the environment which may provide them with opportunities or challenges. The same logic applies to water sectors as water decision-making elite can be identified and their role in changing water governance institutions can be investigated in order to underline the relationship between water agents and water structures that may interfere with agents' willingness to act upon water policy issues and problems.

From a wider perspective, scholars such as Sibeon (1999:141) describe agents as 'an entity that, in principle has the means of formulating and acting upon decisions'. From this angle, it is not necessary for agents to be human beings; they can be any form of social actors including, for example, trade unions, governmental organisations, and syndicates. The main feature that distinguishes these social actors as agents from other social entities is their ability to make decisions. Without having the capability of making decisions and taking actions, no social entity can be classified as an agent (see Hindess, 1986: 116). In contrast with Sibeon (1999: 213) has broadened his definition of agents to include all forms of social actors, whether they have decision-making capabilities or not. According to him, an agent could be individuals or members of concrete collectives such as groups, associations, communities, or social movements.

None of these definitions are instinctively good or bad. The way in which agents are defined is determined to a great extent by the theoretical standpoints taken by the above-mentioned scholars. To put it bluntly, those who are driven by theory building are most likely to widen their definitions of agents to include different formal and informal social actors. This can be understood and justified on the grounds that their core objective is to highlight the theoretical links between agents and their wider social structures. A broad definition of agency can fulfil this task. On the other hand, scholars who are primarily motivated by empirical goals are expected to adopt a narrow and more concrete concept of agency that may help them to test certain hypotheses about the relationship between agency and structure.

Following on from the above discussion it can be concluded that the concepts of structure and agency are quite fluid and deeply entwined. Agents are implicated in structure and structure is occupied by agents. In other words, what can be seen as a structure from one angle may be considered as an agency from another perspective and *vice-versa*. A policy institution for instance represents a structure for those who join it but for the parliament and other governmental bodies, it is an agency. Additionally, Hay (2002:23) notes that international institutions and organisations, although in some sense themselves the product of state action, may come to assume an independent identity and display agency in their own right. As Dowding (2008: 25) puts it, 'some accounts of agents are themselves deeply structural; and some accounts of structure implicate agents'. Therefore, when we conceptualise an agency, this should be done in relation to structures and when structures are defined this also should be done in relation to an agency.

With the concepts of structure and agency so discussed the focus will now be on what is meant by policy analysis. As noted by Hay (2002), a distinction can be made between policy analysts who provide a limited and impoverished conception of policy analysis by focusing on narrowly policy variables and those who introduce a wider conception of this type of analysis that includes extra-policy variables and incorporates a full range of analytical strategies that might inform policy inquiry. The first group of analysts tend to narrow down the meaning of policy analysis and to use it interchangeably with analytical politics particularly those traditions which focus on rationalism and rational choice. This

conceptualisation of policy analysis is important but not sufficient to capture the whole range of policy activities. In the words of Hay (2002:3), '[T]he policy should be defined in such a way as to encompass the entire sphere of the social'. In this sense, all events, processes and practices which occur within the social sphere have the potential to be policy and, hence, to be amenable to policy analysis. This is not to say that policy is indistinguishable from other economic or cultural aspects of the social life. What makes a policy analysis policy is the emphasis it places on the policy aspect of social relations.

Having identified and discussed the three main concepts used in this chapter, the following two sections seek to map out the major perspectives which have come to define mainstream debate about the relationships between agency and structure and the significance of such a debate for policy analysis. This discussion is necessary for the conceptualization of policy transfer governance from a structure-agency perspective later in the chapter.

#### **4.2.2 Bridging the Agency-Structure Divide: Uni-Dimensional and Dialectical Approaches in Policy Analysis**

The question of the agency-structure relationship has consistently plagued policy analysis and divided policy analysts. The crux of this issue is to define the relationship between policy actors and policy institutions, between policy conduct and policy context, between structure and agency (Hay, 2002). Many social and policy theorists have attempted to reconcile agency and structure and to bridge the agency-structure divide. The problem with identifying the relationship between structure and agency is that this issue is entangled with different theoretical and empirical predicaments. According to Dessler (1989: 443), this problem emerges from two uncontentious truths about social life, 'first that human agency is the only moving force behind the actions, events, and outcomes of the social world; and second, that human agency can be realized only in concrete historical circumstances that condition the possibility for action and influence its course'. The agency-structure debate has been fuelled by the contributions of scholars from two main rival theoretical camps: the unidimensional and the dialectical (see Table 4.1).

As the table indicates, the problem with the one-sided approaches in policy analysis such as structuralism, functionalism, and intentionalism is that they are unidirectional and tend to give prominence to either the structure or the agent.

Within the Marxist traditions, for instance, there is a tendency to focus on structure as a superior to agency. As stated by Marx, ‘men make their own history, but not of their own free will; not under circumstances they themselves have chosen’ (see Hay, 2002: 117).

	Theoretical Approaches	Agency-Structure Relationship
<b>Unidimensional Approaches</b>	Behaviouralism	Structural regularities as exhibited in policy behaviour
	Rationalism	Agency is reducible to the structural context in which it is exercised.
	Structuralism	Tends to reduce social and policy outcomes to the operation of institutional or structural beyond the control of actors
	Intentionalism	Tends to account for observable effects in purely agential terms
	Marxism	Structure as a superior to agency
	Functionalism	Social wholes are more important than social participants
<b>Dialectical Approaches</b>	Structuration theory	The structural characteristics of social systems as both medium and outcome of social practices.
	Archer’s morphogenetic approach	Agency and structure cannot be analysed simultaneously because in reality they do not coexist through time
	Institutionalisms, constructivism, critical theorists and other post-positivists	Focuses on the dynamic relationship between conduct and context, agents and structure

Table 4.1: Structure-Agency Relationship from Different Theoretical Perspectives

This is not to say that these theoretical accounts are by nature static as some scholars within these traditions have admitted the interactive and dynamic nature of the relationship between structure and agency (see Jessop, 1990). However, even with this consideration of the dynamic agency-structure relationship, Marxists still give more weight to the static structure and less weight to the dynamic agents acting within these structures. To give an example, the state can be regarded according to Marxist traditions as a static social structure within which different types of dynamic but less important agents such as interest groups and policy networks interact and try to pursue their own interests. The structural elements in this example determine to a great extent the way in which agents interact and in turn what they can get out of this interaction (Jessop, 1990).

In this context, structuralist recognise that there are specific conditions which produce policy actions and shape policy behaviour. Because these conditions

change through time and space then policy agents do not enjoy absolute freedom in determining their own affairs. Structuralist have been criticised on the grounds that by focusing on the individual's position in a hierarchy, their accounts underestimate the reflexivity and autonomy of human actions and the role of ambiguity and ambivalence of human experience. Similar to the Marxists, the functionalists see the structure as a superior element in agency-structure relationships. According to them, social wholes are more important than social participants as they normally are related to particular functions. In this sense, functionalists tend to take policy structures as a starting point to understanding and explaining policy behaviour and the way in which policy systems work.

Mouzelis (1995) gives a good example of a functionalist account that has attempted to re-establish a balanced framework of analysis to the relationship between agency and structure. This is not to say that these theoretical accounts are by nature static as some scholars within these traditions have acknowledged the interactive and dynamic nature of the relationship between structure and agency (see Jessop, 1990). However, even with this consideration of the dynamic agency-structure relationship, Marxists still give more weight to the static structure and less weight to the dynamic agents acting within these structures. One of the major insights of this work for social scientists in general and for policy scientists in particular is that different structures and different agents possess different levels of power and in turn have different impact on shaping social realities. Another strand of the unidimensional approaches can be found in the intentional accounts, which focus on individuals and try to present the social world as a series of complex interactions. The most important contributions in this regard come from symbolic interactionist and the phenomenological approaches in sociology. One of the merits of these accounts, as noted by Layder (1994), is that they tend to focus on the micro level in order to explain the way in which individual agents behave. By doing this, they have diverted the debate from focusing on the macro level and big narratives of the Marxists and the functionalists to focus on more practical and lively issues.

The unidimensional approaches to policy analysis that consider agency-structure relationships have been criticised on different grounds. Chief among these critiques is that these accounts tend to overlook the dialectical and dynamic interactions between these two concepts when focusing on one of them and



giving it supremacy over the other. In this sense, these approaches ignore the totality and the inclusiveness of the issue by focusing only on one side of the coin and disregarding the other (see Hay, 1995; Bhaskar, 1997). In other words, the major flaw of the unidimensional approaches is that they do not explain how agency and structure work together to shape policy reality, to produce policy outcomes, or to create policy institutions. Added to this, these approaches tend to ignore the complex and dialectical nature of policy phenomena. Taking this criticism as a starting point, the dialectical accounts on agency-structure relationships have emphasised that, at the ontological and epistemological levels, social and in turn, policy reality exists and entails subjective interpretation. Many contributions come under the umbrella of the dialectal approaches including Giddens's structuration theory (1984), critical realism as presented in the work of Bhaskar (1986) and Sztompka (1993), Archer's analytical dualism (1996), plus the duality and dualism approach as presented by Mouzelis (1995).

The theory of structuration as presented by Giddens represents a landmark compared to the previous efforts, which attempted to conceptualise and explain the nature of the relationship between structure and agency. In this theory, Giddens suggests that dualism, in which classical unidimensional approaches conceptualise the structure-agency relationship, should be replaced with the concept of duality of structure. In his words, 'the constitution of agents and structures are not two independently given sets of phenomena, a dualism, but represent a duality' (Giddens, 1984: 25). In this sense, the structural characteristics of social systems can be conceived as both medium and outcome of the practices they recursively organise. Consequently, policy systems are created through the 'dynamic reproduction of social structures over time as a skilled accomplishment on the part of social actors' (Hay, 2002: 119). In addition to presenting the concept of duality of structure, the theory of structuration has also made another contribution by emphasising the element of time. According to Giddens the dialectal relationship between structure and agency does not take place in a vacuum. On the contrary, this relationship is bounded by a particular space and time. Taylor (1993) has noted that by introducing the reader to the dialectical interrelationship of structure and agency and to the importance of time as an intervening factor, the theory of structuration has provided as a way out of the problem of structure and agency (see also McAnulla 2002). According to

Hay (2002: 118) the theory of structuration provides a 'third ontology' beyond structuralism and intentionalism. Despite its popularity, Giddens' theory of structuration has been criticised on different grounds. For instance, Blaikie (1993) has noted that the central concepts in the theory (structuration and duality of structure) are inadequately developed. Additionally, in contrast with Giddens's notion about the duality of agency and structure, he has emphasized that the relationship between these two concepts is one of tension. Jessop (1996) has also argued that Giddens has mistakenly mixed different concepts dualism and dialectism. According to their view, a truly dialectical approach should acknowledge the contradictions inherent within structure-agency relationships and consider their effects on the construction of policy reality. In the words of 'the dualistic dichotomy of absolute external constraints and unconditional, free-willed subjective action' needs to be replaced with 'the dualized conceptual couplet of an emergent, contingent social structure and the actions selected by agents' (Jessop, 1996:6).

Based on a distinction between analytical and philosophical dualism, Archer (1985, 1996) has made her contribution to the debate on structure-agency relationship. According to her view, there is a difference between these two forms of dualism as analytical dualism starts from the dialectal relationship between agency and structure but at the same time, it emphasises that these two concepts cannot be analysed simultaneously because in reality they do not coexist through time. Instead of the notion of structuration presented by Giddens, Archer proposes the concept of morphogenesis as an analytic tool of changes structures. Morphogenetic simply means 'society has no pre-set form of preferred state...it takes its shape from and is formed by, agents, originating from the intended and unintended consequences of their actions' (1996:5). For her, this concept does not only imply a process but leads to an end product as well in terms of structural elaboration. As she puts it, 'the morphogenetic perspective is not only dualistic but sequential, dealing in endless cycles of structural conditioning/social interaction/structural elaboration – thus unravelling the dialectical interplay between structure and action' (1985: 61).

Critical realists do not accept the notion of analytical and dualism as presented by Archer. They also have a conception of the relationship between structure and agency, which emphasises a closer relationship between these two

concepts than the one presented by Giddens. According to Sztompka (1993: 217), 'structure and agent are fused together in one human social world'. Instead of looking at structure and agency as two sides of the same coin, critical realists see them as 'two metals in the alloy from which the coin is moulded' (see Hay, 1995: 200). To put it another way, both structure and agency are self-contained concepts but working in different ways and governed by different dynamics. For structure, three principles govern their dynamics: inertia, momentum, and sequence. Inertia means that things are more likely to continue working as they already do. Momentum indicates that when a phase is reached it is likely to proceed to the next one. Finally, the principle of sequence claims that there are routines in social life which have to be followed (Sztompka, 1993: 215). For agents, the story is different as their behaviour does not follow certain patterns, which means they are free to do what they want within the existing structures.

Rather than focusing on the duality and the dualism of structure and agency, Mouzelis (1995) has taken a more flexible and pragmatic approach to dealing with this issue. According to his view, both duality and dualism can exist in structure-agency relationships. In this sense, duality will exist when actors reproduce the social structures and dualism when actors distance themselves from social structures (Sibeon, 1999: 140). One of the main merits of this approach is that it does not presume a certain type of relationship between structure and agency and then take it a starting point for the analysis. Instead, the researcher should be open to the different possibilities that may be found in the relationship between agency and structure. Another merit is that in addition to this flexibility, the approach holds some helpful insights regarding the dialectical relationship between these two concepts, which can be empirically relevant. The major contribution presented by Mouzelis (1995) in his treatment of the agency-structure issue is his distinction between macro and micro levels in structure-agency relationships. According to him, both agency and structures can be found at the macro and micro levels. In his words, 'whether we are dealing with actors/interactions or institutional structures, macro refers to cases where the impact of institutionalised rules (when instantiated) or actors practices stretch widely in time and space; micro applies where this impact is very limited' (Mouzelis, 1995: 155). From this angle, agents are seen as products and

producers of social structures. However, agents at the macro level are more of producers than products and *vice-versa*.

One merit of the dialectical approaches to the agency-structure debate compared to the unidimensional ones is that instead of regarding the relationship between these two constructs as being problematic, these theoretical accounts consider agency and structure as 'a language by which ontological differences between contending accounts might be registered' (Hay, 2002: 90-91). To put it another way, rather than problematizing the relationship between agency and structure, the dialectic approaches acknowledge the fact that this debate exists because policy analysts conceive policy phenomena in different ways and thus conceptualise the structure-agency relationship differently.

#### **4.2.3 The Significance of Structure-Agency Debate to Policy Analysis**

As the discussion hitherto illustrates, prominent policy and social scientists have suggested that the structure-agency question is among the most important theoretical issues within the social sciences. It is an inescapable issue when attempting to understand social reality and to explain policy phenomena. As Hay (1995:189) puts it, 'every time we construct a notion of social, policy or economic causality we appeal to ideas about structure and agency'. In this sense, 'questions of structure and agency, however implicit, are implicated in all attempts to fashion notions of social and policy analysis' (2000:55). Archer (1996) has also highlighted the importance of structure-agency debate to social sciences. According to her, 'in facing up to the problem of structure and agency social theorists are not just addressing crucial technical problems in the study of society, they are also confronting the most pressing social problem of the human condition' (1996: xii). From this angle, it can be safely argued that the agency-structure debate can deepen our understanding about policy phenomena and help us conceive policy systems.

At the normative level, the structure-agency debate indicates the importance of answering fundamental questions about the ability of policy agents to act freely within the existing policy structures. In the words of Hay (2002:28), the thorny perennial question of the structure and agency relationship is basically about 'the relationship between policy conduct and the context within which it occurs and acquires significance'. This issue has been a concern for policy theorists for a long time but with no clear-cut answer. Between methodological individualism,

and its emphasis on individuals' actions as the main source for understanding social and policy reality and the denial of the structuralists that individual human beings are the ultimate social reality, the truth lies somewhere in the middle. No one can safely argue that policy agents are totally free. At the same time, it would be unrealistic to assume that all policy actions are determined by the rules, norms, and structural features of our contexts. It is true that policy agents cannot act completely in isolation of the impact of policy structures but their actions and behaviour may result in changing these structures.

Additionally, the debate around the relationship between structure and agency provides broader linkages into issues of policy theory and a more reflexive and conscious use of the policy phenomena under study. In this context, policy theorists attempt to answer significant questions about the relationship between policy agents and policy institutions or between the micro and macro levels of policy interaction. Identifying such relationships is crucial for understanding how policy systems function and explaining the way in which agents behave under certain structural conditions. Therefore, scholars such as Layder (1994) have highlighted the importance of the agency-structure debate and presented it as a fundamental precondition for conceiving different forms of social behaviour and informing social, economic and policy change.

The agency-structure debate also has a direct implication for the ontological, epistemological and methodological positions adopted in any policy research endeavour. In this sense, this debate can enlighten scholars concerning the way in which theorists and policy scientists observe the world around them and perceive the different aspects of policy reality. Focusing on structure and agency can expose the main ontological assumptions held by policy analysts. At the epistemological level, the structure agency debate can inform us about the way in which scholars in the different fields of policy sciences build-up their knowledge with regard to policy phenomena. Methodologically speaking, the discussion of structure and agency can highlight the different tools and methods used by social scientists to collect data about social phenomena. Having said that, one should expect different ontological, methodical and epistemological assumptions to be held by policy analysts based on the way in which they perceive the relationship between agents and structures (see Audi, 1995). For instance, it is more likely for a researcher who follows the positivist research

traditions to have different ontological, epistemological and methodological concerns from another one who takes realism as a starting point for his analysis. Additionally, a methodological approach that departs from a positivist perspective on the phenomenon under investigation may lead the investigator to adopt quantitative analysis to examine the relationships between the variables rather than following qualitative traditions.

With power relations coming at the heart of the agency-structure debate, the implications can be insightful for policy analysts. As noted by Harold Lasswell (1936), the investigation of who gets what, when and how is of a great significance to policy scientists. The question about the ability of policy actors to act freely in the context of the existing social and institutional structures has been of a great importance to politics students and scholars. The dynamic interaction between agents and structure can be policy intuitive with regard to showing the limits of agents to take specific decisions or to enforce certain rules. A look at the overall institutional environment of policymakers, for example, can tell us a lot about what they can and cannot do. It would also be very enlightening in this respect to observe how structures and institutions gradually change in response to the acts that agents take and the decisions they make. The debate around super and sub structures in Marxist traditions and how the former shape the later has too many implications regarding the way that we can understand policy systems and social order in any society at any given point. In a deterministic fashion, this debate has highlighted the limitations of individual agency and concluded that agents can make their own choices; however, under circumstances which are out of their choices. Following on from this it can be emphasised that a good understanding of the structure-agency debate can enable policy analysts to acknowledge the impact of agency-structures relationships on the way that policy events and actions explained. For instance, it can highlight the rules and role of different policy actors and in turn, their responsibilities about their actions. In international relations, for example, the decision to reform and privatise water sectors is made by water policy and decision-makers who can be held responsible for their decision in front of the public. However, we should also not forget that while working on this decision such water agents are faced with many structural elements that have either facilitated or obstructed the final decision. Hence, by regarding the both sides of

the coin (structure and agency) many policy decisions, actions, and changes can be explained.

To recapitulate, at the conceptual level, the boundaries between agency and structure are blurred. In Takashi's words (2005:15), 'agents are implicated in structure and structure in agents'. Consequently, any attempt to separate these two concepts would only be for the sake of explanation of their relative influence on the outcomes, events or institutions under investigation As Loyal and Barnes (2001:31) state:

[A]gency stands for the freedom of the contingently acting subject over and against the constraints that are thought to derive from enduring social structures. To the extent that human beings have agency, they may act independently of and in opposition to structural constraints, and/or may (re)constitute social structures through their freely chosen actions. To the extent that they lack agency, human beings are conceived of as automata, following the dictates of social structures and exercising no choice in what they do. That, at any rate, is the commonest way of contrasting agency and structure in the context of what has become known as the structure/agency debate'

Hence, a dualism approach for dealing with these two aspects of social theory cannot overcome many problems related to framing the debate in a way that emphasises the pre-eminence of one aspect at the expense of the other. Instead, a duality perspective that highlights the dynamic interactive nature between these two social constructs can be more enlightening and more likely to result in bridging the gap between structures and agents.

With the structure-agency dilemma in policy analysis explained and discussed, the next section will be devoted to unpacking the notion of policy transfer from a structure-agency perspective.

### **4.3 Theories of Policy Transfer: Structures, Agency, and Change**

As noted by Dolowitz and Marsh (2000: 20), 'an increasing amount of policy development, and particularly policy change, in contemporary polities is affected by policy transfer. As such, when we are analysing policy change we always need to ask the question: Is policy transfer involved?' In this section, the discussion will focus on theorizing and conceptualizing the policy transfer governance notion using a structure-agency framework of analysis. It is my contention that the governance of policy transfer extends beyond the process of

importing models and practices from other jurisdictions and transplanting them the way they are in the receiving environments. Many previous studies, particularly those addressing the issue of lesson drawing have focused on this element as will be discussed later in this section. For the purpose of this study, and taking into account the previous conceptualization of governance and the discussion of the agency-structure dilemma, it will not be enough to focus merely on the transfer process itself. For a better understanding of policy transfer governance systems, the dialectical relationships between existing structural components of policy transfer environments and the way they either limit or widen the scope of policy options available for policymakers should be brought into sharper focus and discussion.

In any policy transfer process, there are different state and non-state actors interacting at different functional and territorial levels in an attempt to influence final decisions with regard to what model or practices are to be transferred. In such a context, all policy actors involved are governed by existing structures in their interactions, which interfere with policymakers' agency when selecting specific models, ideas, or practices. Such an understanding of policy transfer governance will allow the examination of how existing governance structures and agency come into play when deciding upon selected practices and models. To put it another way, the discussion in this section will contribute to the current debate on policy transfer by going beyond the typical questions about which actors are included in the transfer process or the lessons to be drawn from certain experiences, to examine the way in which actors are situated in relation to each other and how their positions within existing structures influence interactive processes of transferring models and practices. Additionally, instead of focusing on the relationship between policy transferee and policy change in importing jurisdictions, the locus of the discussion in this section will be on how policy transfer contributes to the creation of new institutional arrangements including independent regulators.

#### **4.3.1 Policy Transfer Governance: Clarifying the Concepts**

Policy scholars use different terminology to describe the process of transferring ideas, practices and institutions. Common among those conceptual constructs are: lesson drawing, policy learning, policy diffusion, policy governance and policy transfer. All these concepts share the idea that policymakers worldwide



can learn from each other's experience and that policy ideas, practices and institutions can be transferred and moved across time and space. This is not to say that these concepts can be used interchangeably as scholars have underlined differences among them.

At the outset, lesson drawing is defined by Rose (2002: 3) as 'a process of applying knowledge about a program in one country to the design of a program in another'. Such a conceptualization implies a process of policy learning in which policymakers motivated by a high level of dissatisfaction in their countries about certain policy issues, or by dysfunctional policy programs, start looking for solutions and lessons to learn and draw from countries with similar conditions. In this context, the meaning of *learning* goes way beyond the mere descriptions of policy solutions worked elsewhere or the exact copying of models and practices from other jurisdictions. As Gilardi (2010: 651) puts it, learning is 'a process whereby policymakers change their beliefs about the effects of policies'. From this angle, policy learning is a complex process that includes an active engagement of policymakers in studying, selecting, and evaluating policy options and lessons from other countries given the existing structures and contexts within which they work (see Figure 4.1).

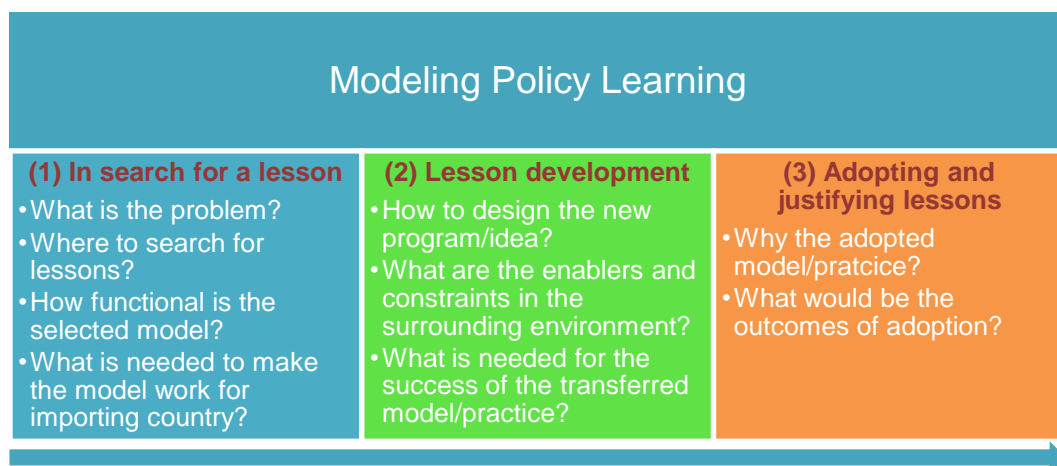


Figure 4.1: Modelling the Process of Policy Learning

Developed by the researcher based on the discussion provided by Rose (2002)

As the figure indicates, when deciding upon what lessons to draw from the experience of other countries and what lessons are to be learnt, policymakers normally go through three main phases: the search for a lesson, lesson development, and adopting and justifying lessons. The first step in stage one is to identify the problem at stake or the policy issue(s) causing dissatisfaction in

the society. Once the issue is identified clearly, policymakers start looking for countries with a similar policy problem and attempt to learn from their experience. In this context, policymakers study the solutions provided by other countries and how successful those solutions were in addressing the issue at stake. Based on such an investigation, policymakers can decide upon the suitability of the studied solutions to be transferred into their own context. Once a lesson is agreed, the design process starts, in which adaptation to the existing policy environment is a paramount. The adopted lesson/practice has to be introduced to the society as *the solution* for the policy issue(s) under examination. In this sense, a convincing justification has to be presented and the expected outcomes of adopting the new lesson/solution have to be explained.

As noted by Rose (2002: 3), the term lesson refers to 'a proposed program for dealing with a problem that makes use of the experience of a program dealing with the same problem in another country or countries'. In this context, learning lessons from the experience of other countries entails a crucial and an active role for policymakers who act as agents for policy transfer. An effort is needed to understand the lesson(s) to be drawn in its own context and to decide upon what modifications are needed for the same lesson(s) to work in different contexts. As put by Rose (2002: 3), '[L]earners are not passive pupils but policymakers actively trying to formulate or decide about the program'. When selecting lessons to learn policymakers have to muddle through different trade-offs, chief of which is the balance between desirability and practicality. From this perspective, lesson drawing is 'a tool that can be used in many different contexts and to different ends. It can stimulate a government to adopt a novel program or lead to the conclusion that what is deemed best practice elsewhere cannot or should not be introduced here' (Rose 2002: 2).

One of the merits of lesson drawing is that it bridges that gap between two competing camps of scholars and practitioners: the universalists and those who support the contextual approach. On the one hand, the universalists believe in best practices and universal solutions to policy problems regardless of the context in which those practices or solutions are embedded. From this angle, all lessons and practices are transferable among countries and across time. This idea has been totally rejected by those who value contextual factors such as socio-economic conditions as well as legal and political frameworks and

acknowledge their impact of the success or failure of any adopted policy or practice. From this perspective, what has worked in the past or in another context does not necessarily work and succeed in other environments.

These two opposing positions summarise the longstanding and unresolved debate over which is more important, agents or structures. The first group emphasises the role of agents and underplays the impact of structures and contexts while the other group emphasises the supremacy of structures in deciding the success or failure of agents' efforts. In order to bridge the gap between the two mentioned groups, lesson drawing provides the notion of 'contingencies', which acts as a link between agents and structures. Accordingly, what matters for drawing successful lessons from other jurisdictions is the extent to which the borrowed lessons fit nicely into the existing structures. This, in turn, requires identifying under what conditions the transfer of certain lessons, knowledge, or practices can be regarded as a success. In the words of Rose (2002: 2), '[T]he critical challenge of lesson drawing is not whether we can learn anything from what is happening elsewhere but when, where, and how well we learn'. In the context of this research, policy transfer will be used in accordance with Evans and Davies (1999: 363-364) as a generic term that includes different transfer practices and holds divergent claims with regard to policy development.

#### **4.3.2 Policy Transfer Governance: Unpacking Transfer Processes**

The policy transfer approach and its explanatory powers have long been the subject of debate among policy scholars. For some, the policy transfer approach is nothing but a descriptive analytic tool that has limited or no explanatory powers. James and Lodge (2003), for instance, raise three fundamental concerns about policy transfer and lesson drawing approaches. The first observation is related to the novelty and the distinctiveness of these approaches compared to the other traditional policy tools. From this angle, policy transfer and lesson drawing do not provide distinctive forms of policymaking compared to other traditions of rational policymaking. The policy transfer accounts have also failed in explaining why policy transfer occurs and not any other form of policymaking. The third criticism of the policy transfer approach is related to the effect of policy transfer and lesson drawing on the success or failure of public policies. Despite such criticisms, the trajectory of policy transfer shows that such a notion and associated approaches have the potential for moving from being

merely descriptive tools of policy processes to being a theoretical framework, which may help policy scholars advance their understanding of policy processes, choices, and change (see Grin and Loeber, 2007).

A glance at the literature of policy transfer indicates that in the cradle of this body of research is the work of distinguished scholars including Richard Rose, Schnieder and Ingram, Bennett, Dolowitz and Marsh, Stone, and Evans and Davies, alongside many others who have contributed to developing our understanding of such a notion. The early work of Rose (1991) on lesson drawing has shaped the discussion of policy transfer and guided the debate and the contributions of others in this regard. According to his view, many policy issues are similar; that means when faced with an uncertain situation or a gap between reality and aspiration, policymakers do not have to reinvent the wheel as they can draw lessons by studying the experience of their counterparts in other contexts that might help them address the problems they face (Rose, 1991: 11-12). In other words, what works in certain situations *can be* a good solution to similar policy issues and problems in different jurisdictions. In this context, policymakers act as social agents for change who instrumentally seek solutions to whatever policy issues they try to address by looking at workable solutions and lessons to be learnt from other policymakers nationally or internationally. As noted by Grin and Loeber (2007: 203), Rose has conceived policy agents as 'social engineers seeking to apply knowledge instrumentally to improve the feasibility of policy programs'. In that sense, lesson drawing has been conceived at such an early stage as a technical issue and Rose has emphasised the practical nature of this process.

In an earlier account, Schnieder and Ingram (1993: 334) draw our attention to the fact that, the policy design process has more to do with selection than invention. In that sense, Rose (1991) shares the same idea when he talks about the engagement of policymakers in lesson drawing rather than looking for new innovations; an idea perceived by Page (2000) as being self-evident. This early account on policy design has provided some other thoughts upon which Rose (1991) has built his notion about lesson drawing. As noted by Grin and Loeber (2007), the work of Schnieder and Ingram (1993) has underlined the sources of bias in selection processes and ideas which appeared later in the work of Rose (1991) on lesson drawing. Accordingly, during the selection processes of

lessons to learn from other experiences, policymakers are most likely to be influenced by some intervening factors such as their previous experiences. From this angle, policy institutional design can be regarded as a result of selection processes based on policymakers' experiences and expertise. Having said that Schnieder and Ingram (1993) have highlighted the possible bias by policymakers when selecting what experience to look at and what lessons should be selected to draw and learn from. The selection processes will be influenced by the personal preferences of policymakers and the way they see the problem as well as the way forward.

By looking at the motives and driving forces behind the selections of policymakers, Bennett (1991) has stated that during selection processes of models and practices to be transferred, policymakers can be motivated by several motives ranging from providing a quick remedy or fix to the issues in place by copying and pasting workable solutions from other jurisdictions to getting seriously involved in learning processes to develop long-term and sustainable solutions to policy problems. In quick fix situations, policymakers respond to social and political pressures by selecting and presenting what they think is the best practice and the best model elsewhere. The main shortcoming of this quick-fix approach is that not enough time is given to examine the suitability of the imported solutions to the new environments. Given that, the consequences of copy and pasting exercises are not always promising. Therefore, the active learning approach for policy transfer can guarantee more positives impacts with regard to the addressed policy issue(s).

Building on the work of Rose and others, Dolowitz and Marsh (1996) have developed the notion of policy transfer. According to their view, policy transfer can be regarded as 'a process in which knowledge about policies, administrative arrangements, institutions, etc. in one time and/or place is used in the development of policies, administrative arrangements and institutions in another time and/or place' (p.343). In their work, they focus on the role of structures and agency in shaping decisions of policy transfer. From this angle, they make a distinction between two broad modes of transfer: voluntary and coercive. In voluntary modes of policy transfer, the element of agency in the terms of the freedom of policymakers in choosing models and practices is quite obvious. This is not to say structures have no effect, but when structures allow the freedom to

look around for good models and practices policy agents tend to adopt them in order to address policy issues in their respective environments. On the other hand, in coercive modes of policy transfer - either directly or indirectly - the level of agency seems to be limited as structures play a major role in determining what can be adopted and transferred. In these modes of transfer processes, policymakers can be forced to select certain models because of existing structures and frameworks.

The outcomes of transfer processes could be a success, failure or showing mixing results. In an attempt to explain this, Dolowitz and Marsh (1996) have underlined three main explanatory factors which can render transfer processes either a success or a failure. The first among those factors is the level of awareness and knowledge by policymakers of the main features of the transferred model and the level of completeness of the transfer process. From this perspective, the uninformed transfer in terms of the absence of fundamental knowledge of the transferred models and practices can result in policy failure. The second explanatory factor focuses on the level of contextualization and adaptation of the adopted models and practices in order to better fit in the receiving environment. Models and practices are products of their environments; therefore, we should not expect them to be fully functional in new environments especially if such environments are not similar to the ones wherein the transferred models and practices have originated. The third and final factor for explaining the success or failure of policy transfer is the level of consistency between adopted practices and models and existing policy programs. This element is particularly important when the transferred model or practice is part of existing programs. In this case, policymakers have to make sure that the transferred practices are not at odds with existing arrangements, otherwise the risk of failure will be higher.

The work of Stone (1999) has taken the discussion of policy transfer one step forward by drawing our attention to the political nature of selection processes. According to her view, the selection of practices, models, ideas, institutions, etc. by policy agents will be affected and guided by the underlying assumptions of current policies and programs. To put it another way, the agency of policymakers when selecting lessons to draw or to learn from other contexts is restricted by a major structural element and that is the existing policies and practices. This

means that policymakers cannot select any policy model or practice which will be at odds with existing policies and procedures. From this angle, one can perceive of existing policy structures as a medium for interaction for policymakers as well as a product or an output for such an interaction.

### **4.3.3 Agents, Structures and Policy Transfer**

Evans and Davies (1999) have provided a model to explain how structural factors may interfere with the ability of policymakers when making policy decisions and selections. Guided by the theory of 'structuration' as presented by Giddens, the authors have highlighted how existing institutions can act as a framework which can either facilitate or hinder policy transfer. According to their view, the research on policy transfer has disregarded the link between macro and micro levels of analysis. In other words, to fully understand how policy transfer takes place and its impact on policy development, this process has to be analysed in multi-level settings and from an inter-disciplinary point of view. The authors were cautious not to make any claims that they provide a comprehensive explanatory model of policy change but an 'analogical' construct that underlines similarities between two entities.

One major contribution of the model provided by Evans and Davies (1999) is that it has conceptualized policy transfer from a structure-agency perspective. The authors highlight the MLG structures within which policy transfer occurs by looking at the meta-governance frameworks (global, international, transnational, and regional), macro governance structures (national and state levels), and micro-level structures (inter-organizational relations). At all these levels, ongoing interactions between policy agents and governance structures take place, in a manner that influence major policy decisions regarding what to transfer, when and how. Additionally, decisions made regarding the adoption of certain practices or policies impact policy development in importing countries. The analytical role of policy transfer from this angle is to bridge the gap between macro and micro governance structures. Based on such a conceptualization, and acknowledging the dialectical relations between policy agents and MLG structures, Dolowitz (1998) has identified 25 possible pathways for transferring policies across different levels and structures (see Figure 4.2).

As the figure indicates, a distinction has been made between international and transnational levels. At the international levels, nation states are the major

players in transfer processes while at the transnational level other non-state actors such as international NGOs and multi-national businesses are the leading players. At each of the five levels identified there are five possibilities or pathways through which policies and practices can be transferred across governance structures. In all transfer processes, the role of agency is paramount. This role can be taken by exporting countries, importing countries, or a third party. Additionally, the transfer of certain policies or practices can either be voluntary, as is the case with most lesson drawing exercises done by policymakers, or it can be coercive especially when there is a third party involved in the process of the transfer. Another feature which denotes the role of agency in policy transfer is the intentionality, in terms of the conscious selection of certain policies, lessons, or practices by policymakers to be imported into their own context. This intentional and conscious selection differentiates policy transfer from other forms of policy change and development such as policy convergence, which tends to occur on an unintentional basis.

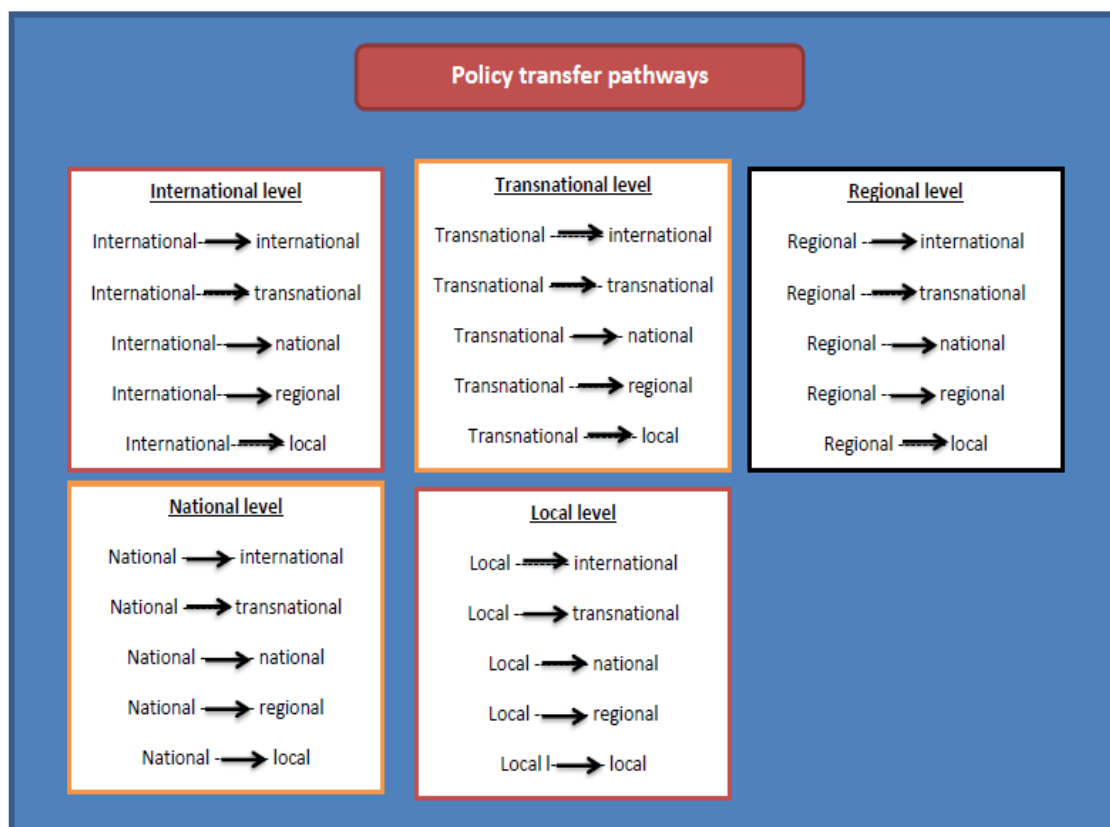


Figure 4.2: Policy Transfer Pathways

Source: based on Dolowitz 1998: 23

Following on from this conceptualization of policy transfer as a question of structure and agency, it can be noticed that the mentioned governance structures



act as independent variables, which in turn may have an impact on the transfer activities and the consequences for policy development. In other words, governance structures can enable or hinder the transfer processes and may also determine to a great extent their success or failure. For that reason, transfer processes that take place within certain governance structures at different levels and characterised by the intention and conscious selections made by policymakers as agents should be the focal analytic point to enable us to understand how practices, knowledge, models and policies travel from one place to another. As Evans and Davies (1999: 370) argue, ‘in order to comprehend that nature of policy transfer it is crucial that we put social and political action within the structured context in which it takes place’. In that sense, to fully comprehend policy transfer we should analyse how governance structures interfere with the ability of policy agents to make free choices and how the choices made by agents affect existing policy arrangements and structures.

Page (2000) has provided a comprehensive review of policy transfer and lesson drawing literature in which he tries to demarcate the boundaries between such extensive bodies of research. According to his view, to unpack the process of policy transfer we need to answer some basic questions (see Table 4.2).

<b>Policy Transfer Variables</b>	<b>Description</b>
<b>Who?</b>	Focusing on the policy transfer <i>agents</i> (individual/organizational)
<b>What?</b>	Focusing on the content of the transfer <i>processes</i> and transfer mechanisms (copying/inspiration)
<b>When?</b>	Focusing on the <i>timing</i> of the transfer processes (single act/over extended period of time)
<b>Why?</b>	Focusing on the <i>rationale</i> behind the policy transfer processes (coercion/voluntary)
<b>How?</b>	Focusing on the vehicle of policy transfer

Table 4.2: Policy transfer variables

As the table indicates, in order to fully comprehend the process of policy transfer and to capture the whole picture of how ideas, institutions, practices, systems and regimes travel from one jurisdiction to another, we need to analyse agents and structures in terms of processes and the content. When it comes to policy agents, the literature has identified individual as well as organizational agents. The policy transfer agents play an important role in identifying what to

import/export and also determine the way in which ideas, institutions, and programs are transferred and the level of rigor in transferring them. In this regard, policy agents can simply copy directly from other jurisdictions what they think will work on their own, or they might be engaged in a serious process or learning in which the experience of other countries inspires them to find real solutions to the policy issues under investigations. The timing of the transfer process is another important factor as the process itself may take place at different points in time. In addition to this, some policies may take longer transferred over an extended period of time. Regarding the rationale behind the adoption of certain policies and practices, the literature makes a broad distinction between coercive and voluntary reasons for policy transfer.

#### **4.3.4 The Limitations of Policy Transfer**

The previous discussion has indicated that the concept of policy transfer provides a powerful analytic tool that can help researchers analyse and understand different policy issues in relation to their governance structures. Nonetheless, this is not to say that policy transfer is the cure for all policy illnesses. As is the case with all analytic tools, the policy transfer approach has its own limitations. According to Evans and Davies (1999: 364), 'policy transfer analysis does not have full explanation and theory status'. In a more detailed critical account, James and Lodge (2003) have noted that the policy transfer approach has failed in addressing three major questions: can policy transfer be defined as distinctive forms of policy- making separate from other, more conventional, forms? Why does 'lesson drawing' and 'policy transfer' occur rather than some other form of policymaking? What are the effects of 'lesson drawing' and 'policy transfer' on policymaking and how do they compare to other processes?

Responding to the first questions, James and Lodge (2003) have stated that policy transfer and its associated terminology such as lesson drawing do not differ as much from the conventional approach of policymaking. For example, the authors have mentioned that the notion of lesson drawing is very close in nature to the idea of rational policymaking. Additionally, the concept of policy transfer has not added much to the previous analytic approaches on policymaking. Consequently, the authors have concluded that it is difficult to present the policy transfer approach as a distinct tool for analysing policymaking. Another shortcoming of the policy transfer approach from this perspective is its inability

to explain why, in certain contexts, policy transfer takes place rather than any other forms of policymaking. The provided analytic framework as per James and Lodge (2003) combines different theoretical accounts in a way which makes it very difficult for scholars to distinguish between them. In addition to this, the proponents of the policy transfer approach have failed in linking it directly to certain policy results. In other words, the link between policy transfer and policy success or failure has not been fully addressed by policy transfer scholars. Flowing on from such an understanding of the limitations of the policy transfer approach, James and Lodge (2003) have decided that ‘researchers may be better off selecting from a range of alternative approaches than limiting themselves to these conceptual frameworks’. In an attempt to examine and classify the limitations of policy transfer, Benson (2009) has made a distinction between four types of constraints: demand-side constraints; programmatic constraints; contextual constraints; and, application constraints (see table 4.3).

<b>Factors constraining transferability</b>	<b>Key questions</b>	<b>Indicators</b>
<b>Demand side constraints</b>		
Policy demand	Is there a demand for the policy or programme? Is there potential resistance to transfer?	High demand, low demand. High resistance, low resistance
<b>Programmatic constraints</b>		
Programmatic uniqueness	How unique is the programme?	Unique, generic programme.
Programmatic complexity	How complex is the programme?	Complexity: low/high
<b>Contextual constraints</b>		
Path dependency	Are past policies restrictive or enabling?	Path dependency: high/low
Existing structures	Are existing structures restrictive or enabling?	Structural density: high/low
Political context	Is politicisation apparent?	Politicisation: High/ low
Resources	Does the receiving context possess adequate resources for transfer?	Resources: adequate/inadequate.
Ideological consensus	Is there ideological consistency or divergence?	Ideological consistency/divergence
<b>Application constraints</b>		
Institutional substitutability	Would new institutional structures be needed?	Institutional structures: enabling/disabling.
Scales of change	Is the anticipated scale of change large or small?	Change: large-scale/small-scale
Programmatic modification	Are programmatic adjustments needed?	programmatic adjustment: High/low

Table 4.3: Factors constraining transferability  
Source: Benson (2009: 11)

As the table shows, on practical grounds, the process of policy may face different types of constraints. On the policy demand side, a crucial question would be the level at which certain policies or programs are needed as well as the level of expected resistance. As indicated earlier in this chapter, policy transfer takes place in response to the need to address existing policy issues or problems. Therefore, if there is no need to transfer policies and programs, policy agents are not expected to embark on transfer practices. It is equally important from this angle to think about the expected level of resistance to the newly transferred practice. As the discussion in this chapter has indicated, the transfer process does not take place in a vacuum. Therefore, it is imperative that policy agents should consider how consistent the new practice is with existing institutions and structures. At a pragmatic level, the degree of uniqueness in addition to the level of complexity will either facilitate or constrain the transfer processes. Unique and highly complex policies and programs are less likely to succeed in completely dissimilar environments.

In his analysis, Benson (2009) has also highlighted the impact of structural and contextual factors on the policy transfer processes. According to his view, existing structures, in addition to the extent to which the newly transferred policies will be restricted with previous ones in terms of path dependency, will affect the process of transfer. Added to this, the political context and the level of politicisation and ideological consensus can act to facilitate or hinder policy transfer. The availability of the required resources to complete the process of transfer has also been underlined by Benson and Jordan (2011) as one of major contextual factors affecting the transfer policies. On the implantation side, other factors such as the scope of intended change, as well as the need for creating new institutions can act as constraints on the ability of policy agents to adopt and implement certain policies/programs.

#### **4.4 Conclusion**

This chapter has addressed the governance of policy transfer from a structure-agency perspective. The chapter started with a discussion of the debate around the structure-agency dilemma and its relevance to policy sciences in general and the notion of policy transfer in particular. The discussion has indicated that, to fully understand policy decisions and choices made by policymakers, we need to focus on and explain the role of agency in terms of the ability of policymakers

to make free decisions and the structural contexts, which may hinder the making of such policy choices. Focusing on one side of such a dialectal relationship will give us a partial and incomplete explanation of why certain policies are adopted by policymakers. Therefore, the discussion has concluded that a dialectical rather than a unidimensional approach would be more helpful for understanding and explicating the reasons behind the adoption of certain policy choices.

The discussion of agency-structure relationships has been of a great importance to conceptualize policy transfer. At the end of the day, policy transfer can be regarded as a result or an outcome of the dialectal relationship between policy agents and governance structures. It is true that ideas, programs, institutions and practices are transferred from a certain jurisdiction to another following a process of identification and selection by policymakers in which the role of agency is evident. Nevertheless, as explained in this chapter, many contextual and structural factors can either constrain or facilitate the transfer process.

In sum, policy transfer and lesson drawing approaches may have the potential to contribute to the growing governance accounts and more precisely, to the efforts exerted in order to theorize the policy process. Theoretically and analytically speaking, combining policy transfer insights and theoretical and analytic structure-agency traditions help in addressing some aspects of the criticism directed at this approach. The growing and influential role of non-state actors has been accounted for in the recent work of policy transfer scholars (Grin and Loeber, 2007). Added to this, as discussed earlier in this chapter, perceiving policy transfer from a structure-agency perspective helps in focusing on the role of agency in policymaking processes. When combined more tightly, policy structures and policy agents can help unfold the dynamics of policy transfer governance. In that sense, some insights regarding the rationale behind the success or failure of policy transfer can be provided and expand the limitations of policy transfer approaches discussed above. At the empirical level, such an understanding of the ways in which policy practices and institutions are transferred from one context to another is particularly important for explaining the changes in the Egyptian water governance and the role played by water structures and water policy agents in bringing about that change (see chapters 7 and 8).

With the notion of governance and water governance having been readily defined, and having conceptualised the notion of policy transfer from a structure-agency perspective, the theoretical framework of the study is now complete. Such a framework will be utilized to investigate and analyse water governance in the context of Egypt. But, before discussing and examining water governance structures and water policy agents in Egypt, the methodological underpinnings of the research have to be explained in chapter 5.

## **CHAPTER 5: DATA AND METHODS**

### **5.1 Introduction**

The preceding four chapters have been devoted to discuss the overall research outline in addition to the theoretical and analytical framework of the study. Before moving to the empirical analysis, it is necessary to explained how the research questions are going to be addressed using the proposed multilevel structure-agency analytic perspective. In this context, the research methodology is driven by the research questions about the possible explanations that a multilevel structure-agency perspective might offer on water governance arrangements in Egypt (see chapter 1). My contention is that, an understanding of the changes of water governance institutions in Egypt calls for an examination the driving forces behind water governance reforms and the role of water agents and structures in selecting specific reform models. To systematically follow-up this line of argumentation, it is important to highlight the methodological drivers as well as data collection and analysis techniques. To this end, this chapter explains the research methodology in terms of describing the research design, approach, and strategies. The discussion focuses primarily on the way in which the research questions will be addressed as well as data collection and analysis. The chapter starts with a discussion of the overall research design in an attempt to justify the analytic approach and the selection of qualitative analysis for investigating water governance in Egypt. Differences between quantitative, qualitative and mixed approaches for analysis will be examined and the reasons behind choosing qualitative research will be fully explained (Onwuegbuzie et al., 2010). In section two, another element of the research design and strategy will be discussed by focusing on a single case study methodology. The rationale behind case selection as well as the relevance of single case analysis to the subject matter of the study will be elaborated on. Section three focuses on data collection and analysis in order to explain data sources in addition to the process of data gathering and the tools used for collecting, organising and analysing primary and secondary data.

### **5.2 Research Design and Strategy**

Research design represents an important step in any robust research process in social sciences generally and in policy sciences in particular. The design process itself is an integrated part of different research activities such as designing data

collection tools. Nonetheless, what is meant by research design is broader than design exercises which might be linked to research activities. The research design process deals primarily with 'aims, uses, purposes intentions, and plans within the practical constraints of location, time, money, and availability of staff' (Hakim, 1997: 1). It focuses principally on the application of scientific procedures and methods to acquire answers to the posed research questions (Adams and Schvaneveldt, 1991:16). Accordingly, Creswell (2008:3) describes research design as 'plans and procedures for research that span the decisions from broad assumptions to detailed methods of data collection and analysis'. In a broader sense, Gorard (2013:8) defines research design as 'a way of organising a research project or programme from its inception'. Research design can also be perceived from a minimalist perspective as 'a set of decisions we take in order to reduce or control bias.' (Maggetti et al., 2013: 10). The provided definitions of research design denote that identifying the design of any research project is basically about answering a number of straightforward questions about the main objectives of the study and the means for reaching these objectives. That means the methods to be utilised to approach and analyse the research questions should be clearly identified and the researcher should provide a justification for the utilisation of those methods.

Following on from this, it is evident that this concept might be expanded to cover different elements. For instance, according to Maggetti et al. (2013), when looking at research design it is essential to consider: theoretical frameworks, concept formation, types of propositions, research questions, causality, selection of cases, variables, explanations, mechanisms and methods. Gorard (2013) has narrowed these elements down to two main elements: case studies and data collection. Regardless of how broad or narrow the definition of research design is, the ultimate goal is to generate convincing evidence and to provide a persuasive answer to the addressed research questions. In other words, research design provides the logical link between the different elements, parts and sections of the research. It links research puzzles and questions, which represent the first step for any project to the final findings and conclusions.

From this angle, research design is quite a significant step for any robust research project for many reasons. On the one hand, it is essential to demonstrate to the readers and the examiners the ways that data for the



research was collected from its sources, categorised and analysed. Different researchers follow different methods and use different tools for data collection. Considering that some of those tools and methods are more robust than others, it is important to spell out the methodological underpinning of the study to enable readers to judge the quality of the findings and conclusions. Added to this, a good research design should also inform the readers about the rationale behind choosing certain tools and methodologies and how appropriate the selected tools are for addressing the issues under investigation. Research design also allows the researcher to set the boundaries for his/her research by talking about the technical, financial and time limitations of the study. By acknowledging such limitations, readers will be able to soundly judge the research results and findings without overestimating or underestimating the research procedures. In short, research design should inform the readers about how scientific the research is, how rigorous the analysis is, and how valid the credible the results are given the indicated limitations.

In spite of the importance of research design, this element of the research process is more often than not overlooked by social scientists. As Gorard (2013:3) notes, 'many areas of social science do not pay enough attention to design'. Social science scholars, including policy analysts, tend to focus more on research methods and data collection tools without providing the link between the addressed research puzzle and the final conclusion(s) of their studies. In such a situation, paying little attention to the design of the research project may result in imprecise findings and misleading conclusions. Consequently, social researchers need to think ahead to consider what their findings and results may look like in order to be able to come up with suitable research designs. In the words of Maggetti et al. (2013), social scientists need to consider research design as an overall term that links claims, arguments and evidence. They should not 'jump into the methods' before fully considering research design options.

Having discussed the importance of research design, the following sections will focus on different research design elements of the study, including the debate over qualitative and quantitative approaches and the case study analysis. Data collection tools and data analysis will also be discussed in addition to sampling and the validity of the results (Johnson et al., 2009).

### **5.3 Selecting the Analytical Approach: Why Qualitative Research?**

Stoker (1995) has noted that the research methodology is mainly determined by ontological and epistemological decisions based on the researcher's view of how social phenomena can be analysed and explained. In this regard, ontology refers to a view about the nature of social entities while epistemology reflects a researcher's approach regarding the most appropriate way to understand social phenomena. Different ontological and epistemological decisions lead to different methodologies. One of the first decisions that should be made at a very early stage of the research is about choosing the analytical paradigm. Here, a choice should be made between qualitative, quantitative, or mixed analytical paradigms (Neuman, 1997). Each one of those approaches has its merits and shortcomings and the selection between them is a matter of practicality. In other words, choosing the analytical approach depends greatly on the addressed research question, as well as the objectives of the study and the degree of analytical rigour (Saunders et al., 2009). The serious treatment of a specific topic may call for the application of qualitative, quantitative or mixed approaches.

At the outset, it must be noted that quantitative and qualitative research differs with regard to many aspects including: the role of the qualitative research, the relationship between the researcher and the subject, the researcher's stance on the subject, the relationship between theory, concepts and research, data collection, the scope of the findings, the image of social reality, and the nature of the data (see Bryman, 1988; Neuman, 1991; Devine, 1995). Such differences have pushed some scholars to value some approaches over others and a polarisation process has taken place between those who value quantitative methods and those who support qualitative research. Such a polarisation has resulted in a paradigm war in which each group of researchers sticks to their understanding of the world and social reality.

While quantitative researchers normally accuse qualitative analysis of being journalistic, descriptive, and having less rigor than quantitative inquiries, the adherents of qualitative approaches stress that it is imaginative, artful, flexible and reflexive (see Sarantakos, 2013). Qualitative researchers start by rejecting the very basic notion of 'logical positivism' as a foundation for social inquiry in quantitative traditions (Locke et al., 2014). According to their views, social reality and social order is far more complex than the way that the supporters of

quantitative approaches present it. In real life, there are some aspects which researchers cannot quantify and present in the language of numbers and equations. Therefore, it is possible and important to ask people about what they make out of social events and try to construct social reality based on their subjective experiences. In other words, qualitative researchers believe that different people see the world and interpret social events and experiences in different ways (Leech and Onwuegbuzie, 2004). Consequently, what we see as a social reality may not be the same for other people. In the words of Locke et al., (2014: 98) 'what is real is regarded as invariably multiple and immutably relative to person and context'. From this perspective, qualitative analysis is 'deeper, more focused, and more detailed than the analysis in quantitative research (Sarantakos, 2013: 366).

In this respect, interpretive approaches provide a good example of in-depth qualitative analysis by focusing on the role of meanings in shaping actions, institutions and the ways in which these two parties function and interact with each other (Bevir and Rhodes, 2000). From this angle, interpretive accounts underscore the importance of understanding meanings in informing the epistemological underpinnings of research in political science and in turn public policy. In other words, qualitative research is able to place into context and understand quantitative data. Between the two conflicting quantitative and qualitative views of the social reality, a group of scholars has tried to bridge the gap between quantitative and qualitative research and to build up a middle ground by using a mixed methodology that focuses on the strengths of each approach and avoid its shortcomings (Leech and Onwuegbuzie, 2004; Onwuegbuzie and Johnson, 2006; Onwuegbuzie et al., 2010).

The debate about the selection of analytic paradigms in research methods literature indicates that the choice between quantitative, qualitative and mixed approaches is quite important for determining the roadmap of the research process. Based on the selected approaches the researcher can then define the research strategy and the available methodological tools. For the purposes of this study, and without undermining the value of quantitative research traditions, the qualitative approach will be selected for analysing water governance in Egypt for the following reasons:

- Qualitative research suits the ontological and epistemological underpinnings of the study as it looks at water governance as continuous interactions between water structures and water agency. No general static laws can be applied independently of time and place to govern such an interaction and the researcher has to use theoretical insights to develop an understanding of how water governance systems work.
- Qualitative research allows the production of rich, detailed and first-hand description of the investigated topic and takes account of the contextual factors and their impacts on the phenomena under examination (see Stein and Mankowski, 2004). From this perspective, using a qualitative approach will help provide an accurate and vivid picture of water governance systems and processes in Egypt. Such a narrative is essential for more rigorous analysis of the Egyptian water sector.
- Qualitative research is more process oriented as it allows the researcher to focus primarily on policy processes and mechanisms rather than policy outcomes. As Locke et al. (2014: 99) state, “it is common for qualitative researchers to have a primary interest in identifying and understanding social processes by which particular end results are created rather than simply describing the results themselves”. From this angle, qualitative analysis is well suited to understanding governance processes and mechanisms in the Egyptian water sector, which may result in certain water policies and decisions.
- Qualitative methods also help to highlight and explain the driving forces and the rationale behind adopting specific policy options. This issue is quite important to explain how policies and policy practices and models are transferred into the context of developing countries such as Egypt.
- Qualitative research better suits the analysis of complex systems such as water governance, wherein different governmental and private actors work together to deliver policy goals. Quantitative methods are not sufficient to fully capture the dynamic nature of governance processes.
- Quantification is not a major concern of this study. The main aim is to unpack, analyse and interpret water governance processes in the selected case study in accordance with empirical observations collected from field work and based on the subjective interpretation of the

researcher rather than a purely objective endeavour. For that purpose, the quantitative approach does not suit this type of analysis.

To sum up, the qualitative approach has been selected because it suits the nature of investigated phenomena and matches the addressed research puzzle. As Locke et al. (2014: 103) note, 'it is the match between the paradigm and the problem that must carry the day'. With the analytic approach so identified and justified, the next section will focus on the research methodology in terms of the way in which water governance in Egypt will be analysed.

#### **5.4 Selecting Research Methodology: Why Case Study Analysis?**

There is a wide range of methods available for conducting qualitative research including case studies, archival analysis, surveys, and experimental designs. The chosen methods should be governed by the type of the addressed research question as well as the nature of the investigated phenomena and level of control exercised by the researcher over the examined events (Yin, 1994). From this angle, case studies are preferred when the researcher tries to answer 'how' and 'why' questions in a contemporary context and without having control over the events under study. Experimental research designs are more useful when the researcher can control the events while analysis of archival information is more appropriate for historical research. Surveys have a more quantitative character although they can be combined with case study analysis.

Thus, in order to understand water governance in general and the ways in which water governance systems works in Egypt different research methodologies could be followed. Given the qualitative nature of this research and taking into account the nature of the studied topic as a contemporary phenomenon, wherein the researcher has no control over the events under examination, water governance in Egypt will be examined as a single case study (Yin 1994, 2003). In comparison to other research methods, the case study approach is claimed to have the following advantages: it is suitable for studying contemporary phenomena and it has descriptive and explanatory powers; it is mainly qualitative therefore it can serve several objectives including description, explanation, and or exploration; it allows the application of numerous data sources and the production of rich and contextual interpretations; it takes several types according to the research purpose such as exploration, theory building, and theory testing and theory extension/refinement; finally, case studies are multi-perspective

analyses; a case study is a triangulated research strategy (Denscombe, 2003; Grunbaum, 2007).

In the context of this research, case study analysis provides detailed accounts of the investigated phenomena and looks at the governance issues under examination in its wider context using different tools and data sources. As stated by Gorard (2013:6), 'case studies involve immersion in one real-life scenario, collecting data of any kind ranging from existing records to ad hoc observations'. Furthermore, case study analysis also better suits the nature of posed research questions which focus basically on understanding the ways in which water governance works in Egypt as well as the ways that private and governmental actors collaborate to reach intended policy goals. Added to this, the lack of in-depth analysis of the water sector in Egypt justifies the focus on Egypt as a single case in order to produce a thick description of water governance in this sector. The availability of such a description represents an initial starting point for any serious and rigorous treatment of water governance issues in Egypt.

This is not to say that single case analysis is problem free. One of the major shortcomings of focusing on one case or even a small number of cases is the limited ability to generalise the findings. Nonetheless, generalisation of the results is not a major concern for the researcher at this stage as the primary goal is to first understand how water governance works in the selected case. In other words, rather than focusing on causal relations from a positivist perspective this research examines the mechanisms through which water governance systems work in Egypt. Additionally, in spite of the limited ability to generalise results from a single case analysis across cases and across countries, generalisations can still be made for similar sectors within the same case.

Among the different traditions available for case study analysis, water governance in Egypt will be analysed employing the congruence method (Blatter and Blume, 2008). As noted by Alexander (1997), the congruence method can be used to analyse single case studies when comparison does not represent a major concern for the research project. The method itself is quite adaptable and can be used with different research designs to fulfil different objectives. The congruence procedure can be employed 'in a disciplined-configurative study, a heuristic or hypothesis-generative study, a plausibility probe, or a crucial case or tough test' (ibid: 11). The flexibility of the congruence method also allows the

analysis of case studies to examine predictive and/or explanatory issues derived from deductive or an empirical theory. Added to this, the congruence method is quite helpful when the theoretical framework used to conceptualise and define the problem under examination is not clear-cut. Given that the governance analytic framework as discussed in chapter two and three is still problematic it will not be helpful, for example, to use more rigorous methods such as process-tracing, which best suits testing a hypothesis driven from well-elaborated theories. For these reasons, the congruence procedure will be employed in order to test the explanatory power of the governance analytic framework as well as exploring the role of structure-agency interrelationships in water governance and management in Egypt.

## **5.5 Data Collection**

As noted by Yin (2003), one of the major characteristics of case study research is the use of multiple data sources. In this context, potential data sources of this study may include: documents, archival records, interviews, direct observation, participant-observation, and physical artefacts (see also Stake, 1995). The data for this research was collected from primary and secondary sources. A combination of data collection tools were used to gather information from these sources including documentary analysis, qualitative interviews and participants' observation. Such a combination of tools was necessary for the purpose of data triangulation and to avoid any subjective judgments regarding the issues under investigation. In other words, diversifying data collection tools was done to arrive at a relatively objective and precise picture of water governance in Egypt.

### **5.5.1 Collecting Secondary Data**

Denscombe (1998), has noted that there is a wide range of secondary material available for qualitative research ranging from books and journals to official governmental reports and statistics. The data collection process started with a desktop exercise wherein the researcher started to search for and collect relevant literature on water governance in general and water governance systems in Egypt in particular. A considerable amount of previous studies, reports, official and policy documents as well as documents published by private actors including NGOs and private companies working in the water sector in Egypt were collected from the university library and using online sources. The researcher also visited the websites of governmental and non-governmental

actors involved in water governance and management in Egypt in order to get a better understanding of the nature of those actors and the roles they play in managing water resources. Valuable materials were collected from the online sources as they were publicly available.

A critical documentary analysis was conducted by reviewing the collected material. The data collected from these secondary sources was used to map-out the major actors in the sector and to acquire the required information about the structure and the functions of the water governance system via interviews. Mapping out the main player was a crucial step before conducting the fieldwork as it enabled the investigator to identify key actors and to approach them for acquiring their consent to participate in the study via interviews. By doing so, the researcher followed a well-established tradition of mapping in policy science that has been implemented by policy scholars in different areas. For example, in a comparative study of regulatory developments in the UK, USA and Canada, Doern (1998) utilised the mapping technique in order to identify and highlight the interconnection and the interplay among regulatory institutions in these three cases. As was the case with this research, mapping has also been used by Turnpenny et al. (2005) to identify the key players in the climate change policy networks within the U.K. The mapping technique was also helpful in mapping-out power relations, concepts, and ideas in different policy fields (see Mayers and Vermeulen, 2005).

### **5.5.2 Collecting Primary Data**

Primary data for this research was collected via elite semi-structured interviews and participant observations. Unlike quantitative research, wherein the data collection process is external to the researcher, the principal instrument for data collection in this study will be the investigator herself, especially while collecting primary data using interviews and participant observations (Brannen, 1992). As noted by Locke et al. (2014: 100), 'with rare exceptions, qualitative researchers must interact directly with study participants determining from moment to moment how to behave, what to notice and record, and how a particular line of inquiry does or does not offer promise for answering the research question at hand'. That means the researcher will be a part of the examined context while interacting, observing and asking questions to respondents. As such, the researcher's own values, perspective and understanding will inevitably become



an integrated part of the research process and will ultimately influence the findings and the final conclusions of this research. This is not to say that the researcher has been biased in favour of some views at the expense of others as every effort was made and every tactic was used to minimise such a bias, to limit data distortion, and to provide an accurate and objective picture of water governance in Egypt. The main two tools for collecting primary data will be elaborated on in the following section.

### **(A) Interviews**

Interviews are among the most commonly used tools for collecting data in the social sciences. Liedtka (1992) states that together with participant observation, interviews are considered as the keystone of qualitative research. Different researchers define interviews in different ways depending on the manner in which these tools are used in their research projects. Baker (1998: 232) has described interviews as an 'interactional event in which respondents draw on their knowledge'. Liedtka (1992: 162) has defined interviews as 'processes of interaction in which questions are asked by one party and answered by another'. Church and Rogers (2006) have described interviews as one-on-one contact with stakeholders, either in person or by telephone. Bachman and Schutt (2008:178) regard interviews as 'a qualitative method that involves open-ended, relatively unstructured questioning in which the interviewer seeks in-depth information on the interviewee's feelings, experiences, and perceptions'. The primary objective of interviews, in this sense, is to generate data, which give genuine insights into people's experiences. The common factor among all these definitions and others is that they all treat interviews as a form of conversation in which the purpose is for the interviewer to gather data that address specific phenomena and achieve certain goals. In such conversations, the logic of interaction and collaborative meaning-making is paramount.

The literature on qualitative research methods is full of classifications and typologies of interviews. Flick (2006), for instance, has made a distinction between five types of interviews: focused, semi-standardised, problem-centred, expert and ethnographic interviews. Based on the level of the structure of the interview, Bernard (1988) has distinguished between informal, unstructured, semi-structured and structured interviews. Considering the way in which interviews may be conducted, Fontana and Frey (1994) differentiate between

individual and group interviews. Scheduled versus non-scheduled or standardized versus non-standardized interviews are other classifications presented by Goetz and LeCompte (1984). Taking the number of involved parties as a criterion for classification, Bachman and Schutt (2008) make a distinction between dyad interviews (one interviewer and one respondent), triadic interviews (one researcher and two respondents) and focus group interviews (one or two researchers and a group of respondents).

Compared to other data collection methods, interviews enable researchers to get the in-depth information around a topic and to discover the story behind interviewees' experiences. By allowing direct communication with respondents, interviews make it easier for investigators to follow up specific issues and to encourage respondents to reflect on their responses. From these perspectives, interviews are exclusive interactions between interviewers and interviewees where both parties create narrative versions of the social world and present reality as they see it.

This is not to say that interviews are problem-free techniques. Like any other data collection tool, interviews have their own problems. For example, they are time consuming, more expensive, and require high communication skills, which may not be available to all researchers. Additionally, scholars such as Holstein and Gubrium (1998) have doubted the added value of interviews by noting that from post-modernist and constructionist viewpoints interview materials cannot be seen as representing the truth about social phenomena as they normally are invented and context specific. In this context, interviews are framed as a potential source of bias, error, misunderstanding, or misdirection. To put it another way, post-modernists and constructionists reject the idea that interviews can provide a mirror reflection of the reality that exists in the social world.

These concerns are understood; however, they do not undermine the potential of interviews for collecting primary data by getting directly in touch with experienced respondents. There is no such thing as a perfect data collection tool and the merits of interviews outweigh their shortcomings. In other words, the assumption that interviews are meaningless beyond the context in which they occur is an intimidating one. The possibility of learning about social realities outside the context of the interview situation should not be totally discounted. Taking into account the interactive nature of interviewing processes where

different roles are played by interviewers and interviewees in constructing meanings and describing social realities, following the appropriate interview logistics, it can be safely claimed that interviews, as data collection tools, can potentially help researchers to learn about the social world.

Consequently, elite semi-structured interviews were used to collect data from the main stakeholders participating in water governance in Egypt. Major players were approached by the researcher to arrange interviews with them in order to complete the missing data collected from the documentary analysis process and to countercheck some of this data. Among the different types of interviews the semi-structured type was used a primary tool for collecting data (Weiss 1992). The reason for this is that compared to the other forms interviews the semi-structured type allows for probing questions, which allow the researcher to follow up on the issues under examination. Added to this, semi-structured interviews better suit elite interviews, wherein policymakers and other stakeholders can freely evaluate and reflect on policy measures and tools.

### **1. Interviewing Logistics**

The logistics of interviewing include the need to decide upon the type of interview to be employed, who to interview, how to prepare for the interview, how to start and conclude the interview, how to ask questions, and how to pace the interview and keep it productive. For the purpose of this study, semi-structured elite interviews were chosen as the main tool for gathering primary data. An interview questions guide was developed that included open-ended questions related to the different examined areas in the Egyptian water sector. Shorthand notes were taken during the interviews and a full version of each interview was fully developed straight after each meeting. These logistics are fully explained in the sections to follow.

### **2. Selecting the Type of Interview**

Different types of interviews are available for qualitative researchers to choose from. Based on the level of formality, a distinction can be made between informal or unstructured, structured or formal, and semi-structured interviews (Sarantakos, 2013). In structured interviews, the researcher uses a structured interview questions guide to collect information from informants. Questions are verbally asked to interviewees in the same order and exactly in the same way.

Responses are recorded by the interviewer immediately during interviews. Unstructured interviews allow more freedom and flexibility for the researcher as she can change the order of the questions or the way she asks respondents in order to collect the information she needs. Semi-structured interviews are located somewhere between formal and informal interviews. They normally combine elements of both types. Different research designs, topics, objectives, preferences and methodological standards may call for employing formal or informal interviews. If a researcher, for instance, is seeking to collect general information about the issues under examination from different respondents, in this case informal interviews would better suit his task. Nevertheless, when researchers seek to collect information from a selected group of interviews regarding specific issues and theme, a more structured form of interviews, either formal or semi-structured interviews, is required.

For the purpose of this study, semi-structured interviews were employed to collect information from policymakers, regulators, water managers, private sector companies and civil society organisations such as consumer groups who are involved in water governance systems in Egypt. The selection of semi-structured interviews can be justified on different grounds. Compared to structured or formal interviews, semi-structured interviews allow more control for the investigator over the interview situation. She can change the wording and the order of the questions in order to direct the conversation during the interview in the way she sees suitable for collecting relevant information about the discussed topics. Such flexibility in the interview situation enables the researcher to focus on the most important issues for her research and to jump from one issue to another depending on the flow of conversation and the knowledge and expertise of respondents. Added to this, unlike structured interviews, which look more or less like formal investigations, semi-structured interviews give respondents enough room to freely think and reflect on the questions and to express their opinions without feeling threatened.

### **3. Selecting Interviewees**

Yin (1994) has noted that case study research is not primarily concerned with sampling from a statistical point of view. Nonetheless, he has also mentioned that the cases should be selected in a manner which contributes to the realisation of the stated objectives, and the boundaries of the analysis should be clearly

demarcated. In other words, researchers using interviews to collect data from primary sources in order to conduct a case study analysis should be selective when they define the boundaries of their sample and decide who to include in their interviewees list. In this regard, Mack et al. (2005: 56) state that selecting respondents for interviews can be problematic for the following reasons: the delicate nature of working with vulnerable populations; possible stigmatization of participants resulting from affiliation with the study; the high mobility of some populations; participants' concerns about confidentiality; and misinformation, lack of information, fear, or rumours about the study.

In the light of these restrictions, the process of selecting interviewees should be done very carefully (Bachman and Schutt, 2008). Random selection and sampling of respondents is not necessarily the best means to this end as representation and generalisation are of secondary concern. In this regard, Locke et al. (2014: 100) have stated that 'only rarely are samples of participants created by random procedures. Selection is more likely to be purposeful with the intention of maximising the utility of data for the research goals intended'. Thus, case study researchers should take into account what kind of information they need to answer their research questions and to achieve the objectives of their studies then they should select the respondents who are knowledgeable about the subject of the interview, open to talking, and who represent the range of perspectives. It is important for researchers in this regard as well to know when to stop selecting new interviewees. In this respect, reaching a saturation point, which means new interviewees seem to yield little additional information, can be a good indicator for researchers to stop the selection process.

Following on from the above, the respondents for this study have been purposively selected from among the stakeholders participating in water governance in Egypt. As Onwuegbuzie and Leech (2007) note, purposive sampling is a familiar technique in qualitative research. This technique allows the investigator to intentionally select the respondents based on their expertise and knowledge about the studied subject, which in turn enables him/her to get a deep understanding of the issues under examination. In that sense, purposive sampling is conceptually driven and does not aim at achieving statistical representation (Huberman and Miles, 1994: Leech, and Onwuegbuzie, 2009). Nonetheless, the researcher was keen on representing different points of views

by selecting different types of stakeholders, including policymakers, public employees, private sector actors, and civil society organisations. Such diversity in stakeholders' selection was necessary to meet the objectives of the research and to be able to collect data relevant to the investigated research question.

Another important feature of purposive sampling is that the process of respondents' selection is a sequential process, which means the sample keeps evolving as the fieldwork proceeds. In this regard, the mapping activity conducted during the documentary analysis helped to identify key players in water governance in Egypt. Those key players formed the core of the research sample. The initial sample of interviewees was extended by using the snowballing technique during the interviews. Respondents were asked if there was anyone else they thought the researcher should talk to in their organisation or elsewhere. This was a quite helpful exercise as it helped in including other stakeholders and directed the researcher towards new sources of information that did not appear in the initial mapping of stockholders.

The sample for this study consisted of 32 interviews. Key informants were approached and contacted by the researcher prior to the interviews in order to explain the purpose of the study and to get their consent to participate in the research. Those who positively responded and agreed to take part were asked to fix a date and a time for the interview and a list was generated including their names, positions and agreed dates for interviews.

#### **4. The Process of Interviewing**

The process of interviewing included four main stages: planning the interviews; designing the interview protocol; conducting the interviews; ending and reporting the interviews.

##### **Stage One: Planning Interviews**

At the planning stage, the researcher should start thinking about the different aspects of the interviewing. An important issue to consider at this stage is to finalise the list of interviewees and to confirm the dates and times of interviews. Following on from that, the researcher should start thinking about the issues to include in the interview questionnaire based on the theoretical and conceptual underpinning of the study. Such an initial thinking should be further developed when designing the actual interview questions guide. It is recommended at this

stage also to think about the practicalities of interviewing in terms of the way that the researcher is going to introduce herself to respondents and the way that questions will be posed and probed in addition to the way that interviews will be concluded. In short, the planning stage acts as a brainstorming exercise wherein the researcher takes a panoramic view of the overall interviewing process (Mack et al., 2005). Those pointers were of great help for the researcher when she was planning the interviews with the water stakeholders in Egypt.

### **Stage Two: Designing the Interview Protocol**

The main issue while designing and planning interviews is what the interview protocol should look like and what types of questions are needed to acquire information. As noted by Baker (1998: 131), questions are a central part of the data and cannot be viewed as a neutral invitation to speak. In other words, the ways in which questions are structured and posed during the interview influences the final output of the interviewing process. It is generally recommended in this respect that interviewers should start with broad and general questions that do not represent any kind of threat to respondents and delay the critical questions until a good rapport with informants is built (see Mayoux, 2001; Mack et al., 2005; Bachman and Schutt, 2008). Depending on the focus of investigation, questions can range from micro-level details of people's experiences to detailed questions about ways in which organisations and institutions work, or macro level policies (Mayoux, 2001). In this context, Goetz and LeCompte (1984:141) have noted that interview questions can be categorized in a multitude of ways to gather information about different things including experiences, opinions, and feelings, in addition to hypothetical and propositional questions.

Guided by the theoretical and conceptual framework developed in this study, the researcher designed the interview questions guide, which was used to systematically collect information from respondents and to maximise the flow of valid and consistent information while minimising misrepresentation of what respondents said during interviews (see appendix 1). The guide included different questions about the main players in water governance in Egypt and their roles and functions. Some questions also aimed at collecting information regarding actors' perceptions of how efficient and effective the existing governance mechanisms and arrangements are, and their opinions on how to improve existing practices in order to face the increasing water challenges.

The interview questions were open-ended questions in order to give the respondents a chance to reflect on the issues under consideration and to freely express their opinions. The way in which questions are directed determines to a great extent the type and the quality of information to be generated afterwards. In the words of Holstein, and Gubrium (1998: 111) '[I]f the interviewer asks questions properly the respondent will give out the desired information'. To put it another way, asking effectively and the proficiency of asking techniques are very important to control the interview situation and to direct respondents to the focal point of the question. Therefore, interviewers should strategize throughout an interview about how best to achieve their objectives while taking into account interviewees' answers. As Bachman and Schutt (2008) mention, this requires,; keeping track of which questions have and have not been asked and answered; knowing how to phrase questions that encourage participants to provide detailed responses; and asking questions that elicit the participant's own views and experiences as opposed to reflecting the convictions of the interviewer.

Encouraging respondents to reflect on their answers by using probing questions is an important interviewing technique. As noted by Mayoux (2001), one of the distinctive features of qualitative interviews is their continual probing and cross checking of information. Questions that lead participants along a particular line of thinking or what Mack et al. (2005) call 'leading questions' must be avoided as informants are most likely to provide answers that agree with interviewers' preconceptions. In the words of Platt (2002: 37), 'leading questions are likely to have the effect that the adventure into the unknown, into uncharted and hitherto undisclosed spheres, has been destroyed'. Questions were posed to respondents in a neutral fashion and the researcher made every effort not to interfere with the way that respondents answered the questions. Macro level questions about the structure of water governance systems in Egypt and the main players participating in managing water resources were posed first, followed by micro level questions about respondents' respective roles and responsibilities plus their relations with the rest of the stakeholders. Probing questions were used during interviews to encourage respondents to reflect on their thoughts and to double check information.



### **Stage Three: Conducting Interviews**

Qualitative research accounts provide practical tips help interviewers to avoid the pitfalls of the interviewing process. Sarantakos (2013: 283) has identified certain tasks that have to be performed by the interviewer during interviews. These tasks include: controlling and guiding the interview; complying with the underlying paradigm; ensuring they do not influence the way the respondents answer the questions; recording the answers accurately; establishing and maintaining positive relations with the public and observing ethical standards. The researcher performed all the listed tasks during the interviews and made sure that she did not interfere with the way that informants were answering the questions. She also gave them enough time and room to elaborate on their ideas and to further their arguments and points of view.

Answers were briefly recorded during interviews. Shorthand notes were taken and then extended into full scripts straight after each interview. The researcher preferred to take shorthand notes and not to record interviews for practical reasons. Compared to recording interviews, shorthand notes allow respondents to freely elaborate on the issues under examination without feeling that they are threatened or being interrogated by the interviewer. Added to this, in elite interviews where policymakers and senior members of staff in government and private companies are involved, recording may make them feel uncomfortable to freely express their opinions.

Ethical considerations were fully considered through the interviewing process as informants were asked for their consent to take part in the study prior to interviews. During interviews, informants were assured that the collected information would only be used for scientific research purposes and would not be employed in any manner that might reveal the source of information. It is worth mentioning in this regard that the researcher also received ethical approval from the ethical committee at the College of Social Sciences and International Studies, University of Exeter, to conduct the interviews and to collect data from the selected informants (see appendix 2)

### **Stage Four: Ending and Reporting the Interviews**

It important to conclude the interview in the same positive way that it has been started (Sarantakos, 2013). The contributions of respondents should be

acknowledged and appreciated and the interviewer should smoothly end the conversation and interaction with the respondents. Concluding interviews in such a positive manner enhanced the trust between the interviewer and the interviewee and increased the possibility for future cooperation. At the end of each interview, the researcher showed her appreciation to respondents and thanked them for their cooperation and contribution to the study.

### **(B) Participant observation**

In addition to documentary analysis and interviews, the researcher also used participant observation. Observation is one of the oldest social research methods in which investigators collect data via vision as a main source (Sarantakso, 2013). As Denscombe (1998) notes, participant observation is a more direct way for collecting data in qualitative research because it depends on the actual participation of the investigator in certain events rather than listening to respondents talking about them. For the purpose and the nature of this study the researcher decided to use participant observation and not to use systematic observation. Unlike systematic observation followed in quantitative research, in order to collect information about the frequency and repetition of certain events, participant observation is more concerned with understanding and getting insights into the examined events. Qualitative research methods literature makes a distinction between different types of participant observation based on the level of participation including total participation, participation in the normal setting and participation as observer (Denscombe, 1998). Without going into the details of each type, the way in which participant observation was used in this research can be described as participation in the normal setting. In that sense, participant observation was flexibly utilised during the site visits conducted by the researcher, wherein the investigator was observing the way in which people interact within those organisations to deal with water governance issues and to come to a decision on the course of action to be followed to solve those issues.

## **5.6 Data Analysis**

The data for this research was qualitatively analysed in order to unpack water governance actors, mechanisms, and processes in Egypt (Johnson et al., 2009). The reason for this was that qualitative analysis is more suitable for the type of data collected during the fieldwork. As noted by Sarantakos (2013: 365), 'qualitative analysis is a research procedure that (a) deals with data presented in

textual, verbal and multi-focus formats; (b) contains a minimum of quantitative measurement, standardisation and statistical techniques; (c) aims to transform and interpret qualitative data in a rigorous and scholarly manner'. All representations of human acts during the interviews, as well as all collected documents and material during the desktop search or throughout the fieldwork, were considered as data for the analysis.

The collected data was organised and analysed thematically using NVivo software (Di Gregorio, 2000; NVIVO 10 Getting started Guide, 2013). Following the full transcription of all interviews, the major themes covered were coded and entered into NVIVO software. Using the NVIVO software was very helpful in comparing respondents' viewpoints and answers to the posed questions. In the light of empirical findings and the fieldwork, such a thematic analysis enabled in-depth reflections on the theoretical and conceptual issues discussed in the theoretical framework. For triangulation purposes and to enhance the credibility of the results the researcher compared the data collected from the secondary sources and the primary data collected via interviews with empirical observations during the visits to the interviewed organisations (Stake, 1995).

## **5.7 Conclusion**

In this chapter, the methodological decisions made in this thesis have been outlined and justified in comparison to other alternative options. The qualitative approach was selected to analyse water governance in Egypt and to address the core research question on how could we understand and explain water arrangements and mechanisms in the Egyptian context. The qualitative analysis was chosen for its suitability to answer the research questions and to achieve the objectives of the study. The water sector in Egypt is analysed as a single case study in order to produce a rich description of water actors, arrangements, and mechanisms. Due to the lack of rigorous academic research in Egypt on water governance, producing such a description and in-depth analysis is a crucial step in mapping out this vital sector. The thick description of the water governance system in Egypt is also required in order to provide the data needed for any future comparative studies.

The data for this research was collected from secondary and primary sources using different data collection tools and techniques. A desktop search of libraries and online databases, qualitative semi-structured interviews and participant

observation were all used for collecting the required data. Data from these sources was triangulated in order to double-check its accuracy and to ensure the credibility and validity of the results (Onwuegbuzie, 2003; Onwuegbuzie and Johnson, 2006). The collected data was qualitatively analysed using thematic analysis and with the help of the NVIVO software.

One of the major challenges during the fieldwork was data collection through interviews and convincing my interviewees to speak out their minds and express their opinions freely. Many of my interviewees are senior civil servants in different water organizations who fear to be quoted in research articles or to be named in written publications. In order to overcome this problem I assured all my interviewees at the beginning of each interview that their identity and names would not be exposed and that all the data and information will only be used for scientific purposes. I have also avoided using tape recording as many of the public officials refused to be taped. Instead, I used shorthand notes during the interviews and fully expanded my notes directly after each interview. This technique was very useful and helped the smooth flow of conversation during the interview as my informants did not feel that they were interrogated. Added to this, fixing the interview date and time with some of my informants was also problematic. Some of them were quite busy and their time was limited. Therefore, I had to show a great deal of flexibility in order to fit into their tight schedule. Given the short span of time some of my interviewees had offered me, I had also to focus during the interview on the most relevant questions and the data that no one else but the interviewee can provide me with. In spite of those challenges, working on my interviews logistics at an early stage of my research and contacting my interviewees' offices way in advance have helped me overcoming many of difficulties and made my fieldwork a success.

With the theoretical and methodological drivers of my work so explained in the previous five chapter, the next part of the thesis will focus on the analysis of the case study by examining water governance in Egypt. The multilevel structure-agency framework developed in the theoretical section of the thesis will be used to explain water governance arrangements in the Egyptian case. For contextualisation purposes, the empirical section will start by giving a background on water resources in Egypt in chapter 6. The transboundary nature of the Nile governance will be highlighted and the challenges facing Egypt

because of such governance arrangements will be explained. In chapter 7, the main elements of the national water governance will be examined by focusing on the existing water agents and structures. Chapter 8, unpack the interplay dynamics between water agents and structures in order to demonstrate the level of agency in making water policy decisions and the ways in which the freedom of water agents is determined by existing water structure at national, regional and international levels.

## **CHAPTER 6: WATER GOVERNANCE IN EGYPT: THE HYDRO-POLITICS OF TRANSBOUNDARY GOVERNANCE IN THE NILE BASIN**

There is no country in the world where the government controls more closely, by means of the Nile, the life of the people. Under a good administration the Nile gains on the desert, under a bad one the desert gains on the Nile (Napoleon, 1798).

### **6.1 Introduction**

In theoretical section of the study, water governance has been conceptualized as a multilevel construct wherein water policies and decisions are framed via the interaction of policy actors at different local, regional and international levels (see chapters 2 and 3). Water governance arrangements were also perceived as a result of the interaction between water structures and water agents (see chapter 4). This understanding of water governance is essential in order to unpack and analyse governance arrangements in the Nile basin and the ways these arrangements impact on water policies and decisions in Egypt. The Egyptian water sector and the associated water governance arrangements do not work in a vacuum. Water policies and institutions at the national level in Egypt are impeded in the overall structures of a governance system in the Nile basin, which is characterized by its transboundary nature. Such transboundary governance is a product of different cooperative initiatives that combine different types of actors and institutions involved in managing and allocating water in the Nile Valley.

The aim of this chapter is to characterize the transboundary water governance regime in the Nile basin in order to underline its main components and to highlight the way in which water issues are managed at the regional level. Water governance arrangements at the basin level influence water policies and governance arrangements within each country of the Nile Valley. As such, understanding the hydro-political dynamics in the Nile basin is necessary in order to allow an in-depth analysis of structure-agency dialectics and the policy transfer mechanisms in the chapters to follow.

### **6.2 Water Resources and Governance in Egypt: Contextualizing the Debate**

The aim of this section is to provide an overview of the geo-political, economic, social and demographic contexts within which water resources in Egypt are utilized. This overview is necessary to identify water availability as well as the main water users in the country.

### **6.2.1 The Political Regime**

The Arab Republic of Egypt has a republican governmental system that is based on citizenship and the rule of law. The Egyptian Constitution pledges equality, justice and equal opportunities among all citizens and defines the people as the main source of power and the safeguard of national unity. The political role of Egypt is defined based on its affiliations to the Arabic and Islamic world as well as being an Afro-Asian country (Arafat, 2009). The strong ties with the Arabic and Islamic states and the African and Asian dimensions have enabled Egypt to play a fundamental role in shaping history and building human civilization by taking the lead on many transformations in the region. The Egyptian political system is a hybrid model located somewhere in-between the parliamentary and the presidential systems (Rennick, 2015). In other words, the political regime carries some features from the parliamentary regimes such as having a majoritarian government headed by a prime minister. Nonetheless, unlike parliamentary systems, the powers of the prime minister are limited as the constitution identifies the President of the Republic as the head of state and the head of executive power. From this perspective, the prime minister acts more like a coordinator between the different ministries rather than an actual decision-maker and head of government (Islami, 2016). The powers and authorities invested in the presidency by the provisions of the constitution make the overall regime look more like a presidential system with many responsibilities assigned to the president including: protecting the interests of the people and safeguarding the independence of the state and the integrity of its territories. Political and partisan pluralism provides the basis for the political party system in Egypt. The Egyptian constitution emphasizes the separation and balance of powers between legislature, executive, and judicial branches. The provisions of the constitution have also underlined the inevitable correlation between powers and responsibilities and the peaceful rotation of power among all players (State Information Service, [www.sis.gov.eg](http://www.sis.gov.eg), 2015, 23/5/2017).

### **6.2.2 The Egyptian Economy**

The basic configuration of the Egyptian economy reflects comparable proportions of different economic sectors including agriculture, industry, tourism and services. Compared to the other economies in the region, the Egyptian economy is characterized by more diversification with a vibrant labour market.

According to 2010 statistics, the 26-million labour force is distributed among the main economic sectors with the majority of labour concentrated in the service sector (51%). The agriculture sector comes in second place with (32%) of the workforce followed by the industrial sector (17%) (State Information Service: [www.sis.gov.eg](http://www.sis.gov.eg), 2015, 23/5/2017). The main sources of revenue are Suez Canal revenues and tourism in addition to revenues generated from petroleum exports and remittances of more than three million Egyptians abroad, mostly in the Gulf States, the United States, Europe and Australia. After two revolutions in almost two years, the Egyptian economy has badly deteriorated.

The contribution of the private sector in economic development varies due to changes in political regimes and the ideological shifts between social and liberal ideologies. The leading role of the private sector before the 1952 revolution was dramatically constrained in favour of a growing role of the public sector as a result of a nationwide nationalization program and a state-led economic strategy focusing on import substitutions. The Nasser regime embarked on an ambitious industrialization policy, which was launched in 1957 and focused on heavy industries such as iron, steel and chemical industries. The poor performance record of the public sector at the beginning of the 1970s and the ramifications of the 1973 war paved the way for a new shift in the state's economic strategies away from state-led strategies and public sector organizations towards a growing focus on private investors under Sadat's open door policy. As noted by Badran (2015), this shift was gradual because of the heavy legacy of Nasser's regime and its socialist orientation.

The open-door policy has opened the door to the participation of the private sector but with a fundamental and in some cases, a leading role of public organizations. The role of the private sector as a driving force behind the economic development has been substantially vitalized following the privatization program, which was devised by the international financial institutions led by the World Bank and the International Monetary Fund in the mid-1980s. The state owned enterprises were sold to private investors and the participation of the private sector has steadily increased in different economic sectors until the present day. Greater incentives have been given to the private sector in order to increase its contribution in all economic activities since 2007. Between 2008 and 2011, the national economy of Egypt was struggling to



overcome the negative impacts of the global financial crisis. The dramatic increase in food prices during the same period worsened the economic situation for millions of Egyptians who suffered from poverty, unemployment, and poor state service. The rich became richer and the poor became poorer while social and economic injustice soared in the society and paved the way for the revolution of January the 25<sup>th</sup>, 2011. Revitalizing the Egyptian economy is now the main target for all governments that came to power after the revolution. This task is not easy, particularly if one considers the high demands and even the higher expectations of the citizens, the level of corruption at all levels within the government and public sector organizations, and the state of conflict among political powers.

### **6.2.3 Geography and Demographics**

Egypt's geographic location in the northeast corner of Africa is distinctive. With long shores on the Mediterranean Sea to the north and the red sea to the east, the country acts as a link between three continents: Europe, Africa and Asia. From the West, Egypt is bordered by Libya and from the south by Sudan. The eastern and western deserts establish the majority of the country's one million square kilometres geographical area. With a large population reaching 82.06 million in 2013 and an annual growth rate of over 2% (World Bank Group, 2015), Egypt represents a cornerstone in the Arab world and in the MENA region. Most of the Egyptian population is concentrated in the fertile Nile Valley, which represents a narrow strip alongside the two banks of the Nile. This creates densely packed population centres with increasing demand for access to clean water. The rapidly growing population, the climate change, as well as being the last riparian on the Nile are all challenges facing the water resources management and governance systems in Egypt. In addition to this, and as rightly noticed by Brunnée, and Toope (2002), agriculture in Egypt, which represents a major economic sector, is heavily reliant on crops that require extensive irrigation, such as rice. In this regard, Conniff et al. (2012:5) have emphasized that '[M]ore than ever, the Nile basin countries feel the pressure of expanding population requirements for food production and energy to develop their economies'. From this perspective, and given the heavy reliance in agricultural on water, sustainable agricultural practices have been emphasised by many

researcher as the way forward for dealing with water shortage (Walsh, 1991; El-Ramady et al. 2013).

Because of being the last recipient of the Nile's waters, Egypt's water share is vulnerable to any actions or developmental projects established by the upstream countries. This point has been emphasized by Johnston (2012: 61), who states that '[E]gypt is already using 120 per cent of its nominal allocation and is dependent on 'excess' flows to Aswan which may not be guaranteed in the longer term; and thus it is vulnerable to any increase in upstream withdrawals'. In the same vein, Whittington et al. (2014:1-2) note that 'it is a simple but stark fact that Egypt receives virtually all of its surface water from the Nile and that these Nile flows come entirely from outside its borders. No other Nile riparian exhibits anything close to that level of dependency on the river'.

The current project of the Grand Renaissance Dam in Ethiopia is a clear example of how vulnerable Egypt is in the face of the upstream countries (Yahia, 2013). Considering the huge hydropower potential in the volume of water with a steeply sloping landscape, Ethiopia has the capacity to become the main power broker in the Nile basin (Baldassarre and Elshamy, 2011). As mentioned by Conniff et al. (2012:20), 'Ethiopia has at least six new dams proposed and four under construction'. The renaissance dam project - known also as the Grand Millennium Dam - was announced in April 2011 and was planned to be completed by 2017. As pointed out by the Ethiopian Prime Minister Abiy Ahmed, the full execution of the project to be delayed by 5 years due to technical issues and lack of commitment from the contractors' side (Getachew, 2018). The project, as described by Whittington et al. (2014:4), represents a quantum leap in Ethiopia's ambitions. As pointed out by Verhoeven (2011a), the dam is located about 40 km from the Sudan border and it is estimated to generate 5250 MW. This large dam in Ethiopia will have a major impact on Egypt as it is expected to result in significant reduction of the Nile flows into the country (Johnston, 2012). This fact adds more pressures on the limited amount of water that Egypt receives and makes the effective and efficient management of such a scarce resource a necessity.

#### 6.2.4 Water Availability

The River Nile – one of the world’s longest rivers- is the main source of water in Egypt<sup>2</sup>. As reported by the Global Water Partnership (GWP) (2014: 14), 90% of the country’s direct water needs and 97% of its agricultural irrigation requirements is provided by the Nile. As noted by Conniff et al. (2012:5), ‘[I]rrigated agricultural expansion over the last hundred years, often driven by foreign powers, has caused significant change in the use of the Nile water, and continues to be a major influence on the decisions around the Nile River use today’. In spite of this importance of the Nile to Egypt, Egyptian authorities have no control over the flow of the water into the country. As noted by Eckstein (2009: 411), 95% of the freshwater reaching Egypt originates outside the country with the majority coming from the Ethiopian Highlands.

Egypt’s water resources are severely strained and a gap between what is required for socio-economic development (76 billion cubic meters) and the annual quota of the surface Nile water received by Egypt as per the 1959 (55.5 billion cubic meters) keeps getting wider (MacAlister et al., 2012: 201) . The overall flow of the river is by nature seasonal as 80% of the flow occurs between August and October, which adds to the complications of water scarcity in Egypt. Furthermore, the recent measurements of the Nile have indicated that the flow is already diminishing (Paisley and Henshaw, 2013). According to Plan Bleu’s analysis of future trends, measured by the renewable natural resources exploitation index, water withdrawals will exceed water availability from 2005 to 2025 across the region including Egypt (GWP, 2012:15). According to the Food and Agriculture Organization Aquastat (2009), renewable freshwater per capita in Egypt is 923 cubic meters. This figure puts Egypt in the category of chronic water scarcity measured by international standards.

The situation of water resources scarcity in Egypt is expected to get even worse with the population of Egypt projected to double by 2025<sup>3</sup> and most likely to reach 114.8 million before it stabilizes in the year 2065 (Gad, 2017:40). As noted by Hefny and Amer (2005: 43), the steady growth of the Egyptian population at

---

<sup>2</sup> It is on record that the River Nile is one of the world’s longest transboundary rivers flowing a distance of more than 6,700 km from its farthest source at the headwaters of the Kagera Basin in Rwanda and Burundi to the Mediterranean Sea in Egypt (Cascão, 2012).

<sup>3</sup> Kinyangi et al. (2012: 30) have reported that “[P]opulation growth is the primary driver of agricultural intensification, which appears to enhance vulnerability to biophysical shocks in pastoral, agro-pastoral and cultivated production systems”.

such a high pace will result in an increasing demand for clean water, in turn reducing the share of the population's fresh and clean water to around 500 cubic meters by 2025. In addition to population growth, the gap between water demand and supply in Egypt is also expected to increase because of the expanding agriculture plans as well as urbanization processes and efforts of the Egyptian governments to provide higher living standards for the people (Swain, 2008; MacAlister et al., 2012). The gap between supply and demand can be even further complicated if one considers the high levels of uncertainty around these two elements. In this context, Johnston (2012: 61) has stated that 'uncertainties in estimates of both irrigation demand and available flows within the basin are so high that it is not possible to determine from existing information the stage at which demand will outstrip supply in Egypt'.

The Egyptian agricultural sector has the highest impact on water consumption with the agricultural irrigation consuming approximately 87% of all water resources (GWP, 2014). As noted by MacAlister et al. (2012: 202), almost 70% of the water consumed for agriculture is satisfied by surface water diverted in the Nile Valley. Nevertheless, Egypt's situation is not unique among the rest of the Nile basin countries wherein agriculture sectors represent major economic players in the national economy. As noted by Awulachew et al. (2012:1), '[A]griculture plays an important role in the economies of all Nile Basin countries. Yet the role and potential of water for agriculture are not well understood throughout the basin, and in some parts of it massive investments in agricultural water development have not achieved the desired levels of food security and poverty reduction'. Another important issue that impacts on water scarcity and water consumption in Egypt is the ambitious economic and developmental plans undertaken by the Egyptian government. The new valley project is a case in a point. This project, which is also known as the Toshka Project, requires the redirection of almost 10% of Egypt's allotment from the Nile in an attempt to establish a new Nile Valley and new inhabitable communities in the west desert (Paisley and Henshaw, 2013).

The issue of water scarcity has been clearly recognized by the consequent Egyptian governments. This has been noted by MacAlister et al. (2012: 207), who state that 'The challenge of managing scarce water resources, including groundwater, for sustainable development incorporating medium and long-term

use for a range of stakeholders is recognized as priority by the Egyptian government'. Major actors, such as the Ministry of Water Resources and Irrigation (MWRI), play an important role in developing plans and strategies to manage water resources in Egypt on a sustainable basis. As noted by a senior policy advisor in MWRI:

'the efforts of the Ministry in this regard do not only include water management plans for the surface water but also strategies to utilize the ground water in a sustainable manner. The MWRI uses the latest technologies to utilize and model groundwater and surface water. Additionally, the ministry tries to reach the wider population via the mass media and attempts to raise their awareness with regard to the sustainable use of water both in households and in irrigation. An equally important role of the MWRI is to coordinate and link water activities and decision among all stakeholders at the national and international levels' (Interview 11).

In addition to water scarcity, water quality is a major concern when we consider the case of the River Nile basin. The quality of water in the River Nile is deteriorating due to the resulting household and industrial waste disposed directly into the river without proper treatment. Another contributing factor to the degradation of the Nile water quality is the runoffs from agriculture, which contaminate the water with pesticides and fertilizers (Golia, 2008). These sources of pollution can cause health hazards to the population, which is rapidly increasing and adding more demands for clean water (Swain, 2008).

### **6.3 The River Nile's Transboundary Governance: The Institutional Context**

The use of Nile River water is a cause for transboundary cooperation and conflict (Conniff et al., 2012:5). The aim of this section is to provide a comprehensive analysis of the water governance regime in the Nile basin, and to provide an informed investigation of the current institutional set-up. Such an in-depth analysis is required to contextualize the debate of water governance in Egypt and to provide an overall picture of the broader water governance framework within which the water sector in Egypt is working. The analysis of the Nile's transboundary governance is equally important to evaluate the cooperative efforts exerted by stakeholders to develop a comprehensive water governance system that benefits all the countries in the Nile basin. A critical analysis of water governance arrangements is also needed to underline the success, failure and pitfalls of almost a decade of cooperation in the Nile basin. Such an evaluation

would be helpful in looking into some future scenarios of governance arrangements in the Nile valley.

### **6.3.1 The Hydro-Politics of the Nile Basin**

The River Nile's catchment basin covers approximately 10% of the African continent and the river is shared by eleven riparian states: Ethiopia, Sudan, South Sudan, Egypt, Rwanda, Tanzania, Uganda, Burundi, DRC, Eritrea, and Kenya (GWP, 2011:1). This very fact makes water governance arrangements, let alone, the effectiveness of transboundary governance of the Nile River basin a challenging and complex issue. The reason behind this is that governance arrangements and the associated institutional architecture are normally products of the political, economic, social, and legal contexts. In other words, one-size-fits-all governance systems and arrangements will not simply work for all eleven sovereign states (Schreiner et al., 2011). Different approaches are needed to design water governance arrangements in each country, taking account of the contextual factors which provide the overall structures within which all governance arrangements and policy actors operate. The fundamental question that needs to be addressed in this regard is how to develop governance arrangements which guarantee the equitable sharing and protection of River Nile water (See Stinnett and Tir, 2009).

Another important feature of the transboundary water governance in the River Nile basin is the hydrological and economic interdependence created among involved countries (Baldassarre and Elshamy, 2011). Such interdependence establishes power relations and structures which may benefit one party at the expense of the others. The concept of power in this regard is relative as there is no one actor who possesses all the powers. In other words, power in the context of the interdependent relations in the Nile basin is a two-way relationship and very contextual. For instance, an actor could be more powerful than others because of its geographic location; however, when it comes to its ability to negotiate legal agreements, its power could be limited compared to the other parties involved (Mayers and Vermeulen, 2005). This conceptualization of power is quite relevant to describe power relations and structures in the Nile basin. The geographic nature of the basin has given upstream countries the power to influence water policies because they are the main contributors to the volume of water running through the river. From this angle, power relations are leaning

more towards the upstream countries wherein water decisions can dramatically affect water sources in downstream countries (Zeitoun and Warner, 2006).

As stated by Cascão (2012: 230), '[I]n hydro-political terms, the basin has been characterized, historically, by the existence of low-level conflict (mainly diplomatic), opposing the two downstream riparians and main users of Nile water (Egypt and Sudan) and the upstream riparians, the main contributors to the Nile flows'. Hence, the overall situation is characterized by long-standing historical power asymmetrical relations. In this context, power asymmetry can be noticed between upriver and downriver countries, particularly Egypt, at different material, bargaining and ideational levels. At the material level, in comparison to Egypt, upstream countries are lagging behind in terms of GDP, economic diversification, external political support and access to international funding. Added to this, the bargaining power of upstream countries in terms of their ability to influence regional and global political and water agendas and also the basin's legal negotiations appear to be limited. From an ideational perspective, a gap exists between upstream and downstream riparians with limited capacities of upriver countries to produce and disseminate knowledge and to influence policy discourse. These forms of power asymmetry between Egypt and the upstream countries, especially Ethiopia, have created an ongoing tension between these two countries as the latter tries to fight against what it thinks is the hegemonic role of Egypt in the existing water governance system.

Following on from the above discussion, it can be noted that the asymmetric upstream/downstream power relationships pose many challenges for Egypt and Egyptian policymakers, who have to take account of what actions are taken by upstream countries and calculate the potential impact on water governance in the country. Managing water resources in transboundary governance systems requires considerable attention from water decision-makers as it poses many diplomatic challenges (Conca and Mei, 2006).

With the pressures on water increasing substantially in the River Nile basin, tensions among involved countries are increasing, which calls for diplomatic efforts to mitigate potential conflicts. As noted by a senior civil servant in the Egypt Water Regulatory Agency (EWRA):

'We try to do our best to respond to water decisions taken in other River Nile basin countries in a way that protects our national interest. This is not to say that

we react all the time to their actions as in some cases we take a proactive approach and get involved in negotiations and diplomacy to stop some decisions or at least reduce their potential negative impact on Egypt' (interview 9).

In spite of the diplomatic efforts exerted by the Egyptian negotiators in order to minimize the negative impact of the Grand Renaissance Dam in Ethiopia, no real progress has been achieved as noted by Dr Mohammed Nassr Al-deen Allam the ex-water minister in Egypt. According to his view, this issue requires political intervention because diplomatic efforts have not been fruitful so far. He has also mentioned that there is no point in negotiating the potential negative impacts of the dam on Egypt as almost 50% of the project has already been completed. This progress, as well as the support of the project from the Sudanese side, is weakening the bargaining powers of the Egyptian negotiators (interview at Almasry Alyoum newspaper, 25/7/2015).

### **6.3.2 The River Nile's Transboundary Governance: Regional Dimensions**

The water governance arrangements in the Nile basin have been altered significantly in the past decade. Based on the principle of multilateral cooperation, new transboundary MLG settings have been originated, (Cascão, 2009; 2012). At the institutional level, the allocation of water resources in the River Nile basin is governed by several agreements and institutions, which dates back to the colonial era. Such historical treaties and practices 'continue to significantly shape directions of future Nile water use' (Conniff et al., 2012:5). In order to protect its interests in Egypt and other British colonies in Africa, the United Kingdom has entered into agreements and signed off treaties with the upstream countries (Tvedt, 2006). The aim was to guarantee the flow of the River Nile into Egypt and to prevent upstream countries from taking any action or developing any projects which may affect this goal and harm the interests of Egypt. As Brunnée, and Toope (2002) state, the first agreement was in 1902 between Britain and Ethiopia. According to this treaty, Ethiopia was not allowed to take any action or work on any project that could divert the flow of the River Nile and prevent it from reaching Egypt. In return, Britain recognized the independence of Ethiopia. In 1941, Ethiopia disavowed this agreement and entered into a new series of conflicts with Egypt and Sudan (Swain, 1997).

Among all water agreements in the Nile basin, the 1929 and the 1959 agreements were the most controversial ones. The major point of contention



revolves around these two water agreements allocating Egypt and Sudan specific volumetric water but not the other riparians. In 1929, an agreement was reached between Egypt and Sudan, which emphasized the high priority of the Egyptian water needs from the River Nile (Waterbury, 2002). This treaty has given Egypt the right to reject any future projects or constructions in other former British colonies that affect the flow of the Nile into the country and reduce the share of Egypt from the Nile water (Tvedt, 2006). This treaty was challenged and rejected by other Nile basin countries, which claim that the agreement is no longer valid given the changes in the economic and demographic situations in Nile basin countries at the time being. On the other hand, Egypt is referring to the principle of state succession as one of the international law principles that validates the 1929 agreement and obliges the Nile basin countries to respect it and honour their stated obligations (Waterbury, 1979). In addition to this, Egypt also insists on keeping its historic bestowed powerful rights based on the demonstrated use of the Nile waters over time. According to most water law regimes the rule of 'first in time, first in right' is widely recognized and accepted (Whittington et al., 2014:2).

The controversial 1929 agreement was replaced by the Agreement for the Full Utilization of the Nile Waters between Egypt and Sudan in 1959 aiming at 'the full utilization of the Nile'. According to this agreement, Egypt and Sudan were named as the only beneficiaries from the entire flow of the Nile at the Aswan High Dam<sup>4</sup> (Abdel-Gawad, 2004). The entire flow of the Nile was allocated between the two countries, with 55.5 billion cubic meters going to Egypt and 18.5 billion cubic meters going to Sudan (Whittington et al., 2014:2). This share constitutes almost 90% of the Egypt's water budget (ICARDA, 2011: 15). This means that no water was left for the other Nile riparian countries including Ethiopia, which contributes over 80% of the Nile flow. Despite the fact that the 1959 agreement has somehow protected the Ethiopian developmental plans by limiting Sudan's share of water to 18.5 billion cubic meters, a volume which is way less than Sudan's needs for irrigation, the agreement was not welcomed by Ethiopia or by the other upstream countries (Allan et al., 2013). As pointed out by Salman (2011) the 1959 agreement triggered a new series of regional conflicts, as the

---

<sup>4</sup> Aswan High Dam (AHD), completed in 1970, is the largest man-made reservoir and produces 2100 megawatts (MW) of electricity – about half of Egypt's total power supply (Conniff et al. 2012:18).

other riparian countries were not happy with the provisions of the treaty. As put by Whittington et al. (2014:2), '[T]he 1959 Nile Waters Agreement became the bedrock for the development of irrigated agriculture and hydropower generation in Egypt and Sudan, but it induced longstanding bitterness and a climate of mistrust among the other eight Nile riparians existing at the time'. In this context, the other Nile basin countries invoked the Nyerere Doctrine which states that all treaties concluded during the colonial era shall be subject to a two-year negotiation process among interested parties. If the negotiated parties fail to come to an agreement, the disputed agreement will lapse.

Conflicts between upstream and downstream countries pose challenges for water governance arrangements in the Nile basin as a whole and within individual states. On the one hand, the downstream states, namely Egypt, defend what they consider as their historical and natural rights to the full volume of the Nile. Accordingly, the upstream countries have no rights to take any arrangements that may disrupt the volume or the quality of water coming to Egypt. Ethiopia and the rest of the upstream countries hold an opposing view that all the treaties concluded during the colonial era favour the downstream countries at the expense of the upstream one and therefore, they are not obligatory (Waterbury and Whittington, 1998; Zeitoun and Warner, 2006). From their perspective, upstream countries have the right to utilize the Nile in a way that serves their developmental plans and projects regardless of the consequences on the volume or the quality of water (Bulto, 2009).

In an attempt to overcome such dichotomous views on historic and natural rights versus the rights of utilization and development and after long and strenuous negotiation processes, the first step towards regional cooperation in the Nile basin was taken by establishing an institutional framework under the name of the Nile Basin Initiative (NBI) in 1999. As per the Nile Basin Act, the main aim for establishing NBI was to 'foster cooperation and sustainable development of the Nile River for the benefit of the inhabitants of those countries' (NBI, 2002). The establishment of the NBI and the negotiations for the Cooperative Framework Agreement are the major steps supporting the cooperation process in the Nile basin (Cascão, 2012). The intention was to create an overall legal and institutional framework to organize water allocation and water management in the River Nile basin. As noted by NBI (1999: 65), the goal was 'to achieve

sustainable socio-economic development through the equitable utilization of, and benefit from, the common Nile basin water resources'. To this end, the NBI has devised two complementary mechanisms: the Shared Vision Programs (SVPs), and the Subsidiary Action Programs (SAPs).

The SVPs aim at enhancing trust and cooperation among the Nile basin countries as well as helping the Nile riparians in developing an investment friendly environment. On the other hand, SAPs focus primarily on identifying cooperative opportunities in the Eastern Nile and the Nile Equatorial Lakes regions. Institutionally speaking, the NBI was run by three main bodies: the Council of Ministers [NIL-COM], the Technical Advisory Committee [NIL-TAC], and the Nile Secretariat [NIL-SEC]. The overall role of NIL-COM was to provide guidance on policy issues while NIL-TAC's role was to provide a technical opinion on the proposed projects. The NIL-SEC was responsible for monitoring the delivery of the projects in addition to integrating and coordinating cooperative efforts and information sharing (see Cascão, 2009). The efforts to establish a holistic cooperative framework via the aforementioned mechanisms have not been a complete success. However, the NBI has resulted in the establishment of a debatable Cooperative Framework Agreement (CFA) among a number of the Nile basin countries. It is worth mentioning in this regard that the established CFA excludes downstream countries (i.e. Egypt, Sudan and South Sudan).

The international aspect of water governance in the River Nile basin started to become obvious with many overlapping technical initiatives established under the umbrella of the NBI to investigate and provide solutions for technical and hydro-meteorological issues. These efforts were led by the United Nations Development Program (UNDP), which played an active role in facilitating discussion in framing the issues under examination. Nonetheless, the international efforts on the technical side did not ease the tensions and the major disagreement between upstream and downstream countries. This disagreement has resulted in the rejection of the formation of a new organizational body under the name of UNDUGU. The aim of this organization was to forge and enhance economic, social, cultural, and technical ties among the riparian countries in the Nile basin as a step towards creating a basin-wide management system. The upstream countries, namely Kenya and Ethiopia, have opposed the idea just

because they thought that the UNDUGU is a new tool to enhance the Egyptian hegemony in the River Nile basin.

The Technical Cooperation Committee for the Promotion of the Development and Environmental Protection of the Nile Basin, known by its acronym TECCONILE, represents another institutional development towards the establishment of a legal and regulatory framework in the Nile basin. The broad goal of TECCONILE was to develop the Nile basin via enhancing cooperation among the Nile basin countries. To this end, TECCONILE has several objectives at the level of improving infrastructure projects and building the capacity of national institutions in order to be able to develop master plans at national levels to be integrated later in a comprehensive Nile Basin Action Plan. As Brunnée, and Toope (2002) note, the Nile basin countries initiated the D3 Project, which aimed to address legal and institutional issues and it was also under TECCONILE sponsorship. As was the case with UNDUGU, and for the exact same reasons, Ethiopia and Kenya refused to join TECCONILE in full membership. In addition to their rejection of the Egyptian dominance as they see it, the two countries have criticized the framework of TECCONILE as being a failure with regard to addressing the main issue of equitable water allotment among the basin countries (Paisley and Henshaw, 2013).

In spite of the opposition of Ethiopia and Kenya for the TECCONILE, the rest of the Nile basin countries have succeeded in developing the Nile River Basin Action Plan (NRBAP). The questions of economic development and the equitable utilization of water resources have been addressed for the first time in the NRBAP (Zedan, 2013: 66). The plan was formally adopted in 1995 by all Nile basin countries and focused primarily on developing a number of development projects to benefit all countries. However, because of the competition among the basin countries as well as the limitation in resources, many of the provisions of the action plan have not been put in place. This is not to say that the efforts of TECCONILE have gone in vain, as it acted as a hub for information exchange among the riparian countries as well as a catalyst for cooperation (Paisley and Henshaw, 2013). The NRBAP was also instrumental in the founding of the NBI in 1999 (Dombrowski, 2003)

At the informal level, and in an attempt to facilitate discussions and negotiations among the Nile basin countries, a series of conferences known as the Nile

Conferences started in 1993 and continued on a yearly basis until 2002. Delegates to these conferences did not hold any formal status and they were involved in discussions and drafting any joint statements. Discussion topics were arranged in these meetings based on the level of urgency with some sessions allocated to open discussion. The conferences covered many technical as well as policy issues. As noted by Hefny and Amer (2005), those conferences substantially increased the basis for dialogue and publicly debated several crucial and innovative issues. In that sense, the Nile conferences have paved the way for the establishment of a multilateral, basin-wide cooperation. Discussions in these meetings were sponsored by different international organizations including the Canadian International Development Agency (CIDA), the UNDP, and the World Meteorological Organization. The involvement of those international agents represents another manifestation of the MLG nature of the water governance system in the Nile basin, wherein institutions are created as result of interactive processes between global, regional, and national levels.

### **6.3.3 The River Nile's Transboundary Governance: International Dimensions**

The role of international agents, especially the World Bank (WB) and the UNDP, was paramount since the very early stages of creating the NBI. In that sense, regional actors of the Nile Basin were involved in bilateral and multilateral agreements with international donors including the World Bank, United Nations Development Programme (UNDP) and Canadian International Development Agency (CIDA). This aspect reflects the international dimension of water governance arrangements in the Nile basin and indicates the ways in which global level water governance influence regional and in turn national levels (Hira and Parfitt, 2004; Cascão 2012).

In addition to being the main financiers to the NBI, the Nile basin countries called upon international agencies to support them in their pursuit of developing an overall governing framework for water allocation and management in the basin (Hira and Parfitt 2004). The lack of funding and absence of expertise have made the basin countries heavily reliant on international organizations and donors' support to implement the Nile River Basin Action Plan and the other arrangements. In this regard, the WB for instance, has played a major role as a coordinator for donors' investments. At the same time, the UNDP and CIDA have

also assisted in encouraging and organizing cooperative projects in the Nile basin. In fact, the role of those international agents has gone way beyond cooperation and coordination to become directly involved in the revision of the established frameworks, policies and plans. They were also key players in prioritizing the issues and framing policy debates (Hira and Parfitt, 2004). As noted by Paisley and Henshaw (2013: 63), 'The World Bank, UNDP, and CIDA reviewed the Action Plan and recommended consultations with Nile countries'. Accordingly, further review of the Action Plan to be done by an International Advisory Group (IAG).

As such, those international agents were involved in crucial activities shaping the main features of the water governance system in the Nile basin. This includes: definition of collaboration projects; refinement of a proposed priority portfolio; presentation of findings to the water ministers; the establishment of a donors' consortium called the International Consortium for Cooperation on the Nile (Sadoff and Grey 2005: 423). In this context, the review process by IAG has underlined the following areas as potential drivers for cooperation in the Nile basin: creating a shared vision among the River Nile basin countries; moving from the planning stage to taking concrete action on the ground; pre-emptive facilitation of negotiations and tensions; simultaneous promotion of country and inter-country dimensions; building trust and confidence among the basin countries (Paisley and Henshaw, 2013).

A quick look at the list produced by the IAG reveals that working on the identified dimensions is problematic especially if one takes account of the long history of competition and distrust between the countries in the Nile basin. From this perspective, creating a shared vision and trust building processes is not be an easy task. In an attempt to build-up a shared vision, the WB has taken the lead via its Senior Water Advisor for the Africa Region who played a fundamental role in reforming national water policy agendas to incorporate and focus on cooperative projects instead of unilateral actions. To this end, the parties involved in negotiations were encouraged to move away from divisive issues such as the allocation of water rights to focus more on potential collective benefits that can be reaped from cooperation (see Sadoff and Grey, 2005; Gersfelt 2007). In other words, instead of focusing on the actual allocation percentages and negotiating who gets what from the Nile, the basin countries

should look at how to benefit each other through the established development projects along the river. The efforts in this regard have culminated in developing a regional framework for cooperation.

#### **6.4 Implementation Challenges and the Effectiveness of Water Governance Institutional Arrangements**

The aforementioned discussion of the transboundary governance in the Nile basin has indicated that the attempts to develop an overall governing framework for cooperation and water management and allocation in the basin have not been a complete success. The hydro-political cooperation process was bumpy and was full of difficulties. According to Cascão (2008), the Nile is a politicized and securitized basin and the results achieved with regard to developing transboundary governance arrangements underline a mix of cooperative mutually beneficial projects and continuing diplomatic and legal deadlocks between upriver and downriver countries.

Despite the generous funding from international donors directed towards the establishment of a cooperative water governance system in the Nile basin, none of the institutions established in the 1980s and 1990s were holistic enough to include all the Nile basin countries. Major up-streamers including Ethiopia, Kenya and Tanzania have always been sceptical of those institutions and were hesitant to join cooperative governance arrangements in full capacity. According to their view, established cooperative initiatives were enhancing the existing power asymmetric relations in the Nile basin. Most of those projects and mechanisms such as the Undugu and TeccoNile were controlled by downstream countries and worked in their favour. Additionally, those governance arrangements have not directly addressed the fundamental issue of unfair water allocation of the Nile waters because of the colonial era water agreements (Arsano, 2004).

Consequently, early cooperative efforts and initiatives have failed to establish a basin-wide water governance system to manage and allocate waters in the Nile basin. The main focus was on technical issues and major water governance issues such as economic development and water infrastructure projects and water investment have received little attention. Realizing the shortcomings of previous collaborative projects, the recent initiatives including the NBI tried to move forward and to address some of issues that have been neglected by old governance arrangements. The penultimate goal of the NBI was to create a

Cooperative Framework Agreement (CFA) to govern water allocation and water management in the Nile basin. That means, the NBI was a means to an end but it was not meant to be a permanent water governance mechanism. In other words, the NBI was regarded as a transitional cooperative mechanism to be replaced at a later stage by the Framework Agreement, CFA as permanent organization. Nonetheless, because of the disagreement between the Nile basin countries on fundamental water issues, the NBI stayed in place for almost a decade, which was much longer than expected. During this time, the NBI has succeeded in developing and implementing several projects but never reached the overall goal of creating the CFA (Zedan, 2013).

The implementation of the NBI and the associated framework was faced with many obstacles, chief among which was the rejection of Ethiopia to abide by a well-established, fundamental principle of international law which is the principle of prior notification. This principle regulates the conduct of countries with regard to international water resources and dictates that all riparian countries have to be notified in advance with any projects, construction, or actions to be taken by any other country that may cause harm to the interests of others. That means any water decision that may affect the current utilization of the Nile has to be declared beforehand and the Nile basin countries have to be notified and provided with all technical information needed to evaluate the potential impact of this decision. From the Ethiopian point of view, this rule restricts its sovereign rights to use the water of the Nile flowing via its territories (Waterbury and Whittington, 1998).

In addition to the Ethiopian sceptical position with regard to the benefits of cooperation, water security, especially for the downstream countries, has been a matter of concern. The downstream countries, namely Egypt and Sudan, insist on keeping the current flow of the Nile as per the 1959 agreement untouched. From their perspective, the flow of the Nile at the current pace is a matter of national security and any change in the use, which may result in a reduction in water allotments, will threaten the water security. As mentioned previously, the idea of sticking to old international agreements to determine water rights and the allocation of water in the Nile basin is highly challenged by other riparians, particularly Ethiopia, which obviously holds an opposing position focusing on its



absolute right to use the Nile crossing its land the way that serves its developmental plans (Zeitoun and Warner, 2006).

Finally, the issue of funding the NBI has also been a major challenge for the initiative. The majority of funds used to come from international donors particularly the WB the UNDP and CIDA. In this respect, it can be noted that the donor community has contributed generously to hydraulic infrastructure projects in the Nile basin (Geletu, 2008). A trust fund was created in 2003 under the name of the Nile Basin Trust Fund (NBTF) to work as a funding mechanism to the NBI projects. The NBTF was the main source of funding projects in the Nile basin; however, other bilateral and multi-lateral donors have funded projects outside the trust fund. Despite the multiple sources of funding for the NBI, the contributions from the basin countries used to be delayed which had affected the implementation process negatively (Paisley and Henshaw, 2013).

In 2010, the five Nile basin countries including Ethiopia, Uganda, Tanzania, Rwanda, and Kenya decided to move forward and to draft the long awaited CFA. Egypt and Sudan plus the other countries, which did not sign the agreement in 2010, were given one year to join. In this context, the universal adoption of the CFA was challenged on the ground of water security. According to article 14 of the agreement, the Nile basin countries agreed 'to work together to ensure that all States achieve and sustain water security and not to significantly affect the water security of any other Nile Basin State' (CFA, article 14:24). This provision was rejected by Egypt and Sudan, who insisted on rephrasing this article to become the signatory states agreed to work together to ensure that all states achieve and sustain water security and not to adversely affect the water security and current uses and rights of any other Nile Basin state.

The change in the way in which this article is formulated only reflects a disagreement on the terminology used but it also highlights a fundamental difference in opinion between the upstream and downstream countries in relation to the way the water should be allocated. The reformulation has been rejected by the up-streamers, who insisted that accepting the proposed article by Egypt and Sudan would preserve the old water agreements. Such a disagreement has brought the negotiators between those countries to a deadlock and the issue of water allocation mechanisms and methods is still hanging (Tawfik, 2016). Nonetheless, this was the first time in the history of the Nile basin in which all

upstream countries formed a unified front facing Egypt and Sudan. As such, the hydro-political dimension of the water governance in the Nile basin has changed. The political pressures have been intensified by the upstream riparians on Egypt and Sudan and old grievances among the Nile riparians were resurrected (Cascão, 2009).

Because of the high stakes of Egypt not to allow such an agreement to be put in place when reaching the two-thirds majority required, pressures were put on Burundi and Congo by Egyptian officials to prevent them from signing the CFA. As reported by *Al-Masry Al-Youm*, an Egyptian newspaper in 2010, the diplomatic efforts of the Egyptian government have resulted in an acknowledgement by Burundi that any water agreement that works against the Egyptian interests should not be signed by the other Nile basin countries. Nevertheless, the position of Burundi changed after the fall of Mubarak's regime in Egypt, which created a political vacuum that encouraged Burundi to retreat from its support of the Egyptian position and to sign the agreement in 2011 (Tawfik, 2015).

The CFA is now ready for ratification thanks to the change in the position of Burundi, which opens a new page in the hydro-political history of the Nile basin. According to the draft of the CFA and following the ratification of the proposed agreement, a new mechanism by the name the Nile River Basin Commission has been proposed in order to replace the NBI (Eckstein, 2010). The draft of the CFA agreement has done much with regard to the allocation mechanism of the water in the Nile basin. Instead of focusing on specific allotments for each country, the CFA talked in general about the equitable use of water. Such a generalization has not been welcomed by downstream countries namely Egypt and Sudan, which insisted on receiving the exact amounts stated in the colonial era agreements (Zedan, 2013: 39).

Putting the cooperative efforts in the Nile basin in the balance, Paisley and Henshaw (2013) have posed a major question that given the cooperative spirit that initially gave rise to the NBI, why has the negotiation of the CFA been so excruciatingly slow and seemingly unsuccessful? In an attempt to answer this question, the authors have underlined several of the following explanatory factors the first among them is the weakness of the NBI in addressing and solving fundamental differences in opinion between upstream and downstream

countries. Another factor that explains the slow pace of the CFA negotiations is the unsustainable water practices by some countries which have not been fully and effectively handled by existing governance institutions and mechanisms (Hefny and Amer, 2005).

From a good governance perspective, the process of negotiating water governance institutions including the NBI and the CFA has left non-state actors and other stakeholders unrepresented. Added to this, the tensions between Ethiopia and Egypt have been fuelled by the new construction projects in the Nile basin, particularly the Grand Renaissance Dam by Ethiopia. Another important issue of contention related to the new construction development projects in the Nile basin is the appearance of new international actors such as China as the main player in the construction and funding process to replace the old players including the WB and the UNDP. Finally, the political unrest in downriver countries has shifted the focus of their governments away from addressing water governance in the Nile basin (Paisley and Henshaw, 2013: 11-12).

With the main features of the hydro-political relations and dynamics in the Nile basin identified and having analysed and evaluated the cooperative initiatives and institutional set-up, the discussion now moves into potential future scenarios with regard to the transboundary governance of water in the Nile valley.

## **6.5 Future Scenarios for Transboundary Water Governance in the Nile Basin**

In the absence of a ratified CFA, the water governance in the Nile basin faces several potential risks, which may hamper the cooperative initiatives and collaborative water management efforts. Chief among these risks is the possibility of not creating a Nile Basin Commission which will affect the potential of future sustainable cooperation in the basin. Added to this, the frustration of the upstream riparians is more likely to increase due to the lack of potential investment. In the absence of the NBI's shared vision the Nile riparians would be more inclined to continue with, unilateral water development projects in an uncoordinated fashion. This in turn will interfere with the willingness of international donors to support and finance the cooperative process and the investment projects. In the worst-case scenario, the NBI may collapse as have other cooperative efforts in the Nile basin (Zedan, 2013; Tawfik, 2016).

Given such circumstances and based on a reading of the current geopolitical situation in the Nile basin, four alternative emerging scenarios could be identified (see Cascão, 2009; 2012):

**Scenario 1: ‘One Nile’:** this scenario is based on the assumption that the CFA will be signed and ratified by all Nile basin countries in the short or medium term. If that happens, a new all-inclusive cooperation mechanism by the name Nile Basin Cooperation will be established and replace the existing transitional NBI. All the Nile riparian states will be members of the newly instituted river basin organization.

**Scenario 2: ‘Two-speed Nile’:** the underlying assumption in this scenario is that the CFA will not be fully adopted by all the Nile riparian states and only some of them will sign and ratify the agreement while the others will either stay out completely or join just as observers. In such a case, an all-inclusive mechanism for cooperation will be difficult if not impossible. However, there are still some cooperation venues among the signatories of the treaty.

**Scenario 3: Cooperation-as-usual:** this scenario assumes that the two-thirds majority required for putting the CFA in place will not be reached and that the CFA will be totally abandoned. In this case, the opportunity of an overall cooperation mechanism in the Nile basin will be completely lost and the Nile riparian states are most likely to continue cooperating based on a multi-lateral agreement framework.

**Scenario 4: End of multilateral approach:** this extreme scenario suggests that in the absence of a CFA in the Nile basin there is a possibility for undermining the cooperation efforts among the Nile basin countries. That means the possibility for all the Nile riparian states to work collaboratively is minimal and there is a big chance for each one of them to act individually on whatever water issues and projects they see benefiting their national interests.

As can be seen from the aforementioned scenarios, the future for establishing collaborative water governance arrangements in the Nile basin is really fuzzy. No one can predict with a high level of confidence what this future will look like or what will be the governing mechanisms. The existing fundamental differences between upstream and downstream countries further complicate the scenery. The previous water governance arrangements, as mentioned before, did not

succeed in addressing crucial water disputes and disagreements among those countries with regard to how to allocate and manage the River Nile waters. Given that, it is highly unlikely for the one Nile scenario to take place since the disagreement between upstream and downstream states will definitely prevent the development of an overarching water governance organization in the Nile basin. It is also highly unlikely for the cooperation in the Nile basin to stop completely as suggested by the end of the multi-lateral approach scenario given the ambitious developmental plans held by the Nile basin countries. Dropping these two scenarios from the calculations will leave us with the partial cooperation possibilities as suggested by the second and the third scenarios. Nonetheless, the historical as well as the current water disputes between Egypt and Ethiopia in addition to the present political context suggest that more projects will take place on business as usual basis.

## **6.6 Conclusion**

To conclude, the water governance of the Nile basin is characterized by regional tensions between the Nile riparian countries, which make cooperation among them difficult if not impossible. Adding to this, many of those countries such as Egypt and Ethiopia have a long history of conflicts and distrust. The internal conflicts and civil wars in other countries, including Sudan, add to the complications of the transboundary water governance in the Nile basin. All these challenges necessitate more efforts from the international community to put an end to a long-standing history of tensions and conflicts on waters in the Nile basin. A new basin-wide collaborative governance mechanism needs to be established to govern the allocation and management of waters in the basin and bridge the gap in opinions between upriver and downriver countries. In other words, the adoption of the Cooperative Framework Agreement by the Nile riparians will determine the future of cooperation in the Nile basin. As the discussion in this chapter has indicated, coming to an agreement with regard to the adoption and the ratification of the CFA is not an easy ride given the fundamental resistance of downstream countries namely Egypt .

One of the major shortcomings associated with the previous water governance mechanisms in the Nile basin was the inability of governance arrangements and institutions to address and resolve crucial and sensitive water issues. Chief among those issues was the longstanding historic tensions between downstream

and upstream countries in relation to the allocations of water rights in the Nile basin (Zedan, 2013). As the discussion in this chapter indicated, two main agreements form the subject of this conflict: the 1929 agreement signed between Egypt and Great Britain as well as the 1959 agreement between Egypt and Sudan. Any future water governance arrangements in the Nile basin have to revisit and reconsider these two agreements for several reasons. *Firstly*, these two agreements still have a major negative impact on water governance arrangements among the basin countries. The upriver states consider these two agreements as the main obstacles for regional cooperation in the Nile basin for the reason that they are partial in scope and do not include all of the Nile riparians. *Secondly*, the mentioned agreements allocate specific volumetric shares of the Nile waters to Egypt and Sudan without doing the same for the rest of the Nile riparians. *Thirdly*, and from a legal perspective, these agreements are only binding to the signatories, which gives the other countries the right to question them and to ask for fairer new institutions to replace them. Dealing with this crucial water issue and coming up with new water governance arrangements which guarantee a fair distribution of waters among downstream riparians and the upstream neighbouring states will help overcome major stumbling blocks in hydro-political relations in the Nile basin.

Equally important to revisiting and revising the archaic water institutions in the Nile basin is the continuity of collaboration among the Nile riparians with respect to the new water projects and constructions on the Nile. As pointed out earlier, 'pressure on water resources remains the key factor in the political and economic development of the Nile Basin countries' (Conniff et al., 2012:20). With many upstream countries trying to pursue their rightful plans to development and with the population of some other countries continually growing at a high pace, the pressures on water resources are expected to intensify. The absence of a collaborative water governance mechanism may result in an aggravation of the conflicts and tensions among the Nile riparians especially when countries start to take individual water decisions that can impact negatively on water availability in other countries. A glance at the Nile basin reveals that many water projects are planned and several are under construction in different countries. The establishment of those projects will have a direct impact on the flow of the Nile and will definitely reduce the amount of the Nile waters reaching downstream

countries, particularly Egypt, the last recipient of the Nile waters. Building new dams and water projects is not all bad as long as the new establishments carry benefits to all stakeholders. This cannot be achieved in the absence of a water governance collaborative mechanism that facilitates cooperation and negotiations with the aim of achieving mutual benefits and minimizing negative implications. Whether this collaborative mechanism will be developed and put in place is still a matter of speculation. In this context, it can be concluded that, the jury is still out on whether the Nile basin is gradually moving towards a new water governance regime marked by multilateral cooperation and joint management of the transboundary resources, or whether partial cooperation and unilateralism will dominate the decades to come.

Unpacking the water governance arrangements at the regional level was a fundamental step to nationally analyse the water governance in Egypt. At the end of the day, water policies, decisions, institutions and players in Egypt do not exist in a vacuum. Hence, with the water governance system in the Nile basin explained, the discussion in the next chapter will focus on water governance arrangements in Egypt.

## **CHAPTER 7: WATER REFORMS IN EGYPT: THE NATIONAL LEVEL GOVERNANCE**

### **7.1 Introduction**

Following on from the previous discussion of water issues and institutions at the regional level in Chapter 6, and guided by the theoretical discussions of water governance and structure-agency dialectic relations in chapters 2, 3, and 4, this chapter focuses on the national level water governance in Egypt. One of the major challenges in examining water governance arrangements in Egypt is the highly fragmented nature of the legislative environment of the water sector as the sector is still lacking a unified water law that governs all stakeholders and clearly identifies roles and responsibilities. Such a unified water law is an integral part of what Saleth and Dinar (2004) called the 'software' component of water governance systems (see chapter 3). Another difficulty associated with the investigation of the Egyptian water governance is the number of policy actors involved in making and enforcing water policies and regulations in the country. A glance at the institutional framework of the water sector reveals that the overall structure of the water industry is highly complex with too many state actors and agencies involved in different capacities in the water decision-making processes. Such institutional complexity in addition to the weakness and fragmentation of the legal environment hinder the proper administration of water governance systems or what can be called the 'hardware' component of the water governance system (see chapter 3). Finally, knowledge about water governance in Egypt is dispersed in a range of documents and lacks a comprehensive analytic framework that combines previous work in this area in a well-documented manner. This final observation indicates the importance of conducting such an in-depth systematic examination of water governance arrangements in Egypt done in this study.

Having said that, the main aim of this chapter is to move from the regional level governance of the water sector in Egypt explained in Chapter 6 to the national level governance in an attempt to produce a vivid picture of this vital sector. Based on the documentary analysis of collected water policy documents and official reports, in addition to the analysis of the interview material, the water sector in Egypt will be mapped out. The main features of its legal and regulatory environments will be identified in addition to the analysis of the complex



institutional framework and the roles and responsibilities of the key policy actors. In order to contextualize the regulatory and institutional analysis, an overview of the development of the water sector in Egypt and the main drivers and stages of reform will be provided first.

## **7.2 Water Sector Reforms in Egypt: An Overview**

This section provides an overview of the development of the water sector in Egypt and the reform process. The aim is to pave the way for a detailed discussion of the legal and regulatory environment as well as the overall institutional framework. The early development of the Egyptian water sector dates back to the nineteenth century, particularly in 1860 when the first group of water companies was founded in Alexandria and the Suez Canal cities by a group of private foreign investors. Following the 1952 revolution, Nasser's regime adopted a socialist ideology under which a nation-wide nationalisation program was devised. Many private industries, including the privately owned water companies were brought back under the direct control and management of the state in 1956. New strategies and policies were formulated to encourage investments in the water industry, particularly in rural and provincial areas. To this end, two governmental agencies were instituted to manage and develop the water supply and sanitation (Sharabas, 2000).

The Open Door Policy, known locally as *Infitah*, was introduced under the regime of Anwar Sadat, the successor of Nasser, in an attempt to attract foreign investment from the Gulf and from international donors. As a result of this policy, international development agencies, including the United States Agency for International Development (USAID), started operating in Egypt and initiated several water projects during the 1970s and the 1980s. These projects aimed at providing technical assistance to water and sanitation organizations in big cities including Greater Cairo, Alexandria, and the Suez Canal cities. Rural and provincial cities wherein almost three quarters of the population live did not receive as much attention from international agencies. The lion's share of the projects went to the big urban cities and communities with almost half of the aid directed to assist water and sanitation organizations in these areas (World Bank, 1995:3).

The impact of the water projects and investments funded by international agencies and donors was a mixed bag. On the one hand, improvements in

service delivery were evident with more people having access to water and sanitation services. As reported by the Holding Company of Water and Wastewater (2006), since the 1980s the production capacity and the levels of consumption have substantially increased. The production capacity increased from about five million cubic meters daily in 1982 to twenty one million cubic meters in 2004. Additionally, the water consumption per capita increased from 130 litres per day in 1982 to 275 litres per day in 2004. Such an improvement at the level of production capacity and service accessibility, however, was not accompanied by similar progress regarding the financial and human capabilities of water organizations. At the institutional level, water organizations, particularly in rural areas, are suffering from the lack of human and financial resources an issue that necessitates capacity building programs and more investments to be directed to address such a shortage.

In an attempt to analyse and diagnose the most pressing water issues in Egypt, the World Bank devised and funded a detailed feasibility study of the water and wastewater sector in the country in 1977. The study highlighted the fragmented and dismal nature of the sector and underlined major issues that resulted in such fragmentation. Chief among those issues were: (a) disintegration of operational responsibility; (b) insufficient operation and maintenance; (c) excessive water losses; (d) inadequate investment level; (e) lack of skilled staff; and (f) low tariffs and inadequate cost recovery (The World Bank, 1995:2).

The identified problems have been perceived as targets for improvement by the consequent Egyptian governments, which in collaboration with international development agencies and donors succeeded in addressing some of them. Actions were taken to enhance cost recovery mechanisms and tools. Nonetheless, the efforts exerted in this regard did not materialize on the ground or result in improving the capacities of water organizations to recover their costs and in turn minimize the subsidies received from the central government. Water organizations, especially in rural and provincial areas, were only able to recover one-third of their operating cost. These limited revenues had to be transferred to the Egyptian treasury, which restrained the capacity of those organizations to further operate and maintain their facilities and infrastructure.

Despite the ongoing efforts of the consequent Egyptian Government to address the water sector problems identified in the mid-1990s, all the identified issues,

apart from the low level of investment, are still noticeable to a different extent today. For instance, after more than four decades of reforms, the water sector in Egypt is still highly fragmented and the overall structure of the water industry is still very complex. Such a fragmentation has always been a defining feature of the water sector since the 1970s. The responsibilities of delivering drinking water in addition to collecting and disposing of wastewater were divided between different agencies and local authorities (see Table 7.1). The fragmented nature of the water sector triggered another wave of reforms during the 1980s aimed at achieving more integration in the water operations and institutional framework. It is worth mentioning in this regard that the reform initiatives were driven by the World Bank and external donors.

<b>Drinking Water</b>	
<b>Key actors</b>	<b>Responsibilities</b>
The General Organization for Greater Cairo Water Supply (GOGCWS)	Own and operate local water infrastructure in Cairo.
The Alexandria Water General Authority (AWGA)	Own and operate local water infrastructure in Alexandria.
The Suez Canal Authority (SCA)	Own and operate water and sewer infrastructure in the Suez Canal cities.
The General Organization for Potable Water (GOPW)	Built and operated seven regional water systems, mainly in the Nile delta provinces.
Municipalities in the larger provincial towns	Own and operate 115 water systems in respective towns.
Governorate housing directorates	Operate approximately 1250 rural water supply systems relying on boreholes or wells serving those areas not covered by municipalities or GOPW.
<b>Wastewater Collection and Disposal</b>	
The General Organization for Greater Cairo Sanitary Drainage (GOGCSD)	Own and operate wastewater collection and disposal systems in Cairo.
The Alexandria General Organization for Sanitary Drainage (AGOSD),	Own and operate wastewater collection and Disposal systems in Alexandria.
The General Organization for Sewerage and Sanitary Drainage (GOSSD)	Decide on investment in sewerage systems in provincial Egypt.
Municipalities	Operate sewerage systems in provincial Egypt.

Table 7.1: Key actors responsible for water and wastewater management  
Source: based on The World Bank (1995)

The reform programme initiated at the beginning of the 1980s had two main pillars. Firstly, there was the merging of the water and sanitation investment agencies, the General Organization for Potable Water (GOPW) and the General Organization for Sewerage and Sanitary Drainage (GOSSD) in a single new

entity called the National Organization for Potable Water and Sanitary Drainage (NOPWASD). Secondly, the model of water companies created in Cairo and Alexandria were replicated in every other governorate. When it came to the implementation stage, it was realized that creating independent water companies in each governorate was a far too ambitious goal. After more than twenty years, only three companies were instituted in the Nile Delta: the Beheira Water Company, the Damietta Water Company, and the Kafr el-Sheikh Water and Wastewater Company. The process of instituting and operating these companies was not problem-free. For example, the establishment of the Beheira Water Company has taken longer than expected and the cost was much higher than the predictable cost of the project. On a positive note however, the establishment of the Beheira Water Company resulted in better water services in the governorate and the company was able to recover the operation cost (World Bank, 1995).

The overall idea of creating independent water companies in the Egyptian governorates was not a success story. On the one hand, many governors resisted the creation of such companies in their governorates and preferred other models of water utilities such as economic authorities. At the same time, the whole rationale behind creating such companies in terms of acting autonomously and generating revenues was defied in practice as the three newly established companies in Beheira, Damietta and Kafr el-Sheikh were not acting in an independent fashion and neither were they profitable or covering their costs. In this regard, USAID (1991:21) reported that those water companies 'are not as independent or as decentralized as was intended, are not financially viable but that the concept is workable'. The dysfunctionality of the independent water companies' model pushed other governorates, including Aswan, Minya, Beni Suef, Faiyum, Dakahlia, Gharbia and Sharqia, to adopt a different model in which public economic authorities were created to provide water services for each governorate. Compared to independent water companies, the established water economic authorities looked less independent and the scope of their financial operations and responsibility was relatively limited.

The efforts to restructure the Egyptian water sector towards a more integrated design were supported in 1985 by introducing a national policy for pricing the water service. The policy aimed at putting in place cost recovery mechanisms for

water utilities to allow them to reach a full coverage of their operation and maintenance costs in five years. To this end, the policy has introduced new charges such as the sewer surcharge of 10%, to be added to the water bill paid by the end-user. The national policy for water prices has also tried to readjust water tariffs in a way that allows water companies to charge higher prices. However, the policy goal has not been fully realized (World Bank, 1995). In that sense, the pricing policy has not achieved its major aim with regard to helping water utilities covering their cost at the operational and maintenance levels. In fact, after ten years of implementing the national water pricing policy Sharabas (2000) has reported that the overall situation has not changed much. The ability of water utilities to cover their operational and maintenance cost is considerably limited. With only one exception, the Alexandria Water Company, all other water utilities have failed to cover the cost of their operations. The financial position of water utilities has become even worse with the accumulated budget deficits, which made those utilities heavily reliant on government, subsidies.

The fact that water utilities have failed in recovering their costs draws our attention to the deeply rooted problems that those institutions are suffering from at the institutional and technical levels. The analysis of the interview material can shed some light on the deep causes of the failure of water utilities. On the one hand, most, if not all of these utilities lack managerial qualifications and expertise in addition to modern management systems required to successfully run them on commercial basis. Additionally, these organizations are overstaffed and suffer, among other things, from the duplication of administrative functions and the lack of capacities and skills of their poorly paid employees. Many of the methods used for billing and collection processes are archaic and result in financial loss of the water utilities. Customer satisfaction is never a big concern for water utilities and they do not normally have designated units to handle and respond to customer complaints. Finally, maintenance is not a high priority for water utilities, a matter that results in the depreciation of the water assets and infrastructure.

The deeply rooted structural issues in the water sector in general and the poor performance of water utilities in particular resulted in a new wave of water reforms in the 2000s in an attempt to address the previously highlighted problems (Sharabas, 2000). A diagnostic study was conducted to find out how

to modernize the Egyptian water sector in a way that builds the capacity of water utilities and enables them to function on a commercial basis. The study recommended the establishment of commercially based water companies at the governorate level, an old standing recommendation that was provided almost twenty years earlier. However, the diagnostic study has also provided two new components to the old proposal: an independent regulatory agency and private sector participation.

To build the capacity of water companies and to modernize their management and operations, a holding company was created in 2004 under which all water companies and water public economic authorities have been transformed to affiliated companies (Bloomberg, [www.bloomberg.com](http://www.bloomberg.com)). Since its creation, the holding company has taken several positive steps to help affiliated companies to run their operations on a commercial basis and recover their costs (HCWW, [www.hcww.com.eg](http://www.hcww.com.eg)). To this end, the holding company has focused attention of the affiliated water companies on performance and established performance benchmarks. Added to this, an incentive mechanism has been introduced, under which outperforming companies are given bonus payments to encourage them to further improve their performance. Customer satisfaction has become a priority for water companies and hotlines were created to receive customer complaints about water services. These reforms were complemented by a major decision to raise water tariffs in Cairo and Alexandria by 100% in order to help water companies achieving financial equilibrium (EWRA, [www.ewra.gov.eg](http://www.ewra.gov.eg)).

In 2006, another important step was taken to reform the water sector by creating an independent regulatory agency to be responsible for controlling and regulating the activities of water companies and other stakeholders active in the water governance system. The regulatory authority has been assigned several tasks at the economic and social levels. At a general level, the sector regulator has taken charge of setting performance standards for water services in addition to monitoring and enforcing compliance with standards and regulations. The regulatory agency also has responsibilities towards price setting and regulation besides promoting the corporatization of water utilities and the introduction of competition in the water industry (EWRA, [www.ewra.gov.eg](http://www.ewra.gov.eg)). These regulatory reforms were enhanced by the creation of the Public-Private Partnerships (PPP) Central Unit in the Ministry of Finance in order to encourage the participation of

the private sector in all utility sectors including the water industry. In this regard, the PPP unit has facilitated the participation of the private sector in establishing new wastewater treatment plants in Cairo and Alexandria using the Build-Operate-Transfer (BOT) model (Ministry of Finance, [www.mof.gov.eg](http://www.mof.gov.eg)). The revolution of January 2011 diverted the attention of policy makers away from the water sector and slowed down the reform process. Additionally, because of the increase in the salaries of water utilities' employees, which has not been compensated by the government, the overall situation of water companies has further deteriorated in comparison to previous performance indicators and measures.

### **7.3 Drivers of Water Governance Reforms in Egypt**

In addition to the sector specific problems highlighted in the brief historical background on the Egyptian water sector developments, the documentary analysis, in addition to the analysis of the interview material, has indicated that the *current* drivers for water governance reforms in Egypt are diverse. Chief among the Egyptian water reform drivers are: water scarcity and sustainability, lack of institutional and regulatory frameworks, water reforms for poverty alleviation, lack of public awareness, competition among Nile riparian countries, and internal pressures exerted by international organizations including the WB, the OECD, and the UN to develop and implement good water governance systems. As can be noticed, some of these drivers have motivated and guided the reform process in the Egyptian water sector over the last few decades. Nevertheless, the results achieved from the consequent reforms were quite humble. Consequently, the following discussion will reflect on the identified drivers of reform in order to explain how stakeholders in the water sector perceive them and how they see the way forward.

The aforementioned discussion of water scarcity in Egypt has indicated that the water situation in the country is risky (see Chapter 6). The demand for water is steadily increasing with the ongoing and rapid increase of the Egyptian population. This unstoppable and nonlinear increase in water resource demand in Egypt for agricultural, industrial, and household reasons raises a fundamental question regarding the sustainability of water resource management and utilization. Many wasteful practices, especially in the agricultural sector - the major consumer of water resources in Egypt - exist and require better

management. From this angle, the quest for sustainable utilization of water resources represents one of the major drivers of water governance reforms in Egypt. As put by a senior member of staff at the Ministry of Water Resources and Irrigation, '[...] our demand for water exceeds what is available. The issue of water scarcity is becoming more significant if one considers the alarming pace at which the Egyptian population is growing. This rapid growth of population is putting more and more pressures on the scarce water resources and calling for more measures to be taken to better manage the demand side' (Interview 12).

From this angle, better governance arrangements with regard to managing the demand for the available water resources are needed in order to reduce existing water pressures in all areas where water scarcity threatens development. In other words, water demand management is seen as a solution for various economic, social problems (Varis, 2010). Nonetheless, managing water demand is not as easy as it sounds; managing the demand rather than the supply side requires interventions to change people's behaviour and attitudes related to water utilization. These sorts of interventions do not yield an immediate impact as it takes a long time for people to change their behaviour. Additionally, water demand management requires a modern institutional and technological infrastructure, which the Egyptian water sector lacks in different areas, as well as economically efficient water tariffs and a metering system.

While suitability, in terms of finding the most efficient ways of water utilization in order to reserve the right of future generations in whatever water resources we have today, provides a major driver for water governance reforms in Egypt, a current and urgent need provides an equally important driver that is poverty alleviation. From a socio-economic perspective, the ways in which water resources are utilized have a direct impact on water availability, which in turn impacts on the economic welfare and levels of poverty in the population (see Chapter 3). Additionally, the failure of government to provide sufficient water for poor and marginalized areas is another major deficiency in a water governance system that adds to the intensification of the poverty issue.

Lack of public awareness has also been underlined by some of the interviewees as one of the main reasons for reforming the water governance system. From this perspective, and taking a broad interpretation of the notion of water governance, many respondents have regarded water utilization by stakeholders



such as households and industrial organizations as a key driver for reforming the current governance arrangements. As rightly indicated by a water specialist in a leading NGO concerned with water utilization in Egypt, 'we used to deal with water as an infinite source; we have the River Nile, which according to some people has more than we need' (Interview 22). Consequently, many people at the household level, or even from other economic sectors, deal with water in a wasteful manner, primarily because they do not pay the actual price of their consumption. Such a misunderstanding about water and its availability is something that requires immediate action to raise the public awareness of the importance of water as a finite resource.

From an MLG perspective, the increasing competition among the Nile Valley countries over the Nile waters provides another major driving force behind the water governance reform processes in Egypt. As Chapter 6 has indicated, over the years the Nile Basin countries have increased their demand for water as a major source for achieving economic development and responding to population growth and demographic changes due to urbanization, rising educational levels, and social, economic and political transformations. The increasing demand for Nile water, particularly from the upstream countries, has added to the pressures faced by the Egyptian water sector and has urged the Egyptian Government to look for new governance arrangements that guarantee the efficient management of water resources.

There has been a growing role of non-state actors in developing and managing water resources, in addition to participating in water service delivery. The top-down state-led approach for making water policies and decisions is long gone. National governments are no longer the sole actor in policies and decision-making arenas. New players, such as private sector organizations and civil society institutions, are now sharing the policy and decision-making space with governments. The new water governance arrangements and the involvement of non-state actors in water policies and decision-making processes highlight the issue of the expected roles and responsibilities of involved parties. For the time being, the major contribution of non-state actors in Egypt appears in the policy implementation phase with governmental actors playing the main role in making water policies and decisions. Different voices for the Ministry and the regulatory body have verified this observation. A senior member of staff in the sector

regulatory agency has stated that ‘we rely on civil society organizations in certain areas including raising public awareness and delivering water to some deprived and scattered areas’ (Interview 29). However, when it comes to water policy formulation and decision-making, it is still reflecting largely a top-down approach. Accordingly, the role of non-state actors, namely the civil society organizations, in the process of formulating water policies and decisions is quite limited and depends to a large extent on information sharing.

International pressures to develop transparent, accountable, participatory, and gender equitable water governance practices are evident in the Egyptian case. The notions of good governance, as presented in Chapter 2, provide an important checkpoint against which international organizations, such as the WB, the OECD and the UN, measure and evaluate water governance arrangements worldwide. Such global comparisons put pressure on national governments to reform and modernize their water governance systems in order to reflect the qualities of good governance in terms of transparency, accountability, and participation. Despite the growing evidence related to the convergence in many government practices to meet the good governance criteria, formal officials in Egypt are most likely to implicitly admit that they are subject to pressures from international organizations to reform the water sector. They broadly frame the issue as they need to respond to changes in the global environment and the way in which the water sectors are reformed, forgetting that these reforms are normally motivated by donors’ agendas.

#### **7.4 The Water Sector in Egypt: The Legal and Regulatory Environment**

As indicated in chapter 3, water laws and regulations provided the overall framework within which water policy decisions are made and enforced. This aspect of water governance was described by Saleth and Dinar (2004) as the ‘software’ component while the administration of this aspect is referred to as the ‘hardware’ component (see chapter 3). The performance of water governance systems is determined by the interactions between the software and the hardware components. In other words, water laws and regulations provide the structures within which water policy agents interact and make decisions regarding water policy issues (see chapter 4).

The analysis of policy documents and the results of the interviews conducted during the fieldwork have indicated that the legal and regulatory framework of

the Egyptian water sector is of a very fragmented and complex nature. In the absence of a sector specific water law, several laws, decrees and decisions organize the development and management of water resources as well as identify and assign the role and responsibilities for the involved actors. Table 7.2 summarizes the main legal documents including provisions on water governance and institutions.

<b>Laws and Legislation</b>	
Law 3081/1955	concerning administrative sequestration
Law 931/1962	concerning discharge of liquid wastes
Law 441/1965	concerning organization of accounts control departments in authorities, public sector establishments and affiliated companies, units and associations,
Law 531/1973	concerning the public budget
Law 471/1978	promulgating law on the civil service
Law 481/1978	promulgating law on public sector personnel
Law 431/1979	promulgating law on the local administration system and its executive regulations
Law 591/1979	concerning establishment of urban communities
Law 481/1982	concerning protection of the Nile and other waterways from pollution
Law 971/1983	promulgating law concerning public sector authorities and companies
Law 971/1983	promulgating law concerning public sector authorities and companies
Law 51/1991	concerning senior civil service positions in government administration and the public sector
Law 41/1994	concerning environmental protection
Law 81/1997	promulgating law on investment guarantees and incentives
<b>Presidential Decrees</b>	
PD 47231/1966	on adoption of the Uniform Accounting System
PD 16381/1968	concerning the establishment of the Greater Cairo Water Authority
PD 16391/1968	concerning the establishment of the Alexandria Water Authority
PD 2621/1979	concerning the establishment of the Alexandria Wastewater Authority
PD 961/1994	concerning amendments to some provisions of PD 2621/1979 on the establishment of the Alexandria Wastewater Authority
PD 1331/1981	concerning the establishment of the Greater Cairo Wastewater Authority,
PD 951/1994	concerning amendments to some provisions in PD 1331/1981 on the establishment of the Cairo Wastewater Authority
PD 1971/1981	concerning the establishment of the National Organization for Potable Water and Sanitary Drainage (NOPWASD)
PD 301/1986	concerning amendment of PD-1971/1981

PD 2811/1995		concerning the establishment of public economic authorities for water/wastewater in some governorates
PD 1641/1996		concerning the organization of the Ministry of Housing, Utilities and Urban Communities
<b>Governor's Decisions</b>		
Decree 4971/1981	No.	on the establishment of the Executive Agency for the Greater Cairo Wastewater Project, with the consent of the Cabinet, and on the basis of the view of the State Council
Decision 3571/ 1984	No.	Damietta Governor: concerning the establishment of the Damietta Water Company
Decision 2011/1983	No.	Kafr El-Sheikh Governor: concerning the establishment of the Kafr el-Sheikh Water and Wastewater Company,
Decision 1981/1981	No.	Beheira Governor: concerning the establishment of the Beheira Water Company,

Table 7.2: The Legal Framework of the Egyptian Water Sector

As the table indicates, there are several laws, presidential decrees, and governors' decisions govern the administration of water resources in Egypt. Among the identified legal documents in Table 7.2, the Irrigation and Drainage Law No. 12 (1984) is of particular importance because it regulates the usage of water, water management, and distribution in Egypt. The law provides guidelines on how water resources should be utilized and the overall regulatory framework for the actors involved. Water issues are covered and discussed in eight chapters, which include 104 provisions dealing mainly with several issues including the identification and definition of public water streams as well as the requirements to use a water stream for irrigation and agriculture (Law 12/1984, Chapters 1 and 2). Chapters 3 and 4 of the Egyptian water legislation cover water utilization issues such as water banks and the methods of water distribution. Chapter 5 regulates the usage of waste and ground water by explaining the restrictions and prohibitions related to the utilization of these water resources. Chapters 6 and 7 deal with the methods of protecting public water streams against misconduct and sanctions for violations by noncompliant parties. The Egyptian water legislation law provides a conflict resolution mechanism to solve water disputes between involved actors. This conflict resolution mechanism is fully explained in Chapter 8 (MWRI, [www.mwri.gov.eg](http://www.mwri.gov.eg)).

At the regulatory level, the sector economic and social regulation has been perceived as an instrumental tool for controlling the behaviour of water utilities and stakeholders in addition to developing the sector by attracting and

encouraging private investments. Given the monopolistic nature of the sector, developing a regulatory framework was also necessary for protecting consumers by controlling water prices and enforcing quality and environmental standards at national, governorate, and municipal levels. In that sense, a broad distinction can be made between the economic regulation of the water sector in terms of setting and adjusting tariffs and prices for water services and other forms of regulation related to social and technical aspects such as health and safety, environmental protection, and water quality.

From an economic viewpoint, the water sector regulator in Egypt plays a significant role in the following areas: promoting cost recovery and commercial tariffs; compelling performance 'benchmarking'; improving operations and maintenance; rewarding competitive utility management; fostering financial management and customer relations; reducing financial drain and leveraging resources and encouraging private investment in the sector.

The literature on utility regulation provides several rationales to justify government intervention in water industries (Mitnick, 1980; Ernst, 1994; Baldwin and Cave, 1999; Nestor and Mahboobi, 1999). In the absence of competition, monopolistic water utilities can exploit water users and fix prices at higher levels. In this case, regulating water prices is required in order to make sure that water prices reflect the actual cost of services. Consequently, the role of the sector regulator is paramount in assessing the cost of production as well as setting the fare rate that water utilities can charge end-users. In the same vein, water sector regulation is also required in order to gradually introduce competition in sectors which used to be dominated by gigantic government institutions and run as natural monopolies. Opening up water sectors for competition is not an easy task and requires government intervention via the sector regulator to carefully design and put in place a competition framework that protects new entrants against water incumbents and manages the transition period towards the privatization of state-owned utilities. Expertise has also been put forward by some scholars in order to justify the creation of water sector regulators. As is the case with other utility sectors, water is a highly technical domain that can be better managed and organized by experts in this field. From this angle, creating a specialised technical body to regulate the Egyptian water sector can be seen as a strong

rationale for the establishment of the sector's independent regulatory agency (Majone, 1994, 1997, 2001; Gilardi, 2003, 2005; McNamara, 2002).

The overall rationale for regulating water sectors, as reflected in the literature on utility regulation, has been widely acknowledged by the interviewees from government as well as non-governmental institutions. Nonetheless, the majority of the respondents have placed much more weight on the badly needed private investment for modernizing the sector's infrastructure and to build up new water facilities. In this regard, regulation has been devised by the Egyptian Government as an instrumental tool that will allow more efficiency at the operational level because of the sector liberalization and competition besides encouraging private investors to enter the market by reducing the risk of political interference. As noted by a senior member of staff in the regulatory agency, '[...] as the sector regulator we need to assure private investors that their capital will be well-protected and their investments in the water sector will pay-off' (Interview 30).

This instrumental rationale, provided by policy-makers and senior members of staff in the Egyptian water organizations, is very much entwined with the notion of policy credibility as presented in the delegation literature of regulatory governance (Spiller, 1993; Majone 2001). From this angle, governments delegate to independent regulatory agencies in order to send positive and credible signals to private investors that the water sector will be run in isolation from any form or shape of political intervention. In other words, the policy credibility notion assures private investors that water decisions will be made on a professional, technical and commercial basis and that the overall water governance arrangements will be transparent, fair, and accountable. As mentioned by the head of an NGO concerned with water issues, 'such an assurance is quite vital in the water industry because of the long legacy of government intervention in water decisions, which has distorted many issues, chief among which are water prices and tariffs.' (Interview 32). The heavy-handed interventionist approach by the Egyptian Government in the water sector has also been echoed by an expert in the field who stated that 'tariff setting and adjustments is a highly political process wherein the government is used to interfering with water prices to keep them below the cost of production. This can work for a short period of time but in the long run this approach cannot be sustained' (Interview 30). Taking account of the history of state dominance and

intervention in the Egyptian water sector and considering the long term immobile and sunk cost nature of investments in the water industry, many interviewees have agreed that it has become a must to create an independent sector regulator in order to send private investors credible policy commitments about tariffs and other rules of the game.

Other concerns were raised by informants during the interviews which, according to their point of view, justify the regulation of the sector. The industry structure and the level of market maturity were among the most important issues. The interviewees have linked this with the risk of investments in the sector. As a senior member of staff in the Holding Company for Water and Wastewater has stated, 'the risk of investing in newly liberalized and emergent markets are higher and uncertainty is greater compared to mature and stable markets' (Interview 28). Accordingly, such high risks and high levels of uncertainty in the Egyptian water sector have called for the creation of a technical body to be able to accurately assess risks and provide a shield for private capital from all forms of politics and political intervention. From this perspective, designing the regulatory intervention is key in helping private investors to make sound decisions. A detailed and specific regulatory approach may lack flexibility and an ability to adapt to changing circumstances but at the same time, it reduces the cost associated with capital investment. On the other hand, a more flexible regulatory framework will provide service providers with more incentives for economic efficiency but it will also increase the level of uncertainty and the potential misuse of the system, which in turn will reflect negatively in the cost of capital.

### **7.5 The Water Sector in Egypt: The Institutional Framework**

The relationship between the institutional components of water governance systems has been theoretically discussed in chapter 3 (Saleth and Dinar, 2000; 2004; 2005). In the light of the aforementioned discussion, this section focuses on the institutional framework of the water governance in Egypt. The water sector in Egypt is a highly-centralised domain wherein in many state actors, including several ministries and affiliated agencies, play diverse roles and bear different responsibilities in relation to water management. The aim of this section is to analyse the institutional framework of the Egyptian water sector by briefly highlighting and discussing the key players influencing water governance arrangements, policies and decisions. The roles and responsibilities assigned to

each player will be underscored in order to highlight the way and the capacity in which those dominant players can influence water decisions and policies.

At a general level, the contribution of water users in the actual decision and policymaking process is considerably limited apart from the role played by the Water User Association for Irrigation, which plays a relatively active role in the area of irrigation (El-Hanbali, 2003). Following the revolution of January 2011, the 1971 constitution was suspended and another one was formed in which there is a tendency towards decentralization of decision-making processes and more citizen participation in all policy domains including water policies.

The documentary analysis of the official records has revealed that a number of ministries alongside several affiliated agencies play different roles with respect to developing and managing water resources in Egypt. At the ministerial level, the mapping out exercise of the state actors involved in water governance in Egypt has resulted in identifying the following ministries: Ministry of Water Resources and Irrigation; Ministry of State for Environmental Affairs; Ministry of Water and Wastewater Utilities; Ministry of Health and Population; Ministry of Finance; Ministry of Interior; Ministry of Agriculture and Lands Cultivation; Ministry of Local Development; and Ministry of Industry. Not all ministries play equal roles in shaping and managing water governance arrangements in Egypt. Some ministries have been identified by the interviewees as key actors in terms of their ability to influence water governance arrangements and decisions (e.g. The Ministry of Water Resources and Irrigation) while others have been perceived as being less influential because they are partially involved in managing or operating specific segments of the governance structure.

### **7.5.1 The Ministry of Water Resources and Irrigation (MWRI)**

The Ministry of Water Resources and Irrigation (MWRI) has a long history as it is considered one of the oldest ministries in Egypt being about 150 years old (Viala, 2008:3). The initial stages of the Ministry go back to Mohamed Ali Pasha's reign, when it was known as the Public Works Department in 1934 and later in 1957 as the Administration of Public Works. The responsibility for water resources and irrigation was not the sole function of the Administration of Public Works. Since the 1952 revolution, the name of the ministry as well as the duties assigned to the minister in charge has changed several times. In 1964, for example, the Ministry was called the Ministry of Irrigation and it has been



assigned duties in the areas of irrigation and drainage works. The name and responsibilities changed again twice under Sadat's regime. The first change was in 1977 with the Republican Decree No. 587/1977, which delegated additional tasks of land reclamation to the Ministry's former duties. Accordingly, the name of the Ministry was changed to the Ministry of Irrigation and Land Reclamation. Not long after, particularly in 1978, another Republican Decree No. 365/1978 was issued and restored the old name and responsibilities of the Ministry to those of 1977. Under Mubarak's regime, the name of the ministry changed twice in 1987 and 1999. The Republican Decree No. 449/1987 modified the Ministry's name to the Ministry of Public Works and Water Resources until the issuance of the Republican Decree No. 409/1999, which has granted the Ministry its current name of the Ministry of Water Resources and Irrigation (European Environment Agency 2010:16-17 ).

According to Law 12/1984, the Ministry of Water Resources and Irrigation (MWRI) is the main governmental body governing the issue of water management and usage in Egypt. In this regard, Varis (2010: 87) notes that 'Egypt's Ministry of Water Resources and Irrigation is the only one among the dozen ministries that are mandated to govern water issues in the country'. MWRI's role, as noted by Viala (2008:3), has chiefly been to ensure the delivery of enough and timely water resources to all stakeholders for the purposes of irrigation, domestic and industrial needs, navigation, energy and production. Accordingly, the water legislation has given MWRI several rights and prerogatives including the right to identify specific streams as public water sources as well as the authority to set forth conditions and limitations on water utilization from public water resources, particularly for agricultural purposes (Article 5 of Law 12/1984).

The water legislation has also granted MWRI the right to approve any modifications to main water resources and public streams or any creation of new streams in addition to the ability to abolish any previously issued licenses for the private usage of water streams and to destroy a certain stream if such a stream will damage neighbouring farmlands and surrounding bridges (Articles 9, 14, 39, and 41 of Law 12/1984). MWRI is also authorized by law to divide farmlands into zones and units in addition to identifying the irrigation network for each zone and

setting a specific schedule for distributing water for irrigation purposes (Article 18 and Article 30 of Law 12/1984).

According to Article 38, the Ministry also has the right to prohibit the planting of certain crops such as rice in specific areas because of the water-consuming nature of those crops. Any utilization for water for purposes other than irrigation has to be permitted by MWRI. To face the cases of non-compliance, the Law has given MWRI the right to impose a wide range of fines against non-complaints and violators. The issuance and the amount of penalties depend on the level and the gravity of violations. In this respect, the fines may vary from thirty Egyptian pounds for minor violations to ten thousand pounds for major infringements (Article 18 of Law 12/1984). In this regard, it is worth mentioning that the Ministry follows an escalation strategy based on the way violators respond to its directions. As stated by the director of awareness and water advisory in MWRI, 'The Ministry's inspectors start normally with giving warnings and administrative orders to non-complaints. If non-complaints continue in their violations the inspectors have right to report those to the law enforcing bodies authorized to take legal actions against them' (Interview 9). Such an approach is very close in nature to the notion of Ian Ayres and John Braithwaite about the enforcement pyramid (Ayres and Braithwaite, 1992: 35-36).

The Law has also provided a mechanism to settle disputes among water stakeholders. According to Article 23 of Law 12/1984, in the case of disputes between farmers and MWRI the law has given farmers and landowners the right to appeal MWRI's decisions before the General Department of Irrigation. The has also guaranteed the fair distribution of water among farmers for irrigation by authorizing the General Director of Irrigation's authority to interfere and to enforce the law in order to deal with any violations (Article 37 of Law 12/1984).

One of the main issues facing MWRI and restricting greatly its agility and ability to achieve its goals is the size of the organization. With over 70,000 employees, MWRI suffers from overstaffing and bureaucracy. In this respect, overstaffing in MWRI has been underlined by the World Bank (2005:2) as being one of the main issues resulting in a higher cost of transactions and in turn, reducing cost effectiveness and quality in the Egyptian water sector (see Figure 7.1).

As the figure illustrates, the organogram on the Ministry reflects a highly-centralised structure. The daily operation of MWRI is the responsibility of two main departments and four public authorities. The Irrigation Department (ID) and the Mechanical and Electrical Department (MED) have extended functions related to the water resources system, irrigation water delivery, and drainage water disposal. The role of these two major departments is complemented by the functions undertaken by the affiliated public authorities including the Egyptian Survey Authority, the Coastal Protection Authority, and the High Aswan Dam Authority. The Egyptian Public Authority for Drainage Projects (EPADP), for instance, is in charge of all drainage activities within MWRI, and has representing directorates within the network. In addition to these operational units, the function of conducting applied research on irrigation and water management in MWRI is primarily done through the National Water Research Center (NWRC). NWRC encompasses 12 specialized research institutes in addition to a strategic research unit and a central laboratory for environment quality monitoring (MWRI, 2005:12-13).



Figure 7.1: MWRI Organizational Structure  
 Source: European Environment Agency (2010: 18)

The large size of the Ministry has also impacted negatively on the economic efficiency of its operations (Varis, 2010: 87). Added to this, the centralized organization structure of MWRI has, on the one hand, facilitated and

consolidated the decision-making process but at the same time, the overall organization lacks coordination among the different departments. As put by Viala (2008:6):

Although Integrated Water Resources Management (IWRM) has been a common buzzword in water communities around the world for some time now, it is often a challenge for many water managers to propose a practical translation of the concept. The same applies to Egypt, where IWRM is an official MWRI policy and is frequently quoted by MWRI managers. But while the concept has been accepted, few are able to outline a concrete process to implement IWRM. The main issue is how to define integration as it relates to management.

A collaborative effort between MWRI and a number of ministries, including the ministries of Agriculture; Environmental Affairs; Trade and Industry; Housing, Utilities and Urban Development; Health; Finance; Local Development; Media; Economic Development; and Tourism resulted in the development of a National Water Resources Plan for Egypt (NWRP) published in 2003. As reported by MWRI (2005:5), the main aim of the NWRP was to indicate the collaborative ways in which water resources in Egypt could be efficiently managed with respect to quantity and quality in order to achieve socio-economic and environmental goals. In other words, the main policy objective of developing the NWRP was to 'develop general and effective policies for all concerned ministries and agencies in Egypt to cooperate in order to achieve the principle of integrated management of water resources' (the European Environment Agency, 2010: 18).

The objectives of the NWRP have been materialized on the ground in the form of an Integrated Water Resources Management Plan (IWRM) that provides a complementary, action-oriented, implementation framework to the NWRP. The formulation of the IWRM followed an integrated management approach for water resources management within the water sector. That means, based on an accurate assessment of current and future water resources, all the gaps in the NWRP have been identified and accounted for in the new document in addition to any shortcomings in the existing reform efforts led by MWRI. The IWRM provides a long-term framework for strategically managing water resources over a period of 15 years and identifies the areas of interventions and the required actions in order to streamline the current trends and practices into an Integrated Water Resources Management System for Egypt. In this regard, IWRM has identified 39 required actions falling under the following categories: institutional reform and strengthening; policies and legislations; physical interventions;

capacity building; technological and information systems; water quality; economic and financial framework; research; raising awareness of IWRM; monitoring and evaluation and trans-boundary cooperation (MWRI, 2005:5). Some of those areas have been given a high priority and required actions have been identified in the short term while others have been given lesser importance and their interventions have been planned in the medium or long term. Despite the adoption of the Integrated Water Resources Management approach in MWRI, Viala (2008:7) has noted that different departments within the Ministry are still working in isolated silos. This silo mentality in the workplace makes it difficult to integrate functions, processes, activities, research and knowledge at the organizational level.

### **7.5.2 Ministry of Water and Wastewater Utilities (MWWU)**

While MWRI is responsible for the main water resources management and administration in the Egyptian water sector, the Ministry of Water and Wastewater Utilities (MWWU) was instituted in 2012 to act as the sector's main actor in the area of drinking water supply and wastewater treatment and management. Upon its institution, MWWU replaced the Ministry of Housing, Utilities, and Urban Development (MHUUD) as the key player in the sector responsible for drinking as well as wastewater. As noted by Svendsen (2010: 10), before the creation of the MWWU, the MHUUD was responsible among other things for the planning and construction of infrastructure including distribution systems and water purification plants, as well as sewage systems and wastewater treatment facilities. These responsibilities have been moved to the newly established MWWU. In this regard, MWWU has a general mandate to take necessary actions in order to develop the whole sector of drinking and wastewater. That means, the Ministry has responsibilities with regard to establishing new water and wastewater facilities in addition to increasing the capacity of the existing infrastructure. To this end, MWWU work very closely with several influential actors in the water sector including: the Egyptian Water and Wastewater Regulatory Agency as the sector regulator; the Holding Company for Water and Wastewater (HCWW) with its 23 affiliated companies; the National Organization for Potable Water and Sanitary Drainage (NOPWASD); and the Construction Authority for Potable Water and Wastewater (CAPW).

Roles and responsibilities are divided among the aforementioned players with the regulatory agency taking the lead as a central organization in forming and enforcing economic and technical regulations of the overall sector (the roles and responsibilities of the sector regulator are discussed later in more detail). At the operational level, the HCWW with its 23 arms and affiliated facilities covering the majority of the Egyptian land is responsible for supplying drinking water in addition to the treatment of wastewater. It is worth mentioning in this regard that the creation of the HCWW has come as a reaction to the high rate of diarrheal diseases, about 20% among children under 5 in Egypt, reported by UNICEF in 2010. The report has underlined the unsanitary water conditions as the main reason behind the spread of such diseases among children (UNICEF, 2010). As a result, the HCWW was established in 2004 with a broad mission of guaranteeing the delivery of clean and safe water and sanitation services for all consumers particularly in rural communities (Abdel-Gawad, 2007).

In this context, the gigantic holding companies and their affiliates play a major role in the area of providing drinking water via water purification, transport and distribution to households and industrial organizations. They also play an equally important role in collecting, treating and disposing of wastewater in a safe manner. As such, the HCWW has responsibilities with regard to monitoring the quality of drinking and wastewater. This job is done via the HCWW's labs in each of the affiliated companies. Added to this, the HCWW monitors the performance of the affiliated companies against the five-year plans submitted from each one of them. The HCWW also provides affiliated companies with technical assistance and is in charge of their maintenance operations. At the level of managing and developing water and wastewater infrastructure, NOPWASD and CAPW are key players. Infrastructure investment and decisions in Greater Cairo and Alexandria are the responsibility of CAPW while the other infrastructure decisions in the rest of the country are taken by NOPWASD.

### **7.5.3 Ministry of State for Environmental Affairs (MSEA)**

In June 1997, the responsibility of Egypt's first full time Minister of State for Environmental Affairs was assigned as stated in the Presidential Decree No. 275/1997 (European Environment Agency 2010:11). Within its overall mission to protect the environment and natural resources, the Ministry of State for Environmental Affairs (MSEA) has been assigned some responsibilities in

relation to protecting the water sector (Presidential Decree No. 275/1997). According to its legal mandate, in addition to MSEA's overall role in making and enforcing policies and regulation for the protection of the environment, it also has some responsibilities towards managing all natural resources in Egypt, including water resources, in a way that guarantees sustainable development (Ministry of State for Environmental Affairs, 2006). Accordingly, MSEA plays the role of the water quality inspector by monitoring the quality of water resources. MSEA plays its role as an inspector for water quality in collaboration with its functional, executive and administrative arm, the Egyptian Environmental Affairs Agency (EEAA). The Ministry, in collaboration with EEAA, monitors the quality of water through regional branches and 52 monitoring points in different governorates. In this regard, MSEA has the right to impose water standards and to take the required legal actions in case of non-compliance (Soulie, 2013: 17).

MSEA's commitment towards monitoring and protecting water resources has been documented in the National Environment Action Plan (NEAP), which reflects Egypt's environmental agenda (2002-2017). The national programme for improving water quality, one of the eight programs included in NEAP, focuses on water issues such as wastewater reuse, protecting the fresh water environment and bodies from pollution, protecting the marine environment; and developing and managing the Egyptian lakes. The realm of the MSEA does not extend to cover the underground water, an area covered by MWRI's jurisdiction. Nonetheless, Svendsen (2010:9) has noted that the MSEA is currently cooperating with MWRI on a project to reduce industrial pollution in the Nile River. In addition to its role in monitoring the quality of water, MSEA plays an equally important role in assessing the potential impacts of new projects on water streams as well as educating the public on the importance of protecting water resources from pollution. For this purpose, the MSEA 'coordinates with international organizations on general environmental protection goals; monitors environmental data, works to preserve Egyptian natural resources, and conducts public environmental education programs' (ibid).

#### **7.5.4 Ministry of Health and Population**

The Ministry of Health and Population is the governmental body responsible for public health and the management of the healthcare system in Egypt. From this perspective, and taking into account its responsibilities towards the general

public health, the Ministry has been assigned some duties related to monitoring the quality of drinking and wastewater in an attempt to reduce any potential health hazards. In this respect, Svendsen (2010:10) has noted that the Ministry of Health and Population 'samples and analyses outflows from water purification facilities, and monitors the potability of water resources, including the Nile and canals'. The Ministry of Health and Population is also testing the quality of drinking water from wells and notifies MWRI of pollution sites in order to take actions to clean them up.

To fulfil its mandate, the Ministry of Health and Population has established the Environmental Monitoring Centre to be responsible, among other things, for monitoring water and wastewater quality. The drinking water quality is monitored through the National Nile Water Pollution Monitoring Network, wherein the Ministry of Health Environmental Monitoring Network periodically tests the quality of the Nile waters at different points. As reported by the European Environment Agency (2010:20), 'Levels of water pollution are measured through 174 sites along the Nile and its two branches as well as the main canals such as Mahmudiya, Ismailia, and Ibrahimeya, in addition to a number of sites located along Bahr Yusuf'. The Ministry monitors the water quality at three different points: at the intake point, after the treatment processes, and at the point of distribution. As for wastewater, the Ministry measures the quality of water entering the treatment plant and the quality after the treatment process and before discharging the treated water. In addition to its responsibilities with regard to monitoring the quality of water and wastewater, the Ministry of Health and Population also encompasses the Higher Committee for Water (HCW). The HCW acts as a coordinating platform on strategic water and wastewater issues as it includes in its membership representatives from different ministries and important agencies including MSEA, MWWU, MWRI, and the Ministry of Defence, representatives of the Water Companies, EWRA, and the National Center for Researches (Soulie, 2013: 17). The aim of having all those important agencies on board is to make sure that all water-borne diseases and water quality issues are adequately addressed in a coordinated fashion that helps improve public health.



### **7.5.5 Ministry of Agriculture and Land Reclamation (MALR)**

As has been previously mentioned, the agricultural sector in Egypt is the major consumer of water among all other economic sectors. More than 80% of water is used for agricultural purposes and for irrigation. With such a huge amount of water, the primary aim of the Ministry of Agriculture and Land Reclamation (MALR) has been set as 'to rationalize the utilization of water for agricultural purposes and to maintain adequate water quantities via good management practices of the available resources' (Interview 14). In this respect, MALR is working in collaboration with MWRI and other concerned parties such as MSEA to ensure the availability of water for agricultural purposes and monitor the quality of irrigation water in an attempt to control and minimize the impact of farmers' utilization of fertilizers and pesticides on water pollution. As noted by Soulie (2013: 19), the Ministry of Agriculture and MWRI also work together to plan and organize the yearly crops via the Common Committee for Planning. In addition to its comprehensive responsibilities for water used in agriculture, the MALR also oversees fisheries and aquaculture industries in Egypt and monitors their effects on water quality (Svendsen, 2010:9). One of the major challenges to face the MALR in the coming years is related to its ability to formulate and implement policies in order to increase farming activities, agricultural production and the development of new agricultural land at a pace that meets the growing demands from the rapidly increasing Egyptian population. To meet such a challenge, new water governance and management arrangements are necessary.

In addition to the previously mentioned big players in the water sector in Egypt, a number of ministries are involved to a lesser degree and in different capacities in the sector's governance system via auxiliary management and operation of part of the irrigation and drainage systems. For instance, in addition to the role played by the Ministry of Industry in running and privatizing the previously state-owned industrial projects, the Ministry is also responsible for controlling and managing water supply for these industries. With respect to water investments and subsidies, the Ministry of Finance, the Ministry of the Interior and the Ministry of Local Development are key players in determining finance methods for new projects and water utilities as well as the overall local development water plans (Svendsen, 2010:12).

### **7.5.6 The Egyptian Water/Wastewater Regulatory Agency (EWRA)**

The Egyptian Water/Wastewater Regulatory Agency (EWRA) was instituted in 2006 in accordance with the Presidential Decree No 136/2004. The establishment of EWRA was part of an overall reform plan in the water sector in order to rely less on government organizations and to put in place a sector that is driven primarily by the needs of its customers and which encourages more participation of the private sector. To this end, a new model for service delivery and regulation has emerged in which the state is no longer the owner and the operator of water utilities but the rule maker and the regulator of the sector. From this angle, instituting EWRA was an important move in order to regulate and manage water utilities on a competitive and commercial basis as well as protecting the rights of the consumers and the public interest in general. To fulfil its role as the sector regulator, the founding legislation has granted EWRA a broad mandate. The mandate of EWRA does not only cover technical and financial issues but it also extends to include economic and social aspects (Presidential Decree No 136/2004). Accordingly, the founding decree has assigned EWRA a comprehensive responsibility for regulating and managing the quality, cost, and price of water services in Egypt. In this respect, the EWRA, as a supreme authority, is exercising its powers in accordance with governmental laws and regulations at both national and local levels. The scope of the mandate covers not only the operations of governmental utilities but the tasks assigned to private actors as well.

The broad legal mandate of the EWRA has been translated into an ambitious mission including the development and enforcement of water standards and regulations in order to guarantee the quality of provided services as well as the efficient cost of production and reasonable prices for end users. This mission should eventually lead to the sustainable development of the overall water sector in addition to an expansion in service provision and improvements at the level of service quality. In pursuing this mission, the EWRA has focused on achieving three main goals: higher levels of performance for water utilities, higher levels of cost recovery at the operational level and enhancing and encouraging self-finance for water services.

At the functional level, the statutory responsibilities of the EWRA are quite diverse. As a supreme authority in the water sector, the EWRA is responsible for

issuing and renewing licenses for water operators and service providers. Added to this, in collaboration with water utilities the authority has to develop and approve the Key Performance Indicators (KPIs) in the technical, economic, and financial areas. The EWRA is also responsible for developing the reporting, control and audit mechanisms for all water operators and service providers in addition to monitoring their compliance. The authority also technically assists service providers and water utilities in assessing costs besides evaluating, setting, and adjusting water tariffs. All tariff proposals have to be reviewed and approved by the EWRA in addition to all yearly targets, as presented in the five-year plans prepared by each operator. Additionally, all water contracts, agreements, and economic feasibility studies of new projects have to be subject to the review and the approval of the authority during the formation and the implementation phase. Given the current transformation process facing the sector, the EWRA has also been assigned the task of determining the essential steps for transforming the Public Economic Authorities (PEAS) and companies working in the water sector into joint-stock companies.

Organizationally speaking, the EWRA was established as an independent juridical entity and is headed by an executive director who holds the rank of first undersecretary. Because of the crucial role played by the EWRA in controlling, planning, developing and managing the sector, the respective minister acts as a chairman of the authority's board (see Figure 7.2).

As the figure illustrates, at the administrative and financial levels the Executive Director of EWRA is supported by a number of organizational units responsible for providing the required legal, technical and administrative assistance. The role of those units is key in helping the Executive Director handling agency-wide internal issues as well as managing relations and external matters with water stakeholders in the sector. In addition to the administrative and technical support provided by departments such as legal, IT, and the secretariats affairs, the Executive Director also manages two central departments: the central department for pricing and tariffs and the central department for standards, compliance and customer protection.

The main role of the central department for pricing and tariffs is to provide the head of the EWRA with specialized and expert opinion on issues related to the costing and the pricing of water services. To this end, the mentioned department

has been assigned several tasks, including identifying methods for measuring costs and conducting cost and rated studies. The department is also required to review and assess all proposals for tariff adjustments submitted by water service providers and to provide the head of the regulatory agency with an expert opinion on these matters for determining water service prices. In order to ensure compliance with the defined tariffs and prices, the central department for pricing and tariffs has to coordinate with the central department for standards, compliance and customer protection.

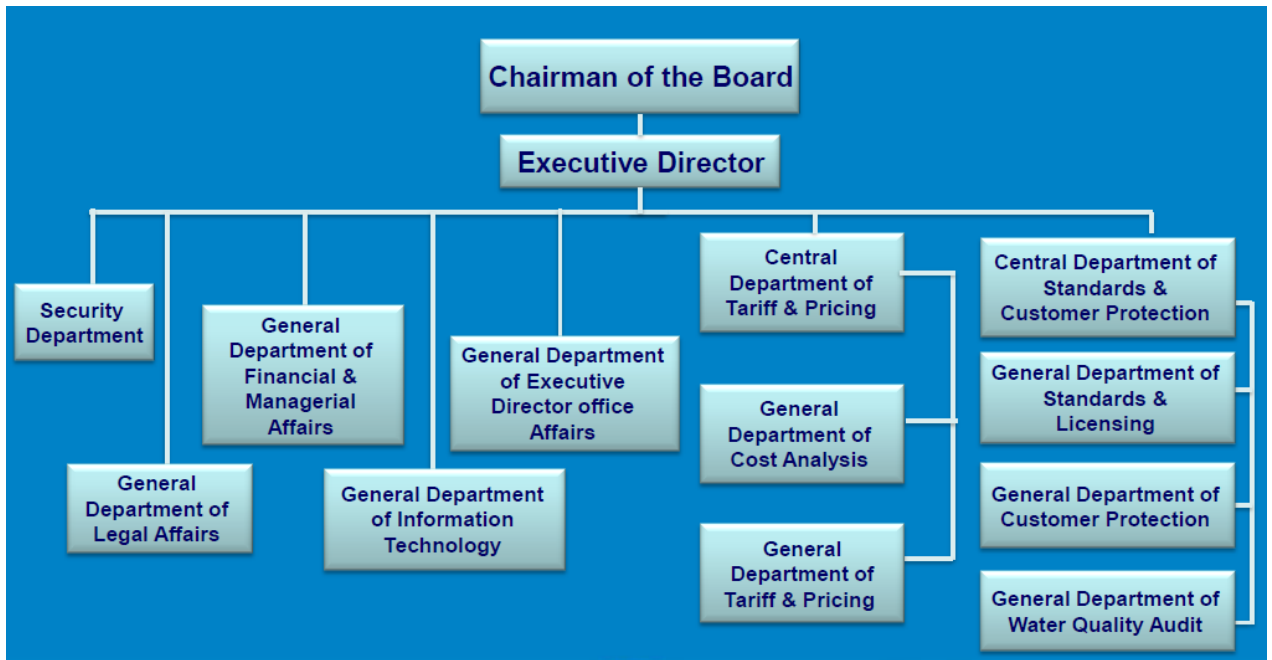


Figure 7.2: EWRA's Organogram  
Source: EWRA website

While issues of economic regulation and pricing are basically dealt with through the central department for pricing and tariffs, the central department for standards, compliance and customer protection plays two important roles: firstly, to monitor and ensure compliance of the regulated companies and secondly, to ensure customers' participation in the decision-making and regulation-making processes as well as protecting their interests. To fulfil these two broad roles, the mentioned department has to undertake several functions. On the one hand, the department is responsible for developing, issuing, and monitoring water standards in order to ensure public health and environmental protection. In the case of non-compliance, the department has the right to propose penalties to be imposed on violators. For reporting purposes, the department is responsible for issuing regulatory accounting guidelines to facilitate comparisons among service

providers in terms of their performance indicators against the identified standards. The results of these performance comparisons should be included in a database on service providers' performance in the sector. The department also plays a major role in reviewing the legality of contractual agreements and the fairness of service charges in addition to providing a legal advice to the regulator on legislative and judicial matters. As the body responsible for consumer protection, the department has the right to review water agreements between service providers and end-users to guarantee their fairness. Additionally, the department has the right to investigate customer complaints and to solve disputes via dispute settlement mechanisms.

### **7.5.7 Other Water Stakeholders**

The analysis of policy documents of the Egyptian water sector shows that the sector is heavily dominated by powerful governmental players. Although the Egyptian Government has adopted and integrated a water management approach to manage water resources and despite being one of the major principles of such an approach, the participatory management principle has not been fully enacted. The role of non-governmental actors such as the private sector companies, the water NGOs and universities, is considerably limited. As reported by Svendsen (2010), the role of the NGOs is basically to act as mediators between water institutions and international donors. Added to this, water issues normally come as a second order matter of concern to many NGOs in Egypt. In other words, concerns about water issues are driven from other broader interests such as environmental protection and sustainable development in general. As for the contributions of the universities, the same report has indicated that because of the different research centres affiliated with the powerful ministries such as the Agricultural Research Center working under the Ministry of Agriculture and Land Reclamation and the Environmental Research Institute under the Ministry of Water Resources and Irrigation, those government institutions rely less on inputs from universities to shape water policy decisions. Added to this, the contribution of the private sector towards water resources development and management in Egypt is minimal because of the limited number of private sector companies and the heavy regulation of the activities of those organizations.

The story is a bit different with the newly emergent water users' associations (WUA) particularly in the area of irrigation. The idea behind creating WUAs is to develop and adopt a participatory irrigation management approach in Egypt via increasing users' participation in irrigation decisions as well as the design of irrigation systems. In other words, WUAs aim at balancing the supply side of the water equation represented by decision-makers, planners, managers and operators with the demand side represented by water users. As reported by the Global Water Partnership (2012), the creation of WUAs has resulted in an improvement in the overall environment of decision-making in the area of irrigation in addition to increasing the performance of the overall irrigation system due to the capacity building processes for water decision-makers, managers, operators and users. The quality input and contributions from the users even at a very early stage of designing water systems have resulted in an increase in water savings as well as crop production. Added to this, involving users in managing water irrigation systems has also stifled the resistance of water users during the different phases of implementing irrigation projects and has guaranteed project sustainability.

Despite these positive signs for improving the effectiveness and the sustainability of irrigation governance systems due to users' participation, many interviewees have warned that the results of this experience have to be taken with great caution given the very early stage of establishing WUAs. There are still many steps to be taken to institutionalize and formalize user participation in all water and wastewater governance arrangements. As a member of staff in the Irrigation Department at MWRI has noted, 'the experience of WUAs and their role in managing irrigation systems needs to be very well-documented and shared with other water stakeholders in all sectors' (Interview 18). This documentation of the process, according to his view, will help other stakeholders to learn from the experience of WUAs in the irrigation area and it will help those WUAs to learn from their own mistakes. On a different note, an expert in the field of water governance has also mentioned that '[...] more investments are needed to build-up the capacities of WAUs' leaders and staff and to train them in the areas wherein they lack crucial expertise' (Interview 2). Accordingly, such a capacity building exercise will help improve the quality of WUAs' contributions and inputs to the water governance system in general.

For WAUs to be more effective, clear policy guidelines have to be in place with ongoing support from the government players in control of the overall game such as the Ministry of Water Resources and Irrigation. In this regard, a senior civil servant in the Ministry of Water Resources and Irrigation has stated that ‘the Ministry are keen on supporting the WUAs and enhancing their role and participation in water activities through keeping open channels of communications and providing the guidance and information needed to participating water stakeholders’ (Interview 11). At the same time, a similar exercise should be conducted for the governmental units to train them on how to map-out and identify relevant stakeholders and how to approach them in order to guarantee their active participation during the different stages of designing and implementing water arrangements.

Finally, the time taken and efforts made during the meetings and the other project related activities have to be appreciated and acknowledged by the governmental counterparts and the participating WAUs have to see some of their inputs and contributions reflected in the final water arrangements and decisions. As one expert in the water sector has put it, ‘one of the major pitfalls of such participatory governance mechanisms is that many government units put them in place under the pressures of the international donor. Participatory decision-making is one of the good governance indicators; however, if it is done in a ritualistic manner it can be counterproductive and in some cases destructive. The reason for this is that the participating stakeholders lose faith and credibility in the whole process’ (Interview 3).

## **7.6. Conclusion**

In this chapter, the national level governance of the Egyptian water sector has been explored in an attempt to map-out the key policy actors and to identify their roles and responsibilities in managing and regulating the water industry. The major milestones of the sector’s reforms and the resultant improvements and shortcomings of each wave of reform have been underlined in order to explain what drives water reforms in Egypt and the actions taken to deal with the main policy and regulatory issues. The legal and regulatory environment has also been mapped-out and analysed with the purpose of identifying the key legal and policy documents governing water stakeholders and identifying their expected contributions in relation to managing water resources in Egypt.

The analysis of the legal, regulatory and institutional frameworks has indicated that the Egyptian water governance is quite complex. Since the very early days, many activities have revolved around the water flow through the Nile. In fact, the very existence of the Nile has shaped the structure of the Egyptian state throughout its history and can greatly explain the centralized nature of its regimes. The long history of controlling the Nile means that the water sector in Egypt has an extensive heritage and legacies from that past in terms of the institutions involved in water management or the policies and regulations governing the processes of water management and distribution. Following on from the historical background to the development of the Egyptian water sector and its consequent reforms, it can be concluded that this sector has two major characteristics: the institutional complexity and fragmentation of roles and responsibilities due to the absence of cohesive legal and regulatory environment.

At the institutional level, the responsibility of managing water resources in Egypt is divided among different ministries and state agents. Those state actors completely dominate water governance and carry the responsibility of making and enforcing water policies and decisions with a minimal level of citizen participation or inputs from other non-state water stakeholders. Despite the various attempts to reform such a complex structure and to redesign the water sector in Egypt in a more integrated fashion, the results were very humble and the sector is still very much lacking clarity in relation to the roles and responsibilities of the involved actors. In such a chaotic institutional environment, a coordination mechanism is a must in order to make sure that there is not any duplication of activities and that roles and responsibilities are clearly identified and assigned.

Institutional complexity is not necessarily a negative indicator in itself as some sectors are complex by definition and their operations require the involvement of many policy actors. The water sector in Egypt is a case in point. Nonetheless, if institutional complexity has not been managed through a cohesive regulatory and legal framework it can turn from being a blessing into becoming a curse. This is more or less the case of the Egyptian water sector, wherein the lack of unified water legislation has resulted in vagueness and duplication of responsibilities when it comes to which party is responsible for doing what. The long awaited water law in Egypt is still under formulation and until its promulgation, the sector



will continue to be operated according to the scattered legal documents and decrees discussed in this chapter.

Another important institutional feature of the national-level water governance in Egypt, as the discussion has indicated, is the weak participation of the non-governmental stakeholders in the governance arrangements. Most of the policies and decisions are characterised by a top-down approach, which excludes many important water stakeholders including private sector organizations, NGOs, and water users or marginalizes their role and input in the policy and decision-making processes. Such a top-down approach is not sustainable in the long run, particularly with the growing role of non-state actors in all fields of public policymaking including in the water sector. The Egyptian Government is calling upon the private sector and civil society organizations to take part in infrastructure development and service delivery. In this context, a participatory decision-making and policymaking and implementation mechanism is a must. It makes no sense for those actors to get heavily involved in implementing policy and decisions in which they have had no input. In other words, those actors have a different rationale for their operations and cannot be treated as a government department or units affiliated to the ministries in charge. In this respect, the creation of the WUAs was a good starting point. However, as indicated earlier, firstly, this model needs to be replicated in all water sectors and activities and not only for the irrigation sector, and secondly, all water stakeholders including civil society organizations, the private sector and the universities and research centres have to be activated and provided with channels to actively take part in all water governance arrangements.

With the overall water sector so mapped-out and analysed in terms of its main institutional setting besides the governing legal and regulatory environment, the discussion in the next chapter will focus on assessing the functionality of the water governance arrangements in the Egyptian water sector. This will be done by looking at the main functions of water governance regimes and the level at which those functions are fulfilled by the key water players identified in this chapter. Looking at the operational and functional side of the water governance system in Egypt will allow the analysis and evaluation of existing water governance arrangements as well as the appropriateness of the adopted regulatory system. In that sense, the relation between agents and structures will

be unpacked and the operational gaps will be identified. Based on the evaluation of the current water structures and agents, the thesis will conclude by providing water policymakers in the country with a set of policy recommendations on how to improve water governance arrangements for the whole Egyptian water sector to work more efficiently.

## **CHAPTER 8: THE EGYPTIAN WATER GOVERNANCE SYSTEM IN PRACTICE: THE INTERPLAY DYNAMICS BETWEEN AGENTS, AND STRUCTURES**

### **8.1 Introduction**

The relationship between policy structures and agents has been the focus of chapter 4. In the light of the theoretical discussion provided in that chapter, water governance can be regarded as a product of the interaction between water structures and water agents at different levels. Based on this understanding of water governance, and with the main water agents and structures so identified and analysed in Chapter 7, the aim of this chapter is to bring into a sharper focus the interplay dynamics between water policy actors and institutions in order to shed light on the way in which the water governance system in Egypt works. The previous discussion of water agents and structures in Egypt has indicated that the responsibilities of managing and allocating water resources are divided among a complex web of actors at the central and the local levels. At the central level, several ministries led by MWRI play an influential role in forming and implementing water policies and decisions. Associated with these ministries is another complex setting of regional authorities responsible for managing specific sections of the water governance system. A number of non-governmental actors including donor agencies and civil society advocacy organizations play a marginal role in water management, planning and allocation in comparison with the dominant governmental actors. Considering the overall complex structure of water governance in Egypt, the question is how do water agents interact in such a fragmented environment? How are roles and responsibilities translated into actions? What are the coordination mechanisms? What are the challenges facing water stakeholders? How can such challenges be overcome?

To answer these questions, it is necessary to assess the water governance system in Egypt from functional and practical angles. Such a functional analysis

will help in highlighting the interplay dynamics between agents and structures and assessing the impact of such dynamics on the overall functionality of water governance arrangements. This evaluation will allow an in-depth discussion of the advantages and disadvantages of the existing governance arrangements as well as underlining the major issues facing the effective management of the Egyptian water resources.

## **8.2 Assessing Water Governance Functions in Egypt**

Water governance has been perceived in the context of this study in accordance with Franks and Cleaver (2007: 11) as a political process which denotes 'the system of actors, resources, mechanisms and processes which mediate society's access to water' (see Chapter 3). Following on from this understanding, an effective water governance system should perform some basic functions including: water sector organization and strategic planning, water resources management and allocation, in addition to regulating and monitoring the performance of all water players (see Table 8.1).

As the table shows, any water governance system is expected to perform five basic functions in order to effectively manage and regulate water resources. At the sectoral level, water governance systems should assist in clearly designing and altering water institutions and structures in a manner that reflects precise allocation of the role and responsibilities among involved actors. Given the multi-level complex governance structure in Egypt as previously discussed in chapters 6 and 7, the coordination function of the system at the national as well as the regional levels becomes paramount. Added to this, modernizing the existing infrastructure and building-up the capacity of water institutions represents another significant function for the water governance system from a sectoral point of view.

For water governance systems to work effectively, they should also adopt a strategic approach that focuses on proactive water decisions based on accurate projections of the future demand on water resources. To this end, collecting and timely use of water data is a critical factor for making long-term water policies and plans. With regard to managing and allocating current water resources, the water governance system should clearly define water rights and explain the way in which such rights can be transferred among users. This issue is quite controversial as the allocation decisions and the associated water rights may

result in conflicts among users (Gersfelt, 2007). Such a possibility calls for the establishment of a dispute settlement mechanism via which water conflicts can be resolved. An effective water governance system should also allow an optimal utilization of the existing water resources by putting in place the right mix of public and private arrangements. In this regard, incentivizing water actors, namely private water companies, is a key in the effective development and management of any water sector.

Organizing & Capacity Building	Strategic Planning	Water Allocation	Water Resources Development & Management	water resources Regulation and services
<ul style="list-style-type: none"> <li>- Creating and modifying an organizational structure</li> <li>- Assigning roles and responsibilities</li> <li>- Setting national water policy</li> <li>- Coordinating and integrating among sub-sectors, levels, and national sub-regions</li> <li>- Establishing linkages with neighbouring riparian countries</li> <li>- Building public and political awareness of water sector issues</li> <li>- Securing and allocating funding for the sector</li> <li>- Developing and utilizing well-trained water sector professionals</li> </ul>	<ul style="list-style-type: none"> <li>- Collecting, managing, storing and utilizing water-relevant data</li> <li>- Projecting future supply and demand for water</li> <li>- Designing strategies for matching expected long-term water supply and demand and dealing with shortfalls (including drought mitigation strategies)</li> <li>- Developing planning and management tools to support decision-making</li> </ul>	<ul style="list-style-type: none"> <li>- Awarding and recording water rights and corollary responsibilities</li> <li>- Establishing water and water rights transfer mechanisms</li> <li>- Adjudicating disputes</li> <li>- Assessing and managing third party impacts of water and water rights transactions</li> </ul>	<ul style="list-style-type: none"> <li>- Constructing public infrastructure and authorizing private infrastructure development</li> <li>- Forecasting seasonal supply and demand and matching the two</li> <li>- Operating and maintaining public infrastructure according to established plans and strategic priorities</li> <li>- Applying incentives and sanctions to achieve long and short term supply/demand matching (including water pricing)</li> <li>- Forecasting and managing floods and flood impacts</li> </ul>	<ul style="list-style-type: none"> <li>- Issuing and monitoring operating concessions to water service providers</li> <li>- Enforcing withdrawal limits associated with water rights</li> <li>- Regulating water quality in waterways, water bodies, and aquifers (including enforcement)</li> <li>- Protecting aquatic ecosystems</li> <li>- Monitoring and enforcing water service standards</li> </ul>

Table 8.1: The Functions and Sub-Functions of Water Governance Systems  
 Source: The Regional Water Governance Benchmarking Project ([www.rewab.net](http://www.rewab.net))

Smart and effective regulation is an integral part of any effective water governance system. An effective water regulator should be able to control and manage the sector by developing a framework which provides the right balance between incentives and sanctions. Additionally, an effective water regulator should be able to develop and enforce water standards and should also be able to monitor and control the behaviour of water players in a manner that leads to

the protection of the public interest besides the rights of water users and consumers. To this end, monitoring water quality represents an important regulatory function, which may have a detrimental impact on public health in the cases where it is compromised.

Taken together, the previously discussed five water governance functions can be very helpful in assessing how effective the existing water governance arrangements are in Egypt. During the interviews, the respondents were asked to generally evaluate the current water governance system and to reflect critically on its core functions and dynamics. The analysis of the interview material underscores the dominant role of MWRI in running the water sector. The Ministry, according to the majority of interviewees, is heavily involved in organizing, planning, allocating, developing, and regulating water resources. As clearly put by a water and sanitation expert in the field, '[...] by looking at the mandate of MWRI and its longstanding history in managing and regulating the water sector in Egypt, one can confidently conclude that MWRI is having a great impact on all water governance functions' (Interview 22). This observation is supported by MWRI's extensive network of affiliated departments and units involved in running key water activities including irrigation, ground water, and drainage services.

In order to reflect fully on the perceived dominant role of MWRI, respondents from the Ministry were asked to describe the role of the Ministry in managing and regulating the overall sector in one word. The used terminology confirms the perceived dominance of the Ministry as words such as 'central', 'important', 'crucial', 'vital' and 'key' were used to describe the role played by MWRI in running the water sector.

In searching for explanations for the perceived importance of MWRI, respondents were asked to give some reasons of why there was such significant involvement of the Ministry in nearly all water functions. Explanations varied based on the affiliations of the respondents. For water experts and specialists in the water sector, the following reasons have been highlighted as explanatory factors of the domination of the Ministry (Interviews 2, 3, 22):

- The historic role of MWRI and the way in which it shaped the evolution of the overall water sector;

- The importance of the water sector itself, which requires a strong and an interventionist role of the government represented by MWRI in order to secure a water supply for water users and the rest of the economic sectors;
- The weak participation of civil society organisations and the limited engagement of the private sector in water governance arrangements compared to MWRI and the other governmental players.

Accordingly, the long-standing history of MWRI and the role it played in developing and regulating the water sector in Egypt (see Chapter 7) has legitimized – for the majority of water players - its current dominant role in managing and regulating water resources. Added to this, many respondents have emphasised the vitality of the water sector itself and the potential hazards for water users in the case of any poor management or negligence in monitoring water quality, for instance. As noted by a senior member of staff at the planning sector in MWRI, ‘the government cannot allow the water to drift; managing water resources and monitoring the quality of water is not an easy task. The government cannot entrust any other organizations to undertake this job but its own units such as MWRI and the rest of concerned ministries’ (Interview 12). From this perspective, such huge responsibility justifies the governmental control of the sector operations and functions via MWRI, in addition to the previously identified complex web of governmental actors.

The dominant role of MWRI in the current water governance arrangements in Egypt is also facilitated by the weak participation and the limited capacities of the non-governmental actors such as the private sector and the NGOs. As reported by the Trade Council at the Embassy of Denmark (2014), despite the ongoing efforts to involve private investors in water governance arrangements via the public-private partnerships between the government and the private sector, the overall contribution of private water companies is still minimal and there is still a great potential for more collaboration between the government and the private sector.

As mentioned by a senior civil servant in MWRI, ‘the government is keen on allowing the national and international private sector water companies a greater role in developing and operating new water projects’ (Interview 9). Such a

commitment has been materialised on the ground through concrete governmental actions. These actions have included:

- The approval of the public-private partnership law in 2010;
- The decision taken by the public-private partnership unit to revive previous plans for private sector participation in infrastructure development projects such as the Abu Rawash wastewater treatment plant;
- The awarding of new projects to the private sector such as the US\$ 148mn contract given to a consortium comprising Passavant-Roediger GmbH, Acciona, and Hassan Allam Sons to expand Al Gabal Al Asfar wastewater treatment plant in Cairo.

Added to this, the government is also keen on modernizing the utilised water technology via contracts with the private sector. In this vein, the government has signed new contracts with General Electric to provide water equipment for a new plant in Ain Sokhna.

The economic forecast for the Egyptian water sector is promising as water scarcity in the country opens new opportunities for private domestic and international infrastructure developers. The participation of the private parties can take different shapes such as building-up new facilities and deploying new technologies (Frost and Sullivan, 2011). As reported by the Trade Council of the Embassy of Denmark in Cairo (2014:2), the Egyptian Government has agreed to implement a number of water network and sanitation projects in the rural areas of the country, worth US\$261mn, which will be spread out over 150 projects. These new projects offer opportunities for more tenders for private water and sanitation companies under the public-private partnerships format. However, the potential of the private sector participation in the Egyptian water sector has not been fully reached in areas such as developing and operating wastewater treatment plants and networks in addition to sewerage collection, sanitation and water desalination facilities.

Looking precisely at the actual participation and engagement in the decision-making and policy formulation process, it can be clearly noticed that the role of the private water companies is considerably limited in comparison to the potential roles those companies can play. With respect to the role of NGOs, as previously

mentioned apart from the role played by the Water Users Associations in the irrigation sector, the input from NGOs is insignificant and lacks real contributions toward setting the water policy agenda in the country or addressing the main water governance issues.

Those who work for MWRI have drawn heavily on the *experience* of the Ministry and the availability of required skills and capacities for organizing, planning, developing, and regulating the water resources. Members of staff in other ministries have also acknowledged the central role of MWRI in running all functions of the water sector. According to their views, the reason for this domination is the *legal mandate* of the Ministry, which is broad enough to give MWRI the right to be involved in and responsible for all water governance functions. As put by a water expert at the agricultural research centre in the MALR, 'by law MWRI has the obligation to monitor and manage all water functions and to act as an umbrella organization under which other government units work and coordinate their activities' (Interview 5). In this regard, although the legal framework of water governance in Egypt is fragmented and diverse, it places many responsibilities on MWRI to manage and run nearly all water functions and these responsibilities are perceived by other water actors in the sector and greatly justify the key role of the Ministry in looking after the overall water governance system.

At the same time, some respondents from other ministries as well as the regulatory agency have emphasized that in spite of MWRI's leading role in managing and running the water sector, the Ministry does not stand alone or work in vacuum. Such a leading role needs inputs and contributions from other entities to be done properly. In other words, the mentioned water governance functions are all collective in nature. That means water stakeholders are involved at different levels, in different capacities, and with different forms of inputs and contributions. As stated by a senior civil servant in the MESA, 'we all play a role but each according to its legal mandate and assigned responsibilities' (Interview 17). For instance, the Ministry of Agriculture and Land Reclamation has been identified by the interviewees as the second most influential actor in the Egyptian water sector. With regard to the five identified core water governance functions, the respondents have agreed that the MALR plays an active role in main areas. These areas include sector organization and planning in addition to water



resources development and planning. As for the role of the MALR in sector regulation, it is relatively limited compared with the role played by MWRI and the Ministry of State for Environmental Affairs, which stands out as a main partner in undertaking regulatory functions. Added to this, when it comes to the organization and the planning of the sector, MWRI has to listen to and work collaboratively with other ministries, including the Ministry of Housing, Utilities and Urban Development, the Ministry of Health, and the Ministry of State for Environmental Affairs. MWRI also has to receive inputs from the Holding Company for Water and Wastewater regarding the operation of water utilities.

In contrast to the dominant role of MWRI and the rest of the governmental actors in running the water sector, the involvement of non-state stakeholders is relatively limited. Considering, for example, the role played by the universities and water research institutes, it can be noticed that several public and private universities in addition to a number of water research units, are involved in water related research projects in different ways and at different levels. The water sector provides students and researchers at the national universities with the data they need to research and investigate many water related issues. Nonetheless, such research efforts are scattered and lack an overall research agenda to guide research in the water sector. As noted by a senior academic at one of the national universities, 'we normally encourage our post-graduate students to contact water authorities and to use their databases for their research projects. But the impact of the results of this research body on the way in which water resources in the country are managed is the least minimal impact' (Interview 3). Given that many of these research projects are addressing real and pressing water issues, it has become a necessity for the government to organize the research efforts in this area and to encourage water stakeholders to sponsor and fund water research projects for the whole sector to benefit from its results.

### **8.3 Regulatory Design, Rationale, Power, and Transfer Mechanism**

Unlike many water regulatory regimes in the Arab region - compare Jordan and Yemen - where regulatory developments and debates are still in their initial phases, the Egyptian water regulatory regime is fairly well-established (Saidam and Ibrahim, 2006). In spite of the broad legal mandate of the sector regulator, however, many respondents have underscored its weak role (Badran, 2013).

According to its legal mandate, the Egyptian Water and Wastewater Regulatory Agency has been assigned different regulatory functions in the areas of economic as well as water quality arenas. In other words, the water sector regulator has to decide upon and manage all aspects related to the financial viability of water services in addition to monitoring and regulating other aspects related to the quality of water and wastewater services. These regulatory aspects, according to a senior member of staff at the Egyptian Water and Wastewater Regulatory Agency, differ from regulating and managing the actual water resources, which is the responsibility of MWRI (Interview 31). Consequently, according to his view, the 'water service regulation' is a more accurate way to describe the realm of the agency's jurisdictions than the commonly used terminology of water regulation. In all cases, the water regulatory agency has to strike a fine balance between considering water as an economic resource and taking account of the social aspects and implications of this commodity.

In comparison with the ministerial bodies involved in water regulation in Egypt, namely MWRI, the power of the regulatory agency seems considerably limited and purely confined to technical and economic actions. The broader decisions of water policies, which may have social implications, rest in the hands of the dominant ministries. As put by a senior regulatory member of staff:

We are not a policymaking body. The core functions and competencies of the Egyptian Water and Wastewater Regulatory Agency revolve predominantly around technical and economic aspects such as setting water quality and operational standards for water and wastewater operators in addition to monitoring and enforcing these standards. Added to this, the agency plays a major role in setting and reviewing services tariffs in order to insure the continuity of provided services as well as the cost recovery of the operators. By doing so, the regulator ensures an optimal overall performance of water utilities alongside its main function as a guardian for consumers' interests. As a protector for the public interests the agency also acts as a disputes settling platform via which the disputants can resolve their conflicts and water disputes (Interview 27).

This understanding of the role of the regulatory agency as a policy implementation tool and not as a policymaking tool has created an image of the agency as a dependent party. This means that in conducting its daily business, the agency is subject to and governed by whatever directions are received from the big players including the major ministerial and governmental bodies. In that sense, the perceived power of the regulatory agency by the water stakeholders is not as strong as the legal mandate of the agency states. In other words, the regulatory system in the Egyptian water sector reflects the case of a strong

formal but weak de-facto independence (Badran, 2017). At the formal level, the water laws and regulations reflect numerous powers assigned to the Egyptian water regulator. Nevertheless, considering the de facto independence of the regulatory agency, the way in which the regulator's legal mandate is translated into actions in addition to its ability to influence water decision-making processes is questioned by water stakeholders (Maggetti, 2007).

#### **8.4. Why This Model? The Rationale behind the Regulatory Design**

A glance at the regulatory regimes in the MENA region reveals that different countries follow different regulatory approaches and designs (OECD, 2010). The water regulatory governance and regulation is still very much a governmental matter in countries such as Lebanon, wherein all issues related to water economic and social regulations are directly handled through government departments. Other countries including Algeria and Egypt have followed a different regulatory approach in order to manage the transformation and the modernization processes of their water sectors. The independent sector regulatory model has been selected by the sector policy makers in Egypt as the appropriate way forward for transforming and reforming the water sector (Badran, 2012; 2013). Therefore, it was instrumental at that stage of the research to understand the official justifications given by the interviewees for this model. The analysis of the interview material underlines the market structure, the nature of the water sector, and the ownership of the water operators and infrastructure as the main reasons behind adopting the sector regulator as the regulatory design for the Egyptian water sector.

Considering the market structure, it was necessary from a regulatory point of view to separate the operational and regulatory aspects of water and the wastewater services provision. This step, as noted by a senior civil servant in the regulatory agency, 'was essential to boost the sector-wide reform efforts' (Interview 30). As discussed earlier in Chapter 7, the water market structure in Egypt is quite hierarchical and greatly dominated by government entities. These governmental bodies are responsible for both making and enforcing water policies and decisions. Given the complexity of the overall regulatory environment and the fragmented nature of the legal framework, (see Chapter 7), it was necessary to establish a new regulatory body in order to manage the economic and social aspects of service delivery. Added to this, during the

different phases of the water reform process, the Egyptian Government was keen on allowing the private sector a bigger role, namely in modernizing the existing water and wastewater infrastructure in addition to building up new projects in a partnership with the concerned government parties. From this angle, having a sector regulator for the water industry was thought to assure and encourage private investors.

In that sense, establishing the EWRA was a governmental move to send credible policy commitment signals to water private investors (Gilardi, 2002). In other words, the creation of the independent regulatory agency was a means to an end, which was attracting the badly needed infrastructure and technology investments. This step was essential in order to assure private water companies, particularly in a country with a previous history in nationalising private industries in the 1950s and the 1960s. As clearly put by a regulatory member of staff at the EWRA:

We have a history with nationalization of private projects and businesses during the 1960s. This history, besides the heavy-handed approach of state water organizations in handling water related issues, could scare private investors off if they do not see institutional guarantees for their investments. Such guarantees have been secured by the establishment of the sector regulatory agency (Interview 27).

What can be inferred from this comment is that setting up the EWRA was a purely instrumental move by the Egyptian Government in an attempt to attract private investments for the purpose of modernising the archaic water facilities.

The natural monopolistic nature of the sector is another justification for state intervention via regulation in Egypt. The water sector in Egypt as is the case with many other utilities is treated as a natural monopoly. That means water services carry certain characteristics that make them different from any other economic sectors. Chief among those features are the vitality of the services provided (water and sanitation), the lack of economic case for competition, and the huge and sunk cost associated with water investments. These natural monopolistic features of the water sector have long justified state interventions in order to maintain certain levels of service delivery and to make sure that water services are provided to all citizens, even those who live in remote areas. According to the majority of the interviewees, the creation of an independent regulatory agency in such an environment was vital for two main reasons. First, it encourages private water companies to invest in the sector and assure them that

their investments are safe and insulated from government interventions. Second, it serves to keep an eye on the behaviour of the private water companies and to make sure that they are not taking any decisions that may harm water users and consumers. As put by a senior advisor in the EWAR, “from a regulatory point of view, the regulatory equation has two parts: the private sector and the consumer. We need the private sector to modernise water facilities and technologies but we have to protect the interests of the consumer and end users. In other words, the private sector participation should not come at the expense of the water users and consumers” (Interview 29).

The changing mode of utility governance in Egypt to rely more on private water company has presented another reason for regulating the sector. Under the traditional model of utility governance, the ownership rights of water facilities and infrastructure were solely assigned to the state. With water sectors’ reforms spreading worldwide, the situation has changed and private sector water companies have been given new opportunities to take part in developing the infrastructure and in some cases in service provision (compare the UK experience) (OFWAT, 2006). In the Egyptian case, the private sector participation in water services delivery has been described as being minimal. The major contribution of the private companies comes from improving the existing water facilities and building up new projects. To put it another way, as natural monopolies, some of the water industry segments should not be left in the hands of the private sector for fear that water private companies may utilize their monopolistic positions to exploit end users and increase the water services prices or provide poor quality services, for example. In that sense, the regulation of the private sector, as well as the rest of the involved non-state actors, has to be substantiated. The traditional model of state ownership needs to be replaced by a new arrangement wherein the state and the private sector work in partnership. As clearly put by a water expert, “we need to learn from other countries’ experiences especially those which have vibrant private regulated water companies” (Interview 26).

### **8.5 Assessing Water Decision-Making and Coordination Mechanisms: a Good Governance Perspective**

In complex and fragmented water governance arrangements such as the Egyptian case, a valid question would be how decision-making rights are

allocated among the involved water policy actors and stakeholders. The previous discussion of the main policy actors and the roles and responsibilities they were assigned in the Egyptian water governance system has shed some light on this issue. It is quite evident from the analysis of the interview materials and the documentary analysis of the collected policy documents and reports that policy decision-making rights are respectively assigned to governmental actors. In other words, the existing water policy structures rely greatly on governmental agents and considerably less on the non-state actors.

The discussion of good governance in Chapter 2 was helpful in identifying the main features of effective decision-making mechanisms in water governance systems (see Chapter 2). Following on from the provided notion of good governance, it can be concluded that an effective water decision-making mechanism should be participatory in nature, transparent, responsive, and follow the rule of law in order to achieve accountability. These good governance criteria were used as an analytic framework to encourage respondents to reflect on the qualities of decision-making processes in the Egyptian water sector.

### **8.5.1 Participation in Water Decision-Making**

There is a growing understanding from the governmental actors involved in the water governance arrangements, particularly the members of staff at MWRI, that the government alone cannot do everything. As put by a technical director in MWRI, 'water issues are becoming increasingly complex and involve many players. Therefore, the Ministry realised long ago in 2005 that an institutional reform is in order' (Interview 9). A designated reform unit in MWRI was established under the name of the Institutional Reform Unit (IRU) in an attempt to discover new governance arrangements in order to better manage and plan water resources (MWRI, [www.mwri.gov.eg](http://www.mwri.gov.eg)). The scope of the proposed institutional reforms extends to cover many areas including a full reconsideration of the way in which roles and responsibilities for running the water governance system are allocated. The purpose of this revision of roles and responsibility was to find new venues wherein the non-state actors, namely the private water companies, can play a greater role. These ideas have been translated into a new policy document reflecting the vision and strategy for MWRI institutional reform. The vision and strategy document has emphasised that the full potential of the proposed water reforms can only be harnessed if the non-state actors, including

water users and private water companies, play a greater role in the water governance system alongside the traditional governmental agencies.

### **8.5.2 The Transparency of Water Decisions**

The issue of transparency was regarded as a by-product of the participatory decision-making approach proposed by MWRI. For many of the interviewees, it is meaningless to try to encourage water stakeholders to take part in making water decisions and policies without providing them with the information they need. As clearly mentioned by a senior member of staff at MWRI, 'it would not be fair to ask water users and private sector water companies to take part in making water decisions especially with regard to the new infrastructure projects and to keep them in the dark. We make as much information as we can available to the water stakeholders including end users and the private organizations' (Interview 1). What can be understood from this quote and from the examination of the interview materials is that for the majority of the governmental water policy, actors' transparency is all about making as much information and data as possible available and accessible by the water stakeholders. Nonetheless, information availability and accessibility represents only one aspect of transparency. This is the aspect most of the interviewees have focused on to show how transparent the water governance system in Egypt is. There are other aspects which are equally important to making data and information readily available on governmental agencies websites. These aspects include the transparency of the decision-making procedures, the transparency of final decisions, and the transparency of decision-making processes and results. These aspects of transparency did not appear in the viewpoints expressed by the respondents.

Added to the above observations, and taking account of the long history of state monopoly of water services and infrastructure projects, transparency has been regarded by many government officials and other experts in the field as a process which may take a long time to be fully instituted. As stated by a water specialist:

The concept of good water governance should be taken as an integrated unit. In other words, participatory decision-making, responsiveness, transparency, accountability and the rule of law should be introduced together because of the complementary nature of these elements. Having said that, we should not also forget the enabling environment for the successful implementation of the core principles of good water governance. [...]What precisely I refer to here is the overall democratic governance within which the principles of good water governance including accountability are embedded. Given the current

transitional period after the 25<sup>th</sup> of January 2011 revolution, I think many elements of this enabling environment are missing and we still have a long journey in order to fully embrace the democratic values and the principles of good water governance in the Egyptian water sector. (Interview 24)

This observation is particularly important when we consider the idea of transferring governance models and best practices from certain jurisdictions to new environments. As the discussion on policy transfer in Chapter 4 has indicated, copying is one of the options available for policymakers when deciding upon which policy option(s) to select in order to address certain policy problems. Policy copying may take place for several reasons, chief among which are the isomorphic pressures from the surrounding environment. In this context, policymakers in certain jurisdictions may opt to copy other policy instruments and institutions voluntarily just because they are successful in their original environments. On the other hand, and this is quite evident in the case of many developing countries, policymakers have no choice but to adopt certain governance arrangements under the influence of the donor agencies and international financial institutions. Regardless of the way in which governance arrangements are transferred, the body of literature on policy transfer warns policy researchers and practitioners from ignoring the impact of the contextual factors on the success or failure of the transferred governance arrangements (see Chapter 4).

By looking at the notion of good water governance, in addition to the core principles of good governance and the environment within which the concept was coined, it can be noted that many of the underlined democratic values are lacking in the governance of the Egyptian water sector. These democratic values are fully appreciated and embraced by all state and non-state players in all policy and decision-making arenas in western democracies. Consequently, in such an environment, one should not expect the water governance system to be fully transparent and open to all water stakeholders at all levels. Nevertheless, the efforts by MWRI to make the water decision-making and policymaking processes more open and more transparent are very much welcomed and should be enhanced and continued. In this regard, a water specialist has rightly commented on the implementation of good governance principles by stating that 'it is a process and not an event' (Interview 23).



### **8.5.3 The Accountability of Water Decisions**

A participatory and open water decision-making environment can be a double-edged weapon. On the one hand, it can greatly facilitate the processes of making informed and responsive water decisions if and only if the overall system is managed effectively. On the other hand, when roles and responsibilities are not clearly defined and assigned to involve water stakeholders, the decision-making processes are chaotic and the results could be disastrous (Leitao and Mcallister, 2010). The main reason for this is that in such a situation the accountability for actions and results will be totally lost. To put it another way, for participatory decision-making mechanisms to work effectively, the centralised authorities for making and implementing water policies and decisions previously assigned solely to ministerial bodies and other state agents have to be diffused downward and outward. This requires many decision-making powers to be delegated to state and non-state water stakeholders at sub-national levels [downward diffusion] in addition to assigning new roles and responsibilities for the new partners including private water companies, water users' associations, and the water NGOs [outward diffusion]. Such decentralised arrangements for making water decisions add to the complications of accountability. With one or even a small number of governmental actors in control of the policy water decisions, it is easier to point at the parties responsible for wrong decisions and misdoings. However, having state actors working hand-in-hand with a whole web of other state and non-state actors certainly results in more complex governance arrangements and calls for a redefinition of the notion of accountability and even more for inventing new mechanisms to hold water policy actors accountable for their decisions and actions.

An analysis of the interviews shows that this full and complex picture is not clear in the minds of some of the interviewed members of staff especially in the main ministerial bodies controlling the water sector governance. For instance, in a discussion regarding how the newcomers will affect the current water decision-making setting and the roles played by the ministerial bodies involved, a respondent in the MALR kept referring to traditional mechanisms of accountability such as roles and responsibilities as stated in water laws, regulations and policy documents. In his words 'it is all in the law' (Interview 19). This institutional and legally bound understanding of accountability is important

but not sufficient to capture all possible forms of misconduct and to make the involved parties accountable for their actions. As noted by a water and sanitation expert, 'the process of involving private water companies in the water governance and water decision-making processes should be designed and managed very carefully. The reason for this is that if anything goes wrong regarding the provided services, the end users will not point at the private party but they will hold the government accountable for selecting those companies in the first place' (Interview 25). From this angle, delegating some of the water governance responsibilities to the non-state actors does not necessarily mean the government is no longer accountable for the decisions they make or for the consequences of their actions and operations. In other words, the ministerial bodies and other governmental water organizations involved in planning and managing the water sector in Egypt are now accountable for the decisions and actions taken by non-state actors although those actors are located outside their direct chain of command.

## **8.6. Water Governance Issues and Challenges in Egypt**

Following on from explaining the interplay dynamics between water agents and institutional structures in the aforementioned section, the focus of the discussion will shift in this part to investigate the major water issues and challenges facing water policy actors in Egypt. As indicated in chapter 3, developing countries have some water governance problems in common that need special attention and consideration while designing and developing the architecture of water governance. Chief among those challenges and issues are poverty, gender, and sustainability (see chapter 3). Egypt is not an exception as it faces those issues when designing water policies and regulations. Nonetheless, the analysis of the interview materials and the review of the policy documents in the Egyptian water sector has shown that in addition to these shared water issues there is a set of other water concerns that preoccupy the minds of water policy agents.

The discussion in chapters 6 and 7 has indicated that water policy decisions in Egypt are greatly influenced by actions and developments that go beyond the control of policy and decision makers at the national level. In this respect, international donors' agendas and the threats of the upstream infrastructure developments are a case in a point. At the national level, the situation is not less complex in any shape or form. Water policy decisions are always influenced by

instructions coming from top-level policymaking agencies as well as the trade-offs between social and political considerations on the one hand and the economic and commercial aspects of water as a commodity on the other. In this context, the investigation of the major policy issues and challenges can help in identifying the way forward and putting in place some policy recommendations in order to improve the overall water sector governance arrangements.

The analysis of the interview data as well as the critical review of the previous literature and policy documents have underlined several water policy issues and challenges. These issues include: increasing water demands and water scarcity; depending on the Nile as the main source for fresh water; the trans-boundary nature of the water governance in Egypt; overpopulation and the growing demand for food; climate change and its impact on land and water use; the fragmented and complex water policy settings and regulatory environment; archaic water infrastructure (Wagd, 2008; Gad, 2017). It is worth noting in this regard that, the identified issues and challenges do not provide an exhaustive list of water governance issues in Egypt. These are the issues which appeared during the documentary analysis of the policy documents and the analysis of the interview material. Covering all policy issues and governance challenges goes beyond the scope of this chapter and therefore the focus will be primarily on the salient issues identified by water stakeholders.

### **8.6.1 The Trans-Boundary Nature of Water Governance and the Challenge of Upstream Infrastructure Developments**

Strickert et al. (2016:50) have rightly noted that '[W]ater is essential for human development and the environment; however, its security is challenged by factors such as competing uses, over extraction, and divergent perspectives'. In that sense, one of the major challenges facing the Egyptian Government in general and the water policy makers in particular is the ongoing infrastructure developments taking place in the Nile Basin's upstream countries, namely Ethiopia. The Egyptian water governance is a multi-level system wherein decisions and actions taken at the regional levels by upstream countries will affect water policies and decisions in Egypt. From this angle, any construction projects and developments in upstream countries become a major concern for the Egyptian Government especially when these projects have the potential of decreasing the Egyptian share of the Nile water. In this context, the

establishment of the Grand Ethiopian Renaissance Dam (GERD) constructed on the Blue Nile was not welcomed by the Egyptian Government. The commencement of the project in 2010 was regarded by many scholars and commentators as demarcating a new era in water governance relations in the Nile Basin (see, for example, Gebreluel, 2014; Salman, 2013). As noted by Tawfik (2015:2), the GERD is the largest dam constructed on the Blue Nile, from which 59% of the water reaching Egypt originates. That means a considerable reduction in Egypt's share of the Nile water, which is very much needed because of the steady population growth and the increasing urbanization. Additionally, challenging the Egyptian historical rights in the Nile water means an alteration in the balance of power and hydro-politics of the Nile Basin (Verhoeven, 2011b). In other words, the new developments in the upstream countries put an end to the hegemonic era of Egypt.

As stated by a water expert, '[...] the construction of the dam should be seen in the light of the overall power struggle and balance in the Nile Basin' (Interview 8). According to his view, it was not a coincidence for Ethiopia to announce the project in 2011. The timing of the project was a clear message to the Egyptian Government that cooperation projects will continue in the basin with or without Egypt. This move has been translated in practice into the signing process of the Cooperative Framework Agreement for the River Nile Basin (CFA) (see Chapter 7). From this angle, the move by Ethiopia and the rest of the upstream countries represents a new tactic to challenge the long-standing Egyptian rights in the Nile's water. It also aims at fundamentally changing the existing hydro-political configurations towards a new hydro-political regime that reflects the interests of all Nile Basin countries (Cascão, 2008). In response to the signing of the CFA, Egypt has frozen all hydropower cooperation projects with the Nile Basin countries, a move that has justified from the Ethiopian point of view the unilateral action with regard to the GERD.

The size and the potential impact of the GERD is a major matter of concern for the Egyptian policymakers. As reported by the International Panel of Experts on the Grand Ethiopian Renaissance Dam in May (2013: 7), the GERD is designed with a storage capacity of 74 billion cubic metres and a power generation capacity of 6,000 MW. It is worth mentioning in this regard that the original plans and design of the dam have been changed to increase its storage capacity. This

change in plans and design has cast more doubt on the real intentions of the Ethiopian Government. To put it another way, the declared objectives of the project in terms of generating hydropower energy for industrial and developmental purposes can be questioned on the grounds that the huge size and storage capacity of the dam are not needed for this purpose. A more plausible explanation for the Ethiopian behaviour is the tendency by the Ethiopian side to gain more control of the water flow in the Nile. This point of view has also been shared by other scholars, who consider the upstream infrastructure developments as a means to fulfil the ambitious plans of the upstream countries, namely Ethiopia, to form a new hydro-political agenda in the Nile Basin via establishing new projects such as the GERD (Asempa, 2010).

Given the size and the potential impact of the GERD on the Nile Basin, many scholars and water specialists have regarded the dam as a 'game changer' in the sense that it will change the current water governance arrangements in the Nile Basin and reshape relations and water rights allocations between upstream and downstream countries (Gebreluel, 2014; Salman, 2013). In other words, a new governance order in the Nile Basin is in the making. As such, the GERD threatens the Egyptian interests and poses a new challenge for Egypt's historical hegemonic position (Tawfik, 2016). The way in which Egypt and Ethiopia have handled the issue of the GERD has added to the complications related to this situation (Zeitoun et al., 2014). On the one hand, Ethiopia has embarked on the establishment of the dam in a unilateral fashion considering that as a national governance issue which does not concern other parties. On the other hand, the Egyptian denial of the Ethiopian right to establish the dam has resulted in a more confrontational situation and polarization among the concerned parties.

In this context, Tawfik (2015:2) has concluded that 'Ethiopia's planning and implementation of the project, and Egypt's inconsistent response to it, have increased uncertainties about the benefits of the project to downstream countries, and even to Ethiopia, and fuelled the historical mistrust between the two countries'. In an attempt to handle the stress around the GERD issue, the three Eastern Nile countries (Egypt, Ethiopia and Sudan) signed the Declaration of Principles (DoP) on the GERD in March 2015 in Khartoum. The analysis of the DoP shows that the document is of a political rather than a technical nature. The DoP has deferred the agreement on the core issues up until the conclusion

of a series of technical studies, which will assess the potential impact of the dam project on Egypt and Sudan. In this context, the DoP only reflects the good intentions of the signatory states to work together to minimize the negative impacts of the project without clearly assigning any obligations to any party.

The analysis of the DoP has also revealed that out of the ten principles included in the document none has referred to the historical Egyptian rights in the Nile water. The signatory states have addressed different issues including the importance of mutual collaboration on water issues, the fair allocation and utilization of the water, not to cause any harm to other countries, the collaborative management of the GERD, trust building, and the peaceful settlement of conflicts (Ahram Gate, 2015). These general principles are good but not sufficient to put an end to the conflict among the involved countries. As mentioned by a senior civil servant in MWRI when asked about the potential impact of the GERD on Egypt's share from the Nile water, 'for Egypt, water is a matter of life and death' (Interview 13). Nonetheless, this very strong affirmation is not fully reflected in the political positions taken by the government officials.

What is seen on the ground is that Ethiopia is going forward with its plans and the majority of constructions have already been completed. Added to this, the political gaming from the Ethiopian party is quite clear, as Ethiopia has recently declared that the results from the technical studies that everyone is waiting for will not be obligatory to the Ethiopian side (Ahram Gate, 2015). As mentioned by a water expert with regard to commenting on the DoP, 'the DoP is no more than a political statement that gives Ethiopia more time to get as many constructions as it can complete' (Interview 32). According to this view, Ethiopia is playing a dangerous political game which will change the reality, and the way in which the Nile water is allocated and used in the future.

Accordingly, the DoP does not take account of the future water needs of Egypt in the light of its growing population. The DoP does not include any concrete measures for trust building. Finally, yet importantly, the DoP focuses on the developmental needs of upstream countries, and their sovereign rights to use their water resources in order to fulfil those needs, while totally ignoring the regional water governance of the overall Nile Valley. Such an emphasis on the national water governance within each sovereign state without taking account of the impact of local water decisions on the overall water governance

arrangements at the regional level is expected to intensify water conflicts and increase the vulnerability of downstream countries, particularly Egypt. As such, the DoP has been regarded by water experts as a 'minefield' that has to be navigated carefully by the Egyptian officials (Interview 33). For instance, the DoP talked about the collaborative management of the dam and the collaboration among the three countries in the first filling process of the dam. Nonetheless, the DoP has given the owner of the project (Ethiopia) the right to change the timings and the procedures of the filling process of the dam after informing the two downstream countries (Tawfik 2016). Given the distrust and the historical tensions between Egypt and Ethiopia, this principle is expected to create more water conflicts on the timings and the arrangements of the filling process of the dam. Having said that, it is essential to translate the ten principles of the DoP in the light of the overall rules of the international law. As stated by an international law professor at Cairo University, 'the DoP is broad and very general. The included principles can be interpreted in many different ways which may contradict with international law rules' (Interview 34).

### **8.6.2 Natural Monopoly, Economic Regulation and the Challenge of Excessive Subsidisation and Water Pricing**

One of the major characteristics of water sectors is natural monopoly and inelasticity of water demand. That means unlike other economic commodities, the demand for water services does not respond to changes in water prices. This feature has been provided as a justification by governments in different countries to bring water industries under the direct control of the state. As put by Kandil (2003: 223), in water services, the monopoly level is naturally high due to the lack of substitute products. For example, it would be inefficient to have several competing irrigation networks in an agricultural area or water distribution or sewerage networks in a city. Consequently, the single service provider is in a dominant position, making it necessary to protect the consumer against monopolistic behaviour.

The natural monopoly and the inelastic demand from water users has justified the subsidization of water prices. That means water service prices do not reflect the actual cost of production and service provision. In other words, water service prices are administrated by governments to benefit certain segments of water users (normally the poor and those who receive limited incomes) in order to

ensure safe and clean water provision. The difference between the production and service delivery cost on the one hand and the administrated prices on the other is most likely to be paid by the government in the form of a subsidy.

The situation in Egypt is not different from what has been described above. The water industry has been regarded as a natural monopoly, which justifies the intervention of the state in service provision including the pricing of water services. As reported by Rohac (2013:2), one-third of Egypt's public spending is directed annually toward subsidies. The overall figure of the annual water subsidy bill has reached 1.2 billion Egyptian pounds as clearly indicated by a senior civil servant in HCWW (Interview 10). The reason for this is that the actual production cost is almost double the subsidized prices at which water services are provided to end-users. Such a huge subsidy bill can no longer be paid by government and a reform process is in order.

As a part of a comprehensive plan to reduce government subsidies in the water sector, the Egyptian Government embarked on a reform process in 2006, which included differentiating water prices according to the level of consumption. As reported by Ahram Online, on Thursday 1 May 2014, Egyptian households and water users with their consumption exceeding 10 cubic metres per month will have to pay LE0.36-LE0.67 per cubic metre compared to LE0.23 per cubic metre for those who consume less than 10 cubic metres per month. By doing so, the poor people who come under the second category of water users will not suffer from the new water tariffs while those who can pay more for their water consumption will bear the majority of the cost (Interview 28). In spite of such a cautious approach to reduce water subsidization, the prices of water bills have been hiked since the implementation of the new water tariffs in June 2015.

Since the early 1990s, there has been a general agreement among water policy analysts and scholars that water should be treated as an economic commodity, and therefore it has to have a monetary value assigned to it. Such an understanding was clearly reflected at the United Nations Conference on Environment and Development (UNCED), in Rio de Janeiro and the resultant 'Dublin Statement' in 1992. Despite such an agreement on the overall principle, the pricing mechanism and the consequences of dealing with water on a purely economic basis are still problematic for many governments around the globe including Egypt. The major concern with regard to treating water as an economic



commodity is the trade-offs between its economic values and non-economic aspects. In other words, given the humanitarian, social and health related issues associated with water, the consequences of any mismanagement of this vital resource and its related issues, including pricing, could be severe for any regime. Consequently, any water pricing mechanism that aims at managing the demand and the supply sides of this economic good must construct a fine balance between water's economic as well as social and human values.

The question of what prices and tariffs should be assigned to water services represents one of the major aspects of water sectors' economic regulation (Rezaee, 1999). Water regulators have to decide upon water charges and how much water companies can charge users in return for the provided services. In this regard, two major questions must be answered: firstly, how can water prices be determined given the overall political and economic situations? Secondly, how can water prices be implemented without affecting vulnerable communities? The answers to these questions are as political and social as they are economic in nature. The political risk and cost associated with answering these pricing questions the wrong way can cost political regimes dearly. High water prices can remove or limit people's accessibility to water, which they see as a humanitarian right. In that sense, imposing high water tariffs and prices can result in riots and political unrest, which in turn creates an unstable society.

The question of water prices is particularly relevant to Egypt because of the growing water shortage and the steadily growing population. As indicated previously, the demand on water services is increasing and it is expected to increase more in the future. At the same time, the amount of water available is decreasing and will decrease even more after the completion of the infrastructure projects built by the upstream countries. In the light of these facts, it has become necessary to come up with a system of water prices and tariffs that enables the government to reduce water demands and increase water supply in addition to the efficient allocation of water resources among the different types of users (Gersfelt, 2007). To this end, the importance of water sector liberalization and economic regulation, namely a water-pricing system, has come to the forefront. As noted by a senior regulatory member of staff in the EWRA, since 2004 the government has taken drastic steps to liberalize the water industry and to run the sector as a commercial sector in which water services have to be priced based

on demand and supply (Interview 21). An increase in water tariffs was introduced and the prices increased from 12 to 23 piasters per cubic meter. Such a move by the government was strongly rejected by the population, who went out in streets in different parts of Greater Cairo to express their anger and to show their dissatisfaction with the new water prices and tariffs.

When he was asked to comment on people's reaction to the government's decision to raise water prices, a senior member of staff at the HCWW said that '[...] we fully understand how important water is especially to those who cannot afford to pay high prices. Therefore, we try to put in place a dual pricing system in which those who can afford to pay more for their consumption support those who can't pay' (Interview 10). This comment reflects the realization of the government officials that water is a social good which has to be kept available for the rich and the poor. However, the comment also implies that the government subsidization of water prices is expected to continue in order to minimize the impact of raising water prices on the people with limited incomes and the poor using government subsidies. Such an approach might contradict the view of water policy analysts and scholars that subsidization and cross-subsidization are not for the benefit of water sector reforms.

Economically speaking, all water services should be priced and paid for by water users at all stages of production and service delivery. Nonetheless, the user-pay principle and water pricing is a new concept for water users and stakeholders in Egypt. As stated by a senior member of staff at the EWRA, '[F]or a long time people were relying on government subsidization for water. The actual cost of production is above 60 piasters per cubic meter while it is priced at 23 piasters per cubic meter; the difference between the production cost and the low price is covered by government in the form of a subsidy' (Interview 21). In this context, the government should pave the way for the introduction of water pricing systems. The gradual involvement of water users in taking responsibility for their consumption is an essential step for the success of any pricing policy.

In this regard, a water policy analyst has emphasised that the 'the gap between the cost of producing water services and the low prices at which water services are sold to the end users represents one of the major obstacles facing the modernization of the archaic water infrastructure' (Interview 22). Added to this, at such low prices people have no incentive to rationalize their water

consumption and reduce their demands for water services. Consequently, 'users must pay for their excessive consumption of water otherwise, the wasteful water practices will continue and the subsidization system will become counterproductive' (Interview 28).

In conclusion, when it comes to water pricing, any pricing regime has to take account of not only the economic but also the social and human value of such a vital commodity. A water-pricing regime should be comprehensive enough to cover the three main components of water as an economic commodity: cost, value and price. In other words, water tariffs and prices should reflect the management and production costs as well as the benefits that water users gain directly and indirectly. Final prices can be determined in the light of water costs and value to consumers. By addressing these three aspects, the full cost of water from economic and social aspects would be considered and taken into account when deciding upon water prices. This approach will also guarantee equity, efficiency and sustainability in water prices and tariffs. Additionally, pricing water at lower levels than the actual cost of production is not a sustainable approach in the long run as it increases users' dependability on the subsidized prices as well as the overall cost of service delivery. To this end, a behavioural change is in order by illustrating to water users the gap between the cost required for producing water and the considerably low prices at which water services are delivered to them. Furthermore, the perception of water as a 'free' commodity has to be altered and people must realize that the continuation of wasteful water behaviour will result in a real crisis wherein the government will no longer be able to meet future demand. Finally, an efficient water pricing policy would result not only in providing water services and improving service quality but also in utilizing the available water resources in an efficient manner. In other words, water-pricing regimes should guarantee the best possible value of this scarce economic resource. For this to be done, the water prices should reflect all aspects of economic, social and humanitarian costs.

### **8.6.3 The Fragmentation of Agricultural Land and the Challenge of Efficient Water Utilisation**

As noted in chapter 3, water sustainability is first and foremost an issue of good long-term planning and utilisation of water resources in order to meet the basic human needs. In that sense, sustainable water practices should allow as many

choices about fresh water to future generations (Knight et al., 2009: 349). Nonetheless, many of the agricultural and irrigation practices in Egypt reflect unsustainable and inefficient usage of water resources. Historically, Egypt was known as the 'breadbasket' of the ancient world. Agricultural land was seen as a source of wealth for major landowners who owned nearly 1/3 of the agricultural land during the 1920s and 1930s (Al-Desoky, 2007). The fertile land has also been regarded as a source for food production but not anymore. To date, the situation has changed and the land is no longer seen as a source of food production especially under the increasing pressures for arable lands resultant from urbanization and the growing population. Added to this, the Land Reform Law 178/1952 issued after the 1952 revolution and its consequent revisions have contributed to the fragmentation of agriculture land ownership. As reported by Nkrumah (2013), 'An estimated 3.5 million farmers cultivate holdings of an average size of two feddans, or 0.84 hectares'. The same conclusion was reflected in the results of the 1990 Egypt's Agricultural Census organized by the General Department of Agricultural Census, of the Ministry of Agriculture and Land Reclamation. The results of the census have indicated that there were 'three million small land holdings, almost 96 per cent of which were under five feddans'. Such a fragmentation of the agricultural land holdings in Egypt poses a direct challenge to the ability of water stakeholders, namely the governmental efforts to organize and manage water irrigation processes in an efficient manner. From this angle, the Egyptian agriculture sector is coming under pressure to rationalise irrigation practices and to make efficient utilization of water resources. In this regard, Allam et al., (2005) have noted that traditional water management and irrigation practices applied by farmers and landowners contribute to high water losses. As reported by Nkrumah (2013), 'only 2% of the eight million feddans of cultivated land are irrigated by modern methods'. The rest of the cultivated land is irrigated using traditional methods such as large scale, flood-based irrigation, which requires increasing amounts of water and does not pay much attention to the water losses (The Arab Water Council, 2009: 3). Such traditional methods of water management in general and irrigation systems in particular have resulted in overall water losses of almost 29%, as mentioned by a water specialist at a leading Egyptian university (Interview 3). Consequently,

addressing such a misguided water management approach and practices is at the forefront of the government's agenda.

As noted by a senior researcher at the agricultural research centre in the MALR, the government is trying to handle this situation by providing awareness campaigns for farmers and water stakeholders in an attempt to encourage them to abandon such wasteful practices (Interview 5). Additionally, the government is also attempting to encourage the utilization of modern irrigation methods including using dripping irrigation systems especially in the new agricultural projects. Another approach to deal with the wasteful water practices in the agricultural sector followed by the Egyptian Government is to look at farmers and water users in general as partners in formulating water policies and decisions including those related to irrigation. As put by a senior official at the MALR:

[.....] Many of our efforts and initiatives in the Ministry are geared to the task of optimizing water management and irrigation systems. In this respect, the MALR has realized that a collaborative decision-making and policy formulation system has to be put in place in an attempt to coordinate the diverse efforts of involved water stakeholders including water users. (Interview 14)

Despite the governmental efforts and initiatives to raise the awareness of water stakeholders and to encourage the utilization of modern irrigation systems, the progress on the front of rationalizing water use is very modest for several reasons. From a historical point of view, water abundance has never been an issue for farmers, who find it hard to believe the whole story about water scarcity and the need for rationalization. Additionally, some of the provided solutions are not practical, especially for small farmers who find them extremely expensive ways to irrigate their land. In this context, dripping irrigation systems is a case in a point. The installation and maintenance cost of these systems exceeds the financial capacity of the majority of farmers. As bluntly put by a water specialist at MWRI:

Dripping irrigation systems can be regarded as the way forward to make a more efficient use of irrigation water and to reduce water losses; however, we should not also forget that the installation and maintenance of these systems is costly and may go beyond the ability of small farmers and land owner to finance. (Interview 15)

As such, installing and maintaining modern irrigation systems has proved to be costly in addition to its limited usability for irrigating certain types of crops. In other words, crops such as rice, which needs large amounts of water, do not lend themselves to new modern irrigation systems. The competition among economic sectors for water adds to the issue of water scarcity in agriculture and in turn

intensifies pressures on existing irrigation practices and systems. Economically speaking, water as a scarce resource should be allocated in an efficient manner that guarantees the best use and the best prices. Given the increasing movement from the rural to the urban areas in Egypt and the industrialization activities, those that are most likely to pay high prices for water are the industrial entities in the urban areas. That means less water allocation for agriculture. Having said that, it is worth mentioning the increasing competition and the growing demand for water as a scarce commodity provides only one side of the story. That means water scarcity is not only associated with these aspects of increasing demands and competition as it is also linked to the water losses resulting from the archaic infrastructure and wasteful water practices. As rightly noted by El-Fiki (2013:2), 'The water shortage we experience is not related to demand, but rather to poor infrastructure and management practices, which result in gross losses within our water systems'. In other words, the water crisis in Egypt is a symptom for a real malfunction and illness of the overall water governance system.

Following on from the above discussion it can be concluded that the governmental efforts to address the issue of water losses resulting from the fragmentation of landownership and the wasteful practices of farmers and water users have provided little incentive for water stakeholders to engage actively in improving their attitudes towards water consumption and utilization. In other words, such an approach for dealing with water losses has not resulted in any sustainable water management practices. Therefore, future utilization of irrigation water in such a fragmented ownership environment calls for a holistic approach to manage and optimize existing irrigation practices and systems. Such an approach looks at water allocation and utilization as a cross-sectoral issue wherein the agriculture sector represents only one player among many others competing for the scarce water supply. In other words, farmers and small landowners should realize and consider the consequences of their inefficient water utilization for the entire sector as well as for the rest of the economic sectors. Added to this, a better management of the agricultural runoff can provide a new source of water and in turn reduce the level of pollution in the ground water and reduce the pressure on the limited amount of available water (Elewa, 2010). In this regard, a water specialist at the agro-economic research institute has emphasised that 'the Egyptian Government has to widen its perspective when

dealing with the available water resources to include not only maximizing the Nile water but also the potential use and recycling of waste water, water desalination and extracting ground water' (Interview 20). Achieving this aim means redirecting more water investments towards establishing new projects in the mentioned areas. Such an approach can be costly in the initial phases but, in the long run it can help provide new jobs and increase the available water resources.

#### **8.6.4 The Climate Change Impacts and the Challenge of Water Availability and Security**

Climate change or climate variability in terms of having weather cycles impacts on water related issues and governance (El-Rae, 2009). Chief among the areas that would be affected by weather variability are water availability and water security. Many reports and research findings have warned of the expected negative impacts of climate change in the MENA region particularly for the countries suffering from water shortages such as Egypt. For instance, the Arab Water Council (2009) has reported that climate change is expected to result in frequent droughts and floods. Added to this, climate change is also expected to result in a rise in seawater levels, which endangers the Nile Delta region. As mentioned in the report, 'A sea level rise of one meter would flood a quarter of the Nile Delta, forcing about 10.5% of Egypt's population from their homes. It also would hit Egypt's food supply as nearly half of Egypt's crops, including wheat, corn, and rice, are grown in the Delta' (The Arab Water Council, 2009: 3).

In that sense, climate change impacts add to the already difficult water management challenges in Egypt. The country is highly vulnerable to any changes in the water situation and policies should consider the potential escalation of existing regional water tensions and conflicts resultant from the climate change impacts. Given the complexity and uncertainty of the climate change issue and its various impacts on water issues such as availability, usability and security the question becomes how can decision-makers take a practical approach to dealing with this problem? In a general sense, such environmental issues do not lend themselves to individual or unilateral actions. Because of their trans-boundary nature, environmental issues including climate change require collaboration among all affected parties. This approach was quite evident in the way the Egyptian Government has reacted to the potential impacts of climate change.

In 2012, the Egyptian Minister for Water Resources and Irrigation welcomed the cooperation among the African countries to mitigate the negative impact of climate change and weather variability on the issues related to water availability and security. Addressing the delegates of the African participating countries on World Water Day, the Egyptian Minister confirmed the commitment of Egypt to work collaboratively with all concerned partners including the African Ministers' Council on Water (AMCOW) and the Global Water Partnership (GWP) to put into effect the Strategic Framework for Water Security and Climate Resilience. As noted by Bahaa El-Din (2012:1), the strategic framework 'provides guidance to countries on how to integrate water security and climate resilience into national development plans and investment decision-making processes, with a focus on prioritizing investment programs that can withstand the impacts of climate change under multiple scenarios'. The overall aim was to bridge the gap between science and policymaking in a way that allows the realization of the developmental goals in all concerned countries via transboundary cooperation.

Such regional platforms for cooperation are important but not sufficient mechanisms for dealing effectively with the impacts of climate change on water. In other words, it is good to have strategic frameworks in order to align the different objectives of participating parties and to coordinate the activities and projects needed to reach the overall aim of the program. However, the way in which such a framework and the associated projects are implemented will reflect in the ability of each country to reach its goals. At the implementation level, learning and sharing experiences has to be emphasized. Furthermore, experiences as well as case studies have to be documented for the purposes of knowledge sharing and lesson learning. In this regard, the Arab Water Council (2009) reported that information and data collection and sharing provides one of the major policy challenges posed by climate change. In order to face this challenge, the collected data and information have to be properly organised, processed, and shared in a way that helps with the successful adaptation to this phenomena. That means, in the absence of collaboration in data gathering and documentation, knowledge transfer among involved parties will be difficult.

On a different note, as rightly mentioned by a senior researcher at the environment research institute, collaborative efforts will be more productive if participating parties adopt a holistic integrated approach that looks at the issue



of water availability and security from a broad angle (Interview 4). In other words, instead of focusing on water governance arrangements at national levels, and considering the potential impacts of climate change on individual countries, the collaborative efforts should consider all available alternatives at all levels. This panoramic view of climate change and its impacts on water availability and security would enable the consideration of possible drivers that might put all the countries at an environmental risk. As rightly noted by an Environmental Economist at OECD, 'One must think about all the other drivers that affect our use of water and exposure to environmental risk' (Dominique, 2012: 3).

The same logic applies to the coordination and implementation of climate change programs and projects among the participating countries. Unilateral actions and national programs would be less effective without taking into consideration the efforts and the projects established at the regional level. As noted by an expert in the national water governance benchmarking for sustainable water, by looking at the investments required to mitigate the impacts of climate change it can be noticed that water sector investment, particularly in Egypt, is quite limited (Interview 7). This shortage in water investments is expected to increase because of the climate change. To put it another way, climate change mitigation and adaptation projects require new investments in water sectors, which already suffer from the lack of investments. In order to address this issue, all affected parties should work collaboratively and coordinate their projects and activities. As stated by the CEO of the Climate Development Knowledge Network (CDKN), 'There is an existing deficiency in water investments. Climate change is likely to exacerbate the deficit, but if we set up different programs, separate programs, we won't meet the MDGs' (Bickesteth, 2012: 3). If we add the environmental considerations, the level of investments required will increase as the new projects and infrastructure developed to mitigate climate change effects should be resilient, green and have a minimal polluting impact on the environment.

#### **8.6.5 The Environmental Pollution and the Challenge of Controlling Water Quality**

Water quality is now a major concern for all countries around the world including Egypt (Gad, 2017: 40). The pollution of the surface and ground water provides one of the major water-related challenges in Egypt (Elewa, 2010). Since the early 1980s, the Egyptian Government has taken several measures to monitor

and control water quality. Nonetheless, with the accelerated levels of urbanization and population growth, the levels of environmental pollution and in turn, its negative impact on water quality have dramatically increased in Egypt. The main sources of water pollution have been underlined by Abdel-Gawad (2004: 337) as follows:

- Untreated or inadequately treated domestic and industrial wastewater
- Improper use of fertilizers and pesticides
- Solid waste disposal and unplanned urban and rural development
- Polluting activities related to navigation and tourism

These water pollution sources have collectively contributed to the rapid deterioration of water quality (Elewa, 2010). The severity of water quality decline depends among other things on the amount of flow, the pattern of use, population density, the extent of industrialization, the availability of sanitation systems, and social and economic conditions (EEAA, 2008; Abdel-Dayem, 2011: 184).

The main sources of pollution are return flows from agriculture, domestic uses and industry, as well as solid waste. From an industrial perspective, the increased industrial activities, in combination with the lack of modern technologies needed to treat the industrial wastewater have resulted in increased levels of pollution in surface and underground water. The problem of water quality deterioration can be further complicated considering the lack of treatment facilities required to treat solid and liquid disposals resulting from industrial activities. As mentioned by Abdel-Dayem (2011: 185), 'Not all industrial facilities, especially the small ones, are provided with wastewater treatment facilities'. The absence of the proper treatment of industrial waste results in an increase in the volume of waste and toxic contaminants discharged into the watercourses. As put by Abdel-Gawad (2004: 337), '[E]ffluents of industries such as pulp and paper, food processing, textile finishing and chemical synthesis typically generate heavy pollution loads'. Added to this, those who work for the different industrial estates do not receive a proper training on how to minimize the potential environmental hazards of their wastes before disposing of them into rivers and water lakes and canals. With the amount of industrial wastewater expected to increase in accordance with the predictions of MWRI's officials (Interviews 4, 9, 11), the issue has become a major concern for water policy and decision makers.

The analysis of the interview material has indicated that in an attempt to minimize the negative impacts of industrial activities on water quality, the Egyptian Government has followed a two-fold approach. For new industrial projects, the government makes sure that they are located in new communities and industrial cities far from the Nile and encourage new industrial establishments to adopt modern treatment technologies. At the same time, for old industries which were established close to the Nile and other watercourses and discharge directly into those waterways, the government has taken several actions to ensure the compliance of those establishments with the environmental laws and regulations. In spite of these efforts, a senior member of staff at the Ministry of Environment has mentioned that there are still many violators. Those violators do not comply with the environmental laws and regulations by discharging their industrial wastes directly into water streams without proper treatment (Interview 17).

In agriculture, the excessive use of fertilizers, pesticides and herbicides has also contributed to the deterioration of water and soil quality. In this context, a member of the Egyptian national committee for irrigation and drainage stated that 'the harmful substances are concentrated in drainage water at considerably high levels, which makes it a major source of pollution to waterways and ground water' (Interview 11). Additionally, the concentration of these harmful substances in food and fresh water can result in many health hazards for those who consume polluted products (Abdel-Dayem and Abdel-Ghani, 1992). In this context, Abdel-Dayem (2011:185) has reported that 'major pollutants in agricultural drains are salts, nutrients (phosphorus and nitrogen), pesticide residues (from irrigated fields), and pathogens (from domestic wastewater)'. When mixed with fresh irrigation water in water canals, these pollutants can cause major health issues for food consumers. Furthermore, when directly disposed into water streams drainage water can considerably contribute to the deterioration of water quality in affected areas. In an evaluative study of water quality in different regions of the country, the National Water Quality Conservation Unit (NWQCU) has concluded that water quality deterioration is a general issue in all investigated sites; however, the polluting substances differ in Upper Egypt from the northern parts of the country and the delta area. The analysis of the interview material has underlined several reasons behind the degradation of water quality. Chief among those reasons is the overutilization of fertilizers and pesticides. The subsidization

provided by the government has been underscored by a number of interviewees as the main reason behind the excessive utilization of fertilizers, pesticides and herbicides by farmers (Interviews 5, 11, 15). The prices of these elements are highly subsidized, which encourages farmers to overconsume and utilize them. Another reason for the overuse of fertilizers, pesticides and herbicides is the poor pest management approaches and techniques followed by farmers. The main issue in this regard could be the lack of awareness on the farmers' side on how to better use these substances in a responsible fashion, which minimizes their polluting effects. Given that the agricultural sector is the major water consumer in the country (see Chapter 7), it has become necessary to deal with the agricultural pollutants. Addressing this issue is crucial for controlling the ongoing degradation in water quality.

At the domestic level, the rapidly growing population has had its effect on water consumption as previously indicated. The increase in water consumption means an increase in wastewater, which needs to be treated before being discharged in waterways. The problem is most of the wastewater is not properly treated-if treated at all- before being disposed of in water streams. As stated by Abdel-Dayem (2011: 184), 'the total wastewater flows generated by all governorates is estimated to be 3.5 BCM/year. Approximately only 1.6 BCM/year receives treatment'. The disposal of untreated wastewater into water streams results in degradation in water quality in addition to aggravating health hazards. Wastewater from domestic households is not the only source of pollution affecting water quality. As mentioned by a senior member of staff at the MESA, solid wastes from domestic use can also be regarded as a source of pollution (Interview 17). A considerable share of the collected solid waste finds its way to waterways and canals especially in the rural areas. The issue is being further complicated by the water users' bad habits and behaviour, which contribute to the problem of water quality deterioration. Many of those practices, including dumping garbage and washing animals in water streams, are prohibited by the law. In this regard, a senior member of staff at MRWI has stated 'law enforcers find it very difficult to bring this sort of behaviour under their direct control' (Interview 9). Given the severity of the negative impacts of such behaviour on water quality, the process of law enforcement has to be reinforced. Those who violate water laws and regulation by polluting waterways in any shape or form

have to pay for the pollution they produce and to bear the consequences for their misconduct. Parallel to law enforcement, the government has to educate water users with respect to the potential impacts of their poor practices on their own health as well as the wellbeing of their children and the rest of the community.

The previously discussed issues in relation to the degradation of water quality have led the Egyptian Government to change its water management approach and to pay more attention to water quality issues. As noted by a senior member of staff in the HCCW, 'traditionally the focus was primarily on managing the supply side of water resources by reallocating water supplies where needed. However, as the level of environmental pollution keeps increasing, we have turned our attention to focus more on water quality as well as quantity. [...] There is no need for supplying the required amount of water with poor quality because it will not be usable' (Interview 10). This shift from focusing on the supply side to be more concerned with quality of the produced water represents a turning point in the way the government and its apparatus regard water quality issues. Added to this, the Egyptian Government has developed and put in place a water quality management program aimed at collecting water quality data and measures in order to serve as a scientific basis for sound water decisions and policies. In this context, Abdel-Gawad (2004: 335) has rightly noted that the water management program follows 'an integrated approach to water quality data collection, analysis, interpretation, management and coordination'. According to a member of the team working on the Integrated Irrigation Improvement and Management Project (IIIMP), such an integrated approach in dealing with water quality issues is expected to assist in directing the governmental efforts in the areas of minimizing the social, environmental and economic negative impacts associated with the deterioration of water quality (Interview 15).

Despite the ongoing governmental efforts to monitor and control water quality, the trend of pollution in many water bodies is still alarming. The increasing environmental pollution resulting from the industrial, agricultural and households' activities has had a negative impact on the quality of water as well as on the possibility of treating and reusing wastewater. Water quality measures have shown that in many places all around the country the levels of bacteria in water resources are high compared to what is globally permitted. The situation

becomes even worse if we consider the closed water system in Egypt, which makes it more exposed to water quality corrosion (Abdel-Dayem, 2011).

To sum up, the issue of water quality deterioration could cause irreversible damage to water resources and result in serious health hazards. From an economic point of view, poor water quality can render economic growth and development goals unattainable. Therefore, controlling water pollutants and improving water quality should be regarded as a multifaceted task that calls for the full cooperation among different stakeholders. The government cannot stand alone and face this issue for the reason that many of the polluting sources do not come under the direct control of its apparatus. Farmers, factory owners, and water users in general have to collaborate in order to address the issue of deteriorating water quality. In other words, an effective water quality management system is needed wherein policy, legal, institutional, regulatory and technical parties work side-by-side in a coordinated fashion to monitor and control the levels of environmental pollution and to minimize its negative impacts on water quality.

#### **8.6.6 Poor Water Infrastructure and the Challenge of Involving Water Private Companies**

Over the last 25 years, the Egyptian Government has spent more than US\$11 billion on water and wastewater plant construction (USAID, 2013:37). As noted by an international water expert, the government investments in developing water and wastewater infrastructure 'is expected to continue but with more reliance and involvements of the private sector in the areas of finance, design, construction, maintenance as well as management and operation of water facilities' (Interview 6). The government has identified the required investments in the water sector until 2037 in its National Master Plan (see Table 8.2).

As the table indicates, at a general level, the opportunities of the private sector participation in providing water services are significant, particularly in the area of wastewater management and reuse (Soulie, 2013: 34-35). Despite such significant opportunities, the number of private companies involved in providing water services in general and wastewater services in particular is considerably limited. One of the major reasons behind the limited participation of the private sector is the non-encouraging overall regulatory and legal framework governing public private projects. The Egyptian Government has taken important steps in

order to address this issue and to encourage the participation of the private sector in water services provision. For instance, in an attempt to lay the foundation for privately financed and operated water projects in the wastewater and desalination sectors, the Egyptian Government approved the Public-Private Partnership (PPP) law in April 2010 (Frost and Sullivan, 2011). Nevertheless, more needs to be done with regard to clarifying roles and responsibilities in addition to developing a proper risk assessment of the PPPs projects. In the absence of such mutual guarantees and safeguards, it will be prudent for the private sector companies to get involved in water projects.

<b>Water and Sanitation Investments for the National Master Plan</b>			
<b>Implementation Phase</b>	<b>(Million LE)</b>		
	<b>Water</b>	<b>Sanitation</b>	<b>Total</b>
2007-2012 Five Year National Plan	11,009.05	15,045.91	26,054.96
2007-2012 High Priority Projects	13,121.86	32,813.58	45,935.44
<b>Total High Priority Projects</b>	<b>26,592.10</b>	<b>48,071.49</b>	<b>72,202.4</b>
2012-2017 Planned projects	12,697.59	20,011.31	32,708.90
2017-2022 Planned projects	7,338.69	14,849.25	22,187.93
2022-2027 Planned projects	8,759.68	11,482.74	20,242.41
2027-2032 Planned projects	4,975.57	7,184.25	12,159.82
2032-2037 Planned projects	2,266.55	8,487.56	10,754.11
<b>Total Planned Projects</b>	<b>36,038.08</b>	<b>62,015.11</b>	<b>98,053.17</b>
<b>GRAND TOTAL</b>	<b>60,168.98</b>	<b>110,086.60</b>	<b>170,255.58</b>

Table 8.2: Water and Sanitation Investments as Per the National Master Plan  
Source: USAID (2013: 31)

The absence of basic infrastructure and services alongside the poor performance and inefficient operations of those in existence provides another reason for the humble participation of the private water companies in service delivery. As noted by a water specialist, 'in many governorates some of the basic water infrastructure is still lacking. In rural areas, for instance, you can hardly find a well-connected sewer system' (Interview 7). The absence of such basic infrastructure facilities makes it difficult for the private sector to take part in the

process of service delivery. Added to this, the inefficient operation of water treatment facilities contributes to the deterioration of water quality and the quality of all associated services.

The issue of archaic and inefficient water infrastructure has been fully acknowledged in interviews from the governmental side. The analysis of the interview material shows that there is an overall agreement among respondents that the water sector in Egypt, especially on the infrastructure side, requires a lot of attention from water policy stakeholders. As noted by a senior regulatory member of staff in the EWRA, 'the government alone cannot do everything; the collaboration of all interested parties and most importantly the private sector is a prerequisite for developing and modernising water infrastructure' (Interview 21). In this regard, the respondents from the governmental side have indicated that the government has developed plans to extend the coverage of the basic water and sewerage system on a large scale to cover villages and urban areas (Interview 11). These new projects can be an opportunity for private sector companies to participate in developing new water facilities and modernizing existing water infrastructure. Nonetheless, without the appropriate incentive schemes in place, in addition to the lack of a clear and well-defined roles and responsibility, the participation of the private sector can be minimal. As clearly stated by the OECD (2010:2), 'In the current context of credit constraint and tighter financial conditions, private developers are, however, likely to be more selective, demanding higher quality, more 'bankable' projects, with clearer forms of public support and risk-sharing'.

The lack of basic water facilities, particularly in rural areas, has resulted in other problems especially for arable lands. As rightly noted by a senior water researcher at the MALR, 'only 3% of the cultivated land is served by primary and secondary drainage systems' (Interview 5). Such an issue has a great impact on the quality of soil and the level of soil salinity. The absence of drainage systems results in high levels of soil salinity, which affects the quality of crops and the possibility of cultivating the land for future use (Interview 15).

#### **8.6.7 The Fragmentation of the Policy Environment and the Challenge of Institutional Coordination**

The discussion about water governance agencies and institutional structures in Egypt has indicated that water policies and decisions are made and implemented



in highly complex and fragmented legal and regulatory environments. As noted by Luzi (2010), many water issues and policy decisions and outcomes go beyond the principal government policy agents including the Ministry of Water. This environment has become even more complicated by the involvement of non-state actors in policy and decision-making, besides other water governance arrangements (Alnaggar, 2003). In complex policy settings wherein state and non-stated actors normally work side-by-side, the issue of coordination becomes paramount. In other words, the question of how water governance activities, processes and operations are organized and coordinated becomes a key to understanding the way in which each party contributes to the water governance functions. This question is also key to realizing how such contributions from state and non-state actors are channelled towards achieving the overall water policy goals. In this respect, El-Fiki (2013) has noted that ‘In a centralized system, what we would expect is cooperation across the board between the multiple ministries in charge. But the picture is quite different in Egypt’s case’. Given the different mandates and objectives of each ministry, all involved parties may end up pushing different projects in different directions, which complicates the task of cooperation and coordination.

As indicated in Chapter 7, the National Water Resources Plan for Egypt (NWRP) provides the overall policy framework within which all policy actors - namely governmental ministries and agencies - play different roles and bear different responsibilities in relation to achieving the intended water policy goals. However, for the entire water governance system to work effectively, a coordination mechanism which guarantees the organization and the utilization of inputs coming from the involved actors to make timely and sound water decisions should be in place. To this end, a coordination body was created under the name of the National Water Resources Plan Coordination Panel (NWRP-CP). The main aim of the NWRP-CP, as noted by a senior civil servant in MWRI, is ‘to make sure that the intended policy goals identified in the National Water Resources Plan are achieved in accordance with the indicators stated in the plan’ (Interview 1). In that sense, the NWRP-CP acts as a decision support mechanism through which the needed information and technical support are provided to water policy actors at the central as well as the governorate and local levels (see Figure 8.1).

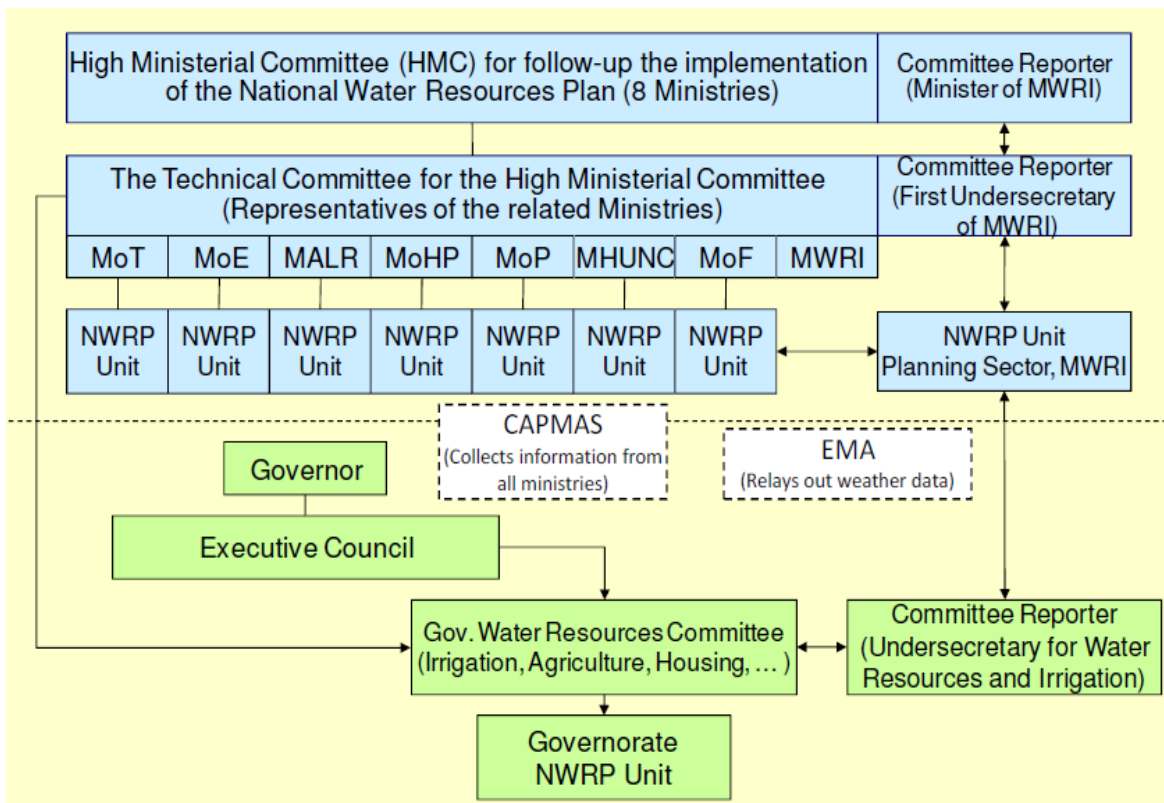


Figure 8.1: NWRP Coordination Platform for follow-up of the implementation

Source: CEDARE (2014:46)

As the figure illustrates, at the national/central level there are eight ministries included in the NWRP-CP: the Ministry of Water Resources and Irrigation (MWRI); the Ministry of Health and Population (MoHP); the Ministry of Drinking Water and Sanitation Facilities (MDWSF); the Ministry of State for Environmental Affairs (MSEA); the Ministry of Agriculture and Land Reclamation (MALR); the Ministry of Planning and International Cooperation (MoPIC); the Ministry of Finance (MoF); and the Ministry of Energy and Electricity (MOEE).

MWRI is taking the lead with respect to the coordination and reporting of all ministerial activities. The NWRP unit affiliated with the planning sector in MWRI liaises with and coordinates the operations and functions of the other NWRP units in the mentioned ministries. At the same time, the first undersecretary in MWRI is responsible for coordinating and reporting the activities of the technical committee while the minister is assigned the same role at the level of the high ministerial committee (HMC). In addition to the eight ministerial bodies, two central agencies are also involved in the NWRP-CP: the Central Agency for Public Mobilization and Statistics (CAPMAS) and the Egyptian Meteorological Authority (EMA). The role of the CAPMAS and the EMA is to collect, organize,

and share information with other involved parties each in its respective domain. The same structure is replicated at the local levels wherein each governorate has to follow up the implementation of the NWRP via their NWRP units and to the undersecretary for water resources and irrigation.

As reported by CEDARE (2014), the creation of the NWRP-CP has had a positive impact on different aspects of water governance including the capacity building of the staff in water facilities in addition to providing a framework for monitoring and evaluating the water governance system in Egypt. Nevertheless, some of the interviewees have cast some doubts about the ability of the NWRP-CP to cope with the changes in the water sector, particularly the participation of the non-state actors. In this regard, a water and energy specialist has noted that ‘the NWRP-CP is fit for the purpose of intra-ministerial coordination activities. But with the recent policy orientation of the government to involve private sector companies the membership of the NWRP-CP should be extended to include the newcomers’ (Interview 22). That means, as a platform for coordination, the NWRP-CP should be ready to receive, process, and feedback inputs from the private counterparts. In other words, the operational span of such a coordination mechanism should be flexible enough to accommodate the contributions coming from the private water companies and to respond to their demand for information that helps in planning their operations and activities. At the sectorial level, the Egyptian Government has endeavoured to facilitate the coordination process in the Water Supply and Sanitation (WSS) sector by instituting an umbrella organizational ministerial body under the name of the Ministry of Drinking Water and Sanitation Facilities (MDWSF) in 2012.

## **8.7 Conclusion**

For a water-scarce country like Egypt, all required actions have to be taken in order to ensure the best possible fit between water structures and agents. In this context, this chapter has brought into a sharper focus the water agents and structure in Egypt. The aim was to see how water policy agents interact around water related issues given the existing governance structures. To this end, the water governance functions in Egypt have been investigated in an attempt to unpack the water governance processes, roles and responsibilities, in addition to the way in which water agents transform their powers into concrete actions on the ground. The discussion in this regard has highlighted the leading and central

role of MWRI in contributing towards nearly all regulatory and operational aspects of Egyptian water governance. Nevertheless, in managing the water sector a complex web of mainly governmental policy agents interact to deliver on functions such as water resources organization, capacity building, strategic planning, and regulation. The discussion has also indicated that the role of the private sector and the rest of the non-state actors are quite limited compared to the potential scope for involvement and participation. The Egyptian Government has taken important steps in order to encourage more participation and involvement, particularly of private water companies in modernising the archaic infrastructure. Nevertheless, more is to be done on this front, as the potential of non-state actors' participation has not been fully harnessed.

By looking at the sector's independent regulatory agency, it can be concluded that compared to the other powerful state organizations including MWRI and the MALR, the powers of the regulator appear considerably limited. The discussion and the analysis of the interview material has revealed in this regard that the creation of the EWRA was first and foremost an instrumental move by the Egyptian Government to secure more private investment and to attract private water companies. In this context, it is worth mentioning that the legal mandate for creating the EWRA has granted the agency all needed powers, which has secured its independence from the rest of the actors. Therefore, the regulatory agency can capitalise on such formal aspects of independence and play a more influential role in sector management and regulation.

A glance at the water decision-making mechanism from a good governance perspective shows that the principles of participation, transparency, and accountability are partially embraced by water decision-making institutions. Nonetheless, there is still scope for more improvement and more involvement of non-state actors in policy and decision-making processes. Added to this, the transparency of all aspects associated with water policies and decisions should be fully secured. Finally yet importantly, the water policymakers should realize that the growing involvement of the non-state actors in water governance arrangements requires new accountability mechanisms. The vertical channels of accountability linked to the traditional governmental model of water policy and decision-making is no longer suitable to hold state and non-state actors

responsible for their actions in more or less flat forms of water governance arrangements.

The discussion in this chapter has also indicated that the water governance system in Egypt faces some fundamental challenges due to its transboundary nature. Added to this, at the national level, there are many water related issues which have to be properly handled. The deterioration of water quality, climate change and its impact on water availability and security, water pricing and subsidization are just some examples of water related issues and problems facing policy and decision makers in Egypt. The complexity of water governance arrangements and structures in addition to the multiplicity of water agents call for coordination mechanisms which channel all the efforts and resources and gear all actors towards realising the intended policy goals. The next concluding chapter will address the identified water governance challenges and provide some policy recommendations on how to deal with these challenges and in turn improve the performance of the overall governance structures.

## CHAPTER 9: CONCLUSIONS AND POLICY RECOMMENDATIONS

### 9.1. Introduction

Over the years, Egypt has become a country with limited water resources due to the rapid population growth as well as the increasing demands for water from all economic sectors. The situation has become more critical with the ambitious developmental plans pursued by the upstream countries, which have resulted in the establishment of more dams and water infrastructure up-Nile. The newly established water developments will add to the water shortage in Egypt and worsen the overall water crisis in the country. In this context, finding unconventional water governance arrangements to handle the water crisis in Egypt has become a necessity (El-Sadek, 2010). In other words, this study regards the water crisis in Egypt as a crisis of governance that calls for innovative solutions built upon well-thought through and integrated water resources management arrangements. Following on from this understanding, the study has posed a core research question: how to explain water governance arrangements in Egypt through the analysis of existing water structures as well as relationships and interaction between water structures and water agents? In order to address this question, the research has examined the existing water governance arrangements in Egypt and their ability to better utilise the scarce water resources in an integrated and efficient manner. The study has also investigated the reform efforts in order to identify the main drivers and to evaluate the efficacy of these reforms in addressing the critical water crisis questions and the water challenges facing the country.

In examining water issues and governance arrangements in Egypt, the research was inspired by contributions from different theoretical and analytic accounts. Chief among those theoretical traditions are the accounts on governance, the debate on the structure-agency dilemma, and the writings on policy transfer and learning. The notion of governance and more precisely, the concept of MLG has been used as an analytic framework in order to investigate water governance arrangements and mechanisms at national and regional levels. Added to this, the contributions of the structure-agency debates were very useful in shaping the discussion in this study by distinguishing between the current water structures in Egypt as well as the ways these structures affect the water agency. The policy transfer and policy learning accounts were helpful in investigating the roots of

the current water governance arrangements in the studied case and the ways via which the existing model was transferred into the Egyptian context. The amalgamation of these theoretical and analytic accounts have helped the researcher to see the overall 'wood' of water governance in Egypt instead of only focusing on the water agents and the way they interact or the 'trees'.

In this context, this study argues that a better understanding of the water crisis and the challenges facing water policy-makers in Egypt requires looking at and perceiving the whole situation as a problem of governance. At the end of the day, water issues, policies and practices result from the ongoing interaction between state and non-state actors at national, regional, and global levels. These interactions do not take place in a vacuum but the way in which water agents interact is governed by holistic water structures in terms of the existing national and international treaties, laws and regulations. The water structures in that sense define what can be done and what would be considered as violations of water governance arrangements. Added to this, water structures at global, regional and national levels greatly determine policy options and choices for policy-makers at national levels. In other words, water policies and governance arrangements at national levels reflect water structures and interactions among water agents at regional and global levels. Such an understanding of water governance could help us explain policy choices and decisions in areas such as water regulations and to underline the reasons for choosing certain model(s) to govern and regulate water sectors. This argument has far-reaching consequences for the way we conceptualize and perceive water related issues and challenges. In any given water governance system, policymakers face new challenges to come up with the best combination of governance arrangements which maximise the utilisation of existing water resources. Yet, there is little evidence on how best this task could be done.

In this concluding chapter, a short synopsis of the theoretical and methodological framework will be provided first, followed by a discussion of the core findings of the research. The aim is to bring into a sharper focus the implications of this research for the practice of water governance, agents, and the overall water policy formulation and implementation in Egypt. The limitations of the study will be highlighted and the directions for future studies and research in the area of water governance will be underlined.

## **9.2. Water Governance, Structures, and Agents: A Synopsis of the Theoretical and Analytic Framework**

In the context of this study, water governance is perceived as a political process wherein different water stakeholders interact around water policy issues in an attempt to come up with sound decisions in order to face water challenges and collaboratively solve water problems (see chapter 3). The examination of water governance arrangements in Egypt was guided by three sets of interconnected apprehensions: theoretical, methodological, and empirical. These three drivers are to be fully explicated in this section.

### **9.2.1. Understanding Water Governance: Theoretical, Conceptual and Substantive Issues**

Unpacking and exploring the notion of water governance has resulted in the examination of different concepts and theoretical constructs. At the conceptual level, the examination of the different meanings of governance leads to the conclusion that, as is the case with other social sciences terminology, this concept has no authoritative definition. In other words, governance is a complicated construct that can carry many different meanings depending on the context. From this theoretical standpoint, the study has focused on unpacking and analysing water issues using the notion of governance and inspired by the debate over the relationship between agency and structures. This theoretical endeavour of the study was a means to develop an analytic framework to use in examining and analysing water governance arrangements in Egypt.

The developed theoretical and analytic framework has highlighted the main concepts and the way in which these concepts are related to each other. Moving from the broader to the narrower context, the study has discussed the notion of governance and the core elements of this concept. The examination of the different facets of the notion of governance, as well as the steering mechanisms, has indicated that the concept was firstly coined in order to denote the transition from state-centred approaches to more private governance (see Chapter 2). In this context, the study has instrumentally perceived governance as an analytic framework of analysis. It is a means for developing a better understanding of water challenges in addition to providing ways to improve existing policy practices and encouraging innovations in policy implementation. In other words,



governance was not treated in the context of this research as a panacea for all water policy ills. Instead, the study looks at governance as an analytic and theoretical lens via which policy scholars can unpack and analyse complex water policy processes and government arrangements.

Following on from this understanding and conceptualization of governance, 'water governance' was defined in Chapter 3. The water crisis was framed as an issue of governance, which underlines a political multi-party and multidimensional interactive process. This conceptualization of water governance as a political process has called for a detailed discussion of a host of closely related issues including the core institutional components of water governance systems. At the heart of the water governance institutional settings come water laws, policies, and management plans. Added to this, the discussion of water governance has emphasised major strategic issues such as sustainability, gender, and poverty. Considering all these issues from a governance point of view it can be concluded that, the top-down and command-and-control approaches for managing water sectors are no longer suitable to manage water crises at the present time. Government agents such as water ministries and bodies have to work hand-in-hand with all water stakeholders in order to ensure a wise management approach for water resources. Additionally, water policies and laws have to be redesigned to be more reflective of and more responsive to issues such as suitability and development. In short, water governance and shared planning and management of water resources provide an effective policy instrument to design and implement water policies that are gender-sensitive, produce more equality in the society and address the needs of the poor and most vulnerable.

### **9.2.2. Understanding Water Governance: A Structure-Agent Perspective**

For further analysis of water governance regimes, the study has brought the debate over structures and agency to the heart of the discussion (see Chapter 4). That was needed in order to make sense of water governance regimes, which include different types of water agents using the existing water structure as springboards for interaction around water issues. This theoretical debate has contributed to the distinction between water structures and agents at different levels of governance including national, regional and global spheres. At the end of the day, a better understanding and explanation of water governance in any

given context requires a sound and clear answer to the question of how water policy decisions are arrived at. The debate over the nature of the relationship between water agents and structures was very enlightening in addressing this point. Water policy decisions are not made in a vacuum but they are normally formulated with water institutions in mind including water laws and regulations. These institutional contours form the structures within which water policy agents of all types including water policymakers and decision-makers interact in a dialectal fashion in order to set up water governance arrangements. As such, any attempt to use a unidimensional approach to explain water governance will not be sufficient to capture the full dynamics and rationale behind water decisions. In other words, the dialectic between water agents and water structures provides a means for looking at the trees (water policy agents) but without losing sight of the overall forest (existing water structures).

### **9.2.3. Understanding Water Governance: Water Governance Arrangements in Egypt**

The Egyptian water sector provides a thought-provoking empirical field for this study to investigate water governance issues and arrangements for several reasons. Chief among those reasons is the need to unpack and reshape and existing water governance arrangements in the light of the emerging and ever growing difficulties facing water policymaking at the current time. In that sense, the conceptualization of water issues and policy problems from governance and structure-agency perspectives was paramount for analysing the case of water governance in Egypt. The developed analytic framework was utilized to map-out the main water agents and major water structures in the Nile Basin. The hydro-politics of the Nile Basin was discussed in Chapter 6 by looking at the River Nile as an example par excellence of a transboundary water governance regime. The local, regional, and international dimensions of the Nile governance have been explicated in terms of the existing water structures (treaties) and the role of water agents in forming and implementing them. The Nile governance analysis has indicated that governance arrangements at national levels in Egypt are shaped largely by the existing water structures, namely at regional levels. Furthermore, the discussion in has concluded that the water governance of the Nile Basin is characterized by regional tensions between the Nile riparian countries, which makes cooperation among them difficult if not impossible. Adding to this, many

of those countries, such as Egypt and Ethiopia, have a long history of conflicts and distrust. In such a hostile context, the discussion in this chapter has concluded that basin-wide collaborative governance mechanisms need to be established to govern the allocation and management of waters in the basin. Such a mechanism will help bridge the gap in opinions between upriver and downriver countries. At the same time, and for such a mechanism to work effectively, the overall archaic water institutions and treaties have to be revisited and reconsidered in order to reflect the current reality of water governance in the Nile Basin. The absence of such measures will result in more escalations of tensions in the Nile Basin and will stand as a hurdle in the face of any collaboration between the Nile riparians.

Moving from the regional water governance to the national level, the developed theoretical and analytic framework has also proved helpful in mapping-out water agents and structures in the Egyptian water sector. The main water policy actors (agents) in Egypt were identified in Chapter 7 alongside the roles and responsibilities associated with their functions. The analysis of the existing water agents and structures in Egypt has demonstrated that many of them have come into being as a result of the ongoing water reforms. Nonetheless, such reforms have produced a complex and multi-part water governance system with central and influential roles for government water agencies. Two main features of the current water governance arrangements in Egypt were identified: institutional complexity and fragmentation of roles and responsibilities. Institutionally speaking, different ministries and state bodies assume the responsibility of managing and allocating water resources in Egypt. The level of non-state water stakeholders' involvement in making and enforcing water policies and decisions is considerably limited. Added to this, the fragmentation of the legal and regulatory environment in terms of the absence of a unified water legislation has further complicated the scenery and produced more confusion and uncertainty about water governance responsibilities. In such fragmented and complex water governance arrangements, the study has underlined the importance of setting-up a coordinating mechanism in order to avoid the overlapping in jurisdictions and roles. Added to this, the discussion has emphasised the need to move away from the top-down approach of making water policies and decisions. A participatory approach wherein non-state as well as state water stakeholders in

Egypt can play a role in making and implementing water policies and decisions would produce better results in terms of governance arrangements.

The mapping-out exercise of water agencies and structure in Egypt has paved the way for a more in-depth analysis of the interplay dynamics between these two parties, as discussed in Chapter 8 of the study. The discussion has focused on examining the ways in which water agencies and water structures come into play when delivering the core functions of the water governance system. By investigating five main functions: organization and capacity building; strategic planning, water allocation; water resources development and management; and water resources regulations the discussion has concluded that the overall governance is dominated by government agencies, namely MWRI. All regulatory and functional aspects are tightly controlled by this ministerial body and its affiliations. In spite of the major steps taken by the Egyptian Government to allow more participation of non-state water stakeholders, the participation of those actors, namely the private water companies and advocacy organizations, has not reached its full potential. The discussion has also indicated the limited power exerted by the sector's regulator, the EWRA, in comparison to the dominating ministerial bodies such as MWRI and the MALR. The analysis of the interview materials and the discussion of the regulatory independence of the newly established sector regulator has highlighted a gap between the legal mandate, which granted the regulatory agency the required prerogatives to function independently, and the ability of the new regulator to translate such a mandate into actions in real life when dealing with water issues (see Badran, 2012). The overall assessment of the interplay dynamics between water agency and structures in the Egypt has demonstrated a partial adoption of the core principles of good governance when it comes to making and implementing water decisions and policies. Nevertheless, the empowerment and involvement of non-state agents will result in more collaborative governance wherein the issues of transparency and accountability can be properly addressed.

#### **9.2.4. Understanding Water Governance: The Methodological Drivers**

At the methodological level, the central undertaking of this thesis has been to examine the case of water governance in the context of Egypt as a single case study for the reasons explained in the methodological section (see Chapter 5). In that sense, the empirical effort of the study has focused on unpacking and

analysing the water governance arrangements in Egypt in addition to identifying existing water structures. The empirical analysis also aimed at mapping-out local, regional, and global interactions among the water agents. To this end, a wide range of policy documents and written materials were consulted in addition to conducting elite interviews with water policy and decision-makers in Egypt in order to produce primary and secondary data for empirical analysis. Hence, from an empirical perspective, the researcher has been interested in mapping-out the core water policy agents and structures involved in the water governance arrangements in the Egypt. Additionally, searching for better settings and more efficient ways to utilize the scarce water resources represented another empirical motive for this research. In this context, with the intention of providing a contextualisation for the water governance arrangements in the Egyptian water sector, the institutional as well as the structural elements have been investigated.

Put together, these three sets of research drivers have provided a coherent and thorough investigation of water governance at theoretical, analytic, and empirical levels. In that sense, the study bridges the gap between practice and theory by providing a comprehensive wording of the specific problem phenomenon. By assimilating the conceptual and theoretical investigation alongside the empirical inquiry of the context of water governance in Egypt, this thesis provides an inclusive examination of the Egyptian water governance in terms of its structures and agents.

### **9.3. Understanding Water Governance: the Major Contributions of the Study**

In order to inform the ontological, epistemological and methodological basis of the thesis, the governance analytic framework is combined with theoretical insights from structure-agency accounts. By combining theoretical and empirical enquiry, this work attempts to contribute to and advance beyond the existing literature in three ways. First, it offers one of the first attempts to organise an empirical in-depth case study analysis of the water governance arrangements in Egypt using a multi-level structure-agency framework. Second, it provides a systematic examination and mapping-out of the new water governance systems in Egypt. Third, it presents a rigorous evaluation of the impact of water governance regimes at the regional and international levels on water policy decisions at the national level.

In that sense, this thesis contributes to the area of water governance and water policies at different theoretical and empirical levels. At the theoretical level, the study provides an innovative approach for conceptualizing water issues and analysing water policies. The provided approach integrates the notion of governance as an analytic construct in addition to the structure-agency theoretical debate in an attempt to capture the full dynamics of water governance systems. In this regard, the water crisis was introduced and framed as an issue of governance. Water issues have been studied from different social, economic, and environmental perspectives and by using different techniques and methods. However, framing the water crisis from a governance perspective has helped the researcher to address not only the substantive issues related to water management but also to capture the dynamics and the politics involved in water policy processes and management arrangements.

The governance component in the developed theoretical framework offers new insights into the study of water policies. Governance, as indicated earlier, is a relatively novel analytic construct with unique characteristics. Its explanatory powers are yet to be fully discovered by testing this framework through investigating real life policy problems and issues. To this end, a solid foundation has to be established by considering the unique features of the governance approach and the extent to which these features can be integrated with other theoretical and analytic tools. This research provides a step on that path by integrating the governance notion and the structure-agency theoretical approach in an attempt to unpack and elucidate water governance in Egypt.

The utilization of the notion of governance as an analytical tool has provided a great deal of flexibility in dealing with the phenomenon under investigation. Water resources management and allocation is a complex process, especially where the main source of water is shared among more than one country. By doing so, the study contributes to the current theoretical and analytical debate concerning the explanatory power of governance and MLG in examining and elucidating complex policy settings including water governance systems. From this angle, the applicability of the governance notion at multi-levels has facilitated the task of analysing water governance arrangements in the studied case at regional as well as national levels. Hence, in the context of this research, it can be concluded that governance as an analytic framework is best suited to analyse water policy

issues and governance measures. It provides a rigorous analytic tool that helps to capture the dynamics of water governance systems at multiple levels.

Integrating the agency-structure debate with the governance as an analytic tool has also contributed to a better examination of the interplay dynamics between the agents and the structures of the water governance system in Egypt locally and regionally. The provided synthesis and a review of the literature on the agency-structure dilemma and the accounts on governance as an analytic construct have produced a novel approach and theoretical lens to examine water issues and governance arrangements. A complex topic such as water governance calls for complex and integrated theoretical and analytic frameworks which bring together the different aspects of the examined phenomena and capture the full picture of agents and structures as well as the interplay dynamics among them. Hence, instead of focusing on one aspect of the water crisis, one of the major theoretical contributions of this research is the more rounded approach followed, in which water governance, water structures and water agents have been brought together under investigation in an attempt to illustrate their theoretical foundations and the connection between them. In that sense, it can be emphasised that understanding the theoretical relationship between the main elements of water governance systems represents a crucial step for designing effective water governance mechanisms and deciding upon critical and strategic water policy issues.

Added to the above, the development of the theoretical framework in this study has opened several new avenues for investigation. At the conceptual level, the deconstruction of complex concepts such as governance, good governance, water governance, water structures and water agents has contributed to a clearer understanding of water related issues, especially when we apply them to describe the water governance arrangements in the investigated case study. The holistic governance approach and theoretical perspective in dealing with water policy issues, together with the focal analytic point of structure-agency debate have enabled the investigation of water governance arrangements in Egypt and provided a better visualization of the reality of the Egyptian water sector in terms of its agents, structures, processes, and politics. Such a vivid picture of water governance arrangements was captured at regional as well as local levels.

Applying the notion of governance to the study of water policies also makes several contributions to this field in particular. On the one hand, it has helped the research to arrive at a better and deeper understanding of the theory and practice of making water policies and decisions. Furthermore, adopting a governance perspective has exemplified the highly political nature of water governance as an activity that involves state and non-state actors working collaboratively to develop, manage and allocate water resources effectively. The notion of governance also highlights the potential roles that non-state water stakeholders, namely the private water companies, can play in water governance owing to the important resources that they have at their disposal. At the level of water governance processes, the governance approach has been very helpful for comprehending water management and decision-making processes as political tournaments that include different rounds between the involved water stakeholders. In each round, water stakeholders make strategic choices that affect their net outcomes of games. This dynamic comprehension of water governance arrangements allows for a deeper and improved understanding of water governance systems and their lively nature.

The holistic and integrated nature of the developed theoretical and analytic framework has provided the base for more profound investigations of water governance arrangements in the Egyptian context. One of the major empirical contributions of this research is derived from the fact that it is one of the first studies at the PhD level, if not the first, to examine thoroughly and in-depth the water governance system in Egypt considering local as well as regional water structures and agents. From this angle, the study provides a comprehensive analysis of the Egyptian water sector using a variety of first-hand data and secondary resources. This rich and thick description of the Egyptian water sector can be beneficial for academics, water policy-makers and practitioners in the field of water management. From this angle, this research offers insights on the practice of water governance in Egypt and provides an alternative approach which focuses more on the role of the non-state water stakeholders in the new water governance arrangements. At the same time, the study offers a valuable learning tool and a rich inventory of techniques for water policy scholars, practitioners, and policymakers.



For public policy scholars, this work contributes to the theoretical and conceptual debate over governance and its applicability for unpacking and analysing public policies. It also brings to the forefront the debate about agency and structures and how the dialectic relationships between these two elements explains the formation and implementation of water governance arrangements. The integrated nature of the developed theoretical framework in terms of putting together governance and structure-agency perspectives can inform the policy analysis in relation to governing water processes as well as the role of agency in making and enforcing water policies and decisions. Added to this, the empirical analysis in this research provides deep insights into the reality of water policy-making and implementation in Egypt. It also provides a map of the major contours of this sector in terms of the main water agents and the governing structures, besides the ways in which water agents and structures interact around water policy issues and decisions. Such working knowledge is fundamental for understanding the way in which water governance arrangements function in Egypt.

For policy-makers, the study contributes to the practice of water policymaking and implementation by offering a more people-centred and participatory approach for forming and undertaking water governance functions. In that sense, the results of this research may improve the way in which policy and decision-makers in the Egyptian water sector perceive water issues and act upon them. The governance notion draws their attention to the new reality of making and implementing water policies and decisions wherein the government has to work hand-in-hand with the rest of non-state water stakeholders in order to develop and implement policies and decisions. In other words, in a water governance system, ministries and other governmental bodies are just one type of policy actor and represent one type of interest among other stakeholders who take part in setting-up and implementing governance arrangements. The role of the non-state actors in water policymaking and implementation is ever growing and ignoring this fact may result in policy failure and dysfunction at the water governance system level. In that sense, this thesis contributes to the practice of policymaking and implementation by bringing non-state water stakeholders to the centre of making and enforcing water policies and decisions. That in turn

improves the overall democratic qualities of the water governance system and results in more people-centred and ecologically friendly water policies.

For water managers and practitioners, the study provides a detailed account of the main actors as well as their roles and responsibilities in relation to developing, managing, and allocating water resources. Providing such a holistic picture can be beneficial for water managers in understanding and integrating the different parts of the system in order to develop better water management strategies and techniques. Additionally, this research highlights the political nature of water governance and the importance of paying attention to the existing water structures. Ignoring this dynamic nature of water governance, and overlooking the politics involved in water governance arrangements might lead to wrong managerial decisions and affect the overall efficiency and effectiveness of the water governance systems. In other words, understanding the overall governance structures within which water managers and practitioners are embedded is reflected in the way they develop, steer and manage the water resources at their disposal. As such, this thesis contributes to the ongoing debate on how to formulate water strategies and how to better manage the water resources at hand in a way that addresses, takes account of and improves water accessibility and gender equality. In other words, this research provides insights on how water managers and practitioners can set up a water governance system that guarantees clean, safe, affordable water. It is worth mentioning in this regard that the provided framework does not provide solutions to all water policy and water management issues but it adds a few new tools to the practitioners' toolbox to be used in certain situations as they see fit.

#### **9.4. Implications and Policy Recommendations for Water Policymaking and Water Governance Practices in Egypt**

Using a governance/structure-agency analytic and theoretical framework, this study has aimed at contributing to the theory and practice of water policymaking and water governance. The water sector in Egypt was analysed as a single case study in order to underline the main water agents as well as water structures alongside the ways those agents and structures interact to develop and implement water governance arrangements (see chapters 4 and 5). The sectoral analysis and the analysis of the interview material has indicated that the Egyptian water sector has undergone a profound reform process. In collaboration with

water stakeholders, the Egyptian Government has developed and put in place several initiatives to reshape the archaic water policies and institutions. Many of the embraced initiatives have yielded positive results. These results contributed to the evolution of a relatively better water governance system and practices. Nevertheless, there are still important areas for further improvements at the institutional and regulatory, technical and operational, and governance levels. In this respect, and following on from the examination of water governance arrangements in the case of the Egyptian water sector, this section will provide a set of policy recommendations in an attempt to address technical, operational, legal, regulatory and water policy issues.

#### **9.4.1. Implications and Policy Recommendations: Water Institutions**

As indicated earlier in chapters 7 and 8, the governance of the Egyptian water sector is primarily dominated by the presence of powerful and influential government water bodies. In such a context, any reform program or any attempt to change existing governance arrangements has to be very carefully planned and to take into consideration the recommendations to follow:

- **Securing ongoing political support.** Political support and the buy-in of the influential water governance institutions can make or break any reform initiative in the Egyptian water sector. Therefore, any reform initiative should be done in consultation with and the approval of the government water agencies, in particular MWRI and the MALR. Such political support is paramount for the institutionalization of the reform activities and processes. To put it another way, revamping existing water governance arrangements and mechanisms requires a new infusion of adequate capital investment alongside political commitment and support. Such a political will is required to ensure the success of any reform program and to face the institutional weaknesses and lack of good governance components in current water policy practices.
- **Combating the revolving-door effect.** The water sector is of a highly technical nature and reflects largely the features of closed communities. In this context, water engineers are rare commodities and there is a high demand especially for highly qualified ones in the market. This demand creates a state of instability within water organizations, wherein water experts and engineers will move to other entities providing better offers.

Losing personnel affects the overall performance of water agencies and their ability to undertake their functions in the water governance system. This problem was quite evident with government water institutions such as EWRA, which tends to lose personnel to private water companies. Such low retention levels of the agency's employees was one of the factors that crippled the organization. Such a revolving door effect also takes place in government, when public officials occupy more than one position in different water government bodies. To give an example, the Executive Director of the EWRA serves also as an assistant to the Minister for International Cooperation. Such a dual role may facilitate pushing the regulatory agenda when dealing with the minister in charge. Nonetheless, such a dual role can also compromise and reflect negatively in the autonomy of the regulatory agency.

- **Building staff capacities and skills.** In dealing with government water institutions, experts and stakeholders from the private sector have echoed the same concerns about the level of competency exhibited by government officials (see chapters 7 and 8). Some major areas of shortcomings have been underscored, in particular the ability of employees to communicate in English as well as the lack of some basic knowledge and applications of computer software. These shortcomings have to be addressed by the water government bodies through collaboration with other stakeholders to develop and deliver training and educational programs to their employees. In other words, building employees' capacities should be a high priority for water institutions, including ministries and regulators, in order to make sure that they have the same level of competency and skills acquired by their counterparts in the private sector. If PPPs are going to form the engine for water sector reforms, government water institutions have to be well equipped with high calibre staff members who are on top of their game when they deal with the private and other non-state counterparts.
- **Providing coordination mechanisms.** As discussed earlier, the existing institutional framework suffers from a lack of coordination between the involved water institutions. In a complex and fragmented institutional environment such as the one explicated in Chapter 7, coordination becomes the name of the game especially among the big governmental

players. The mapping-out exercise has resulted in a complex web of relations among numerous governmental entities including the Ministry of Water Resources and Irrigation, the Ministry of Agriculture, the Ministry of Interior, the Ministry of Foreign Affairs, the Ministry of Environment and the Ministry of Health, the Ministry of Electricity and Energy in addition to other water stakeholders. Each one of those ministerial bodies works under a separate mandate, which assigns the minister in charge certain responsibilities in steering respective subsectors in the water industry. In the absence of an intra-ministry coordinating body, the possibility of contradicting directives and overlapping activities becomes much higher. A good model to mimic in this respect is the PPP central unit under the Ministry of Finance, which has resulted in better coordination for all PPPs.

- **Developing better governance mechanisms for water decision-making processes.** The current central top-down approach for making water decisions is no longer suitable to cope with the reality of changing water governance in Egypt. A bottom-up, participatory approach that accommodates the contributions of water stakeholders of all types is needed wherein government institutions work side-by-side with private and non-state water agents in order to develop and implement water governance arrangements. The new governance model should be leaning more towards power delegation and decentralization of water decision-making activities. Go-alone strategies have to be completely avoided in dealing with water governance issues as they increase rejections and resistance to any proposed reforms. Additionally, the role of the private and non-state water stakeholders has to be enhanced via consultation processes via which those actors can express their opinions and concerns in relation to the proposed reforms before being implemented. This participatory multi-party decision-making mechanism will result in better water policy design and more effective implementation of water reforms. To this end, the role of private water agencies, water NGOs and universities, has to be improved in water policy and decision-making processes. The institutional analysis of the water sector in Egypt has indicated that the participation of those actors in water governance is considerably limited and therefore needs to be increased to ensure the full utilization of the overall water governance resources.

#### 9.4.2. Implications and Policy Recommendations: Water Management and Operation

The analysis in this thesis has demonstrated that the Egyptian water sector is shifting from having abundant water resources to being a system characterized by water deficit and scarcity. That means it is time for the water policymakers to pay more attention to the issue of water governance. For the water experts and the rest of water stakeholders, it is time to take a deeper look at how best to exploit the remaining volume of that scarce resource. Hence, considering water governance challenges domestically and internationally, it can be safely concluded that the current practices related to the management and operation of the Egyptian water sectors have be revisited and reconsidered to reflect the new reality of water scarcity. To this end, the study recommends the following actions:

- **Reforming the current tariff structure.** The earlier discussions have emphasised the fact that water is a rare economic commodity and it has to be perceived and treated as such by all water stakeholders (see chapter 7). In this respect, it would be difficult to sustain any water reforms without restructuring current water tariffs to reflect the actual cost of production. In other words, maintaining the existing low tariffs for water services will not be helpful in changing wasteful water practices among stakeholders. Therefore, it is recommended in this regard to continue tariff reforms guided by the experiences of other countries which have succeeded in developing effective pricing mechanisms and putting in place efficient water tariff structures. The role of EWRA is paramount in this respect as the sector's economic regulator. A regulatory framework is needed, which provides a tariff level and structure that encourage higher access to services without jeopardizing financial stability for water users namely the poor and women (see chapter 3). Nevertheless, as of now, water tariffs are determined by the Cabinet's High Committee on Policy and Economic Affairs with almost no role of the sectors' regulator. Given state responsibilities in the special sphere, and driven by the social protection of water users, tariffs are set in the light of political rather than economic and efficiency considerations. In this respect, the study recommends the development and implementation of a pricing mechanism that takes account of the needs of the water utilities and at the same time guarantees

consumers' rights especially the poor and women (see chapter 3). The role of the EWRA in setting water tariffs has to be enhanced dramatically as the sector's regulator and it has to work collaboratively with water stakeholders on developing such a pricing mechanism. Whatever pricing mechanisms and tariff structures are put in place for water services, they have to be fully justified to end-users and reviewed periodically. Otherwise, the implementation of the new tariffs will be faced with high resistance from water stakeholders. A participatory approach might help in developing a sustainable tariff system that reflects the economic cost but at the same time meets the needs and demands of water users.

- **Balancing a public services ethos with commercial considerations in water utilities.** Focusing on the idea of cost recovery and efficiency gains from an economic perspective is new to public officials in water utilities. More often than not, the public officials in HCWW perceive end-users as recipients of water services provided and heavily subsidized by the state. In other words, water users are not seen by public water utilities as customers who have to pay for the services they receive. Such an understanding of the nature of water services and the obligation of the state to adequately provide them to end-users have been developed and shaped over time and supported in many cases by the ways of pricing water services and public utilities' behaviour in handling water rights and other issues. In this context, any attempt by the state to move away from this common ethos of water public services to a new model wherein commercialization and cost recovery are the main pillars will face resistance, not only from end-users but also from the utilities staff. Having said that, it is recommended to gradually embark on a cultural change in public water utilities wherein in the old notion of the state special protection of water users is balanced with the new government's commitments with regard to economic efficiency, commercialization and providing economically viable water services. The process of pricing water services has to be fully shielded from political interference by government agencies under any form of legal and social rights in order to justify setting 'social' water tariffs.
- **Managing the demand-side.** One of the major challenges facing the water sector in Egypt is to bridge the gap between the scarce water

resources and the mounting demand for water from all economic sectors and households. To this end, a sustainable approach that focuses on demand-side management strategies could be helpful in rationalizing water usage by concerned stakeholders. The current water practices and strategies focus on the supply side and try to find new ways to increase water supply particularly to sectors with high levels of demand such as agriculture. Given the global water crisis previously discussed in chapter 3, alongside the water shortage that is facing and will continue to face Egypt in the future, focusing on the supply side would not be helpful. Sustainable water governance systems require sound planning and good management of water resources on both demand and supply sides (see chapter 3). The efforts on managing the supply side have to be complemented with efforts to reduce the existing demand for water. In other words, for such a balanced approach to be effective, all water sources including conventional and non-conventional sources have to be fully developed and utilized in an efficient manner to meet the increasing demand for water (ICARDA, 2011). However, at the same time, it is equally important to rationalize water practices and to reduce the demand for water by combating wasteful practices in industry and agriculture. It is worth mentioning in this regard that the approach followed by MWRI to integrate demand-side, water resources development and environmental protection in its planning model is a step in the right direction. However, this approach has to be sustained and systematically followed by other water organizations.

- **Maintaining and modernizing water facilities.** From a governance perspective, private investments can play a major role in modernizing and maintaining water infrastructures (see chapter 2). Yet, the analysis of the water sector in Egypt has indicated that many of the existing water facilities require modernization. Most of the water facilities have plans for maintenance and modernization. Nonetheless, these plans have been delayed for several reasons such as the lack of required resources and the weak political commitment to such improvement plans. Ignoring the maintenance and improvement plans results in water losses in a system suffering greatly from water shortage and the ever-increasing demand for



water. In other words, overlooking the dire needs of existing water facilities for maintenance means undermining the utilization efficiency.

- **Providing reliable measures and data and developing performance-oriented systems.** As indicated in Chapter 7, the lack of data and accurate measures represents one of the main challenges facing water managers, planners, and policy-makers in Egypt. The very basic data about water usage, for example, in the municipal and industrial areas is lacking. Added to this, measures of water quality and levels of pollution are not accurate and up-to-date (Hussona, 2014). These are just examples but the lack of information and data were highlighted on several occasions during the interviews by different types of stakeholders as one of the main constraints to making sound and efficient water decisions. The quality of managerial and policy decisions is contingent on the quality of the data used to produce them. As such, timely, up-to-date, and accurate information is paramount for evidence-based, scientific and efficient water policy and managerial decisions. Water utilities' performance data has also to be fully utilized in order to measure the performance of water agencies against services and performance standards. In this respect, having a transparent performance indicator system in place will help the sector regulator and water stakeholders to assess the performance of water companies. However, the regulatory officials confirmed during the interviews that performance measures are used to monitor the performance of water utilities. Nonetheless, the absence of a clear incentive or sanctioning scheme linked to this process has weakened the ability of the regulator to influence water utilities behaviour. To this end, it is recommended that a link should be established between water utilities' performance and the distribution of water subsidies received from the government. It is worth noting in this regard that current water governance settings and practices have the upper hand in the areas of setting, monitoring, and measuring water quality and utility performance standards to water bodies other than the sector's regulatory agency. For instance, the HCWW has the upper hand when it comes to setting and measuring performance standards for the affiliated water utilities. At the same time, the responsibility of developing and monitoring the water quality standards are assigned to the Ministry of Health. This observation

supports the conclusion that the EWRA does not function in its full capacity as the sector's regulator and these distortions in regulatory powers have to be fully corrected in the new water law.

- **Developing a holistic approach in managing water resources.** The water crisis is multifaceted and calls for an all-inclusive approach for effective water management and operation. In this respect, water issues and challenges should not be addressed in a stand-alone fashion. On the contrary, an integrated approach in identifying, planning, and handling those issues would be more productive. In other words, the water sector in Egypt is in need of effective Integrated Water Resources Management practices which put together the different pieces of the water crisis puzzle in an attempt to factor them all into the proposed solutions. Such a comprehensive and integrated approach to managing water resources would provide water strategies that go beyond the easy and comfortable solutions which focus primarily on the idea that the Nile is the only water resource in the country and tackle the water problems at hand with innovative solutions. Added to this, a holistic and comprehensive approach to water management would suggest an accurate assessment of current and future water resources in terms of availability, location, quality, and demands from water stakeholders. Some of the institutional basis for such a system are already in place including the National Water Resources Plan for Egypt (NWRP) and the Integrated Water Resources Management Plan prepared by The Ministry of Water Resources and Irrigation issued in 2005. Such an institutional base is important but not sufficient to transform water management practices in the sector. The implementation is faced with many challenges which need to be addressed. Chief among those challenges is the business-as-usual mentality and culture prevailing in water institutions. This way of thinking hampers the efforts of thinking out of the box and developing new solutions to water problems. Added to this, the lack of a clear institutional vision and concrete mechanisms for full water stakeholders' participation means some elements of the overall picture are missing, which stands as an obstacle in the face of developing integrated water management practices. Such challenges need to be addressed with legal and

regulatory developments that ensure full and efficient utilization of all types of water resources.

#### **9.4.3. Implications and Policy Recommendations: Legal and Regulatory Environments**

The analysis of the legal and regulatory framework of the Egyptian water sector has underlined the complex and the fragmented nature of the legal and regulatory environment. Such complexity and fragmentation are reflected in the weak and sub-optimal operations of the water governance system. In this context, legal and regulatory reforms are considered integral components in any mega water reform program. For the water governance system in Egypt to work effectively, water regulations and the overall legal and regulatory environments have to be reconsidered and redesigned. Water laws need to be unified and simplified in a way that helps the effective formation and implementation of water policies. In this context, the study suggests the following actions:

- **Continuing and completing water legal reforms.** The discussion in chapter 3 has underlined the importance of the overall legal and regulatory environment for water governance systems by focusing on the relationship between water policies and water laws. The analysis of the case study though has flagged the fragmentation of the legal environment in the Egyptian water sector as one of the major hurdles facing reform efforts and negatively impacting the effectiveness of current water governance arrangements. A comprehensive water law has been drafted as previously indicated, wherein some of the legal and governance water issues have been properly addressed. One of the main benefits of having this new law in place is the clear assignment of regulatory powers to the EWRA. For instance, the sector's regulator will have the power to issue licenses to the water subsidiaries. This in turn will enhance the overall governance of the licensing process and increase the transparency as well as the accountability of those water facilities for delivering specific outputs. In this context, the examination of the interview data has underlined a major concern related to the incomplete legal and regulatory reforms in the sector. That is the sector's institutional complexity will continue increasing with different water agencies playing diverse regulatory and operational roles at the same time. The relationship

between the EWRA and the Egyptian National Organisation for Potable Water and Sanitary Drainage (NOPWASD) is a case in point. Due to the lack of adequate separation between regulatory and operational functions, both agencies are assigned regulatory duties and report to the same minister. Such an overlapping of regulatory and operational water bodies' responsibilities has to be addressed in the new legal and regulatory institutions. Additionally, the legal and regulatory framework of the water sector should secure the separation of functions and roles at the levels of water policy-making, economic and social regulations, and water operations and service delivery.

- **Developing a better understanding of regulations based on the idea of shared water governance.** During the interviews, water experts and government officials provided different notions and diverse interpretations of 'regulation'. For most of the government officials, water regulation is nothing but a new layer of rules which govern the water sector. In other words, the concept of regulation as an interactive process wherein regulatory rules are made and implemented by all water stakeholders and based on shared water governance was clear enough in their minds. Such a narrow interpretation of the concept of regulation is reflected in the ways those government actors perceive their role in the overall water governance system and the roles of other stakeholders. Consequently, a common understanding of what is meant by water regulation among all stakeholders is in order. Focusing on the final products - regulatory rules - is not enough to capture the full dynamics of water regulation. As indicated earlier, water governance is of a political nature and ignoring water processes and interaction among water stakeholders is like focusing on the trees and ignoring the wider water governance forest. Added to this, perceiving water regulation from a process perspective will help in fostering the participation of non-state actors in water governance and acknowledging their potential effects on regulatory outcomes.
- **Providing and enhancing the institutional guarantees for the regulatory independence of EWRA.** At the time being, the sector's regulator, as has been illustrated earlier, is acting as a technical office in the big shadow of the other government institutions. In this regard, it is highly recommended that for water reforms to be sustainable and fruitful

and for the sector's regulator to act independently from all water stakeholders including government water agencies (Badran, 2017). In other words, for EWAR to fulfil its role in the newly established governance structures, it has to be fully shielded from any form of political interference by the powerful dominating water bodies. EWAR also has to act independently from the regulated industry and has to avoid regulatory capture by powerful international and national private water companies. For a newly established regulatory agency, this task is far from being easy, as regulatory independence has to be reflected in all decisions and actions. In this regard, it is recommended that the financial independence of the EWRA has to be strengthened in order to ensure the autonomy of decision-making and the ability to act independently from all water stakeholders. As it stands at the moment, the EWRA is fully funded by government. Nonetheless, the regulatory agency can ensure its financial autonomy by using the money collected from non-compliant companies in addition to the funds secured from issuing and renewing water licenses to sustain its financial independence. In all cases, a long-term commitment to enhancing in-house regulatory capacities and organizational development in EWRA will result in increasing the confidence and trust from water stakeholders in the new regulator and produce behavioural change at the operational levels of water players. Without such a commitment to enhance the regulatory power of EWRA, the ability of the agency to regulate the water sector may wither and the possibilities of regulatory capture may increase.

- **Addressing information asymmetry.** In relation to the regulated water facility, the EWRA as it stands now suffers from information lack and the absence of reporting mechanisms. Such an information asymmetry makes the sector's regulator ill equipped to effectively address major regulatory issues. To put it another way, water facilities can hold information about the different operational aspects including production and distribution, which are crucial for making sound and timely regulatory decisions. In such an asymmetrical situation, the EWRA is highly dependent on the regulated water facilities for receiving information. This interferes with its ability of EWRA to respond effectively to the water issues. In this regard, formally instituted reporting mechanisms from all

private water companies and utilities can help in addressing the information asymmetry between EWRA and the regulated industry. Additionally, the EWRA has to develop a system to effectively validate and handle the flow of information received from the regulated companies. Having too much information can be as counterproductive as having no information at all, especially in the absence of the required analytics to deal with the received data. It is also recommended that the EWRA should not rely on the reports sent by the regulated water companies. As the sector regulator, he should have the right to undertake site visits and to access all water companies' filing systems in order to verify the reposted information. The EWRA could also seek unification of reporting mechanisms by following international standards to report information from the regulated water companies. The international financial standards are a case in point when it comes to reporting financial data and relevant information about water companies' financial performance.

- **Enforcing water and environmental regulations and controlling non-utility providers.** The discussion in chapter 7 has indicated that the levels of water pollution due to the disposal of industrial companies and the malpractice from the agricultural sector have become a major concern for environmental and water policy scholars and practices. Disposing of such hazardous substances directly into the Nile water without a proper treatment degrades the quality of the water and increases the chances of health hazards and illnesses. To restrain these practices, environmental and water regulators have to work hand-in-hand to effectively monitor and enforce regulations and sanctions for violating parties. Lenient enforcement would result in more violations taking place and more deterioration in water quality, which in turn increases the economic cost of treating contaminated water to the level of becoming drinking and potable water safe for end-users. If needed, new regulations and laws have to be developed with harsher sanctions in order to deter violators from breaking the law and polluting the water sources. The regulatory agency should also pay close attention to the growing role of the non-utility service providers. The role of those entities currently is limited to the poor and scattered areas. Nonetheless, the poor provision of water and sanitation services may result in an increase in the number and

importance of those actors. Working illegally, those actors are always associated with numerous forms of misconduct. For instance, in poor areas where there is a considerable lack of water and wastewater services, non-utility providers tend to exploit customers by charging high prices for the services they deliver. The activities of those actors have to be legalized and regulated by the EWRA in order to protect water users from exploitation and prevent any practices that might result in health hazards to end-users. This will not be an easy task for the sector regulator as the interviewed regulatory members of staff have agreed that it would be difficult to control the behaviour of those actors given the scattered and sporadic nature of their operations and the absence of basic water and sanitation services in the areas where they function.

- **Strengthening the EWRA's regulatory powers.** From a historical point of view, the regulation of the water sector was merely perceived as a function of oversight aiming at monitoring water quality in order to reduce any health hazards for end-users (see chapter 7). This narrow interpretation of water regulation is no longer suitable to handle the different aspects of water reforms in Egypt. In addition to water quality, there is more focus now on the economic efficiency of water utilities and the quality of water services in general. In other words, with the commercialization of the water sector, and in order to handle water structural reforms in Egypt in a better manner, the regulatory powers of the EWRA have to be extended to cover major economic as well as social areas. As mentioned previously, EWRA is more of a technical body than a fully-fledged regulator of the sector. In this regard, and in order to function as a regulator for the water sector, new powers have to be granted to EWRA. As the water regulatory body, EWRA has to be empowered and mandated to monitor the performance of the water facilities and measure such a performance against a set of technical, commercial, financial and economic standards. The embedded information asymmetry in the water governance system hampers the efforts of the regulator to fulfil this task. Additionally, the analysis of the interview material has underscored some areas of concern shared by the interviewed regulatory members of staff at the EWRA. Chief among those concerns were the weak power of the regulator in imposing fines on the

noncompliant water facilities in addition to the inability of the EWRA to issue water licences or to design and impose service tariffs. Current water utility licenses are issued in accordance with applicable decrees and legislation in the absence of a unified framework for licensing water services providers. The new water law is expected to grant the power of licensing water operators as well as the right to renew and revoke their license to the EWRA. However, until this projection becomes a reality, the regulatory powers of the sector's regulator will continue to suffer from major weaknesses. In the meantime, and given the aforementioned shortcomings, it can be concluded that the EWRA is in need of a comprehensive program to build-up the capacity of its members of staff in different economic and social areas of water regulation. Furthermore, the regulatory powers of the agency have to be clearly mandated to the EWRA in the new long-awaited water law.

#### **9.4.4. Implications and Policy Recommendations: National and Regional Water Governance Settings**

Introducing the notion of governance in the Egyptian water sector is still relatively new and the relationships between water agents and structures have not yet been clearly determined. Nonetheless, the discussion of the water crisis from a governance point of view has demonstrated that the water crisis in Egypt provides an abundantly clear example of a crisis in governance. At the domestic level, several governance issues require the attention and intervention of water policy and decision-makers. At the same time, and considering the transboundary nature of the Nile water system, another set of water governance issues needs to be addressed. In this regard, the following actions are recommended by this research:

- **Increasing water consumers' awareness.** Any success in developing and enacting sustainable water reforms will be dependent largely on the acceptance of the water users to change their perceptions and behaviour in dealing with available water resources. Focusing on technical improvements in managing and operating water facilities will partially address the water shortage faced by stakeholders in Egypt. However, utilizing advanced water technologies will not provide remedies for all water problems. Improving the operational and managerial aspects of



water governance has to be accompanied by behavioural change at the level of the water users. Such behavioural change cannot be realized without public campaigns designed to educate, inform, and raise the awareness among water users and underscore the main water issues and the ways to deal with them. A collaborative effort between concerned government agencies and the water NGOs can be fruitful in raising public awareness and changing consumer behaviour. The directed message should be clear and convincing to consumers by focusing on showing the positive impacts of saving water and rationalizing water consumption for all stakeholders in the society. It is worth mentioning in this regard that changing the existing conceptions about water and consumption patterns and behaviour means creating a new culture among end-users. Such cultural and behavioural change requires persistence and continuous effort from all involved parties. Sporadic efforts will not be helpful in changing people's behaviour and wasteful practices.

- **Enhancing the overall qualities of the water governance system.** The notions of governance, good governance, and water governance as presented in chapters 2 and 3 have underlined transparency and accountability among the main elements of good water governance systems. Nonetheless, the analysis of the decision-making mechanisms in the Egyptian water sector has demonstrated that the core elements of good governance such as transparency and accountability have not been fully embraced and systematically maintained throughout the governance system's operations. Transparency is paramount when it comes to the legitimacy of water decisions and proposed reforms. For instance, the lack of transparency in awarding PPP concessions to the private water companies may raise fundamental issues related to corruption. However, transparent concession processes mean the fair treatment of all bidders and legitimize the decisions made by government water bodies regarding the projects at hand. Additionally, with the private water companies on board building and operating new water facilities using different PPPs models have become a common practice. Moreover, considering the growing involvement of other non-state actors in making and implementing water policies and decisions in the water sector, it is essential to draw clear lines of accountability. It is essential to clearly

identify the roles and responsibilities which hold all involved parties accountable for their actions. Lack of accountability may undermine the overall system and make involved water agents prone to opportunistic behaviour that might harm other water stakeholders such as end-users.

- **Coordinating donors' activities and programs.** As noted in chapters 6 and 7, the Egyptian water sector has received considerable donations and technical support from different types of developmental organizations including the OECD, the UNDP, and the USAID. This aspect reflects the role of international water governance level in influencing water policy practices at national and regional levels (see chapters 2 and 3). Having all those donors working at the same time and trying to reform and modernize the water sector requires an effective coordination mechanism that ensures the best utilization of the provided resources. As indicated in the sectoral analysis, the water issues are numerous and the reform areas in the sector are multiple. Without the proper coordination mechanism in place, it is highly possible that efforts could easily overlap and the outcomes of donations would not be optimal. In this context, it is essential to have a clear reform agenda and to devote the provided assistance accordingly. Prioritizing sector reform needs will help donors in developing their programs and make sure they build upon each other's efforts to ensure sustainable and efficient water reforms. Some of the donor-driven reform agenda has been criticized by water experts during the interviews for being heavily reliant on consultancy and having little to do with building in-house expertise or developing local solutions to water problems.
- **Empowering non-state water stakeholders.** In water governance systems, all types of stakeholders contribute different kinds of resources and expertise (see chapters 2 and 3). Each constellation of actors plays to their strength. For instance, government actors use law making and policymaking powers allocated to them to regulate the overall governance operations. At the same time, private water companies, for example, possess the resources, the technology and the capital needed to modernize and build up new water projects and facilities. Relationships among the governance system's members are of an interdependent nature. That means each type of actor needs the other for the overall governance system to work effectively. Having said that, it is needless to

emphasise how important non-state and private water stakeholders are for the functionality of the water governance system in Egypt. Unlike the current situation (see chapter 7), those new policy players need to be fully empowered in the sense that they are given the opportunity to use the resources they have at their disposal to benefit the water governance system and to make profits and return on the investments they make. This will result in a win-win situation wherein all parties contribute to and benefit from the system. In this context, more partnerships with the private sector are needed in order to provide the needed investment for establishing the new projects. At the same time, the relationship with other water stakeholders, namely consumer groups, should not be neglected. The EWRA, as the protector of public interests, should reinforce its ties with consumers and make sure that their voices are echoed in regulatory and policy decision-making processes. As of now, and as reported by water experts in the interviews, the regulatory agency is focusing on handling customers' complaints. This could be a good approach to identify and react to the sector's main issues. Nonetheless, a proactive regulatory approach is recommended wherein the EWRA seeks input from end-users regarding the intended policy and regulatory goals. In this regard, conducting public consultations could be an efficient regulatory tool in order to ensure the participation of water customers and other water stakeholders in making regulatory policies and decisions.

- **Thinking globally and acting locally.** The discussion of policy learning and lessons drawing in chapter 4 has indicated that policy-maker may learn from the experiences of other countries. It is clear from the analysis of the water sector regulation in Egypt that the regulatory design adopted is modelled based on the independent sector regulatory model such as the experience of the water sector regulator in England and Wales (Ofwat). Such an observation has been supported by the evidence gathered from the analysis of the interview materials and the other examined water policy documents. For example, the regulatory members of staff have confirmed the technical links with Ofwat and stated that some of them have visited Ofwat and attended training there. It is worth noting in this respect that the accounts on policy learning and lesson drawing have concluded that there is a possibility for policymakers in a specific

context to learn from the experience of other jurisdictions (see chapter 4). This is not to support the idea of copying institutions, ideas, and policy solutions to address water issues at the local level. The idea here is for water policy and decision-makers to look globally and to search for best practices; but they have to evaluate the suitability and compatibility of the identified ideas, models, and solutions to deal with water issues domestically. As the discussions indicated earlier, despite being modelled based on the Ofwat model, the EWRA lacks numerous regulatory powers, which the Ofwat fully enjoys as the sector's regulator in England (see chapters 7 and 8). In this context, it is good to look for lessons to be learned from other jurisdictions. However, such lessons and experiences have to be localised. In other words, Egypt has no shortage of water experts; nonetheless, the complexities of the water crisis require the collaboration and integration of all efforts to develop customised locally driven solutions to the water governance problems.

- **Coordinating efforts and plans with upstream Nile riparians.** As noted in chapters 2 and 3, water crisis is perceived as a problem of governance that calls for the collaboration of state and non-state actors at global, regional and national levels. Such a multilevel analytic framework is particularly relevant to examine the transboundary nature of water governance in the Nile basin. One of the major features of the water governance in Egypt is the transboundary nature of the governance system as the Nile, which is the main source of water in Egypt, cuts across different countries and political jurisdictions (see Chapter 6). This feature, in particular, makes the overall governance of the Nile highly political and sensitive to the water politics among the Nile Basin countries. On the one hand, Upper Nile countries have the right to manage their own water resources the way that helps them in achieving their developmental goals. At the same time, and considering that most of Egypt's water is produced outside its own boundaries, accepting this argument means for water policy-makers accepting a considerable reduction in the country's share from the Nile water, which will hamper the developmental plans of Egypt. In such a complex governance setting, a common understanding of the nature of the system and the ways in which it affects involved parties is paramount for developing coordination mechanisms and shared visions

and plans. In other words, for all parties to win a new governance system must be developed away from short-term, self-centred, and narrow perspectives and centred on mutual benefits for all countries. To this end, and considering the recent crisis between Egypt and Ethiopia with regard to the establishment and operation of the Grand Renaissance Dam, a cooperative and win-win solution would require developing a common understanding of the Nile governance and forming a shared vision regarding the use of its water resources. On the one hand, Egypt has acknowledged Ethiopia's right to develop the dam and to pursue its economic development plans. On the other hand, and given the gravity of the water shortage situation in Egypt and potential impact of the dam on water availability, Ethiopia has to come to an agreement with Egypt on how to minimize the negative impacts of the dam. It also has to provide an insurance policy to the Egyptian Government assuring the full cooperation between the two parties during droughts and other water crises. Added to this, the benefits from establishing the dam in terms of power generation should be shared among the Nile Basin countries, namely Egypt, to compensate for the potential negative consequences.

#### **9.5. The Limitations of the Research and Opportunities for Future Studies**

This study has developed an integrated approach using governance and structure-agency theoretical accounts in order to investigate water governance issues in the context of the Egyptian water sector. In this context, it is worth noting that any attempt to investigate water governance arrangements and to address the question of water crises in Egypt has to grapple with many conceptual, theoretical, and methodological difficulties. At the conceptual level, introducing the notion of governance as a new policy tool and a novel mechanism for making and implementing water policy decisions in an environment dominated primarily by giant government entities such as MWRI and the MALR was not an easy task at all. The history of Egypt reflects the very central nature of the country, with government entities having the upper hand when it comes to managing and allocating the water resources. This central role of government institutions has been sustained and reinforced over centuries. In such a context, it is hard to convince the dominant government water agents to share responsibilities and tasks with non-state water stakeholders, namely citizens and the private sector.

It was clear from the analysis of the interview material that government agencies in charge of water management in Egypt do not want to lose control to the new players from the private sector.

At the theoretical level, the research has suffered from the lack of academic accounts using new theoretical frameworks of analysis such as governance to study the processes of making and enforcing water policies and regulation in the Egyptian context. This field is dominated by technical reports mainly from an engineering point of view with very little attention devoted to the analysis of water governance issues and policy processes. The study has attempted to use such a lack in the academic literature to its favour by developing the provided integrated approach for analysis and applying it to study the current water governance issues and arrangements in Egypt using an MLG perspective. In that sense, the research at hand offers an attempt to bridge the gap between theory and practice in the area of making water policies and setting up water governance systems.

At the methodological level, one of the major challenges was scheduling and conducting the elite interviews. Despite the fact that the researcher was keen on having all the interviews scheduled in advance, many of them were subject to last minute changes due to the busy schedule of the interviewees. During the interviews, the researcher was keen on establishing a common conceptual ground among all interviewees. This was done by briefly introducing some major concepts such as governance and non-state policy actors in a simple fashion. The aim was to make sure that the interviewees all had the same understanding of these concepts when talking about water governance issues and the role their agencies play in managing water resources. It is also worth mentioning in this regard that the researcher found it difficult in some interviews to keep the interviewees focused on the question at hand, as they tended to reflect more on their experiences to highlight their achievements. Government officials also rejected the request to record the interviews, therefore, the researcher had to take shorthand notes and extend the notes after the interview in a fully documented record.

The investigation of water governance in Egypt has underlined some new avenues for future research. In the field of water policymaking and implementation, more focus on the growing role and influence of non-state actors

in water governance is required. The existence of non-state actors in policymaking and implementation in many policy domains has become a fact. Nonetheless, the potential roles and the forms of participation by such actors are still in dire need of academic examination and investigation. This area of scientific enquiry will result in a body of research that provides the proper guidance as well as a sound understanding of the responsibilities of the private actors in the overall water governance system. Added to this and from a governance standpoint, more enquiry in the areas of accountability, transparency and rule of law is in order. Examining these areas will help highlight the shortcomings in the current water governance arrangements in addition to proposing new strategies to enhance those core elements of good governance.

From a methodological point of view, the researcher would have liked to extend the boundaries of the study to include other sectors or to compare similar water governance settings in other countries. However, given the limitations of time and resources, the single case study research design was preferred at this stage with future intentions to incorporate a comparative perspective. One of the major shortcomings of the single case study approach is the limited ability to generalise the results of the study (see chapter 5). Nonetheless, for a comparative analysis to be fruitful it has to be founded on a solid base of rich data and information. This thick description of water sectors can be produced via single case studies, which look in depth into the practice of water governance in specific contexts. Having said that, the plan at the post-doctoral level is to continue the enquiry in the area of water governance by conducting a series of comparative analyses considering water governance regimes in other countries of the region.

To conclude, it remains to be seen how the water governance system in Egypt will look like in the years to come. Nonetheless, with little doubt one can easily predict an ever-growing role for private water stakeholders of all kinds in developing and managing available water resources. It is my belief that this new reality of water governance requires imaginative solutions to water issues. It also calls for a full implementation of the core principles of good water governance, particularly the participatory decision-making and accountability mechanisms.

## **APPENDICES**

### **Appendix1: Interview Question Guide**

Q1 Who are the actors involved in managing the water sector in Egypt?

Q2 Who in your opinion are the most influential actors when it comes to make water policy decisions?

Q3 How sustainable do you think the existing water governance system is? Does it help in addressing pressing issues such as gender considerations and poverty?

Q4 Do you think involving non-state actors in water decision-making processes helpful? Why?

Q5 Do you think the independent sector regulator was the best policy option for managing the water sector in Egypt? Why?

Q6 Do you think donor agencies which were involved in the reform process have somehow influenced the decision regarding which reform model to adopt?

Q7 What factors do you think decision makers take into account when selecting reform models and policy options?

Q8 Do you think the adopted model (IRA) suits the existing structures in the Egyptian water sector? Why?

Q9 Was the decision of adopting the IRA model based on the study of other countries' experiences?

Q10 How effective the IRA model is in securing the participation of all stakeholders in the Egyptian water governance system?

**Thank you very much for your time and cooperation.**

**Do you think there is anyone else I should talk to in your organization about my research?**



## دليل أسئلة المقابلات الشخصية

1- من هم برأيك الفاعلون الرئيسيون في منظومة حوكمة المياه في مصر؟

2- من وجهة نظرك، من هم الفاعلون الأكثر تأثيراً في عملية صنع القرارات الخاصة بسياسات المياه في مصر؟

3- إلى أي مدى تتمتع منظومة حوكمة المياه في مصر بالاستدامة؟ هل يتفاعل النظام القائم مع القضايا الملحة كقضية الفقر والنوع الاجتماعي بفاعلية؟

4- هل تعتقد بأن مشاركة الفاعلين غير الحكوميين في عملية صنع القرارات الخاصة بسياسات المياه في مصر أمر مفيد؟ لماذا؟

5- هل تعتقد أن تبني النموذج التنظيمي القائم على تنظيم وإدارة قطاع المياه في مصر من قبل هيئة مستقلة هو النموذج الأفضل لإدارة هذا القطاع؟ لماذا؟

6- من وجهة نظرك، هل أثرت الجهات المانحة المشاركة في عملية تطوير وإعادة هيكلة القطاع في عملية تبني نموذج بعينه من قبل صانعي القرار؟

7- في اعتقادك، ما هي العوامل التي أخذها صانع القرار بعين الاعتبار عند تبني نموذج الهيئة المنظمة المستقلة؟

8- هل تعتقد أن نموذج الهيئة المنظمة المستقلة يتناسب مع الأطر والأبنية المؤسسية الموجودة بقطاع المياه في مصر؟

9- هل تعتقد بأن صانع القرار المصري قد استفاد من خبرات الدول الأخرى بشأن تطوير وإعادة هيكلة قطاعات المياه؟

10- أخيراً، ما هو تقييمك لمنظومة حوكمة المياه في مصر؟ ما هي الإيجابيات والسلبيات؟  
شكراً لك علي حسن تعاونك.

هل تعتقد أن هناك أي شخص آخر في المنظمة يمكن أن يفيدني في موضع دراستي؟

## Appendix 2: certificate of ethical approval

### CERTIFICATE OF ETHICAL APPROVAL

School/Academic Unit: Exeter University

Title of Project: Explaining water governance in Egypt: Actors, mechanisms and challenges

Name(s)/Title(s) of Project Research Team Member(s): Wesam Lasheen, PhD student

Project Contact Point (incl. telephone no.): wl249@ex.ac.uk  
07951523264

Brief Description of Project:

This project investigates water governance in Egypt in an attempt to identify the main policy actors and the way in which they interact regarding water policy issues. The aim is to understand why a certain model has been adopted by policy makers in Egypt to manage the water sector and whether a policy learning experience is included in the process of policy transfer.

The researcher is going to conduct the field work at two different stages; the first stage will be in August 2015 and the second one in January 2015 to update the data.

This project has been approved for the period

from: August 2014

to:  
January 2015

School Ethics Committee approval reference:  
(minute number/date reference, etc)

Signature .... Date .  
(Chair of School Ethics Committee)

Name/Title of Chair (BLOCK CAPITALS) .

## BIBLIOGRAPHY

- Abdel-Dayem, S. (2011), Water Quality Management in Egypt. *International Journal of Water Resources Development*, 27(1), 181-202.
- Abdel-Dayem, S., and Abdel-Ghani, M. (1992), Concentration of agricultural chemicals in drainage water. Proceedings of the 6th Conference International Drainage Symposium. Nashville, Tennessee, USA.
- Abdel-Gawad S. (2004), Water Quality Challenges Facing Egypt. In F. Linkov and A. Bakr (eds.), *Comparative Risk Assessment and Environmental Decision Making*, 335–347. (Kluwer Academic Publishers, Netherlands).
- Abdel-Gawad, S. (2007), Actualizing the Right to Water: An Egyptian Perspective for an Action Plan. *International Journal of Water Resources Development*, 23 (2), 341-354.
- Adams, G., Schvaneveldt, J. (1991), *Understanding Research Methods* (New York, Longman Press).
- Agreement on the Nile River Basin Cooperative Framework (CFA) (2010), [www.nilebasin.org/index.php/documents-publications/30-cooperative-framework-agreement/file](http://www.nilebasin.org/index.php/documents-publications/30-cooperative-framework-agreement/file). Accessed 20/11/2017.
- Ahram Online, (Thursday 1 May 2014), First price hike on water bills for Egyptian households in nearly a decade. [english.ahram.org.eg](http://english.ahram.org.eg). Accessed 14/2/2016.
- Al-Ahsan, A. (2017), Guidance for Good Governance and Civilizational Transformation: Lessons from History, Religion and Science. In A. al-Ahsan and S.B. Young (eds.), *Qur'anic Guidance for Good Governance*, DOI 10.1007/978-3-319-57873-6\_2.
- Al-Desoky, A. (2007), *Major Landowners in Egypt: 1914-1952* (in Arabic, Dar Al-Shorouk, Cairo).
- Alexander, G. (1997), Case Studies and Theory Development, paper presented at Carnegie-Mellon University.
- Allam M, El Gamal, F. and Hesham M. (2005), Irrigation Systems Performance in Egypt. In Lamaddalena N, Lebdi, F., Todrovic, M. and C. Bogliotti, (eds.), *Irrigation Systems Performance*. Options Méditerranéennes: Série B, Etudes et Recherches, 52, CIHEAM, Bari.

- Allan, J., Keulertz, M., Sojamo, S. and Warner, J. (2013), *Handbook of Land and Water Grabs in Africa: Foreign Direct Investment and Food and Water Security*. (Routledge, Abingdon).
- Almasry Alyoum newspaper (2010), Burundi will not take stand inimical to Egypt's interests. Al-Masry Al-Youm, 14 November. www.AlmasryAlyoum.com, Accessed 20/4/2017.
- Almasry Alyoum newspaper, www. AlmasryAlyoum.com, 21/6/2016.
- Alnaggar, D. (2003), Water Resources Management and Policies for Egypt. Workshop on Policies and Strategies Options for Water Management in Islamic Countries (Tehran), December, 2003.
- Anokye, A. (2013), *Stakeholder participation in water resources management: the case of Densu Basin in Ghana*. Dissertation, VU University Amsterdam, Amsterdam, The Netherlands.
- Appleton, B. and Smout, I. (eds.). (2003), Gender Perspectives on Policies in the Water Sector. The Gender and Water Development Report 2003: Delft, Netherlands: Gender and Water Alliance.
- Arafat, A., (2009) Hosni Mubarak and the Future of Democracy in Egypt (London: Palgrave Macmillan).
- Archer, M. (1985), Structuration versus Morphogenesis. In S. Eisenstadt and H. Helle (eds.), *Macro-Sociological Theory*, 1, Newbery Park, CA: SAGE Publications: 58-88.
- Archer, M. (1996), *Culture and Agency* (Cambridge, Cambridge University Press).
- Argyriades, D. (2005), Administering Global Governance: An Introduction, In G., Fraser-Moleketi, (ed.) (2005), *The World We Could Win: Administering Global Governance*, (Amsterdam, IOS Press).
- Arsano, Y. (2004), Ethiopia and the Nile: Dilemma of National and Regional Hydro-politics. PhD thesis, Center for Security Studies, Swiss Federal Institute of Technology, Zurich, Switzerland.
- Asempa, A. (2010), The Battle of the Nile, North-East Africa. *Africa Confidential*, 51(17), 6-8.

- Audi, R. (ed.) (1995), *The Cambridge Dictionary of Philosophy* (Cambridge, Cambridge University Press).
- Aureli, A. and Brelet, C. (2004), Women and Water: an ethical issue. *UNESCO series on Water and Ethics*, Essay 4. Paris, France: UNESCO.
- Awulachew, S., Smakhtin, D., and Peden D. (2012), *The Nile River Basin: Water, Agriculture, Governance and Livelihoods* (Oxon, Routledge).
- Awulachew, S., Vladimir S., David M., and Don P. (2012), Introduction. In S., Awulachew, D., Smakhtin, and D., Peden (2012), *The Nile River Basin: Water, Agriculture, Governance and Livelihoods* (Oxon: Routledge).
- Ayres, I. and Braithwaite, J. (1992), *Responsive Regulation: Transcending the deregulation debate*. (New York, Oxford University Press).
- Bache, I. and Flinders, M (2004), Themes and Issues in Multi-level Governance, in I., Bache, and M., Flinders, (eds.) (2004), *Multi-Level Governance* (Oxford, Oxford University Press).
- Bache, I. and Flinders, M. (eds.) (2004), *Multi-Level Governance* (Oxford, Oxford University Press).
- Bachman, R. and Schutt, R. (2008), *Fundamentals of Research in Criminology and Criminal Justice* (London, SAGE Publications).
- Badran, A. (2012), Steering the Regulatory State: The Rationale behind the Creation and Diffusion of Independent Regulatory Agencies in Liberalised Utility Sectors in the Developing Countries: Thoughts and Reflections on the Egyptian Case, *International Journal of Public Administration*, 35(3), 204-213.
- Badran, A. (2013), Understanding the Egyptian Regulatory State: Independent Regulators in Theory and Practice, in N. Dubash, and B. Morgan, (eds.) *The Rise of the Regulatory State of The Global South: The infrastructure of Development* (Oxford, Oxford University Press).
- Badran, A. (2015), The Political Economy of Administrative Reforms in Egypt: Governance, Reforms, and Challenges, in A. Massey and K. Miller (eds.) *The International Handbook of Public Administration and Governance*, (London, Edward Elgar).

- Badran, A. (2017), Revisiting Independence of Regulatory Agencies: Thoughts and Reflections from Egypt's telecoms sector, *Public Policy and Administration*, 32(1), 66–84.
- Bahaa El-Din, M. (2012), Water Climate Development. (Speech to World Water Week, 27 August 2012, Stockholm).
- Baker, C. (1998), Membership categorisation and interview accounts. In Silverman, D. (ed.) *Qualitative Research: Theory Methods and Practices* (London, Sage publications).
- Baldassarre, G., and Elshamy, M. (2011), Future Hydrology and Climate in the River Nile Basin: A Review. *Hydrological Sciences Journal* 56(2), 199-211.
- Baldwin, R. and Cave, M. (1999), *Understanding Regulation: Theory, Strategy, and Practice* (Oxford, Oxford University Press).
- Bandaragoda, J. (2006), Status of Institutional Reforms for Integrated Water Resources, Management in Asia: Indications from Policy Reviews in Five Countries, Working Paper 108, International Water Management Institute, Sri Lanka.
- Barreira, A. (2006), Water Governance at the European Union, *Journal of Contemporary Water Research & Education*, 135:80-85.
- Barrett, C., Lee, D. and McPeak, J. (2005), Institutional Arrangements for Rural Poverty Reduction and Resource Conservation, *World Development*, 33(2), pp. 193-197.
- Bennett, C. (1991), What Is Policy Convergence and What Causes It?. *British Journal of Political Science*, 21(2), 215-233.
- Benson, D. (2009), Constraints on policy transfer, CSERGE Working Paper EDM 09-13.
- Benson, D. and Jordan, A. (2011), What have we Learned from Policy Transfer Research? Dolowitz and Marsh Revisited, *Political Studies Review*, 9(3), 366-378.
- Benz, A. and Zimmer, C. (2010), 'The EU's competences: The 'vertical' perspective on the multilevel system', *Living Reviews in European Governance*, 5(1), <http://www.livingreviews.org/lreg-2010-1>.

- Bernard, H. (1988), *Research Methods in Cultural Anthropology* (Newbury Park, CA, Sage).
- Bevir, M. (2007), Differentiated Polity. In M. Bevir, (ed.) (2007), *Encyclopaedia of Governance* (London, Sage Publications).
- Bevir, M. (2013) *A Theory of Governance* (University of California Press).
- Bevir, M. and Rhodes, R. (2000), Interpretive Theory, in D. Marsh and G. Stoker (eds.), *Theories and Methods in Political Science*. (London, Macmillan).
- Bhaskar, R. (1986), *Scientific Realism and Human Emancipation* (New York, Verso).
- Bhaskar, R. (1997), On the Ontological Status of Ideas, *Journal of the Theory of Social Behaviour*, 27(2), 139-147.
- Bickesteth, S. (2012), Water Climate Development at World Water Week. 27 August 2012, Stockholm.
- Blaikie, N. (1993), *Approaches to Social Enquiry* (Polity Press, Cambridge).
- Blatter, J. and Blume, T. (2008), In search of co-variance, causal mechanisms or congruence? Towards a plural understanding of case studies. *Swiss Political Science Review*, 14(2), 315-356.
- Blin, A. and Gustavo, M. (2009), The UN and World Governance, forum form a new world governance, [www.world-governance.org](http://www.world-governance.org), accessed 21/10/2017.
- Bloomberg, Water Utilities, Company Overview of Holding Company for Water and Waste Water, [www.bloomberg.com](http://www.bloomberg.com), accessed 14/3/2018.
- Bonn, December (2001), Ministerial Declaration and Bonn Recommendations for Action, [www.water-2001.de/](http://www.water-2001.de/)
- Born, M. and Sonzogni, C. (1995), Integrated environmental management: strengthening the conceptualization. *Environmental Management*, 19(2), 167-181.
- Bourdieu, P. (1991), *Language and Symbolic Power* (Cambridge, Polity Press).
- Brannen, J. (1992), Combining Qualitative and Quantitative Approaches: an Overview. In J. Brannen (ed.) (1992), *Mixing Methods: Qualitative and Quantitative Research* (Vermont, Ashgate Publishing Limited).

- Brunnee, J. and Toope, S. (2002), The changing Nile Basin regime: Does law matter?. *Harvard International Law Journal*, 43(1), 105–159.
- Bryman, A. (1988), *Quantity and Quality in Social Research* (London, Rutledge).
- Buller, J. (1999), A Critical Appraisal of the Statecraft Interpretation, *Public Administration*, 77 (4), 691-712.
- Bulto, T. (2009), Between ambivalence and necessity in the Nile Basin: occlusions on the path towards a Basin-Wide Treaty. *Colorado Journal of International Environmental Law and Policy* 20(3), 291–320.
- Cardwell, E., Cole, A., Cartwright, A., and Martin, A. (2006), Integrated Water Resources Management: Definitions and Conceptual Musings, *Journal of Contemporary Water Research and Education*, 135, 8-18.
- Carlsnaes, W. (1992), The Agency-Structure problem in Foreign Policy Analysis, *International Studies Quarterly*, 36.
- Carrey, M. (2011), Water Recycling and Water Management, [www.novapublishers.com/catalog/product\\_info.php?products\\_id=13051](http://www.novapublishers.com/catalog/product_info.php?products_id=13051). Accessed 20/11/2017.
- Cascão A. (2012), Nile water governance. In S., Awulachew, D., Smakhtin, and D., Peden (2012), *The Nile River Basin: Water, Agriculture, Governance and Livelihoods* (Oxon, Routledge).
- Cascão, A. (2008), Ethiopia: challenges to Egyptian hegemony in the Nile Basin. *Water Policy* 10(3), 13–28.
- Cascão, A. (2009), Changing Power Relations in the Nile River Basin: Unilateralism vs. Cooperation?, *Water Alternatives*, 2(2), 245-268.
- Cerny, P. (1990), *The Changing Architecture of Politics* (London, SAGE Publications).
- Church C. and Rogers M. (2006), *Designing For Results: Integrating Monitoring and Evaluation in Conflict Transformation Programs* (Washington, DC).
- Cleaver, F. and Franks, T. (2008), Distilling or diluting? Negotiating the water research-policy interface, *Water Alternatives*, 1(1), 157-176.



- Cleaver, F., Franks, T., Boesten, J., and Kiire, A. (2005), *Water Governance and Poverty: What Works for the Poor?. Research Report to DFID* , Final%20Report%2006.05.pdf.
- Common, R. (2010), When policy diffusion does not lead to policy transfer: explaining resistance to international learning in public management reform. Paper presented to the 14th IRSPM Conference University of Berne April 2010.
- Conca, K., and Mei, C. (2006), Global regime formation or complex institution building? The principled content of international river agreements. *International Studies Quarterly* 50(20), 263–285.
- Conniff K., Molden D., Peden D., and Seleshi B., Awulachew, S. (2012), Nile water and agriculture: Past, present and future. In S., Awulachew, D., Smakhtin, and D., Peden (2012), *The Nile River Basin: Water, Agriculture, Governance and Livelihoods* (Oxon, Routledge).
- Conzelmann, T. (2009), Towards a New Concept of Multi-level Governance?, Committee of the Regions, The Contributions to the 2008 Ateliers on Multi-level Governance; Brussels: CoR, 31-40.
- Cornforth, C. and Chambers, N. (2010), The role of corporate governance and boards in organizational performance. In K. Walsh, G. Harvey, and P. Jas, (eds.) (2010), *Connecting Knowledge and Performance in Public Services: From Knowing to Doing*. (Cambridge, Cambridge University Press), 99–127.
- Creswell, W. (2008), *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*. Upper Saddle River, NJ: Pearson/Merrill Education.
- Denscombe, M. (1998), *The Good Research Guide* (Buckingham, Open University Press).
- Denscombe, M. (2003), *The Good Research Guide for Small - Scale Social Research Projects* (Berkshire, England, Open University Press).
- Dernbach, J. (1998), Sustainable Development as a Framework for National Governance, *Case Western Reserve Law Review*, 49 (1).

- Dessler, D. (1989), What's at Stake in the Agent-Structure Debate?. *International Organization*, 43, 441-73.
- Devine, F. (1995), Qualitative Analysis. In D. Marsh and G. Stoker (eds.) (1995), *Theory and Methods in Political Science* (London, Macmillan).
- Di Gregorio, S. (2000), Using Nvivo for Your Literature Review. Paper presented at Strategies in Qualitative Research conference, the Institute of Education, London - 29-30 September, [sdgassociates.com.pdf](http://sdgassociates.com.pdf). Accessed 20/10/2016.
- Dingwerth, K., and Pattberg, P. (2006), Global Governance as a Perspective on World Politics. *Global Governance*, 12(6), 185–203.
- Doern, B. (1998), *Changing Regulatory Institutions in Britain and North America* (Toronto, University of Toronto Press).
- Dolowitz, D. (1998), Where's the State? The Political Process of Globalization, In C. Hay and D. Marsh (eds.), *Globalization and Governance* (London, Macmillian).
- Dolowitz, D. and Marsh, D. (1996), Who Learns from Whom?. *Political Studies*, 46(2), 343-357.
- Dolowitz, D. and Marsh, D. (2000), Learning from Abroad: the Role of Policy Transfer in Contemporary Policy-making. *Governance* 13(1), 5-24.
- Dombrowski, I. (2003), Water accords in the Middle East peace process: moving towards cooperation?. In H. G. Brauch, P. H. Liotta, A. Marquina, P. Rogers and M. el Sayed (eds.) *Security and Environment in the Mediterranean Conceptualising Security and Environmental Conflict* (Springer, Heidelberg, Germany).
- Dominique K. (2012), Water Climate Development at World Water Week, 27 August 2012, Stockholm.
- Dowding, K. (2008), Agency and structure: Interpreting power relationships, *Journal of Power*, 1(1), 21 – 36.
- Duggett, M. (2005), Defining Terms and Delineating the Debate in Global Governance, In G., Fraser-Moleketi, (ed.) (2005) *The World We Could Win: Administering Global Governance*. (Amsterdam, IOS Press).

- Eckstein G. (2009), Water Scarcity, Conflict and Security in a Climate Change World: Challenges and Opportunities for International Law and Policy. *Wis.Int.L.J.* 27 (3), 409–461.
- Eckstein, G. (2010), Accord or Discord on the Nile? Part II, International Water Law Project, [www.internationalwaterlaw.org](http://www.internationalwaterlaw.org). Accessed 3/8/2017.
- El-Arabawy, M., Attia, B., and Tosswell, P. (1998), Water Resources in Egypt: Strategies for the Next Century. *Journal of Water Resources Planning and Management*, 310-18.
- El-Bedawy, R. (2014), Water Resources Management: Alarming Crisis for Egypt. *Journal of Management and Sustainability*, 4(3), 108-124.
- Elewa H. (2010), Potentialities of water resources pollution of the Nile River Delta, Egypt. *The Open hydrology journal*, 4(1), 134-150.
- El-Fadel M., El-Sayegh, Y., El-Fadl, K., and Khorbotly D. (2003), The Nile River Basin: A Case Study in Surface Water Conflict Resolution. *Life Sci. Educ.* 32(2), 107–117.
- El-Fiki, D. (2013), Egypt's troubled water management. *Egypt Independent*, [www.egyptindependent.com](http://www.egyptindependent.com). Accessed 16/8/2016.
- El-Hanbali, U. (2003), Water Users Associations in Egypt Irrigation Improvement Project (IIP). [siteresources.worldbank.org](http://siteresources.worldbank.org). Accessed 14/11/2016.
- El-Rae M. (2009), Impact of Climate Change on Egypt. GAIA Case Study, [www.ess.co.at/GAIA](http://www.ess.co.at/GAIA), accessed 14/5/2017.
- El-Ramady, R., El-Masrafawy, M., Lowell, L. (2013), Sustainable Agriculture and Climate Changes in Egypt. *Sustainable Agriculture Reviews*, 12(2), 41-95.
- El-Sadek, A. (2010), Virtual Water Trade as a Solution for Water Scarcity in Egypt. *Water Resource Management*, 24(3), 2437-2448.
- Ernst, J. (1994), *Whose Utility: the Social Impact of Public Utility Privatisation and Regulation in Britain* (Buckingham, Open University Press).
- Evans, M., and Davies, J. (1999), Understanding Policy Transfer: A Multi-level, Multi-disciplinary Perspective. *Public Administration*, 77(2), 361-86.
- FAO. 2000. <http://fao.org/gender/gender.htm>.

- Farazmand, A. (1999), Globalization and Public Administration, *Public Administration Review*, 59, (6), 509-522.
- Farazmand, A. (2001), Globalization, the State and Public Administration: A Theoretical Analysis with Policy Implications for Developmental States, *Public Organization Review: A Global Journal*, 1, 437–463 (2001).
- Farolfi, B. and Hassan, R. (eds.), (2012) *Water Governance for Sustainable Development: Approaches and Lessons from Developing and Transitional Countries*, Earthscan, London.
- Finkelstein, L. (1995), What is global governance?. *Global Governance*, 1 (3), 367-372.
- Fisher, J. (2006), Evidence Report: For Her It's the Big Issue: Putting Women at the Centre of Water Supply, Sanitation and Hygiene. [https://dspace.lboro.ac.uk/dspace-ispui/bitstream/2134/9970/20/wsscc\\_en.pdf](https://dspace.lboro.ac.uk/dspace-ispui/bitstream/2134/9970/20/wsscc_en.pdf). Accessed 21/4/2017.
- Flick, U. (2006), *An Introduction to Qualitative Research* (London, Sage publications).
- Fontana, A. and Frey, J. (1994), Interviewing: the art of science. In N.K. Denzin, and Y.S. Lincoln, (eds.) (1994), *Handbook of Qualitative Research* (Thousand Oaks, CA, Sage).
- Foucault, M. (1980), *Power/Knowledge: Selected Interviews and Other Writings 1972-1977* (New York, Harvester Wheatsheaf).
- François, R. (2009), World Governance Index - WGI – Why Should World Governance Be Evaluated, and for What Purpose? Forum for new world governance, [www.world-governance.org](http://www.world-governance.org), accessed 25/8/2017.
- Franks, T. (2004), Water Governance – What is the consensus?. Paper prepared for the ESRC-funded seminar on The Water Consensus - Identifying the Gaps, Bradford Centre for International Development, Bradford University, 18-19 November 2004 , [www.splash.bradford.ac.uk.pdf](http://www.splash.bradford.ac.uk.pdf). Accessed 23/4/2016.
- Franks, T. (2006), Water Governance: A Solution to all Problems. Paper presented at final seminar of ESRC-funded seminar series, Water Governance – Challenging the Consensus. ,

[www.atl.org.mx/seminario/images/stories/water/01\\_Tom\\_Franks.pdf](http://www.atl.org.mx/seminario/images/stories/water/01_Tom_Franks.pdf).  
Accessed 23/4/2016.

Franks, T. (2007), *Water Governance: A Solution to All Problems*. Bradford Centre for International Development, [www.brad.ac.uk/acad/bcid/seminar/water](http://www.brad.ac.uk/acad/bcid/seminar/water), Accessed 23/11/2017.

Franks, T. and Cleaver, F. (2007), *Water Governance and Poverty: A Framework for Analysis*. *Progress in Development Studies*, 7(4) , 291 -306.

Franks, T. and Cleaver, F. (2009), *Analysing Water Governance: A Tool for Sustainability*. *Engineering Sustainability*, 207-214.

Fraser-Moleketi G. (2005), *The World We Could Win: A Preface* In G., Fraser-Moleketi, (ed.) (2005) *The World We Could Win: Administering Global Governance*, (Amsterdam, IOS Press).

Fraser-Moleketi G. and Kauzya, J. (2005), *Administering Global Governance: Making it Work in Africa Through Regional Integration* in Fraser-Moleketi (ed.) (2005), *The World We Could Win: Administering Global Governance*, (Amsterdam IOS Press), 105-134.

Fraser-Moleketi, G. (ed.) (2005), *The World We Could Win: Administering Global Governance*, (Amsterdam, IOS Press).

Friedman, G. and Starr, H. (1997), *Agency, Structure and International Politics*, (New York, Routledge).

Frost, J and Sullivan, P. (2011), *Assessment of Water and Wastewater Sector in Egypt*. [www.frost.com/prod/servlet/report-brochure.pag?id=P541-01-00-00-00](http://www.frost.com/prod/servlet/report-brochure.pag?id=P541-01-00-00-00), Accessed 17/2/2018.

Gad, W. (2017), *Water Scarcity in Egypt: Causes and Consequences*, *IIOABJ*, 8(4), 40–47.

Gebreluel, G. (2014), *Ethiopia's Grand Renaissance Dam: ending Africa's oldest geopolitical rivalry*. *The Washington Quarterly*, 37(2), 25–37.

Geertz, C. (1973), *Thick Description: Toward an Interpretive Theory of Culture*. In *The Interpretation of Cultures: Selected Essays* (New York, Basic Books).

- Geletu, J. (2008), Optimization of hydropower plant expansion – Case study: Nile basin, Ethiopia. Unpublished PhD thesis. Addis Ababa, Ethiopia: Faculty of Technology, Addis Ababa University.
- George, L. (1997), The Role of the Congruence Method for Case Study Research. MacArthur Program on Case Studies, Georgetown University, [www.ciaonet.org/wps/gea01/](http://www.ciaonet.org/wps/gea01/). Accessed 10/3/2017.
- George, L. and Bennett, A. (2005) *Case studies and theory development in the social sciences* (Cambridge, Mass., MIT Press).
- Gersfelt, B. (2007), *Allocating Irrigation Water in Egypt* (Cornell University, Ithaca).
- Getachew, A. (2018), Ethiopia: PM blames contractor for delay in dam, <https://www.aa.com.tr/en/africa/ethiopia-pm-blames-contractor-for-delay-in-dam/1239072>. Accessed 30/12/2018.
- Giddens, A. (1976), *New Rules of Sociological Method* (London, Hutchinson).
- Giddens, A. (1984), *The Constitution of Society: Outline of the Theory of Structuration* (Cambridge, UK, Polity Press).
- Gilardi, F. (2002), Policy credibility and delegation to independent regulatory agencies: a comparative empirical analysis. *Journal of European Public Policy*, 9(6), 873-893.
- Gilardi, F. (2003), Explaining Delegation to Independent Regulatory Agencies: The Role of Political Uncertainty. Lausanne, Switzerland: Institut d'Etudes Politiques et Internationales Université de Lausanne.
- Gilardi, F. (2005), The Same but Different: Central Banks, Regulatory Agencies and Politics of Delegation to Independent Authority. Paper presented at the conference credibility through Delegation? Independent Agencies in Comparative Perspective. Centre of Competition Policy, University of East Anglia Norwich, June 28–29.
- Gilardi, F. (2010), Who Learns from What in Policy Diffusion Processes?, *AJPS*, 54(3), 650-666.
- Gleick, P. (1998), water in Crisis: Paths to Sustainable Water Use. *Ecological Applications*, 8(3), 571–579.

- Gleick, P., Loh, P. Gomez, S. and Morrison, J. (1995), California water 2020: a sustainable vision. Pacific Institute Report, Pacific Institute for Studies in Development, Environment, and Security. (Oakland, California, USA).
- Global Water Partnership (2011), Transboundary: SWOT analysis and challenge of Nile Basin Initiative an Integrated Water Resource Management perspective. [www.gwp.org](http://www.gwp.org) pdf. Accessed 8/10/2016.
- Global Water Partnership (2012), Water Demand Management: The Mediterranean Experience, <https://www.gwp.org>, accessed 15/10/2017.
- Global Water Partnership (2014), Financing local water management in Egypt. [www.gwp.org](http://www.gwp.org) pdf. Accessed 8/10/2016.
- Goetz, P. and LeCompte, D. (1984), *Ethnography and Qualitative Design in Educational Research* (Orlando, FL, Academic).
- Golia, M. (2008), Egypt Negotiates Troubled Waters. *The Middle East*, July, 30-31.
- Gorard, S. (2013), *Research Design: Creating Robust Approaches for the Social Sciences* (London, Sage).
- Grin, J. and Loeber, A. (2007), Theories of policy learning: Agency, structure and change. [www.researchgate.net/](http://www.researchgate.net/). Accessed 6/4/2017.
- Grindle, M. (2004), Good Enough Governance: Poverty Reduction and Reform in Developing Countries. *Governance*, 17(4), 525-548.
- Grunbaum, N. (2007), Identification of Ambiguity in the Case Study Research Typology: What is a Unit of Analysis?. *Qualitative Market Research*, 10 (1), 145-160.
- Guide to Responsible Business Engagement with Water Policy (2010), [http://www.pacinst.org/topics/globalization\\_and\\_environment/ceo\\_water\\_mandate/water\\_policy\\_engagement\\_guide\\_public\\_consultation.pdf](http://www.pacinst.org/topics/globalization_and_environment/ceo_water_mandate/water_policy_engagement_guide_public_consultation.pdf)
- Gupta, J. (2011), Developing countries: trapped in the web of sustainable development governance. In O. Dilling, M. Herberg, and G. Winter, (eds.). *Transnational administrative rule-making: performance, legal effects and legitimacy*. Hart, Oxford, UK. 305-330.

- Gupta, J., Akhmouch, A. Cosgrove, W. Hurwitz, Z. Maestu, J. and Ünver, O. (2013), Policymakers' reflections on water governance issues. *Ecology and Society*, 18(1), 35-48.
- Gupta, J., and Pahl-Wostl. C. (2013), Global water governance in the context of global and multilevel governance: its need, form, and challenges. *Ecology and Society* 18(4), 53-68.
- Gustavo M. , Ricardo J. and Grzybowski C. (2011), Rethinking and changing world governance, Working Paper following on from the Biocivilisation for the Sustainability of Life and the Planet International workshop Rio de Janeiro, 10-12 August 2011.
- Hakim, C. (1997), *Research Design: Strategies and Choices in the Design of Social Research* (London, Rutledge).
- Hartley, J. (2004), Case study research. In C. Cassell, and G. Symon (eds.) (2004), *Essential Guide to Qualitative Methods in Organisational Research* (London: Sage).
- Hay, C. (1995), Structure and Agency, in D. Marsh and G. Stoker (eds.), *Theory and Methods in Political Science* (London, Macmillan).
- Hay, C. (2002), *Political Analysis: Contemporary Controversies* (Palgrave, Hampshire).
- Head, B. (2008), Wicked Problems in Public Policy. *Public Policy*, 3 (2), 101 – 118.
- Hefny, M., and Amer, S. (2005), Egypt and the Nile Basin. *Aquatic Sciences*, 67 (2) 42–50.
- Higgott, R. (2005), Public Goods, Global Governance and Private Actors: Learning from the WTO, In G., Fraser-Moleketi, (ed.) (2005) *The World We Could Win: Administering Global Governance*, (Amsterdam, IOS Press).
- Hindess, B. (1986), Actors and Social Relations. In M. Wardell and S. Turner (eds.), *Sociological Theory in Transition* (Boston, Allen and Unwin).
- Hira, A. and Parfitt, T. (2004), Development projects for a new millennium. (Westport, US, Praeger).



- Hirst, P. and Thompson G. (1996), *Globalization in Question* (Cambridge: Polity Press).
- Holland, P. and Moore, M. (2003), Cadillac Desert Revisited: Property Rights, Public Policy, and water Resource Depletion, *Journal of Environmental Economics and Management*, 46: 131-155.
- Holstein, J. and Gubrium, J. (1998), Active Interviewing. In Silverman, D. (1998) *Qualitative Research: Theory Methods and Practices* (London, Sage publications).
- Hood, C. (1991), A Public Management for All Seasons?. *Public Administration*, 69, 3-19.
- Hooghe, L. and Marks, G. (2004), Contrasting Visions of Multi-level Governance, in I., Bache, and M., Flinders, (eds.) (2004) *Multi-Level Governance* (Oxford, Oxford University Press).
- Hooper, B. (2005), Integrated river basin management: learning from international experience. International Water Association, London, UK.
- Huberman, M., and Miles, M. (1994), Data Management and Analysis Methods. In N. Denzin and Y. Lincoln (eds.) (1994), *Handbook of Qualitative Research* (New Dehli, Sage Publications), 428-444.
- Hufty, M. (2009), the governance analytical framework, [http://graduateinstitute.ch/webdav/site/developpement/groups/hufty\\_greg/public/Governance\\_Analytical\\_Framework.pdf](http://graduateinstitute.ch/webdav/site/developpement/groups/hufty_greg/public/Governance_Analytical_Framework.pdf). Accessed 15/11/2017.
- Hufty, M. (2011), Investigating Policy Processes: The Governance Analytical Framework (GAF). In U. Wiesmann, H. Hurni, (ed.) (2011), *Research for Sustainable Development: Foundations, Experiences, and Perspectives*, (Geographica Bernensia, Bern, Switzerland), 403-424.
- Hussona, A. (2014), Water Quality Assessment of Mahmoudia Canal in Northern West of Egypt. *Journal of Pollution Effects and Control*, 2(2), 51-66.
- International Center for Agricultural Research in the Dry Areas (ICARDA) (2011), Water and Agriculture in Egypt. Technical paper based on the Egypt-Australia-International center for agricultural research in the dry areas Workshop on On-farm Water-use Efficiency, July 2011, Cairo-Egypt.

- International Center for Agricultural Research in the Dry Areas. [cgspace.cgiar.org.pdf](http://cgspace.cgiar.org.pdf). Accessed 14/11/2016.
- International Panel of Experts (2013), Grand Ethiopian Renaissance Dam: Final Report. [www.internationalrivers.org/final\\_report\\_1.pdf](http://www.internationalrivers.org/final_report_1.pdf). Accessed 14/8/2016.
- Islami, I., (2016) Political history of modern Egypt, *ILIRIA International Review*, Vol 6, No 1.
- Iza, A. and Stein, R. (eds.) (2009), *Reforming water governance*. Gland, Switzerland: IUCN, [www.iucn.org/publications](http://www.iucn.org/publications). Accessed 25/11/2017.
- Iza, A., Stein, R. and Sánchez, J. (2009), Creating Water Governance Capacity, in A. Iza, and R. Stein (eds.) (2009). *Reforming water governance*. Gland, Switzerland: IUCN, [www.iucn.org/publications](http://www.iucn.org/publications). Accessed 25/11/2017.
- James O., Lodge, M. (2003), The Limitations of ‘Policy Transfer’ and ‘Lesson Drawing’ for Public Policy Research. *Political Studies Review*, 179–193.
- Jessop, B. (1990), *State Theory: Putting the Capitalist State in Its Place* (Cambridge: Polity Press).
- Jessop, B. (1996), Interpretive Sociology and the Dialectic of Structure and Agency, *Theory Culture Society*, 13:119.
- Jessop, B. (2004), Multi-level governance and multi-level meta-governance, in I., Bache, and M., Flinders, (eds.) (2004) *Multi-Level Governance* (Oxford, Oxford University Press).
- Johnson, B., Onwuegbuzie, A., Slate, R., Leech, L., Collins, T. (2009), Mixed methods research validity types. In L. Sullivan, B. Johnson, C. Mercado, and K. Terry (eds.) (2009), *Sage Glossary of the Social and Behavioral Sciences* (Thousand Oaks, CA, Sage).
- Johnston, M. (2006), *Good governance: Rule of law, transparency, and accountability*. (New York, United Nations Public Administration Network).
- Johnston, R. (2012), Availability of water for agriculture in the Nile Basin. In S., Awulachew, D., Smakhtin, and D., Peden (2012), *The Nile River Basin: Water, Agriculture, Governance and Livelihoods* (Oxon, Routledge).

- Kandil, M. (2003), Institutional Reform Vision for the Irrigation Sector in Egypt. *International Journal of Water Resources Development*, 19(2), 221-231.
- Karar, E., Gumbo, T., Dickens, C. and Jacobs, I. (2012), Freshwater governance conference narrative, the international conference on fresh water governance for sustainable development, South Africa, 5-7 Nov 2012.
- Khosla, P. and Pearl, R. (2003), *Untapped Connections: Gender, Water and Poverty*. New York: Women's Environment and Development Organization.
- Kinyangi, J., Don, P., Mario, H., Aster, T., Tom, O. (2012), The Nile Basin, people, poverty and vulnerability. In S., Awulachew, D., Smakhtin, and D., Peden (2012), *The Nile River Basin: Water, Agriculture, Governance and Livelihoods* (Oxon, Routledge).
- Kjorven, O. (2009), Human Rights for Development News Brief, Vol1, Jan 2009: UNDP, <http://web.undp.org/geneva/docs/2009>. Accessed 23/11/2017.
- Knight, J. (2009), Models, interpretations, and theories: Constructing explanations of institutional emergence and change. In J., Knight, and I., Sened, (eds.), *Explaining social institutions*, (Ann Arbor, University of Michigan Press).
- Knight, J. (2009), Water Governance and Sustainable Development, International Symposium on Sustainable Development, June 9-10 2009, Sarajevo.
- Koppell, J. (2007), Structure of Global Governance: Explaining the Organizational Design of Global Rulemaking Institutions, Paper prepared for the Annual Meeting of the International Studies Association, Chicago, IL March 1, 2007.
- Kuma, R. (2011), *Corruption and Human Rights in India: Comparative Perspectives on transparency and good governance* (Oxford, Oxford university press).
- Læg Reid, P. and Verhoest, K. (2010), *Governance of Public Sector Organizations: Proliferation, Autonomy and Performance*, (London, Palgrave Macmillan)

- Lasswell, H. (1936), *Politics: Who Gets What, When, How* (New York, McGraw-Hill).
- Layder, D. (1988), The Relation of Theory and Method: Causal Relatedness, Historical Contingency and Beyond, *Sociological Review*, 36 (3), 441-463.
- Layder, D. (1994), *Understanding Social Theory* (London, SAGE Publications).
- Leech, L., and Onwuegbuzie, J. (2004), A proposed fourth measure of significance: The role of economic significance in educational research. *Evaluation and Research in Education*, 18, 179- 198.
- Leech, L., and Onwuegbuzie, J. (2009), A typology of mixed methods research designs. Quality and Quantity: *International Journal of Methodology*, 43, 265-275.
- Leitao, M., Mcallister, L., (2010), Participatory Water Management Strategies: Contributions. [revistas.ufpr.br/made/article/viewFile/17665/13503](http://revistas.ufpr.br/made/article/viewFile/17665/13503). Accessed 5/8/2017.
- Lewis, P. (2000), Realism, Causality and the Problem of Social Structure, *Journal of the Theory of Social Behaviour*, 30 (3), 249-268.
- Liedtka, J. (1992), Exploring Ethical Issues Using Personal Interviews, *Business Ethics Quarterly*, 2(2), 161-181.
- Locke, L., Spirduso, W., and Silverman, S. (2014), *Proposals That Work: A Guide for Planning Dissertations and Grant Proposals* (London, Sage).
- Loorbach, D. (2010), Transition Management for Sustainable Development: A Prescriptive, Complexity-Based Governance Framework, *Governance: An International Journal of Policy, Administration, and Institutions*, 23(1), 161–183.
- Loucks, P., Van Beek, E. (2005), Water resources systems planning and management. UNESCO, Paris, 2005, <http://ecommons.library.cornell.edu/bitstreamchapter10.pdf>. Accessed 30/8/2017.
- Loyal, S. and Barnes, B. (2001), Agency' as a Red Herring in Social Theory, *Philosophy of the Social Sciences*, 31 (4), 507-524.

- Luzi, S. (2010), Driving Forces and Patterns of Water Policy Making in Egypt. *Water Policy*, 12:92-113.
- MacAlister, C., Pavelic, P., Tindimugaya, C., Ayenew, T., Ibrahim, M., and Abdel Meguid, M. (2012), Overview of groundwater in the Nile River Basin. In S., Awulachew, D., Smakhtin, and D., Peden (2012), *The Nile River Basin: Water, Agriculture, Governance and Livelihoods* (Oxon, Routledge).
- Mack, N., Woodsong, C., Kathleen M., Guest, G., Namey, E. (2005), Qualitative Research Methods: A Data Collector's Field Guide. *Family Health International*, www.fhi.org. Accessed 18/2/2017.
- Maggetti, M. (2007), De facto independence after delegation: A fuzzy-set analysis, *Regulation and Governance*, 1(4), 271-294.
- Maggetti, M., Gilardi, F., Radaelli, C. (2013), *Designing Research in social sciences* (London, Sage).
- Majone, G. (1994), The rise of the regulatory state in Europe. *West European Politics*, 17(3), 77–101.
- Majone, G. (1997), From the positive to the regulatory state: Causes and consequences of changes in the mode of governance. *Journal of Public Policy*, 17(2), 139–167.
- Majone, G. (2001), Non-majoritarian institutions and the limits of democratic governance: A political transaction-cost approach. *Journal of Institutional and Theoretical Economics*, 157(1), 57–78.
- Makrydemetres, A. (2005), The Morality of Governance – A Postscript, In G., Fraser-Moleketi, (ed.)(2005), *The World We Could Win: Administering Global Governance*, (Amsterdam, IOS Press).
- Margot, H. (2013), Climate Change and Water Governance: Adaptive Capacity in Chile and Switzerland, *Advances in Global Change Research*, 54: 223-240.
- Marks, G. (1992), Structural Policy in the European Community, in A. Sbragia, (ed.) *Euro-politics: institutions and policy-making in the new European Community*. (Washington DC, The bookings institute).

- Marks, G. (1993), Structural Policy and Multilevel Governance in the EC, in W., Cafruny, G., Rosenthal, (eds.) (1993) *The State of the European Community. Vol. 2: The Maastricht Debates and Beyond*, Lynne Rienner, Boulder, Col, 391–410.
- Marks, G. (1996), An Actor-Centred Approach to Multi-Level Governance, *Regional and Federal Studies*, 6(2), 20-40.
- Marks, G., Nielsen, F., Ray, L., Salk, J. (1996), Competencies, Cracks and Conflicts: Regional Mobilization in the European Union, *Comparative Political Studies*, 29(2), 164-192.
- Massey, A. (2004), Modernizing Government in the Channel Islands: the Context and Problematic of Reform in a Differentiated but Feudal European Polity. *Public Administration*, 82(2), 421–443.
- Massey, A. (2005), Multilevel Governance: Administering Global Governance in a Differentiated Political Context In G., Fraser-Moleketi, (ed.) (2005), *The World We Could Win: Administering Global Governance*, (Amsterdam, IOS Press).
- Mayers, J., and Vermeulen, M. (2005), Getting Started, Power tools series. International Institute for Environment and Development, London, UK.
- Mayor, R., Casado, R., Landeta, J., López-Gunn, E., Villarroya, F. (2016), An expert outlook on water security and water for energy trends to 2030–2050. *Water Policy*, 18 (1) 1-18.
- Mayoux, L. (2001), *Qualitative Methods*, [www.enterpriseimpact.org.uk](http://www.enterpriseimpact.org.uk), accessed 23/1/2017.
- McAnulla, S. (2002), Structure and Agency. In D. Marsh, and G. Stoker, (eds.) (2002), *Theory and Methods in Political Science* (Palgrave Macmillan, Hampshire).
- McNamara, R. (2002), Rational fictions: Central bank independence and the social logic of delegation. *West European Politics*, 25(1), 47–76.
- Minero, S. (2007), Tracking governance – indicators and measurement for constructing learning water management systems. CAIWA international conference on adaptive and integrative water management , [www.newater.uni-osnabrueck.de](http://www.newater.uni-osnabrueck.de). Accessed 4/2/2017.

- Mitnick, M. (1980), *The Political Economy of Regulation: Creating Design and Removing Regulatory Forms* (New York, Colombia University press).
- Moravcsik, A. (1993), Preferences and Power in the European Community: A Liberal Inter-governmentalist Approach, *Journal of Common Market Studies*, 31(4), 473–524.
- Morrison J., Schulte P., and Christian-Smith, J. (2010), Guide to Responsible Business Engagement with Water Policy. United Nations Global Compact, Pacific Institute, [ceowatermandate.org.pdf](http://ceowatermandate.org.pdf). Accessed 14/12/2017.
- Mouzelis, N. (1995), *Sociological Theory: What went Wrong?* (New York, Routledge).
- Muller, M. (2012), The role of water in development, the international conference on fresh water governance for sustainable development, South Africa, 5-7 Nov 2012.
- Murphy, C. (2000), Global governance: poorly done and poorly understood, *International Affairs*, 76, 789–804.
- Muylwijk, J. (2010), Gender, Water and Climate Change, The International Conference on Integration of Gender Dimensions in Water Management, [www.researchgate.Proceedings-of-the-Conference.pdf](http://www.researchgate.Proceedings-of-the-Conference.pdf). Accessed 12/11/2017.
- Nestor, S., and Mahboobi, L. (1999), Privatisation of Public Utilities: The OECD Experience. Paper presented at an international seminar on Privatisation in Brazil.
- Neuendorf, A. (2002), The Content Analysis Guidebook, [academic.csuohio.edu/kneuendorf/content/](http://academic.csuohio.edu/kneuendorf/content/). Accessed 9/12/2017.
- Neuman, L. (1991), *Social Research Methods* (Massachusetts, Allyn and Bacon).
- Neuman, L. (1997), *Social Research Methods: Qualitative and Quantitative Approaches* (Boston, Allyn and Bacon).
- Nkrumah, G. (2013), Egypt's land question. Al-Ahram newspaper Issue No.1176, [weekly.ahram.org](http://weekly.ahram.org). Accessed 14/6/2017.

- NVIVO 10 Getting started Guide (2013), [download.qsrinternational.com](http://download.qsrinternational.com). Accessed 1/9/2017.
- OECD (2010), Progress in Public Management in the Middle East and North Africa: Case Studies on Policy Reform, Organisation for Economic Co-Operation and Development, <https://www.oecd.org/mena/governance/48634338.pdf>, Accessed 12-2-2019.
- OFWAT (2006) The Development of The Water Industry in England and Wales, [https://www.ofwat.gov.uk/wp-content/uploads/2015/11/rpt\\_com\\_devwatindust270106.pdf](https://www.ofwat.gov.uk/wp-content/uploads/2015/11/rpt_com_devwatindust270106.pdf), Accessed, 12-2-2019.
- Onwuegbuzie, J. (2003), Expanding the framework of internal and external validity in quantitative research. *Research in the Schools*, 10(1), 71-90.
- Onwuegbuzie, J., and Johnson, B. (2006), The validity issue in mixed research. *Research in the Schools*, 13(1), 48-63.
- Onwuegbuzie, J., and Leech, L. (2007), A call for qualitative power analyses. Quality and Quantity. *International Journal of Methodology*, 41, 105-121.
- Onwuegbuzie, J., Dickinson, B., Leech, L., and Zoran, G. (2010), Toward more rigor in focus group research in stress and coping and beyond: A new mixed research framework for collecting and analyzing focus group data. In G. S. Gates, W. H. Gmelch, and M. Wolverson (eds.) (2010), *Toward A Broader Understanding of Stress and Coping: Mixed Methods Approaches*, (Charlotte, NC, Information Age Publishing), 243-285.
- Onwuegbuzie, J., Leech, L., and Collins, K. (2011), Innovative qualitative data collection techniques for conducting literature reviews. In M. Williams and W. Vogt (eds.) (2011), *The Sage Handbook of Innovation in Social Research Methods*, (Thousand Oaks, CA, Sage), 182-204.
- Page, E. (2000), Future Governance and the literature on policy transfer and lesson drawing, paper prepared for the ESRC Future Governance Program Workshop.
- Paisley R., and Henshaw, T. (2013), Transboundary governance of the Nile River Basin: Past, present and future. *Environmental Development*, 7: 59–71.



- Pegram, G. and Schreiner, B. (2010), Financing Water Resources Management – South African Experience. EUWI Finance Working Group and Global Water Partnership.
- Perret, S. (2006), New Paradigms, Policies and Governance in Water Sector. In F. Renaud, and C. Kuenzer (eds.) *The Mekong Delta System: Interdisciplinary Analysis of a River Delta*, Springer Environmental Science and Engineering.
- Peters, G. and Jon Pierre (2001), Developments in intergovernmental relations: towards a multi-level governance, *Politics & Policy*, 29(2), 131-5.
- Peters, G., and Pierre, J. (1998), Governance without Government? Rethinking Public Administration. *Journal of Public Administration Research and Theory*, 8(2), 223-243.
- Piattoni, S. (2009), Multi-level Governance: a Historical and Conceptual Analysis, *Journal of European Integration*, 31(2), 335-345.
- Piattoni, S. (2010), *The Theory of Multi-level Governance: Conceptual, Empirical, and Normative Challenges*. (Oxford, Oxford University Press).
- Pierre, J. (2000), *Debating Governance* (Oxford, Oxford University Press).
- Platt, J. (2002), The history of the interview. In J. Gubrium, and J. Holstein, (eds.) (2002), *Handbook of Interview Research: Context and Method* (Thousand Oaks, CA, Sage).
- Pollitt, C. and Bouckaert, G. (2004), *Public Management Reform. A Comparative Analysis*. (Oxford, Oxford University Press).
- Productivity Commission, (2003), Water Rights Arrangements in Australia, Commission, Research Paper, Melbourne, <https://www.pc.gov.au/pdf>. Accessed 18/12/2017.
- Radwan, A. (2007), Egypt Leads in Cutting Infant Deaths. *Time Magazine*, content.time.com, accessed 18/12/2017.
- Reed, M. (1997), In Praise of Duality and Dualism, *Organization Studies*, 18(1), 21-42.
- Rennick, S. A. (2015). The Practice of Politics and Revolution: Egypt's Revolutionary Youth Social Movement,

- <https://lup.lub.lu.se/search/ws/files/5309346/5274498.pdf>, accessed 12-2-2019.
- Rezaee, Z. (1999), Water Resource Management. *Atlantic Economic Journal*, 27: 343-353.
- Rhodes, R. (1999), Foreword. In M. Kickert, H. Klijn, and M. Koppenjan, (eds.) (1999), *Managing Complex Networks: Strategies for the Public Sector* (London, Sage).
- Rhodes, R. (2007), Understanding Governance: Ten Years On. *Organization Studies*, 28:12-43.
- Rocard, M., Gustavo, M., and Arnaud, B. (2010), Moving toward a New World Governance, paper prepared for the China-Europa Forum 2010, <http://www.world-governance.org>. Accessed 5/9/2017.
- Rogers, E. (1995), *Diffusion of Innovations* (New York, The Free Press).
- Rogers, P. (2002), Water Governance in Latin America and the Caribbean, Inter-American Development Bank, <http://atl.imta.mx/files/Water.pdf>, accessed 8/9/2017.
- Rogers, P., and Hall, A. (2003), Effective Water Governance, Global Water Partnership, <https://www.gwp.org/>. Accessed 20/10/2017.
- Rohac, D. (2013), Solving Egypt's Subsidy Problem. *Policy Analysis*, 741, November 6, 2013, [object.cato.org/sites/cato.org/web\\_2.pdf](http://object.cato.org/sites/cato.org/web_2.pdf). Accessed 5/9/2017.
- Rose, R. (1991), What is Lesson-Drawing?, *Journal of Public Policy* 2.(1), 3-30.
- Rose, R. (2002), Ten steps in learning lessons from abroad. Future Governance Discussion Paper 1. Economic and Social Research Council, Swindon.
- Rosenau, J. (2004), Strong Demand, Huge Supply: Governance in an Emerging Epoch, in I., Bache, and M., Flinders, (eds.) (2004) *Multi-Level Governance* (Oxford, Oxford University Press).
- Rosenau, J., (1995), Governance in the Twenty-First Century, *Global Governance*, 1, (1).

- Sadoff, C., and Grey, D. (2005), Cooperation on International Rivers: A Continuum for Securing and Sharing Benefits. *Water International*, 30(4), 420–427.
- Saidam, M., and Ibrahim, M. (2006), Institutional and Policy Framework Analysis of Water Sector Jordan, Royal Scientific Society Environment Monitoring and Research Central Unit, [http://www.adu-res.org/ADU-RES%20Deliverables/ADU-RES\\_D7\\_2\\_Jordan.pdf](http://www.adu-res.org/ADU-RES%20Deliverables/ADU-RES_D7_2_Jordan.pdf), accessed 11-2-2019.
- Saleth, M. and Dinar, A. (2000), Institutional changes in global water sector: trends, patterns and implications, *Water Policy*, 2(3), 175–199.
- Saleth, M. and Dinar, A. (2004), *The Institutional Economics of Water: A Cross-Country Analysis of Institutions and Performance*, (London, Edward Elgar).
- Saleth, M. and Dinar, A. (2005), Water institutional reforms: theory and practice, *Water Policy*, 2(3), 1–19.
- Saleth, M. and Dinar, A. (1999), Evaluating Water Institutions and Water Sector Performance, World Bank Technical Paper No. 447, Washington.
- Salman, S. (2011), The new state of South Sudan and the hydro-politics of the Nile Basin, *Water International*, 36(2), 154–166.
- Salman, S. (2013), The Nile basin cooperative framework agreement: a peacefully unfolding African Spring?. *Water International*, 38(1), 17–29.
- Sarantakos, S. (2013), *Social Research* (Hampshire, Palgrave Macmillan).
- Saravia A. and Chen J. (2008), The Theory of Corporate Governance: A Transaction Cost Economics - Firm Lifecycle Approach, [mail.sssup.it/~l.marengo/ENEffinal/Saravia.pdf](mailto:mail.sssup.it/~l.marengo/ENEffinal/Saravia.pdf). Accessed 18/7/2016.
- Saunders, M., Lewis, P. and Thornhill, A. (2009), *Research Methods for Business Students* (Pearson Education Limited).
- Sbragia, A. (1992), *Europolitics. Institutions and Policymaking in the New European Community*, Washington, DC, Brookings Institute.
- Schnieder, A. and Ingram, H. (1993), The Social Construction of Target Populations *American Political Science Review* 87(02), 343-352.

- Schreine, B. (2012), Welcome and opening address –WRC and DWA International Conference on Fresh Water Governance for Sustainable Development, Proceedings of conference of 5–7 November 2012.
- Schreiner, B. (2010), why we need pro-poor water resources regulation. Global Water Forum [www.globalwaterforum.org](http://www.globalwaterforum.org). Accessed 24/6/2017.
- Schreiner, B., Mtsweni, A., and Pegram, G. (2011), An institutional framework for stakeholder participation in transboundary basins, Report to the Water Research Commission. [www.orangesenqurak.com](http://www.orangesenqurak.com). Accessed 20/8/2017.
- Sharabas, A. (2000), Water and wastewater sector reform: the Egyptian experience. Regional conference on water demand management, conservation and control, [citeseerx.ist.psu.edu/viewdoc/download;jsessionidpdf](http://citeseerx.ist.psu.edu/viewdoc/download;jsessionidpdf). Accessed 2/10/2017.
- Sibeon, R. (1999), Agency, Structure, and Social Change as Cross-Disciplinary Concepts, *Politics*, 19(3), 13 9-144.
- Skelcher, C. (2005), Jurisdictional Integrity, Polycentrism, and the Design of Democratic Governance, *Governance*, 18, 1 (January), 89-11.
- Smith, E. (2004), Water As an Economic Good – A Work In Progress. ESRC funded seminar series, Water Governance – Challenging the Consensus , [splash.bradford.ac.uk/.pdf](http://splash.bradford.ac.uk/.pdf). Accessed 27/12/2016.
- Solanes, M., and Jouravlev, A. (2006), *Water governance for development and sustainability*. [www.eclac.org](http://www.eclac.org). Accessed 9/9/2017.
- Sørensen, E. (2006), Meta-governance: The Changing Role of Politicians in Processes of Democratic Governance. *The American Review of Public Administration*, 36(1), 98-114.
- Soulie, M. (2013), Review and Analysis of Status of Implementation of Wastewater Strategies and/Or Action Plans: National Report Egypt. Sustainable Water Integrated Management (SWIM) - Support Mechanism Project funded by the European Union, [www.swim-sm.eu/files/National\\_Report\\_WW\\_strategies-EG\\_Final.pdf](http://www.swim-sm.eu/files/National_Report_WW_strategies-EG_Final.pdf), Accessed 6/4/2017.

- Spiller, T. (1993), Institutions and regulatory commitment in utilities' privatization. *Industrial and Corporate Change*, 2 (3), 387–450.
- Stake, R. (1995), *The Art of Case Study Research* (London, Sage Publication).
- Stein, C., and Mankowski E. (2004), Asking, Witnessing, Interpreting, Knowing: Conducting Qualitative Research in Community Psychology. *American Journal of Community Psychology*, 33: 123-135.
- Stets, J., and Burke, P. (2003), A Sociological Approach to Self and Identity. In M. Leary, and J. Tangney, (eds.) (2003), *Handbook of Self and Identity* (Guilford Press).
- Stiglitz, J. (2004), The Future of Global Governance, Paper prepared for conference in Barcelona, September 24-25, 2004 on From the Washington Consensus towards a New Global Governance. [hdl.handle.net/10022/AC:P:8453](http://hdl.handle.net/10022/AC:P:8453). Accessed 30/12/2017.
- Stinnett, D., Tir, J. (2009), The institutionalization of river treaties. *International Negotiation* 14 (2), 2-29.
- Stoker, G. (1995), Introduction. In D. Marsh, and G. Stoker, (eds.) (1995), *Theory and Methods in Political Science* (London, Macmillan).
- Stoker, G. (1998), Governance as theory: five propositions, *International Social Science Journal*, [onlinelibrary.wiley.com](http://onlinelibrary.wiley.com). Accessed 5/1/2018.
- Stone S., and Wayne, S. (1997), European integration and supranational governance, *Journal of European Public Policy*, 4(3), 297–317.
- Stone, D. (2001), Learning Lessons, Policy Transfer and the International Diffusion of Policy Ideas. CSGR, University of Warwick, CSGR Working Paper No. 69/01, April 2001.
- Stone, D. (2008), Global Public Policy, Transnational Policy Communities, and Their Networks, [dx.doi.org/10.1111/j.1541-0072.2007.00251.x](http://dx.doi.org/10.1111/j.1541-0072.2007.00251.x), accessed 23/4/2017.
- Strickert, G., Chun, K., Bradford, L., Clark, D., Gober, P., Reed M., and Payton, D. (2016), Unpacking viewpoints on water security: lessons from the South Saskatchewan River Basin. *Water Policy*, 18 (1) 50-72.

- Stubbs, P. (2005), Stretching Concepts Too Far? Multi-Level Governance, Policy Transfer and the Politics of Scale in South East Europe, *Southeast European Politics*, 6 (2), 66 – 87.
- Stubbs, P. (2005), Stretching Concepts Too Far? Multi-Level Governance, Policy Transfer and the Politics of Scale in South East Europe, *Southeast European Politics* 5 (2), 66 – 87.
- Sülün, E. (2018), Women, Water Resource Management, and Sustainable Development: The Turkey- North Cyprus Water Pipeline Project. *Resources* 2018, 7, 50, [www.mdpi.com/journal/resources](http://www.mdpi.com/journal/resources). Accessed 8/5/2017.
- Svendsen, M. (2010), MENA Regional Water Governance Benchmarking Project Country Profile: Egypt. the United States Agency for International Development (USAID).
- Swain, A. (1997), Ethiopia, the Sudan and Egypt: The Nile River Dispute. *African Studies*, 35(4), 675–694.
- Swain, A. (2008), Mission Not Yet Accomplished: Managing Water Resources in the Nile River Basin. *Journal of International Affairs*, 61(2), 201-216.
- Sztompka, P. (1993), *The Sociology of Social Change* (Oxford, Basil Blackwell).
- Takashi, H. (2005), Negotiation Analysis of Climate Change: Structure and Agents in Japan's Climate Change Policy Formulation, Annual ISA Convention, March 1-5,2005 , Honolulu, Hawaii, <http://www.allacademic.com>. Accessed 30/11/2017.
- Tawfik, R. (2015), Revisiting hydro-hegemony from a benefit sharing perspective: the case of the Grand Ethiopian Renaissance Dam. Discussion Paper / Deutsches Institut für Entwicklungspolitik ISSN 1860-0441.
- Tawfik, R. (2016), Reconsidering counter-hegemonic dam projects: the case of the Grand Ethiopian Renaissance Dam. *Water Policy*, 1-20.
- Taylor, M. (1993), Structure, Culture, and Action in The Explanation of Social Change. In W. Booth (ed.) *Politics and Rationality* (Cambridge, Cambridge University Press).

Technical Committee (TEC),  
[www.tnmckc.org/upload/document/bdp/2/2.7/GWP/TEC-7.pdf](http://www.tnmckc.org/upload/document/bdp/2/2.7/GWP/TEC-7.pdf). Accessed  
4/12/2017.

The Arab Water Council (2009), Vulnerability of arid and semi-arid regions to climate change – Impacts and adaptive strategies. [www.preventionweb.net](http://www.preventionweb.net). Accessed 5/8/2017.

The Centre for Environment and Development for the Arab Region (CEDARE) (2014), Egypt Water Sector Rapid Assessment Report. Monitoring and Evaluation for Water in North Africa (MEWINA) Project, Water Resources Management Program, CEDARE.

The Egyptian Environmental Affairs Agency (EEAA) (2008), Study on Water Quality of the Nile River, Egyptian Environmental Affairs Agency, [www.eeaa.gov.eg/en-us/home.aspx](http://www.eeaa.gov.eg/en-us/home.aspx). Accessed 15/1/2018.

The Egyptian Water/Wastewater Regulatory Agency (EWRA), [www.ewra.gov.eg/](http://www.ewra.gov.eg/). Accessed 23/1/2018.

The European Commission's White Paper on Governance (2001), [https://ec.europa.eu/europeaid/sites/devco/files/communication-white-paper-governance-com2001428-20010725\\_en.pdf](https://ec.europa.eu/europeaid/sites/devco/files/communication-white-paper-governance-com2001428-20010725_en.pdf), Accessed 15/12/2017.

The European Environment Agency (2010), European Neighbourhood Policy Instrument Shared Environmental Information System: Egypt Country Report. [Downloads/Egypt%20country%20report%20final%20110313.pdf](http://www.eea.europa.eu/downloads/Egypt%20country%20report%20final%20110313.pdf). Accessed 21/3/2017.

The Food and Agriculture Organization of the United Nations (FAO) Aquastat (2009), [www.fao.org/nr/water/aquastat/countries/egypt/index.stm](http://www.fao.org/nr/water/aquastat/countries/egypt/index.stm). Accessed 27/3/2017.

The General Department of Agricultural Census, of the Ministry of Agriculture and Land Reclamation (1998), Egypt Agricultural Census 1990. [www.fao.org/fileadmin/templates/ess/documents/world\\_census\\_of\\_agriculture/main\\_results\\_by\\_country/Egypt\\_1990.pdf](http://www.fao.org/fileadmin/templates/ess/documents/world_census_of_agriculture/main_results_by_country/Egypt_1990.pdf). Accessed 25/4/2017.

- The Global Water Partnership (2012), Egypt: The Role of Water Users' Associations in Reforming Irrigation. GWP case studies, at [www.gwp.org](http://www.gwp.org), Accessed 2/7/2017.
- The Holding Company of Water and Wastewater (2006), Country Dialogues Process On Water In Mediterranean Partner Countries. EU Water Initiative, Inaugural Meeting of the Country Dialogue in Egypt. Accessed 11/5/2017.
- The Independent Commission on Good Governance in Public Services (2005), [www.cipfa.org.uk/pt/download/governance\\_standard.pdf](http://www.cipfa.org.uk/pt/download/governance_standard.pdf). Accessed 12/3/2017.
- The Ministry of Finance: PPP Central Unit, [www.mof.gov.eg/english/pages/home.aspx](http://www.mof.gov.eg/english/pages/home.aspx), Accessed 5/7/2017.
- The Ministry of State for Environmental Affairs (2006), Protected Areas of Egypt: Towards the Future. Egyptian Environmental Affairs Agency, Nature Conservation Sector. June 2006. [www.eeaa.gov.eg/en-us/contactus.aspx](http://www.eeaa.gov.eg/en-us/contactus.aspx). Accessed 17/2/2018.
- The New Webster's International Dictionary, [www.merriam-webster.com/info/commitment](http://www.merriam-webster.com/info/commitment).
- The Nile Basin Initiative (NBI) (1999), Policy Guidelines for the Nile River Basin Strategic Action Program prepared by the NBI Secretariat in cooperation with the World Bank. Nile Basin Secretariat, Kampala, Uganda. [www.nilebasin.org/](http://www.nilebasin.org/). Accessed 14/3/2018.
- The Nile Basin Initiative (NBI) (2002), Nile Basin Act. [faolex.fao.org/docs/pdf/uga80648.pdf](http://faolex.fao.org/docs/pdf/uga80648.pdf). Accessed 14/3/2018.
- The OECD (1993), DAC Orientations on Participatory Development and Good Governance. [www.oecd.org](http://www.oecd.org). Accessed 4/2/2018.
- The OECD (2010), Framework Conditions for Private Sector Participation in Water Infrastructure in Egypt. MED EUWI Egypt Country Dialogue on Water, [www.euwi.net](http://www.euwi.net). Accessed 4/9/2017.
- The Organisation for Economic Co-operation and Development (OECD), [www.oecd.org/dac/](http://www.oecd.org/dac/). Accessed 1/12/2016.



The Trade Council, Embassy of Denmark in Cairo (2014), Sector Analysis: Egypt: Water Sector. [www.iberglobal.com/files/egipto\\_agua.pdf](http://www.iberglobal.com/files/egipto_agua.pdf), Accessed 24/3/2017.

The UN (2006), *The United Nations World Water Development Report 2: Water a shared responsibility*. [unesdoc.unesco.org/images/0014/001444/144409e.pdf](http://unesdoc.unesco.org/images/0014/001444/144409e.pdf). Accessed 14/9/2017.

The United Nations Development Program (UNDP) (2015), UNDP Water Projects. Washington Representation Office, (December 2015), [www.us.undp.org.pdf](http://www.us.undp.org.pdf). Accessed 7/7/2017.

The United Nations Development Program (UNDP) (2017), *Water and Ocean Governance*. [www.undp.org/](http://www.undp.org/). Accessed 11/4/2018.

The United Nations Development Programme (UNDP) (2009), Democratic Governance Reader: A reference for UNDP practitioners. [www.undp.org/content/dam/aplaws/publication/en/publications/democratic-governance/oslo-governance-center/democratic-governance-reader/DG\\_reader-2009.pdf](http://www.undp.org/content/dam/aplaws/publication/en/publications/democratic-governance/oslo-governance-center/democratic-governance-reader/DG_reader-2009.pdf). Accessed 8/9/2017.

The United Nations Development Programme (UNDP), Good governance – and sustainable human development, [mirror.undp.org/magnet/policy/chapter1.htm](http://mirror.undp.org/magnet/policy/chapter1.htm). Accessed 14/11/2017.

The United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), [www.unescap.org/pdd/prs/ProjectActivities/Ongoing/gg/governance.asp](http://www.unescap.org/pdd/prs/ProjectActivities/Ongoing/gg/governance.asp). Accessed 23/12/2017.

The United Nations International Children's Emergency Fund (UNICEF) (2010), UNICEF and Holding Company for Water and Sanitation join forces to promote sanitary behavioral practices. [www.unicef.org/egypt/media\\_6170.html](http://www.unicef.org/egypt/media_6170.html), Accessed 8/1/2018.

The United Nations, Economic and Social Council (2006), Definition of basic concepts and terminologies in governance and public administration, Committee of Experts on Public Administration, New York, 27-31 March 2006,

<http://unpan1.un.org/intradoc/groups/public/documents/un/unpan022332.pdf>.

The United States Agency for International Development (USAID) (1991), Water and Wastewater Institutional Support Project (WWISP). Basic Contract Completion Report, August 1991, [pdf.usaid.gov/pdf\\_docs/PDABG411.pdf](http://pdf.usaid.gov/pdf_docs/PDABG411.pdf), Accessed 19/12/2017.

The United States Agency for International Development (USAID) (2013), Clean Water for Egypt: Egypt Water Policy and Regulatory Reform Program: Final Report. The United States Agency for International Development.

The World Bank (1992), Governance and Development (Washington, DC, The World Bank)

The World Bank (1994), Governance: the World Bank's experience. Washington (DC).

The World Bank (1995), Project Completion Report: Arab Republic of Egypt. Report No. 14805, <http://www-wds.worldbank.org>. Accessed 9/12/2017.

The World Bank (2005), Cost-effectiveness and equity in Egypt's water sector. Policy Note 3, Social and Economic Development Group Middle East and North Africa Region, [www.mof.gov.eg/notes/Cost%20Effectiveness%20Egypt%20Sector%20-%20May%202005.pdf](http://www.mof.gov.eg/notes/Cost%20Effectiveness%20Egypt%20Sector%20-%20May%202005.pdf). Accessed 27/11/2017.

The World Bank (2008), what is Governance? [web.worldbank.org](http://web.worldbank.org). Accessed 9/11/2016.

The World Bank Group (2015), Indicators. [data.worldbank.org/indicator?display=default](http://data.worldbank.org/indicator?display=default). Accessed 12/10/2017.

The World Water Development Report (WWAP) (2018), [www.unesco.org/new/en/natural-sciences/environment/water/wwap/about/](http://www.unesco.org/new/en/natural-sciences/environment/water/wwap/about/). Accessed 8/12/2017.

Trémolet, S. and Hunt, C. (2006), Taking account of the poor in water sector regulation, Water Supply and Sanitation Working Notes, Note No. 11, August 2006.

- Trnski, M. (2005), Multi-level governance in the EU: Regional co-operation as Central European perspective, Europe Centre PBC, 2005. 23-33.
- Turnpenny, J., Alex, H., Irene, L., Tim, O. and Mavis, J. (2005), Mapping Actors Involved in Climate Change Policy Networks in The UK. Tyndall Centre for Climate Change Research, Working Paper 66.
- Tvedt, T. (2006), The River Nile in the age of the British – Political ecology and the quest for economic power. (Cairo, The American University of Cairo).
- UN DESA, DAW. Women 2000 and beyond: Women and Water. 2005
- UNDP Cap-net, Gender and Water Alliance (GWA). Why Gender Matters: A tutorial for water managers (CD-ROM, in English and Spanish March 2006.
- UNESCO. (2009), Water in a changing world. (Paris, UNESCO Publishing).
- Varis, O. (2010), Water governance under reform: are the Arab societies ready for change?. Finnish Institute of International Affairs. [www.fiia.fi/en/](http://www.fiia.fi/en/). Accessed 8/8/2017.
- Verhoeven, H. (2011a), Black Gold for Blue Gold? Sudan's Oil, Ethiopia's Water and Regional Integration, Africa Programme Briefing Paper. Chatham House, London, [www.chathamhouse.org.uk/research/africa/papers](http://www.chathamhouse.org.uk/research/africa/papers). Accessed 7/1/2018.
- Verhoeven, H. (2011b), A second revolution on the Nile? Fair Observer, July 31, [www.fairobserver.com/region/middle\\_east\\_north\\_africa/second-revolution-nile/](http://www.fairobserver.com/region/middle_east_north_africa/second-revolution-nile/), Accessed 18/4/2017.
- Viala, E. (2008), Implementing IWRM in Egypt: From Concept to Reality. USAID, [wwc2008.msem.univ\\_montp2.fr/resources/authors/abs797\\_article.doc](http://wwc2008.msem.univ_montp2.fr/resources/authors/abs797_article.doc), Accessed 7/3/2017.
- Wagd A. (2008), Progress in Water Resources Management: Egypt. Proceedings of the 1st Technical Meeting of Muslim Water Researchers Cooperation. [www.ukm.my/muwarec/research.html](http://www.ukm.my/muwarec/research.html). Accessed 8/12/2017.

- Walsh, J. (1991), Preserving the options: food productivity and sustainability. Consultative Group on International Agricultural Research, *Agriculture*, 2:1 – 20.
- Waterbury, J. (1979), *The hydro-politics of the Nile* (Syracuse University Press).
- Waterbury, J. (2002), *The Nile Basin National Determinants of Collective Action*. (New Haven, Yale University Press).
- Waterbury, J., and Whittington, D. (1998), Playing chicken on the Nile? The implications of microdam development in the Ethiopian highlands and Egypt's New Valley Project. *Natural Resources Forum*, 22(3), 155-163.
- Weaver, G. and Gioia, D. (1994), Paradigms Lost: Incommensurability vs Structurationist Inquiry. *Organization Studies*, 15, 565-590.
- Weiss, R. (1992), *The Art And Methods Of Qualitative Interview Studies* (New York, Free Press).
- Weiss, T., (2000), Governance, Good Governance and Global Governance: Conceptual and Actual Challenges, *Third World Quarterly*, 21(5), 795-814.
- Whittington, D., Waterbury, J., and Jeuland, M. (2014), The Grand Renaissance Dam and prospects for cooperation on the Eastern Nile. *Water Policy* (2014) 1–14.
- William H. and Sewell, J. (1992), A Theory of Structure: Duality, Agency, and Transformation, *The American Journal of Sociology*, 98 (1), 1-29.
- Yahia, M. (2013), Leaked report sparks disagreement between Egypt and Ethiopia over dam. [www.researchgate.net/between Egypt and Ethiopia over dam](http://www.researchgate.net/between_Egypt_and_Ethiopia_over_dam). Accessed 18/12/2017.
- Yin, R. (1981), The Case Study Crisis: Some Answers, *Administrative Science Quarterly*, 26(1), 58-65.
- Yin, R. (1994), *Case Study Research: Design and Methods* (Beverly Hills, CA, Sage Publishing).
- Yin, R. (2003), *Case Study Research, Design and Methods* (Thousand Oaks, Sage, 3rd edition).

- Zedan, B. (2013), Water Conflicts in the Nile River Basin and Impacts on Egypt's Water Resources Management and Road Map, Review Article, 27 June 2013, Downloads/Zeidanarticle2013.pdf. Accessed 8/2/2018.
- Zeitoun, M., and Warner, J. (2006), Hydro-hegemony: A framework for analysis of transboundary water conflicts. *Water Policy* 8(5), 435-460.
- Zeitoun, M., Cascão, A., Warner, J., Mirumachi, N., Farnum, R., and Matthews, N. (2014), Transboundary Water Interactions III: Contesting Hegemonic Arrangements. Concept Paper Prepared for HH7: Contesting Hegemony, London Water, Research Group. University of East Anglia, London, 10–11 May.
- Ziller, J. (2005), Administering Global Governance: The Issue of Access to Justice, In G., Fraser-Moleketi, (ed.) (2005), *The World We Could Win: Administering Global Governance*, (Amsterdam, IOS Press).

## **Interviews:**

- Interview 1: an Under Secretary of State for Minister's Office Affairs, Egyptian Ministry of Water Resources and Irrigation (MWRI), 6/8/2014, MWRI.
- Interview 2: a water and sanitation expert, Ein Shams University, 3/8/2014, Ein Shams University
- Interview 3: a water and sanitation expert, Cairo University, 4/8/2014, Cairo University
- Interview 4: a water and sanitation specialist, Environmental Research Institute, MWRI 10/8/2014, MWRI.
- Interview 5: a water and sanitation specialist, Agricultural Research Center, the Ministry of Agriculture and Land Reclamation (MALR), 19/8/2014, MALR.
- Interview 6: a senior program officer, USAID Office of Middle East, 11/8/2014, telephone interview.
- Interview 7: a senior policy analyst, National Water Governance Benchmarking for Sustainable Water Development (UNDP), 11/8/2014, telephone interview.
- Interview 8: a senior manager, the Water Resources Program., the Center for Environment and Development for the Arab Region and Europe (CEDARE), Egypt, 13/8/2014, CEDARE.
- Interview 9: a director in the General Directorate for Awareness and Water Advisory (MWRI), 3/1/2015, MWRI
- Interview 10: a senior technical advisor, the Holding Company for Drinking Water and Sanitation (HCWW), 28/12/2014, HCWW.
- Interview 11: a senior director, the Egyptian National Committee for Irrigation and Drainage, 11/8/2014, MWRI.
- Interview 12: a senior civil Eng., the Planning Sector, MWRI, 19/8/2014, MWRI.
- Interview 13: a senior civil servant, the Nile Water Sector, 11/8/2014, MWRI.
- Interview 14: a senior policy advisor, the Ministry of Agriculture and Land Reclamation (MALR), 27/8/2014, MALR.
- Interview 15: a senior project manager, Integrated Irrigation Improvement and Management Project IIIMP, MWRI, 20/8/2014, MWRI
- Interview 16: a water research fellow, Environmental Research Institute, MWRI, 23/12/2014, MWRI.
- Interview 17: a water quality specialist, the Central Department for Water Quality, (MESA), 28/12/2014, MESA.
- Interview 18: a senior planning officer, Irrigation Department, 25/12/2014, MWRI.
- Interview 19: an irrigation expert, 19/8/2014, MALR.
- Interview 20: a senior economist, Agro-Economic Research Institute, MWRI, 24/8/2014, MWRI.
- Interview 21: a senior manager, the Technical Regulation Dept. (EWRA), 3/8/2014, EWRA.
- Interview 22: a senior water and energy specialist, 12/8/2014, telephone interview.
- Interview 23: a program management specialist, Water Policy and Regulatory Reform Project (WPRR), 5/8/2014, WPRR.

Interview 24: a Project Controls Engineer, Water Policy and Regulatory Reform Project (WPRR), 5/8/2014, WPRR.

Interview 25: a regulatory economist, Water Policy and Regulatory Reform Project (WPRR), 5/8/2014, WPRR.

Interview 26: a strategy specialist on the Water Policy and Regulatory Reform Project (WPRR), 5/8/2014, telephone interview.

Interview 27: the Executive Director EWRA, 3/8/2014, EWRA.

Interview 28: a monitoring and reporting specialist, Holding Company for Water and Wastewater (HCWW) 28/12/2014, HCWW.

Interview 29: a senior policy analyst, the Policy Advisory Unit, EWRA 24/12/2014, EWRA.

Interview 30: a senior manager, the Technical Services Dept., EWRA, 29/8/2014, EWRA.

Interview 31: a legal specialist, EWRA, 24/12/2014, EWRA.

Interview 32: the founder of the Better Life Association for Comprehensive Development (BLACD).