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**THE MACHINERY OF IRAQI WATER
INSTITUTIONS:
The Development of Institutions in a Post War State**

Janice C. Romzek

Abstract:The current state of Iraq regarding water issues is quite poor despite ongoing efforts to rebuilt water infrastructures. Investigating the underlying problems with failed water infrastructures, this paper aims to identify water institutions as the key to the failure of water governance in Iraq. Utilizing the theories of New Institutionalism, a mechanical model of institutions is formulated, identifying the various components of institutions. Based upon empirical findings we address how water institutions are being built in the ‘new’ Iraq, post Saddam Hussein and focus on the translation of norms and values to the institutional development. Based upon a political institutional approach, the assessment of the elements which enables an institution to function is also analyzed in the form of integrity and competence which will be described as the ‘oil’ of the institution machine. Overall the paper will identify that Iraq is still in a proto-institutional setting that is still developing.

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1. Introduction

1.1 Theme of Study

Water, as the most vital resource for living, is becoming a scarcity around the world due to a variety of causes including rapid population growth and economic development, to inefficient governance and utilization practices. Within Development Studies, water issues have gained significant importance as the lack of access to clean water and sanitation is described as a form of unfreedom by Amartya Sen, in *Development as Freedom*. Various international conferences have begun to look at the various concerns of water throughout the world. The declaration at the Bonn 2001 International Fresh Water Conference and again at the 2002 World Summit on Sustainable Development (WSSD) in Johannesburg, Ministries expressed the concern about the 1.1 billion people in the world who, at the beginning of the 21st Century, lived without access to safe drinking water, and 2.4 billion without access to proper sanitation.¹ These humanitarian needs of water were highlighted as well as the environmental concerns associated with water pollution and unsustainable patterns of water consumption. As important as water issues are around the entire world, it was not until 2001 that an international forum was proposed in Ahmedabad, India, to specifically examine and address policies and actions associated with water development for poverty alleviation, economic growth, improvement of quality of life, and management and protection of the environment and the ecosystems.²

Since 2001 there has been an upsurge in the amount of international conferences dedicated to addressing water issues pertaining to governance, policies, and management of water resources with focuses on the humanitarian and environmental concerns. Having the opportunity to actually participate in one of these international conferences, the World Water Week in Stockholm (an annual conference) allowed access as a reporter to attend the

¹ Ministerial Declaration. (2001) Bonn International Freshwater Conference. http://www.water-2001.de/outcome/MinistersDeclaration/Ministerial_Declaration.pdf

² Conference Report. (2001) Bonn International Conference on Freshwater. <http://www.thirdworldcentre.org/freshwater.PDF>

various workshops and seminars that convene international government officials, donor agencies, Non-governmental Organizations (NGOs), and various academics to the table to openly discuss water issues.

There is no doubt that water issues pertaining to humanitarian needs and environmental concerns is a personal passion. Thus, with the initiation of a Master's Thesis in Development Studies the focus was decidedly fixed. However, with the various issues and complexities surrounding water in the developing world it was quite difficult to pinpoint the course of action. The Middle East has been a focus area that captured the greatest amount of personal attention due to the region's arid climate, complexity of transboundary waters that verges in many instances on conflict, the overall lack of adequate water provision and sanitation needs, and the dire environmental concerns plaguing the region. As an American citizen, the case of Iraq has been grounds of great concern as my country has invaded a sovereign nation and is struggling with continued violence and the reconstruction of the state. Thus, my initial focus was on the water infrastructure problems Iraq is currently facing despite billions of dollars in funds and finances being prescribed to rebuild water infrastructures. Various news centers in the U.S. have continually reported the Iraqi's inability to maintain newly built water infrastructures that have been handed over to the newly formed Iraqi government. According to MSNBC, \$120 billion of funds still lag in improving infrastructure services to the public.³ Utilizing the quarterly report released to Congress on the efforts to rebuild Iraq's shattered Nation, the article notes; "Only 47 percent of people in rural areas use drinking water supplied via pipes to their homes. Only 20 percent of families outside of Baghdad province have access to working sewage facilities. The United States has (spent) \$2.4 billion in the water sector." This coupled with the fact that two-thirds of the raw sewage produced in Baghdad flows untreated into rivers and waterways and sewage water mixing with tap water in several areas of Baghdad. Similar reports came from various other American News agencies. The United States Agency for International Development (USAID) received the mandate to rebuild the destroyed infrastructures, public facilities and services in post-conflict Iraq and gave the company Bechtel National, Inc. the contract to provide construction services. However, the many news reports that surfaced in the following months and years

³ (2008) "\$120 Billion Effort to Rebuild Iraq Still Lags." MSNBC. Associated Press.
<http://www.msnbc.msn.com/id/25921268/>

noted that Bechtel was rebuilding infrastructures, handing them over to Iraqis and leaving. In a report written by the organization Public Citizen, the performance of Bechtel is criticized for its inadequate reconstruction of water infrastructures.⁴ However, according to Bechtel, water infrastructures were rebuilt according to the contract and handed over to the Iraqis to manage as a public utility. It is difficult to deconstruct whether the problems of water infrastructures are the onus of Bechtel or if the encountered problems came about after the projects were complete. In a U.S. report by the Operation Research Center (a military extension), an analysis on the southern region of Iraq, Basra; obstacles were addressed concerning water infrastructures.⁵ Besides low levels of training and education, the eye-catching problem that was encountered through interviews with the sector technical directors and their staffs revealed that there appeared to be little influence oversight from the national level Ministries on the management or operation of governing.

This evidence thus began directing the research on the governance of water resources and their management in Iraq. Initially looking at governance, we will dissect what governance entails, how it affects the water sector and specifically how institutions in Iraq are shaping governance. The institutional approach is the basis of the thesis in addressing the water issues in Iraq.

1.2 Objectives of the Study

The focus of this paper is on water institutions from a political-institutional perspective which will be utilized in the context of Iraq later in the paper. The problem that has been encountered is the water institutional rebuilding in a post-conflict state and the performance of such water institutions. In order to do this we will first be establishing the connection of water governance, the water sector and water institutions in an analytical chapter. After providing a basis for the study of institutions, we will begin to discuss the theoretical implications of institutions through theory development of New Institutionalism. The single

⁴ Jamail, Dahr (2004) "Bechtel's Dry Run: Iraqis Suffer Water Crisis." Public Citizen. Water for All Champaign

⁵ Trainor, Tim & Henderson, Dale L. (2007) "Building Capacity in the Public Utility Sectors of Basra, Iraq." Operations Research Center of Excellence. Pg. xi

case study approach will be substantiated and then an array of independent variables will be analyzed which will build upon the dependent variable of Water Institutions.

The questions of this study address the following various questions to be applied in the context of Iraq:

- How are Water Institutions built?
- How can we measure the performance of Water Institutions?
- What are the independent and intervening variables of which to assess the creation and performance of Water Institutions?
- What are the theoretical implications of the analyzed variables in the case study?

This paper will not be attempting to provide institutional solutions to the problems facing Iraq nor will it be assigning reforms that Iraq needs to follow in order to fix any discovered issues. However, we are seeking to discover why institutions in Iraq are dysfunctional, through the analysis of how they are being built and their performance. Although the diagnosis of Iraqi institutions is already perceived as deficient, the paper hopes to highlight some of the positive features of water institutions in its context and understands that Iraq is still an unstable state as far as continued violence and the new government is still quite new to the job of governance. The paper builds a model in which to assess water institutions that will be visualized later in the paper through a metaphorical mechanical model of Institutions, the necessary components and the production of water governance.

2. Analytical Framework

The function of this chapter is to create an analytical framework of the problems that have been formulated about water in Iraq. Recognizing the existence of water problems requires us to delve further into the governance of water, water sector performance, and the analytical composition of institutions. These are framed in order to substantiate the inter-linkages in order for us to focus on institutions from a theoretical perspective.

2.1 Water Governance

The term water governance has become the hot term within the water community in just the last few years. Although governance itself has been seen as important for sustainable development for quite some time, the water community did not recognize the centrality until the 2nd World Water Forum in The Hague (2000). The Global Water Partnership's (GWP), 'Framework for Action', declared that the 'water crisis is often a crisis of governance' and prioritized 'making water governance effective'.⁶ This notion was backed by The Hague Ministerial Declaration which identified 'governing water wisely' as one of the primary challenges for achieving the World Water Vision.⁷ Since this conference, the concept of water governance has become a bit revolutionary, with its celebrity status making its presence in all subsequent water and sustainable development conferences.

So what is water governance exactly and what constitutes 'good' or 'effective' water governance? This section of the thesis is being used to discuss the meanings and usages of the term water governance in order to fully understand the various developments of the usage of the term.

⁶ (2003) "Effective Water Governance – Learning from the Dialogues." Global Water Partnership. A status report prepared for presentation at the 3rd World Water Forum in Japan, March 2003. Pg 2

⁷ (2003) "Effective Water Governance – Learning from the Dialogues." Pg. 2

The term governance itself is currently perceived and defined as a much broader notion which entails a wide span of actors in a society.⁸ Thus, it involves a process of making choices and decisions that are not limited to the ‘government’, but also includes the private sector and civil society as well. Consequently, governance can be a term used in various manners, including forms of power and authority, ranging from household formations, religious authorities, gang organizations, international organizations, and resource management. Some have included governance to include notions of resolutions of common problems and the common good, which gives governance a more meaningful definition if it is linked to a common good or the resolution of common problems. Thus, the term, water governance has been formed out of the various meanings associated with governance. It seems as though the concept of linking the resolution of common problems amongst the various actors was included in the various meanings given to water governance. This section utilizes United Nations Development Program’s (UNDP) definition of water governance, which best sums up the various components and functionality of water governance, as:

“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. It comprises the mechanisms, processes, and institutions through which all involved stakeholders, including citizen and interest groups, articulate their priorities, exercise their legal rights, meet their obligations and mediate their differences.”⁹

Thus, water governance encompasses all social, political, economic and administrative structures, both formal and informal, and uses mechanisms to influence water use and water management through various tools. The different levels of society encompass household usage, irrigation for farmers, industrial users, electrical generation, fisheries, transport and environmental needs. Hence, it creates four dimensions of structures involved with water allocation; Social, Political, Economic and Environmental in the mediation of differences over the common good of water. The sharing of water resources between all of these sectors

⁸ Tropp, Håkan. (2007) “Water Governance: Trends and Needs for New Capacity Development.” Water Policy. 9. Supplement 2. Pg. 19-30 (Pg. 3)

⁹ “Effective Water Governance.” UNDP. http://www.undp.org/water/about_us.html

affects various policy fields, in which the coordination is a major challenge for a vital resource.

Yet, when defining water governance it must be recognized that there are two approaches to distinguish: the normative as well as the analytical definitions of water governance. The provided UNDP statement is an analytical perspective on regulation and coordination management. The analytical approach is used to describe and assess the reality of which water resources is managed and distributed among the levels of society. As governance is not being used as a theory in of itself, the process of defining governance is showing the need to analyze reality. In the reality of depleting and mismanaged resources, the concept of water governance provides a comprehensive perspective on water usage and regulation. This perspective also takes into account the interests of various competing sectors and actors.

Although the term governance is widely used in discussing water management, when it comes to discussing the discourse surrounding water governance, the analytical approach takes a backseat. As the term has a strong intuitive appeal, the precise definitions of governance are not as imperative as the normative conception of effective water governance. In normative terms, meaning, delegating how water governance becomes effective and good governance in a more practical vocabulary. With the normative concept of effective water governance in the driver's seat, it focuses on conditions of governance being transparent, open, accountable, participatory, communicative, incentive-based, sustainable, equitable, coherent, efficient, integrative and ethical.¹⁰ According to Tropp, this other side of the governance coin of normative notions exhibits that in fact, good governance 'matters' for improved water resources management and service provision.¹¹ Taking the analytical dimensions of Social, Political, Economic and Environmental, we can conceptualize the normative aspects of water governance. With the social dimension, water governance aims to equally allocate water between both the poor and the rich, economic zones, and between rural and urban populations. In the political dimension, good water governance should seek to be accountable and transparent in order to create participatory democratic means of

¹⁰ Solanes, Miguel & Jouravlev, Andrei. (2006) *Water Governance for Development and Sustainability*. United Nations. Economic Commission for Latin America and the Caribbean. Pg. 8-9

¹¹ Tropp (2007) pg. 8

equitable distribution and goal oriented water management. The economic dimension encompasses the aim to be efficient and ethical in the water usage. And finally the environmental dimension takes into account sustainable usage and water quality for a healthy natural environment of land, water, and human health. The conceptualizations of the normative elements to the analytical components of water governance allows us to recognize that good water governance can be defined as a process that is equitable, sustainable and efficient through inputs and outputs from the various dimensions as well as the coordination processes through governance between all of these dimensions.

The governance of water thus implies the capacity to both generate and implement appropriate policies and laws in coordination of all of the dimensions. These capacities are the product of having a foundation of consensus, with developed consistent management systems as well as sound administration systems which are based on social participation, acceptance and capacity building.¹²

There are many elements that analytically and normatively encompass water governance that are all intrinsically interlinked. Nevertheless, water governance ultimately comes back to water sector performance. What this involves is discussed below.

2.2 Water Sector Performance

It seems simple enough to understand that water sector performance is the functionality of various sectors equitably using water in a sustainable fashion which is efficient in use, as we described in the normative definition of good water governance. However, it is important to deconstruct the aspects involved in water sector performance. For the purposes of analyzing the performance, the water sector is considered to cover all consumptive utilizations of water such as domestic consumption, industrial uses, and agricultural users from all water sources.¹³ The non-consumptive uses of water, such as environmental needs must also be included in the usage of the term water sector as it also influences water usage. Due to the

¹² Solones & Jouravlev (2006) pg. 9

¹³ Saleth, Maria & Dinar, Ariel (1999) *Evaluating Water Institutions and Water Sector Performance*. World Bank Publications. Pg. 3

complexity of all sectors of water use this research has chosen to focus upon the domestic consumption as public infrastructures and environmental needs within the water sector.

When decomposing what water sector performance involves, it is difficult to evaluate the overall performance of the water sector as whole because the criteria are constrained in encapsulating the value of water as well as the subjective issues involved with evaluating equity performance.¹⁴ In the works of Saleth and Dinar, they have established water sector performance as an entity in of itself, involving physical, financial, economic, and equity dimensions. These performance aspects are listed and measured through various components listed as:

Physical Performance of the water sector is evaluated via the following features:

- (a) Demand-supply gap
- (b) Physical health of water infrastructure
- (c) Conflict resolution efficiency
- (d) Smoothness of water transfers across sectors/regions/users

Financial Performance of the water sector is evaluated via the following features:

- (a) Investment gap
- (b) Financial gap

And the Equity Performance of the water sector is evaluated via the following features:

- (a) Equity between regions
- (b) Equity between sectors
- (c) Equity between groups¹⁵

Although the works of Saleth and Dinar are focused mainly on the economics of water provision this decomposition provides a simple map of what constitutes water sector performance in a simple fashion which includes some of the normative identifications of good water governance. Without these components in water sector performance, it is evident that water governance is ineffective, resulting in lack of water delivery, poor water

¹⁴ Saleth and Dinar (1999) Pg. 6

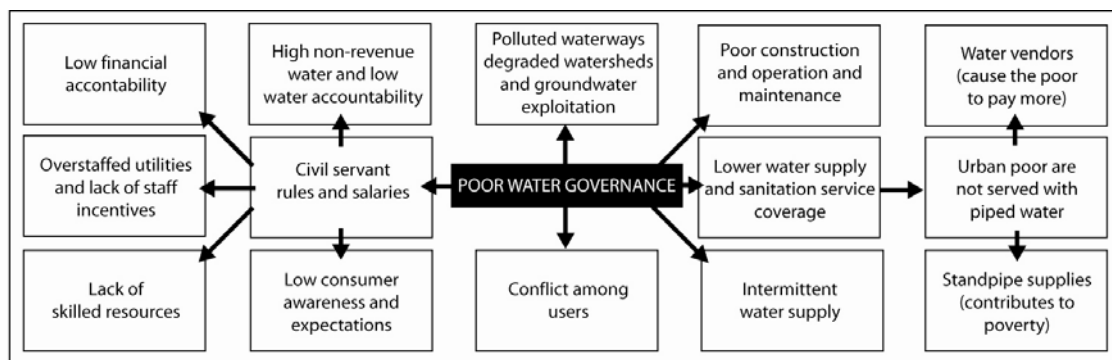
¹⁵ Saleth and Dinar (1999) Pg. 7

quality, failing water infrastructures, and a diminishment of norms and values attached to water in a society. Thus this next section deals with the problems of water governance.

2.2.1 Water Governance Problems

Good water governance is the key to having a successful water sector with reliable performance. According to Rouse, “poor governance is worse than no governance at all, as wrong decisions can only prevent the attainment of the desired water supply”.¹⁶ As much of the developing world faces great challenges in managing their water sector, the water availability is crucial for development. The water crisis as it is today has finally begun to catch headlines and the world is realizing that the resource is vital in sustainable development. The following figure aptly depicts the consequences of poor water governance:

FIGURE 2.1 / Poor Water Governance ¹⁷



This map of poor water consequences is adapted from a publication made by the Asian Development Bank and the International Water Association. Although it is formulated in a poor urban Asian context, most of the same symptoms can be witnessed in states with weak governance worldwide. It should be noted though, that this map does not address the consequences of poor governance to rural areas. Most of the consequences for rural poor areas are similar, with lack of 24 hour water supply, poor maintenance, lack of sanitation

¹⁶ Rouse, Michael (2007) *Institutional Governance and Regulation of Water Services: The Essential Elements*. IWA Publishing. Pg. 2

¹⁷ McIntosh, Arthur C. (2003) “Asian Water Supplies: Reaching the Urban Poor.” Asian Development Bank. Pg. 6

services, and especially conflict among users as rural areas must contend with the agricultural dimension of water resources.

The consequences of poor water governance as shown, affects all aspects of society. The question that often comes up in dialogues concerning water governance is whether effective water governance is achievable in societies that struggle with weak overall governance. According to the Global Water Partnership document, 'Effective Water Governance', there has been evidence in the past that good water governance has existed alongside poor overall governance in some countries (the example provided was in Spain under the reign of General Franco).¹⁸ Effective water governance can even be seen as being a catalyst for governance advances at all levels. Thus, there is hope for post conflict states, such as Iraq, to focus upon water governance issues despite hardships in other areas of development.

In states that exhibit the consequences of poor water governance, the core failure is that of institutions. These institutions are accountable for the planning, allocation and management of the state's water resources which is the responsibility of governments and their ability to govern. This next section is the foundation of what institutions are and later we will discuss the centrality of institutions to the performance of the water sector through water governance.

2.3 Water Institutions

This section as said is setting the foundation of analytically decomposing what constitutes water institutions. We will discuss later the theoretical implications associated with the institutional approach. The analytical understanding of water institutions may vary with the theoretical understandings of institutions due to the fact that many analytical definitions of institutions exist alongside with various theoretical interpretations.

In order to fully understand water institutions, we must first examine institutions themselves. According to North, institutions are 'rules of the game in a society or, more formally, are the

¹⁸ (2003) "Effective Water Governance – Learning from the Dialogues." Pg. 7

humanly devised constraints that shape human interaction'.¹⁹ According to March and Olsen, institutions can be understood as a collection of norms, rules, understandings and routines, which formulate the rules of the game.²⁰ These various 'rules of the game' are set by the institutions in order to define the actions of individuals and collective decision-making that can and cannot be allowed. Institutions are also characterized by their durability and their capacity to influence behavior of individuals for generation.²¹ Similarly, institutions are argued to have an inbuilt legitimacy that binds members to behave in ways that might even go against self-interests.²²

Institutions and organizations are often terms that are used interchangeably; however it is important to note the distinct differences between the two. As said, institutions are the 'rules of the game' which basically represents policies, laws and arrangements that have been created. Organizations are the groups of individuals who are bound by a common objective towards specified goals. How organizations come into existence and how they develop is fundamentally influenced by the given institutional framework.²³ Yet this is not a one way street, organizations themselves; which may consist of political bodies, economic bodies, social bodies, and educational bodies; also influence how institutional frameworks change. It is not only these organizations that influence institutions, but there is also historical precedents, constitutional provisions, political arrangements, demographic conditions, resource endowments, and economic development.²⁴ The influence of these factors is translated into formalized 'rules of the game' of policies. Institutions and organizations can be conceptualized as we enter into the discourse of what water institutions are and which organizations operate within the framework.

It is important to note the types of organizations that perform under and influence institutions as we will later use it as a variable affecting institutions. Formal organizations mainly consist of state departments or ministries (national, province and local) that manage

¹⁹ North, Douglass Cecil (1990) *Institutions, Institutional Change, and Economic Performance*. Cambridge University Press. Pg. 3

²⁰ Peters, B. Guy. (2005) *Institutional Theory in Political Science: The 'New Institutionalism'*. Continuum International Publishing Group. Pg. 29 (March and Peters: 1989: 21-6)

²¹ Peters (2005) pg. 29

²² Peters (2005) pg. 29 (March and Olsen 1989: 22-3)

²³ North (1990) pg. 5

²⁴ Saleth and Dinar (1999) pg. 3

water resources through officials that are appointed or elected whom may also be influenced by international lender organizations. Less formal organizations that in different nations may have higher or lower significance include religious groups, civil society, NGOs, and the private sectors. It is all of these organizations that function under the parameters of constraints imposed by institutions. When institutions are weak it is the course of various organizations attempts to accomplish their objectives that are the major agent of institutional change. Now we can move on to describing the water institutions which organizations work under and have the ability to change.

The term ‘water institutions’, is described by Gopalakrishnan, as consisting of three elements of water law, political processes and water administration.²⁵ This triangulation of the elements of water institution is quite common amongst discourse surrounding the term. Saleth and Dinar also decomposes water institutions as three inter-related aspects of water law, water policy (done through political processes) and water administration as the formal dimensions.²⁶ Institutions also consist of informal aspects of conventions, customs and administrative traditions that are important to shaping the formal aspects. Beyond the components of institutions, Saleth and Dinar define water institutions as ‘rules that together describe action situations, delineate action sets, provide incentives and determine outcomes both in individual and collective decisions related to water development, allocation, use and management.’²⁷ Water institutions, like all other institutions are also subjective, path dependent, and hierarchical which is all rooted within the context of cultural, social, economic and political forces.

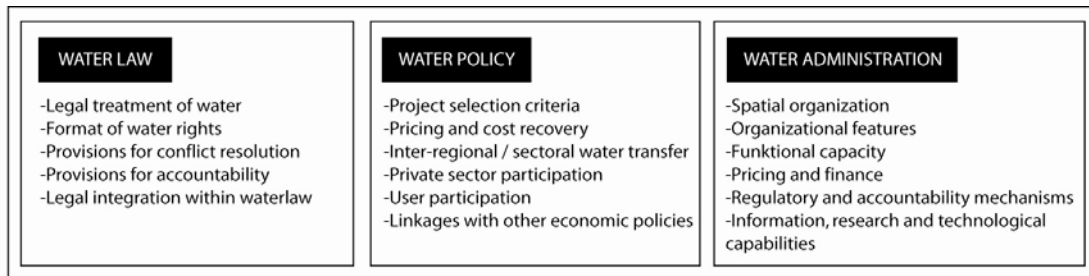
The triangulation of the three institutional aspects requires decomposition so that we can conceptualize what they consist of rather than simply stating that they are formal elements that are needed for the function of ‘sound’ institutions. Saleth and Dinar outline the three components and their institutional aspects:

²⁵ Gopalakrishnan, Chennat & Totajada, Cecilia & Biswas, Asit K. ed. (2005) *Water Institutions: Policies, Performance, and Prospects*. Springer. Gopalakrishnan, Chennat. “Water Allocation and Management in Hawaii: A Case of Institutional Entropy.” Pg. 1

²⁶ Saleth and Dinar. (1999) Pg. 4

²⁷ Saleth, Maria & Dinar, Ariel. (2005) “Water Institutional Reforms: Theory and Practice.” *Water Policy* 7. Pg. 1-19 (Pg. 2)

FIGURE 2.2 / Components of Institutions ²⁸



Simply having water law, water policies and water administration does not necessarily mean that an institution itself is effective. The overall effectiveness of each factor of institutions relies on the strength of each component in itself as well as the strength of the interlinkages it has with each other. The water laws and water policies cannot be effective without playing off of each other in the form of mutual recognition and feedbacks in the form of changes taking place over time. Together they outline the frameworks and establish the capacity of the water administration which implements the laws and policies.

It is also helpful to note that effectiveness of an institution can also be analyzed in terms of the ‘progressiveness of water institutions’.²⁹ As shown, Saleth and Dinar are partial to deconstructing terms, as they have done once again here where they conceive the progressive nature of water institutions as four inter-related factors; adaptive capacity, scope for innovation, openness for change and ability to tackle emerging problems.³⁰ These factors all relate to institutions ability to change or reform in the face of water sector needs and can all directly impact the performance of the water sector.

2.4 Linking Governance, Performance & Institutions

The purpose of this section is to establish that the *fundamental* determinant of whether governance of water is effective in ensuring good water sector performance is the existence

²⁸ Saleth and Dinar. (1999) Pg. 4-5

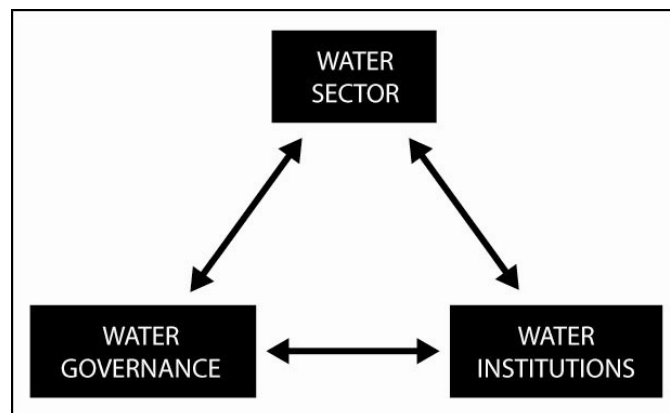
²⁹ Saleth and Dinar (1999) Pg. 5

³⁰ Saleth and Dinar (1999) Pg. 6

of a sound water institution. This will lead us to the reality that in order to ‘fix’ water governance and improve water sector performance, the focus should essentially be on institution reforms.

This approach is a focus on institution interaction with water sector performance. As we have already discussed the linkage of water governance to water sector performance, the institution to water sector performance is the final linkage among all three factors of a healthy water system. As this triangular diagram shows, governance and institutions affect each other, which in turn both affect water sector performance, as the water sector also affects governance and institutional arrangements.

FIGURE 2.3 / Triangulation of Governance, Water Sector and Institutions



So how specifically does an institution affect water sector performance and vice versa? It is the institutional arrangement that governs the water sector by defining the rules of water development, allocation, and utilization. As the water administration manages through the set policies and laws, the water sector too affects institutions as institutions must reorient their management and rules to reflect the changing supply-demand and quantity-quality realities that are present in national water systems.³¹ Consequently, crisis’ that exist in water sectors are inherently linked to the limitations of existing institutions in dealing effectively with problems associated with resource allocation and management when the institutions do not adapt to water sector needs.

³¹ Saleth and Dinar (1999) pg.11

This is not an entirely new concept as the multi-national dialogues on effective water governance (a status report prepared for presentation at the 3rd World Water Forum in Kyoto, Japan), stated that one of the key features for achieving improved governance over the distribution of water included capacity building to prepare institutions for reforms necessary for better water sector performance.³² The interlinking of water institutions, water governance and water sector performance provides the stepping stone to move on to discussing the importance of sound institutions to improving water governance and water sector performance.

2.5 Institutional Change

This section is titled ‘change’ rather than reform, because although reform denotes change, some situations need a complete reconstruction of an institution due to lack of proper institutions in the first place or a drastic change in regime which requires a new sets of policies, laws and administrations to be developed. In most instances it is stressed that the use of existing institutions, where possible, rather than creating new institutions, is important because of underlying causes.³³ However, we will be looking at the state of Iraq, which is a state that has undergone drastic formal institutional changes.

It may seem simple to change laws, policies and administrations; however, institutional change can be a very difficult to process because these changes are done at the margin of what formally constitutes institutions. Changes go beyond these formal aspects to changing informal constraints that are already imbedded in societies. According to North, although formal rules may change overnight as a result of political or judicial pronouncements, the informal constraints that are embodied in customs, traditions, and codes of conduct are much more impervious to deliberate policy and law modifications (noting the underlying causes).³⁴

³² (2003) “Effective Water Governance – Learning from the Dialogues.” Pg. 6

³³ (2003) “Effective Water Governance – Learning from the Dialogues.” Pg. 18

³⁴ North (1990) Pg. 6

Despite the hardships of changing informal constraints, moving towards more effective governance is about changing institutions, both formally and informally. It is an overwhelming challenge when institutional reforms are needed at a large magnitude that is required in various national situations, which face outdated and poorly functional water institutions that have shaped societal attitudes of water resources. Nevertheless, policy makers realize the serious socio-economic costs of prevailing institutional inadequacies managing the water sector even though the political constraints continue to be a prevailing obstruction for the initiation of substantive institutional reforms.³⁵ Whatever the holdbacks are, the need for institutional change is essential to the management of water so that it is equitable, sustainable and efficient for the various sectors that share the resource. Thus, the Water Institutional Reform (WIR) is now at the forefront of discussions surrounding the improvement of water sector performance. As the political constraints are seen as the prevailing obstruction for the initiation of reforms, this paper aims to take the political-institutional perspective of these changes rather than the dominate notion that water issues were handled through technical system based on rational decision making and engineering improvement.³⁶ Therefore the aim of this research is to take the political-institutional perspective of water institutional creation and performance to better understand the institutional rebuilding challenges in Iraq.

Thus far we have assessed the defining features of water governance, water sector performances, and the reliance on institutions to create the rules of the game translated into policies and administration. It is now essential to theoretically substantiate institutions, their creation and the normative assessment of sound institutions.

³⁵ Saleth and Dinar (1999) pg. 1

³⁶ Sehring, Jenniver. (2008) *The Politics of Water Institutional Reform in Neo-Patrimonial States: A Comparative Analysis of Kyrgystan and Tajikistan*. VS Verlag. Pg. 29

3. Theoretical Framework: New Institutionalism

This chapter outlines the theoretical framework of this study. As institutions have already been defined, we now will proceed with an overview of approaches of institutions through the theory of New Institutionalism. The theory has had many transformations throughout history with the new resurgence of ‘New’ Institutionalism which has diverged into several separate views of analyzing institutions in a more modern context. The theoretical substantiation of institutions and water institutions will be provided as well as the concept of institutional creation and the assessment of institutions in a theoretical manner. The theoretical focus revolving around institutions and their assessment is obviously not new as we have already touched on the basic premises of institutions in their relation to water resources through the works of various authors.

3.1 Old Institutionalism vs. New Institutionalism

In order to say that there is a theoretical approach of ‘New Institutionalism’ it must denote that there was first an ‘Old Institutionalism.’ However, it can be debated whether this old institutionalism was in fact theoretical. It is generally agreed within the current political science field that old institutionalism was lacking in theoretical standings and was rather simply a tool. This tool was used to create systematic analysis of institutions in almost entirely normative terms and defined the influence institutions had upon society.

The tradition of institutional studies dates back to the very roots of political thinking, with the first political philosophers such as Aristotle, Hobbes, John Locke, and Montesquieu (to name a few) writing on institutions. However, the institutional approach across the centuries was focused on identifying and analyzing the success and failures of institutions in governing and creating recommendations for the design of other institutions established upon

observations.³⁷ Although the focus of creating good governance was quite practical, the normative nature of the practice was seen as lacking in a scientific basis of theory building. With the rise of political science identifying itself as a true scientific practice, it was no longer acceptable to describe politics and make interpretations. Rather it was vital that the development of theory, which is so simply described by Peters as ‘general statements which could explain phenomenon in a variety of settings’³⁸, was a necessity for a scientific approach. This is not to say that old institutionalism completely lacked any theoretical building. Despite the portrayal of old institutionalism being short of theoretical generalizations, theoretical analysis was lurking in the corners of the discipline.

The old institutionalism did construct some basic components of what made institutions that were verging on theoretical generalizations. B. Guy Peters explains the various theoretical characteristics of old institutionalism, which he termed ‘pro-theory’.³⁹ The first defining characteristic was legalism, which involved the central role of law in governing. Law constituted the framework in which institutions governed and affected the behaviors in society. The second leading supposition was that structuralism mattered because it also determined behavior. Third, older institutionalists used holism to obtain variations within institutions; however, this tradition tended to compare whole systems, rather than individual institutions. Old institutionalism also tended to use a historical approach to its analysis, showing how institutions were embedded within historical development. And finally like previously mentioned, old institutionalism based its research on a normative element linking descriptive statements with elements of good governance. The description of these five elements of proto-theoretical approaches of old institutionalism is of course a very simplistic version of these elements. They were important to briefly note here due to the fact that New Institutionalism builds itself from these older assumptions of institutions. Prof. B. Guy Peters, outlines each of these pro-theories more clearly in his book *Institutional Theory in Political Science*.

³⁷ Peters, B. Guy (2005) *Institutional Theory in Political Science: The ‘New Institutionalism’*. Continuum International Publishing Group. Pg. 3

³⁸ Peters (2005) pg. 12

³⁹ Peters (2005) Pg. 6

The death of old institutionalism came about not only because of the lack of solid theoretical constructions, but also come about with the rise of the behavioral revolution and the rational choice movement. The post World War era became preoccupied with the claim that individuals are the appropriate focus for social and political analysis. They diverged from the thought of institutions having importance, declaring that it is the people within the institutions that actually have the power to change societal behaviors. Public figures, egoism, and rational choice became heralded as the true power holders, rather than established institutions. However, these movements failed to understand the importance of institutions for structuring decisions and removing random individual elements for a functioning government.

Old Institutionalists do deserve some credit for not completely eliminating the role of some charismatic individuals and society in shaping institutions. Peters explains how where many of the contemporary political scientists tend to see interactions between people and institutions running in one direction – from society to politics – old institutionalism tended to see a long term pattern of mutual influence between the two.⁴⁰ The actions of the state, through institutions, influenced society as much as society shaped the politics of institutions. However the general absence regarding theory and methods tells us a lot about the traditional institutionalism in regards that it was generally unreflective on issues of theory and method, taking facts and values for granted.

3.2 New Institutionalism

The resurgence of institutionalism came about in the 1980's with the works of March and Olsen, who coined the theoretical movement 'New' Institutionalism.⁴¹ The use of the word 'resurgence', is not to say that institutionalism had completely fallen off of the political science map. For behaviouralists, institutions were created from individuals, statuses, and learned responses.⁴² And for rational choice theorists, institutions were the creation of individual choices based on utility maximization. Thus, institutionalism was perceived as

⁴⁰ Peters. (2005) pg. 10

⁴¹ March, J. G. & Olsen, J. P. (1984) "The New Institutionalism: Organizational Factors in Political Life." *The American Political Science Review*. Vol. 78. No.3. pp. 734-749

⁴² Marsh, David & Stocker, Gerry eds. (2002) *Theory and Methods of Political Science*. Second Edition. Palgrave Macmillan. Lowdes, Vivian. "Institutionalism." Pg. 94

being outside the mainstream of the science which had focused its attention on the individualistic approach. The initial advocates of this new institutionalism noted how political science had been lead off course in its reduction of institutions.

In the resurgence of institutionalism, March and Olsen reestablish the role of political institutions, asserting that they played a more independent role in determining outcomes. Thus stating:

The Bureaucratic agency, the legislative committee, the appellant court are arenas for contending social forces, but they are also collections of standard operating procedures and structures that define and defend interests. They are political actors in their own right.⁴³

Of course with the use of the word 'New' to describe the contemporary development of Institutionalism, implies that the new version is significantly different from the traditional institutionalism studies of old. The main differentiations came in the form of realization that theory development was imperative in the research of institutions and methodological methods built upon behavioral research could be used in the analysis of institutions. But most importantly the reemergence of Institutionalism brought about important questions – about what composes political institutions, the functions of an institution in defining and defending interests, and the capacity of individual actors in influencing the functionality of political institutions.

The New Institutional approach is not a single breathing animal, and several varieties of the approach have emerged to answer these central questions. Although there are seven strains of New Institutionalism there is a fundamental split – this split is between the 'normative' approaches and the strains that have stemmed from the rational choice version of political theory. The normative institutional approach, headed by March and Olsen, makes the argument that political institutions shape actors' behaviors through the 'collection of norms, rules, understandings and perhaps most importantly routines.'⁴⁴ Thus, the variables relate to

⁴³ March and Olsen (1984) Pg. 738

⁴⁴ This section of March and Olsen's work was provided by B. Guy Peters on pg. 29 as a copy of *Rediscovering Institutions* could not be found. March, J. G. & Olsen, J. P. (1989) *Rediscovering Institutions* (New York: Free Press.) pg. 21-6

norms and values in this sense of the term ‘normative.’ This argument also seeks to establish that the values created in rules and structures create appropriate behaviors with both political actors and the society. The other side of the coin, Rational Choice Institutionalism disagrees with the notion that institutional factors ‘produce behavior’ or influence individualistic actions, supporting the rational choice basis of utility maximization. Rather it is the institutions that provide incentives or disincentives attached to behaviors, allowing individuals to ‘choose’ to follow the institutional determined path that is outlined through rules and policies.

From this divide, the concept of New Institutionalism has formed into a wide range of institutional approaches. As said above, seven strains have now emerged from variations in the approaches. These include the previous stated normative institutionalists and the rational choice institutionalists, with their premises stated above. Vivien Lowdes provides a condensed clear description of each of the strains of new institutionalism, which is adapted from B. Guy Peters.⁴⁵ We also have the addition of historical institutionalists, who look at how choices made about the institutional design of government systems influence the future decision-making of individuals. Empirical institutionalists, which resembles the old institutionalism approach of classifying various institution typologies which are then evaluated on their practical impact upon government performance. International institutionalists seek to examine how the behavior of states is directed by the structural limitations of international political life. The Sociological institutionalists analyze the way institutions produce meaning for individuals, offering theoretical building-blocks for normative institutionalism in political science. And finally, we have Network institutionalists, who show how regularized models of interaction between individuals and groups shape political behavior.

Each of these institutionalisms is briefly outlined because it provides a basis of which institutionalism this research project will employ in its analysis of the case study that is provided. With some consideration, normative institutionalism was the chosen yellow brick road to follow in order to arrive at the Emerald City. The Wizard of Oz reference of the Emerald City in this instance represents the theoretical analysis of how institutions are

⁴⁵ Marsh, David & Stocker, Gerry ed. (2002) Lowdes. Pg. 94

formed, what components drive institutions and how to assess the performance of institutions.

3.3 Normative Institutionalism

The particular version of New Institutionalism dubbed as Normative Institutionalism is seen as the original form of New Institutionalism. March and Olsen were the forerunners of New Institutionalism itself as we have noted, but their particular form of Institutionalism came in the development of the Normative Institutionalism as they primarily focused on norms and values. It must be noted though that March and Olsen did not themselves originally call it Normative Institutionalism. To them, they were formulating Institutionalism in its new right, which they coined as New Institutionalism. But since so many versions have stemmed from New Institutionalism, many academics refer to this as the normative strain. Hence we will be referring to it as Normative Institutionalism from here on out.

As the forerunners to the revival of Institutionalism, March and Olsen realized that the concept of institutions had not necessarily died out from theoretical political science but characterized the shortcoming as they perceived them, as Contextual, Reductionist, Utilitarian, Functionalist, and Instrumentalists. These were described by March and Olsen as; *contextual*, inclined to see politics as an integral part of society, less inclined to differentiate the polity from the rest of society; reductionist, inclined to see political phenomena as the collective consequences of individual behavior from the rational choice and behaviorist movements which were less prone to credit the outcomes of politics to organizational structures and rules of appropriate behavior; utilitarian, prone to see action as the product of self-interest which disregarded the obligations and duties that political actors had to respond to; functionalist, prone to utilize history as an efficient tool for attaining uniquely appropriate equilibria which did not give appropriate acknowledgment to the possibilities of maladaptation and non-uniqueness in historical development; and instrumentalist, prone to describe decision making and resource allocation as the central concerns of political life which disregarded how political life is organized around the development of meaning through symbols, rituals, and ceremonies.⁴⁶

⁴⁶ March and Olsen (1984) pg. 735

Thus, because of the short-comings that March and Olsen saw in political science theory, the birth of Normative Institutionalism marked the fundamental role assigned to norms and values within organizations in explaining political behavior. Prof. B. Guy Peters explains that the political actors in this approach are argued to echo the values of the institutions they are associated with in how they perform.⁴⁷ This does not necessarily go against the theoretical assumptions of rational choice theories, but rather than saying that political actors act upon maximum utility advancement of their own wants, the maximum utility advancement is accomplished through the institutions needs and wants which have been set through policies, laws, and administrations. This notion imparts that individuals are entrenched in a complex set of relationships between other individuals and within set institutional settings. Thus, the decisions of other individuals and the ‘rules of the game’ that have been established by an institution are what characterizes an individual’s choices and actions. The complexity of the environment of which these political actors are functioning creates a setting in which actors must function amongst contending institutional loyalties and pick and choose which actions best adhere to their own institutional settings. This again goes against rational choice theories, as actors are described as not being fully autonomous, utility-maximizing and fully rational individuals.⁴⁸

The Normative Institutional approach places a great deal of focus on the organization itself, which was why it was important to distinguish earlier the difference between organizations and institutions. March and Olsen’s treatment of institutions comes through how organizations function as a result of institutions. They made a distinction between two models, between the aggregative and integrative political processes.⁴⁹ The aggregative process considered that individuals within organizations operated mainly for personal gain, whether this be power, prestige, or political advancement of some sort (to name a few). Rather, the integrative form of political processes in organization is what March and Olsen defined as participation of individuals as done on the basis of an obligation to the goals of the organization, these goals being the institution. Thus, the focus of the March and Olsen

⁴⁷ Peters (2005) pg. 26

⁴⁸ Peters (2005) Pg. 26

⁴⁹ Peters (2005) Pg. 27

treatment of institutions is the integrative version of these institutions, where the idea of an institution conveys a 'logic of appropriateness.'⁵⁰ This concept of 'logic of appropriateness' will be discussed later as it is a significant element in the writings of March and Olsen.

Now moving on to Normative Institutionalism's thought on institutions themselves, March and Olsen's premise that institutions are political actors in their own right is a theoretical statement that New Institutionalism in general is based off of. March and Olsen state: 'Without denying the importance of both the social context of politics and the motives of individual actors, the new institutionalism insists on a more autonomous role for political institutions.'⁵¹ Institutions as actors are therefore personas that function as an entity that can affect society and be affected by society as well, this also extends to the idea that political processes not only relies on economic and social settings but also on the design of political institutions themselves. The institutions provide structure of the standard operating procedures which define and defend the interests of a particular institution.

The idea that institutions are actors in of themselves is important to control the individuals in organizations. As Normative Institutionalism rejects the idea of contemporary political science that individuals are fully rational or autonomous⁵², it is the institutions that provide the context of behavior of the members. This concept works with the development of the concept of bounded rationality that Peter's indicates grew out of the work of Herbert Simon in 1947. March seems to have become interested in this concept, as he published a paper in 1978, titled 'Bounded Rationality, Ambiguity, and the Engineering of Choice', which is prior to the arrival of New Institutionalism, which came just a short period later. In this paper, March is searching for intelligence in the decision-making in an effort to rationalize the apparent anomalies in behavior of individuals. March notes that 'action is presumed to follow either from explicit calculation of its consequences in term of objectives, or from rules of behavior that have evolved through processes that are sensible but which obscure from present knowledge full information on the rational justification for any specific rule.'⁵³

⁵⁰ Peters (2005) Pg. 27

⁵¹ March and Olsen (1984) pg. 738

⁵² Peters (2005) Pg. 28

⁵³ March, James G. (1978) "Bounded Rationality, Ambiguity, and the Engineering of Choice." *The Bell Journal of Economics*. Vol. 9. No. 2. Pg. 587-608 (Pg 591)

Here March, is noting the ‘rules of behavior’ which we have identified as ‘rules of the game’ of which institutions constitute.

As March and Olsen begin to shape the theoretical contours of Normative Institutionalism, they realize within this concept of bounded rationality that individuals themselves cannot really meet the conditions for complete rationality because they are operating within the constraints of institutions. As a result of this realization, the concept of the ‘logic of appropriateness’ was created. In this concept, March and Olsen describe the centrality of institutional influence on the behavior of individuals who are operating in political organizations. The ‘logic of appropriateness’ of institutions is described by B. Guy Peters as a version of role theory, in which institutions characterize a set of behaviors expected for individuals in positions within the institution which then reinforces behavior that is appropriate for the role and restricts behavior that is inappropriate.⁵⁴ Since individuals do not meet the conditions for complete rationality; institutions, as actors themselves, step in to establish the norms and values in which to operate within. The norms and values strategize the behaviors through the design of goals translated into policies. This is not saying that all institutions are good institutions that have established appropriate norms and values in which organizations and their individuals operate under.

The ‘logic of appropriateness’ is a key feature to March and Olsen’s Normative Institutionalism. As an element of institutions, it allows the influence of behaviors of its members to conform to the norms of the organization rather than considering the consequences decisions may have on him or her. In the readings of Peters, he elucidates that in most cases the logic of appropriateness in public institutions may be revealed through rather ordinary activities such as serving the client as well as possible or not engaging in corruption on the job.⁵⁵ This idea can also be carried over to how water resources are managed, conserved, and allocated amongst the competing needs of the public and private sectors. In this normative conception of institutions, the most important manifestations of the logic appropriateness are the mundane and routine standards of behavior. Hence, it eludes that not only are formal policies, laws and administration important for the existence

⁵⁴ Peters (2005) Pg. 31

⁵⁵ Peters (2005)pg. 30

of an institution, institutions may exist with non-formal appearances of norms. Norms are the result of shared notions of appropriate behavior in which institutions are to be founded upon. It is important that institutions share the same norms as society or else there would be a clash of norms. The logic of appropriateness in the form of norms is thus formalized in the rules of institutions, so that they can guide newcomers to an organization, punish those that do not follow the rules, and create a uniform understanding of the logics of appropriateness.

Now that we have elaborated the theoretical premises of how and why institutions exist in order to imbue the logic of appropriateness into the individuals acting under institutions, we now ask; how do institutions come about in the first place?

3.3.1 Creation of Institutions

Institutions originate their structures of meaning, and their logic of appropriateness from the society in which they are formed.⁵⁶ The norms of which create institutions are taken from the needs and wants of society itself. In proto-institutional settings, routines seem to arise naturally as norms and values from society are brought in by individuals that have already been socialized by society. This extends on March and Olsen's idea that institutions are integrative not only in the sense that participation of individuals in organizations embeds them into the set norms and values, but integrates the norms and values from the society from which the individuals are coming from. Thus, the routines of an organization define the overall nature of a society.

The creation of institutions therefore must be an integrative process, which is directed by logic of unity.⁵⁷ This process pushes politics to seek the creation, identification, and implementation of shared preferences in the creation of institutions. March and Olsen really push the idea that institutions are the embodiment and instrument of the community, or of the democratic order as a constitutional system, as an important aspect of institutions.⁵⁸

⁵⁶ Peters (2005) pg. 33 (March and Olsen 1989; 17-19)

⁵⁷ March, James G. & Olsen, Johan P. (1986) "Popular Sovereignty and the Search for Appropriate Institutions." *Journal of Public Policy*. Vol. 6. No. 4. Pg. 341-370 (Pg. 351)

⁵⁸ March and Olsen (1986) Pg. 351

Hence, the creation of institutions based upon integrative processes should fully capture both historical and modern considerations of common cultures, collective identities, belonging, bonds, mutual affection, shared visions, symbols, history, mutual trust, and solidarity. However, these bonds must be recognized to not exist in all societies that are fragmented which make the creation of institutions difficult in many circumstances.

So how can we theoretically access whether a given institution is a ‘good’ or ‘bad’ institution? March and Olsen elaborate, and we will continue to explore institutions under their theoretical direction.

3.3.2 Accessing Institutions

March and Olsen choose to access institutions as an instrument of integration, where the institution utilizes norms and values to integrate political actors and society into a functioning and ‘effective’ governance. This involves two critical questions according to March and Olsen, which are somewhat different from the questions of efficiency, preferences, and endowments that are often utilized when institutions are seen as aggregative rather than integrative structures.⁵⁹ The key issues center on questions of competence and integrity.

In the matter of competence, we ask if the process develops and uses genuine expertise that is relevant to the problem. When speaking of competence we think about the degree in which an institution can reliably meet or exceed its objectives. March and Olsen elaborate it further as; “both technical competence in areas of knowledge (e.g., science, history) that are relevant, and the competence of wisdom that comes from a deep appreciation of community needs and possibilities.”⁶⁰ So, not only does an institution need to be capable to integrate technical components to meet its objectives but it must also realize that the needs of the community are primary to the formulation and accomplishment of directives.

⁵⁹ March and Olsen (1986) Pg. 352

⁶⁰ March and Olsen (1986) Pg. 352

The second matter involves integrity; asking if the process guarantees that participants proceed in the manner which is committed to the common good and uncorrupted by individual objective or interests.⁶¹ We can access integrity in a variety of manners whether it be corruption or transparency. But again, March and Olsen tend to focus more upon the integrity of individuals operating in organizations rather than the integrity of institutions themselves.

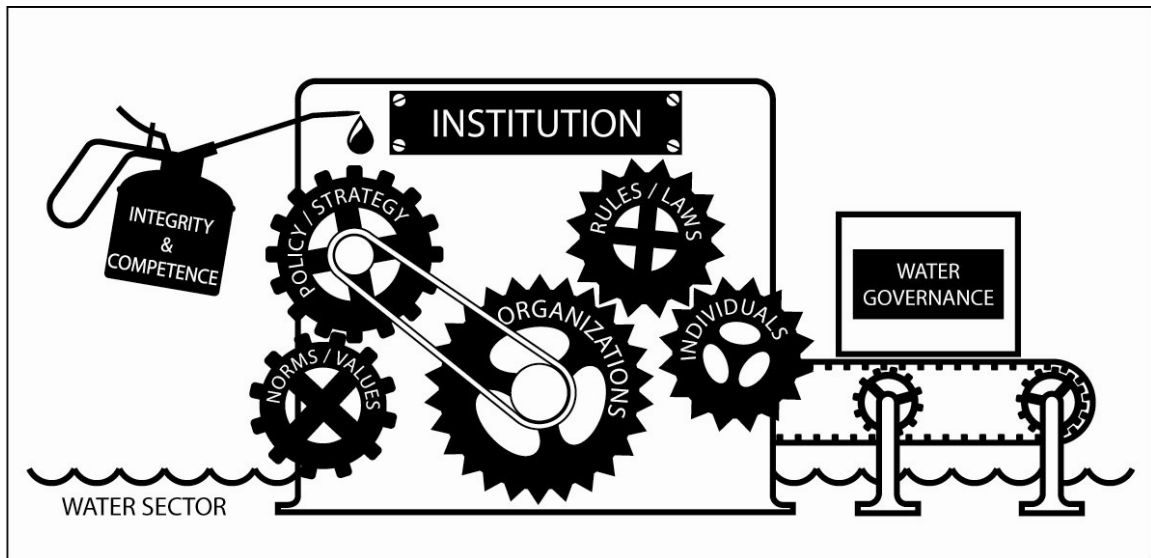
Competence and Integrity are the elements used to assess institutions within Normative Institutionalism. These factors are not necessarily components of institutions rather provide the means for the components of institutions to function properly.

3.4 Summary of Normative Institutionalism

To create a model of water institutions of which to test variables, the metaphor of a machine can be utilized to simplify the process of institutions modeling governance for the application to the water sector. Utilizing this metaphor of a machine; the Institution itself is the entire machine while there are many varying components which make the machine run. This is not to say all institutions have all the pieces necessarily put together. However, the basic components can be delineated as: having norms and values from society formulated into a form of strategy or policy, rules in the form of laws, organizations that have been formulated, and individuals that are committed to the functioning of the Institution. The competence and the integrity are like the oil in which the components are greased so that the overall performance of the machine runs smoother and produces the needs of society. The next figure is a visual composition of the machine metaphor.

⁶¹ March and Olsen “Popular” pg. 353

FIGURE 3.1 / The Machinery of an Institution



As the figure depicts, the institution is visualized as a machine, this machine contains the various components. The components are oiled in order for the machine to mechanically function and not get 'broken'. And the product that is produced by the machine is water governance that is 'dropped off' in the visualized water, representing the affect on the water sector.

We should note that this theoretical section did not cover all of the theoretical basis' of Normative Institutionalism but it did set up a framework in which to look at how institutions are formed, what they are composed of, and what is needed in order to have a well-functioning machine: an Institution. It will allow us to look at the case study of Iraqi water institutions, how they are formulating in the post-Saddam era. This will comprise of addressing issues such as operating organization, the individuals in organization, the strategies and policies, and the competence and the integrity of the institutions.

4. Methodology

The methodology that is employed in this research is a single case study. The case study approach is thoroughly discussed in Alexander George and Andrew Bennett's book; *Case Studies and Theory Development in the Social Sciences*. According to the authors, the case study approach is the 'detailed examination of an aspect of a historical episode to develop or test historical explanations that may be generalizable to other events.'⁶² Personal interpretations of what a case study approach entails the understanding of a case in depth, recognizing its complexity and content. The case study approach is also an examination into a certain aspects of a case; the dependent and independent variables of phenomena of scientific interest; that can be theoretically tested. The case study approach also does not necessarily require the need to generalize; approaches may also seek to understand a case in its complexity and its entirety, as well as in its context.⁶³ However, the generalization of explanations is a useful feature of theories that are applied to cases to be tested and verified or debunked. The systematic development of the case study method for cumulative building of social science theories however is a recent phenomenon, aside from the work of John Stuart Mill.⁶⁴

After exploring the theoretical framework of Normative Institutionalism it is important to identify what type of theory-building is being undertaken in this study. Utilizing Alexander George and Andrew Bennett's concept of the 'Building Block' approach fits suitably with the aims that have been noted of analyzing water institutions and why they remain dysfunctional in the context of Iraq. This approach is the study of "...particular types or subtypes of a phenomenon (that) identify common patterns or serve a particular kind of heuristic purpose. These studies can be component parts of larger contingent generalizations

⁶² George, Alexander & Bennett Andrew (2005) *Case Studies and Theory Development in the Social Sciences*. MIT Press. Pg. 5

⁶³ Punch, Keith F. (2005) *Introduction to Social Research: Quantitative and Qualitative Approaches*. Sage Publications. Pg. 146

⁶⁴ George & Bennet (2005) Pg. 5

and typological theories.”⁶⁵ As this study is looking at the dependent variable of water institutions in Iraq, the Building Block procedure allows blocks of subtypes to fill spaces in the overall theory. The blocks of subtypes constitute the components of institutions; Organizations, Norms and Values translated into Policies and Laws, and Individuals.⁶⁶ And the theoretically described ‘oil’ of institutions; Competence and Integrity. These are the independent and intervening variables that comprise the theoretical framework. The components of institutions and its ‘oils’ are each building blocks to the contribution to theory and to the examination of why a particular institution in a particular state is faltering.

The process of analyzing the independent and prevailing variables takes a process-tracing technique, which attempts to draw links between possible causes and observed outcomes.⁶⁷ This technique involves the examination of histories, archival documents, interview transcripts, and other sources to see where the causal process presents evidence of component malfunction in the overall dysfunction of an institution. My hypothesis is that all of the components as well as the ‘oil’ are deficient in the Iraqi context, which is obstructing their ability to maintain a well-functioning water institution.

Many sources were utilized in the examination of the variables. In order to understand and follow Iraqi progress of institutional component building, we utilize the 2007 and the 2008 ‘International Compact with Iraq’ reports. The International Compact is an initiative of the Government of Iraq that is establishing a partnership with the international community in achieving a National Vision for Iraq. These annual reports document the progress of Iraq in the last few years in its development and reconstruction of the newly formed Iraqi government. Along with these reports we also utilize various other reports that have mainly been released by international organization such as UNDP, UNICEF, and Transparency International. Another key document that was utilized was a report released by the United States Institute of Peace (USIP), which has been operating in Iraq since 2004. The U.S. of course has an invested interest in the stabilization of a functioning Iraqi government in order to reduce the need for U.S. presence that has caused so much domestic dispute in the U.S.

⁶⁵ George & Bennet (2005) pg. 76

⁶⁶ Water Law was not a focused variable used because the published laws deal with transboundary issues of the Tigris and Euphrates which extends outside of the boundaries of internal water issues in Iraq. Their development is much along the process of which policy creation in Iraq has taken.

⁶⁷ George & Bennett (2005) pg. 6

In addition to the documents used, I contacted the Iraqi Ministry of Water Resources in order to procure an interview. This request was met with an unexpected enthusiasm from the Ministry, with responses sent by the Minister's secretary stating the Minister was willing to answer interview questions emailed to the office and possible follow-up questions over a Skype phone call. Despite a regular rapport with the office, after sending the questions a response was unfortunately never delivered.

5. Case Study: Waters of Iraq

Before going into the analysis of variables, it is important to first construct the existing environment of Iraq in order to understand the context of water institution building. This addition of background creates a perspective of the huddles the nation faces as they rebuild their nation after years of authoritarian rule as well as being in a region known for water scarcity and potential water conflict.

5.1 Building a Background

The reconstruction of Iraq, following the 2003 invasion and occupation by the United States and its allies, has presented a challenge of post-war reconstruction that has been seen as an integral element to U.S. military strategy and various external strategic interests.⁶⁸ This post-war reconstruction is quite different to other past experiences of reconstruction as Iraq had not been classified as a failed-state previous to the 2003 invasion. Although Iraq, under the leadership of Saddam Hussein, was not entirely a ‘well’ functioning state; under the conditions of harshly imposed sanctions, Iraq managed to maintain a functioning type of modern state mainly due to its richness in oil assets (largely due to the oil for food program). Despite this, the U.S. invasion of Iraq left a state that was totally destroyed of infrastructures, erased the previous regime and has since led the reconstruction efforts. However, the U.S. was not prepared to meet a resistant society upon its ‘victory’ after the 9th of April 2003, when large-scale operations ended as the U.S. Army entered Baghdad in force and in a symbolic gesture pulled down the statue of Saddam in Firdaus square in the heart of the city.⁶⁹ As a result, it is hard to classify Iraq as a post-conflict state as there continues to be a U.S. military occupation and various forms of violent resistance. This resistance has only made the reconstruction efforts even more difficult.

⁶⁸ Barakat, Sultan (2005) “Post-Saddam Iraq: Deconstructing a Regime, Reconstructing a Nation.” *Third World Quarterly*. Vol. 26. No. 4/5. Pg. 571-591 (Pg. 571)

⁶⁹ Allawi, Ali A. (2007) *The Occupation of Iraq: Winning the War, Losing the Peace*. Yale University Press. Pg. 89

The reconstruction efforts in Iraq are so crucial to the stability of the nation, which is important for the Iraqi society and for the U.S. as it seeks the establishment of a stable nation within the region of the Middle East. This may be so that the U.S. can have a puppet government of which to control in the region, in a form of post colonialism but that issue is for another paper. Whatever the reasons, reconstruction is necessary for the sustainable development for the people of Iraq, the region of the Middle East, and for the overall environment. So what exactly constitutes reconstruction? As a starting point for the analysis of Iraq, we take Barakat's meaning of reconstruction to be the:

Range of holistic activities in an integrated process designed not only to reactivate economic and social development but at the same time to create a peaceful environment by addressing the emerging deficits in security and political and institutional capacity that will prevent a relapse into violence.⁷⁰

We substantiate the reconstruction focus on institutions here as we proceed with the analysis of Iraq's political and institutional capacity for water governance. In order to look at reconstruction it is important to look at the practical implications of this approach. First, it is critical to have an overview of the historical and current situation of water resources within the country so we understand the issues surrounding water resources and its management. Second, for reconstruction to be accomplished effectively it is necessary to establish institutions and the mechanisms for a collaborative Iraqi government. Third, the overall development of institutions in Iraq needs to be examined. And finally we need to access the performance of the institution.

5.1.1 Water Resources in Iraq

The total land area of Iraq is 437,072 km², of which 4,910 km² is water bodies.⁷¹ Iraq's two major river systems, the Tigris and Euphrates have long been a source of freshwater in the region dating back to the Great Mesopotamian civilization.⁷² Both of these rivers are Transboundary Rivers that originate in Turkey, and must be shared with Syria as well. The

⁷⁰ Barakat (2005) pg. 573

⁷¹ "Water Resources in Iraq" World Water Assessment Programme. Pg. 1 <http://www.unesco.org/water/wwap/news/iraq.shtml>. 15 October 2007.

⁷² "Water Resources in Iraq." World Water Assessment Programme. Pg. 1

water from the Euphrates and Tigris Rivers constitutes the main source of water in Iraq, and is used for municipal, industrial, navigational, and primarily irrigational purpose. The only river basin in Iraq is the Shatt Al-Arab basin, which is a convergence of the Tigris and Euphrates into the Persian Gulf on the southeastern portion of Iraq and is shared with Iran. Subterranean water has also been discovered in the northeastern foothills of the mountains and in the area along the right bank of the Euphrates.⁷³ According to the Global Environment Outlook 2000, this source of freshwater is quickly deteriorating due to high volumes of water withdrawn, which are exceeding natural recharging rates.⁷⁴ The Afalaj system of tapping into aquifers in Iraq is similar to the situation Israel is facing of salination due to over-pumping. However, Iraq is not a country that is classified as a state that is scarce in water resources. Rather, according to the World Water Development Report (WWDR), the total renewable water resources available per capita per year in Iraq are 3,287 m³ which is substantially high for the Middle East region.⁷⁵

5.1.2 Provision of Water Resources

The water and sanitation services in Iraq have been in shambles for decades now due to mismanagement. The deterioration after the 1991 Gulf War, between Iraq and the U.S., was a cause of lack of maintenance, inadequate skilled manpower, international sanctions, and war damage. The infrastructures that were in place were further damaged in 2003, with the eruption of looting following Operation Iraqi Freedom, which destroyed the equipment and materials that were needed to operate the infrastructures. The 2003 UN/World Bank Joint Iraq Needs Assessment, noted that Iraq had a system before the 1991 Gulf war that supplied more than 95 percent of urban Iraqis and 75 percent of rural Iraqi's with running water.⁷⁶ These figures dropped considerably with the deterioration of infrastructures, and by 2003 Iraq's 140 major water treatment facilities were operating at about 35 percent of their design capacity (3 billion liters a day).⁷⁷ The lack of functioning infrastructures not only deprived the Iraqi society of water and sanitation, it also had serious consequences upon the environment.

⁷³ "Water Resources in Iraq." Pg. 2

⁷⁴ "Water Resources in Iraq." Pg. 2

⁷⁵ "Water Resources in Iraq" Pg. 2

⁷⁶ (2003) United Nations/World Bank Joint Iraq Needs Assessment. pg. 21

⁷⁷ USAID "Assistance for Iraq" <http://www.usaid.gov/iraq/accomplishments/watsan.html>

5.1.3 Environmental Outlook

The environmental degradation that has taken place in Iraq is quite alarming. Due to the degrade of infrastructures, sewerage was directly let out into the streets of cities and into the Tigris and Euphrates Rivers. The most apparent environmental disintegration formed in the historical Mesopotamian Marshes which progressed with an alarming rate, receiving the most international attention. The marshes have deteriorated due to decades of dam building, drainage, and large-scale irrigation projects upstream in Turkey, Syria, Iraq, and Iran.⁷⁸ The degradation has also resulted from agricultural and urban runoff during the ‘mini Industrial Revolution’ during the 1970s and 1980s in Iraq, with detections of mercury, arsenic and lead in the water in the region.⁷⁹ The marshlands were also greatly affected by depraved management of Saddam Hussein, due to the Shiite minority in the region. During the Saddam Hussein regime, the area was intentionally depleted by five major drainage projects carried out since the end of the Gulf War in 1991 by diverting most of the Euphrates into the Tigris before reaching the marshlands.⁸⁰ The motive of the desiccation of the marshlands, despite explanations from the government of agricultural reasons, was due to the Shiite rebellion against Saddam Hussein after the Gulf War. This persecution of the Shiite population in the marshland region has forced more than two hundred thousand inhabitants from their homes, and an evident decline in the living conditions for those who have remained.⁸¹

5.2 Iraqi Water Governance

It is quite plain to see that the overall treatment of water resources of Iraq was treated with great neglect. This caused an extreme break down of the availability of water resource for human needs and the environment. For the reconstruction of Iraqi’s war-torn state, it is not the short-term relief effort that will create success and sustainability in regards to water issues in Iraq. Rather, the long-term recovery is dependent on the existence of effective

⁷⁸ Miller (2003) pg. 173

⁷⁹ Brown, Valerie J. (2004) “Environmental Education. Reconstructing the Environment in Iraq.” Environmental Health Perspectives. Vol. 112. No.8. pg A464

⁸⁰ Benvenisti, Eyal. (2003) “Water Conflicts during the Occupation of Iraq.” The American Journal of International Law. Vol. 97. No. 4. pp. 860-872. pg. 865

⁸¹ Benvenisti (2003) pg. 865

systems of governance that were obviously misguided for decades under the regime of Saddam Hussein.

The focus of rebuilding governance was not an element that was ignored on the onset of Iraqi reconstruction. However, the vision for a ‘New Iraq’ post-Saddam, was developed within the U.S. administration that was not a cohesive policy development with the Iraqi citizens, which removed any sense of legitimacy of the new government. According to Barakat, ‘the chaos of war often destroys or discredits traditional social structures and authorities, while new political structures may remain fragile, having yet to build their profile with the public – they too lack legitimacy and credibility.’⁸² Since gaining sovereignty the Iraqi government has faced an uphill battle in creating a functioning state while still in a state of violence that continues to this day. This violence will be briefly address later but is not an element that is extensively studied in this thesis for there are many causes and explanations that contribute to the unrest in Iraq. Rather, the next section is directed to keep the focus upon water governance, thus we begin to look at the components of the water institutions in today’s Iraq. These components were previously mentioned as the working wheels of an institution.

5.3 Components of an Institution

As said this section begins to look at the institutional development of water governance in Iraq. The components under study here involve the individuals working with water governance, the actual organizations that have been created, and the translation of norms and values into water resource policies. These represent the first set of independent variables of analysis.

5.3.1 Individuals

As the U.S. begins to take a step back, and Iraqi’s begin to stand on their own feet with sovereignty, as a new government has been formed. In 2006 and in more recent elections this year (2009), a group of Iraqi leaders came into power. The report published by the

⁸² Barakat pg. 579

United States Institute of Peace, outlined three main characteristics of individuals within the new Iraqi government.⁸³ First, is how new and inexperienced most of them are. Second, the current leadership is still dominated by ‘outsiders’ – exiles who have spent much of their adult life outside Iraq, or Kurds who have lived in the north, cut off from the rest of Iraq. And third, many of the leaders spent their adult life active in opposition to the Saddam regime, often in underground or militant activities. It is important to note though that this report was released before the most recent elections, thus data on the individuals that were newly elected is not as available. Yet we are utilizing the findings of this report and believe that they are still useful to understand the individuals that have begun to formulate the Iraqi government.

Before looking into negative aspects of the individuals that form the Iraqi government, it is also important to note the positive changes that have occurred. The ethnic and sectarian composition of the leadership has changed, with Arab Shi’ah and Kurds being dominant and Sunnis being a minority which better represents the composition of society; women are now better represented than they were under the Saddam regime; and the post-Saddam leaders are better educated than their predecessors.⁸⁴

We begin by addressing the inexperience of current leaders. It is noted that rapid political mobility and replacement of ministers was a standard in previous cabinets in Iraq, but in this government it has intensified.⁸⁵ The carryovers are quite few and tend to concentrate amongst the Kurds, one most notably the Minister of Water Resources Abd al-Latif Rashid who currently still holds the position. However, the quick changes that have occurred within the government has made it difficult for new leaders to acquire experience in national government; entailing running a bureaucracy, creating institutions, establishing networks across ministries, and cultivating constituencies outside the central government.⁸⁶ So although the Minister of Water Resources has been able to maintain his position this cannot be said of the various other ministries that must also coordinate the use of water, thus the lack of a ‘habit of collaboration’.

⁸³ Marr, Phebe. (2007) “Iraq’s New Political Map” United States Institute of Peace. Special Report 179

⁸⁴ Marr (2007) pg. 3

⁸⁵ Marr (2007) pg. 3

⁸⁶ Marr (2007) pg. 4

The second issue that affects the current leaders is that they are dominated by ‘outsiders,’ or Iraqi exiles who have been either outside of Iraq or in the north, which was separated from Saddam’s control. Only about 28 percent were insiders during the study, insiders denoting that they were either in the Ba’athist party or under the control of Saddam.⁸⁷ However, of these Arab Sunnis (of which Saddam was and had placed in power), only those who broke with the regime at some point or were associated with the opposition groups have been given positions in the new government. It is interesting to note where the ‘outsiders’ lived during their exile, most of them spent their time in various Middle Eastern countries and are unfamiliar with Western society and Western ways.⁸⁸ The divide between insiders and outsiders and even amongst outsiders themselves who were located in various areas during their exile, explains some of the lack of cohesion the government is experiencing.

The third syndrome of the new government is the leader’s previous participation in opposition movements against Saddam Hussein. Having spent their formative years in under-ground activities, in military battles, or in anti-Saddam publications, explains the lack of experience in government. Now with Saddam Hussein out of the picture, it may seem that many have lost their way. Thus, without the common target of Saddam Hussein, many have turned upon one another as they develop political parties and groups that are accompanied by their own private militias. With the Iraqi lacking in the development of institutions, detachment from the electorate and with little experience; leaders have used the tactic to appeal to ethnic and sectarian identity to create a connection with the Iraqi constituents with great success, explaining much of the ongoing violence today.

5.3.2 Organizations

Now that we have established the individuals functioning in the new government, we now turn our attention to the organizations. The main focus of this section is on the Ministry of Water Resources, but it is worthy to note that Iraq has formulated the face of ministries that

⁸⁷ Marr (2007) pg. 4

⁸⁸ Marr (2007) pg. 4

encompass all of the various governmental needs. However, it is unnecessary to list them all in this section.

In May 2004, the Coalition Provisional Authority (CPA), which was the established transitional government that was put in place by the U.S. following the 2003 invasion of Iraq, handed over full sovereignty to the Ministry of Water Resources.⁸⁹ Under the direction of Dr. Latif J. Rashid, the Ministry states a mission to provide Integrated Water Resource Management to the citizens of Iraq. They have accepted the stewardship of the vital resource, as they strive to balance the competing demands of irrigation, municipal and industrial water supply, hydropower, flood control and environmental requirements including marsh restoration. The stated goal of the Ministry is to transform and modernize the organization into a dynamic and efficient organization that meets current requirements and optimizes future utilization of the diminishing water resources of Iraq. The focus areas of improvement include improved operation and maintenance of water control structures and pump stations, efficient management of water through conservation and optimization, and comprehensive approach to project approval that considers environmental impacts, competing demands, and public involvement.⁹⁰ However despite stated goals, these objective are not clearly elaborated into policies and laws.

In a brief speech His Excellency Dr. Latif J. Rashid gave in the opening ceremony of the Iraq Development Program in June 2005, he summarized the brief functions of the Ministry of Water Resources as:

- Access water resources and requirements
- Manage water in rivers, streams, reservoirs, wetlands and marshes as well as groundwater
- Construction, operation and maintenance of dams, canals, regulators, barrages, pumping station and drainage systems
- Issuing water extraction licenses and water allocation entitlements
- Research and studies on land and water
- Monitor, plan and manage water use across the country; including integrated master water plan
- Negotiate water sharing agreements with other riparian countries based on international law

⁸⁹ Coalition Provisional Authority. http://www.cpa-iraq.org/pressreleases/20040510_water.html

⁹⁰ This stated vision is from the Ministry of Water Resources site: <http://www.mowr.gov.iq/english/>

- Protect the environment, biological diversity and related ecosystems
- Restoration and development of marsh land areas
- Construction of strategically important Hydro-Electric Projects
- Improvements in standard of technical knowledge through capacity building and training courses⁹¹

The Ministry has taken many steps for the improvement of water resources as it has undergone many projects to repair damaged water systems. The Ministry of Planning and Development Cooperation, which reviews and approves project proposals in Iraq has documented its meetings since 2004. In going through all of these meeting, I have made a catalog of all the instances water projects, dealing with building new infrastructures, creating policies and law were reviewed by the Iraqi Strategic Review Board. This catalog can be seen in Appendix 1, which also provides the projects costs and the organizations that are involved with the projects. This catalog is also used to show that the functions that were listed by the Minister of Water Resources are matters that are being somewhat addressed.

5.3.3 Translation of Norms and Values into Policy

Iraq has undergone a great deal of stress in the past decades with wars, an authoritarian leader that disregarded many water related issues, the flee of many educated citizens (brain drain) and heavy sanctions that degraded many infrastructures due to lack of monetary resources. So what has this left the state of norms and values regarding water resources in society and how are the political leaders shaping norms and values into policy?

Taking into context that Iraq is a predominately Muslim state, it is important to take culture, including religion, as a clear influence on how people perceive and manage water resources. Although this aspect has often been neglected in development projects in the past, it is increasingly acknowledged that local culture and values are important in formulating policies.⁹² The values that Muslims place upon water hold a special importance due to its use in *wudu* (ablution, washing before prayer) and *ghusl* (bathing). The daily prayers which are one of the Five Pillars of Isalm, have been compared by the Prophet to the cleansing action of

⁹¹ His Excellency Dr. Latif J. Rashid. Iraqi Minister of Water Resources. Speech <http://www.iraqdevelopmentprogram.org/idp/events/idpa/speeches/watsspeech003.htm>

⁹² Faruqui, Naser I., Biswas, Asit K., & Bino, Murad J. (eds.) (2001) *Water Management in Islam*. United Nations University Press. Pg. xiv

water in the following *hadith*, “The similitude of five prayers is like an overflowing river passing by the gate of one of you in which he washes five times daily.”⁹³

Although many of the political leaders in the new Iraqi government were exiled for decades, or partitioned from the nation in the northern region, the overarching norms and values of Islam should hold some elements of influence. Yet there could also be the argument that after so many decades under the Saddam regime, that the Iraqis have developed a new sense of norms and values that the political leaders are not yet in touch with. As said earlier, after decades of absence from Iraq the political leaders have found difficulty connecting with the electorate and instead have used ethnic and sectarian divides to build support. They were so quick to jump to these divides they failed to see that there were and continue to be other avenues to build common bonds with constituents. Instead, many of the newly built infrastructures have continued to be looted, citizens still disregard paying water meters, and the general state of water provision is still not sufficient. There continues to be an overall sense of chaos as violence continues.

When speaking earlier of institutions we addressed the idea that policies are one of the main components, providing guidance and goals for ministries. These policies are a formulation of norms and values that the political leaders derive from society and continue to promote. There seems to be a bit of confusion in Iraq though about exactly the norms and values of water resources are. Despite cultural, religious statements and importance of the use of water, policies seem to not be ensuring the progression of security over water resources in the nation. Thus required a further probe into what exactly the official Iraqi national policy on water dictates. This search proved to be much more difficult than it may seem.

In 2007 a conference was set up entitled ‘The Road to 2050 - Iraq Waters’. This conference was a collaboration of the Government of Iraq seeking assistance from UNDP in an effort to specifically address local institutional and policy issues to optimize the management and use of its water resources. In an international water conference, where UN agencies and specialized water institutions organized to discuss and better understand the water resource situation in Iraq, there was a stated objective to formulate a vision and a sustainable strategy

⁹³ Faruqui (2001) pg. 2

framework for water resources planning and development. This seemed like a great step in finding the official water policy of Iraq, as one of the immediate objectives was to strategize towards a long term vision and policy with three stated outputs:

- Output 3.1 An agreed upon strategic water vision and policy framework;
- Output 3.2 A national water council structure agreed upon and endorsed;
- Output 3.3 An institutional capacity building document is formulated.⁹⁴

The conference was held in Amman, Jordan in May 2007. In a press release posted by the UNDP, the Minister of Water Resources Dr. Al-Rashid said: “No matter how challenging or grave the current events in Iraq might be, it is a national imperative for us to strengthen our capacity and establish a vision for managing our precious water resources. We owe it to our country and future generations.”⁹⁵ This showed great promise that an actual water policy was being formulated. Upon further investigation, it was found that upon the completion of the conference, a solid policy had not been formed.

According to the International Compact with Iraq, there was a notation about this particular conference mentioning that detailed policy recommendations were prepared for the Government’s consideration.⁹⁶ The areas that were identified as priority areas of action to strengthen the Iraqi capacity for the management of water and sanitation included training on water rescue and environmental management, water and waste management including sewage networks, pumping station and sewage treatment stations. However, they did not mention any of the norms and values associated with water management, for instance conservation of water, 24 hour service, urban and rural attentions, human rights, to name a few. Perhaps, a more details look into the norms associated with water were mentioned in the conference, but this is unknown. The status reports projected that at the time of the report the need to improve the institutional capacity to administer environment and natural resource conservation programs had reached 10 percent of completion. It is a bit unclear as to what the 10 percent represents and what had been accomplished. Thus we take a look at the following years International Compact with Iraq’s progress report (2008) to see of any further progress.

⁹⁴ The objectives of this conference were provided in a document from the UNDP-Iraq office in Amman Jordan.

⁹⁵ UNDP Press Release (15 May 2007) Amman, Jordan. “Conference Spotlights Water Challenges in Iraq.”

⁹⁶ International Compact with Iraq pg. 31

According to the 2008 International Compact with Iraq's progress report, the first phase of the National Water Resources Management Plan (noting an actual title to a policy plan), had been completed. This seems like some type of progression, however this National Water Resources Management Plan is no where to be found. It is almost as if we are on a wild goose chase searching for this policy.

Part of this section of addressing norms and values and their translation into policy formulation also included an interview with the Minister of Water Resources, Dr. Latif Rashid. It was actually quite unexpected that the office of the Ministry of Water Resources agreed to an interview. This interview was supposed to compose of emailed questions and a follow-up over a Skype phone conversation. Before sending the questions however, the contact person in the administration was asked if the water policy could be provided. In response, I was told that the water laws in Iraq were only published in Arabic, but a policy was not mentioned. It seemed that questions over a policy were completely disregarded. Thus I sent the following questions to the Minister:

- How has the Ministry of Water Resources developed water norms and values in Iraqi society?
- How was the development of water norms and values designed and implemented?
- How can the Iraqi society learn about the norms and values that you want to initiate about water issues?
- What Institutional factors impacted the development and implementation of water norms and values?

The question did not directly ask about policies; however, I had hoped that through the discussion of norms and values we could discover the elements that were being incorporated into the policies regarding water. Unfortunately, despite what seemed like an eagerness to participate in an interview, a response was never returned. Perhaps the Minister will come around at a later date to address these issues of norms and values concerning water resources. Or maybe this is yet another instance of the Ministry of Water Resources stating they will proceed with something and failing to come through as it seems with the formulation of a water policy.

5.4 The Oil: Competence and Integrity

Now after discussing the components of institutions in Iraq we now proceed to looking at what was described as the oil of the machine; competence and integrity. These are described as the oil because they keep the components smoothly running. They also represent independent and intervening variables of analysis.

5.4.1 Competence

Competence was mentioned earlier as the degree in which an institution can reliably meet or exceed its objectives. The problem with looking at competence in Iraq is the fact that the National Water Policy either does not exist, or can not be found. It is difficult to measure meeting objectives if the objectives are not clearly stated and available to analyze. The short stated mission of the Ministry of Water Resources provided on their webpage cannot be said to be a solid policy formulation, but at least there is some type of goal oriented statement. The Iraqi situation shows the mass sums of funds that are flowing into the nation to rebuild water infrastructures and the international organizations that are participating in the rebuilding of infrastructures, organizations, and institutions (shown in Appendix 1). The use of competence to appreciate community needs and possibilities is hard to analyze. We can note from Appendix 1 that many projects are being started in Iraq, but the evidence of failed or uncompleted projects seems to be overriding.

When we are addressing failed and uncompleted projects, we can first start with the seemingly uncompleted project of creating water policies. On top of this, or perhaps due to the lack of policies, the failings that affect the public were highlighted in an article published by UNICEF.⁹⁷ The article highlighted the many problems society continues to face regarding water. In the Baghdad area of Sab' Qsoor, only a few pipes supplied municipal water, many of which are broken or contaminated. This has resulted in the large cases of diarrhoea, which is a common consequence of drinking unsafe water, which is already the second biggest killer of Iraq's young children and is linked to the high rates of malnutrition. The

⁹⁷ Hajaj, Claire & Dhayi Ban (2007) "Lack of Safe Water Endangers the Health of Baghdad's Most Deprived Children." UNICEF http://www.unicef.org/emerg/iraq_39172.html

ABC/BBC/ARD/NHK Poll also highlighted many of the water issues that persist in Iraq, stating that living conditions for many remain dire.⁹⁸ Of people polled, 68 percent of Iraqis rated clean water conditions as being bad. The infrastructures that are being rebuilt have faced failings as well, as reports surface about mismanaged water and sewer plants. According the Los Angeles Times, the Iraqi officials have ‘crippled’ many of the water and sewage plants that had been rebuilt with U.S. funds by failing to maintain and operate them properly.⁹⁹ There are many articles that are following the failures of the Iraqi government to administrate. This could be party due to the ongoing violence however this violence in large part is endemic of the political leaders themselves utilizing ethnic and sectarian divides discussed earlier.

5.4.2 Integrity

When looking at integrity earlier, it denoted asking if the process guarantees participants proceeded in manners which are committed to the common good and uncorrupted by individual objectives or interests. Assessing this in Iraq’s water management, we largely look at transparency and corruption. As far as transparency goes, official information from the Iraqi government is quite difficult to find. If there *is* a water policy, the Ministry is keeping it quite under wraps. Transparency is also often associated with corruption, as when transparency is not a strong element in a government, corruption is often hidden in the dark corners. Transparency International’s 2008 Corruption Perception Index (CPI) rated Iraq 178th out of 180 nations (tying with Myanmar and ranking above Somolia), with the CPI score of 1.3 out of 10.¹⁰⁰ A country’s CPI score indicates the degree of public sector corruption as perceived by business people and country analysts, and ranges between 10 (highly clean) and 0 (highly corrupt). The International Compact with Iraq addressed concerns over the transparency and corruption issues, acknowledging that perceptions of Iraq amongst the global public have suffered from poor visibility.¹⁰¹ However, they state that there has been significant progress that has been under-reported, because of the ‘below the

⁹⁸ ABC/BBC/ARD/NHK Poll. (2008) Iraq Five Years Later: Where Things Stand. Pg. 3

⁹⁹ Miller, T. Christian (April 2005) “Millions Said Going to Waste in Iraq Utilities.” Los Angeles Times. <http://articles.latimes.com/2005/apr/10/world/fg-waste10>

¹⁰⁰ Transparency International (2008) Corruption Perception Index http://www.transparency.org/policy_research/surveys_indices/cpi/2008

¹⁰¹ International Compact with Iraq. (2008) pg. 7

water line' (which is quite appropriate for this paper) progress, that is not immediately visible to outsiders; mentioning the changing mood on the street and the 'ferment' of activity within the Government and Parliament. Efforts have focused on eliminating abuse and corruption, improving policy planning and coordination, as well as improving transparency and accountability. The evidence they provide to substantiate this movement entails that from 2006 to 2007 the rate of budget execution nearly tripled from 23 percent to 64 percent. Although a tripling of budget execution can be applauded, the fact that 36 percent of funds still are not executed, with the billions of dollars that are being utilized, is still quite alarming.

5.5 Theoretical Implications: Institutional Performance

After looking at the components and the 'oil' of the machinery of Iraqi Institutions regarding water resources it comes down to the theoretical implications of the findings.

First of all we have to admit not all of the components seem to be in place for the existence of a Water Institution. Despite having individuals and organizations in governance, institutions entail the development of norms and values that have been translated into policies and strategies. It is a bit unclear as to what exactly the norms and values are in Iraq as we have discussed the political leaders have spent a considerable period either outside of Iraq or partitioned off in the North. The norms and values of the population were noted to most likely be religiously and culturally centered. However, this too is a point of concern as the society had been under the regime of Saddam Hussein for several decades, which did not provide an acceptable respect for water resources in the state. Although this was not mentioned previously, there is evidence that the Ministries are trying to get in touch with the norms and values in society, as the Minister has reportedly met with several sheiks (in Arabic meaning a type of community or tribal leader).¹⁰² However, the purpose of these meetings was not expounded upon.

It is difficult to say that Iraqis do not have norms and values about water that seek an equitable, sustainable and efficient governance of a finite resource that is depended upon for livelihood. Questioning the norms and values more comes into play when addressing the 'oil'

¹⁰² A brief notation was found on the Ministry of Water Resources website (www.mowr.gov.iq)

of the machine. The integrity variable showed a quite low manifestation of transparency within the government and a quite high level of corruption. As corruption was a tool utilized during the Saddam regime not only by officials but throughout society itself, in order to survive under the harsh conditions of imposed sanctions. Going further into this idea, it seems as though path dependency is an element that must be noted upon. Path dependency was also noted earlier in Chapter 2 as an element of institutional creation.

Path-dependency is often a term that is most notably used in the Historical Institutionalism form of New Institutionalism. Historical institutionalists are associated with a characteristic focus on historical development. According to Hall and Peter, historical institutionalists 'have been strong proponents of an image of social causation that is 'path dependent' in the sense that it rejects the traditional postulate that the same operative forces will generate the same results everywhere in favor of the view that the effect of such forces will be mediated by the contextual features of a given situation often inherited from the past.'¹⁰³ The use of path dependency in the analysis of norms and values theoretically explains why institutions are having such tribulations in developing proper norms and values into policy action in Iraq. It also explains the continuance in a dysfunctional form of integrity present in Iraq.

Addressing the lack of competence in Iraq can be seen as a sensitive matter, it is never nice to hear or diagnose lack of competence in performance. Yet the evidence provided points to the inexperience of new Iraqi political leaders. This lack of experience also shows in the form of lack of strategic and policy making in regards to water resources. As discussed earlier in the theoretical chapter, March and Olsen denoted the need for technical competence and the competence of wisdom that is derived from the comprehension of community needs and possibilities. It seems apparent that the organizations realize that infrastructures need to be rebuilt and provide water services and sanitation to the public in the number of projects that noted in Appendix 1. However, the competence lacks in how to properly manage the newly constructed infrastructures. This was first noted in the introduction of this paper where the problem was presented in the evaluation of Basra

¹⁰³ Hall, Peter A. & Taylor, Rosemary, C. R. (1996) "Political Science and the Three New Institutionalisms." Paper presented by Professor Hall as a public lecture during the MPIGF Scientific Advisory Board meeting.

Infrastructures, that there was little oversight from the national level Ministries on the management or operation of governing newly built infrastructures.

It seems overall that Iraq is lacking in the ‘oil’ necessary to keep institutions running smoothly. This is quite an amusing observation as Iraq is so abundant in actual oil resources, actually holding the world’s second largest oil reserves.¹⁰⁴ The oil dependency of Iraq seems to actually be holding back the political progression, as many speak of a ‘resource curse’ affecting numerous resource-dependent countries, which perpetuates corruption levels.¹⁰⁵ The corruption-based patronage that exists in Iraq is something that can only be turned around as institutional development progresses and formulates new norms and values in society.

As institutions have been continuously described as ‘shaping behaviors’, but as a main question of this thesis, how are these institutions created? March and Olsen described the creation of institutions as an integrative process, directed by a logic of unity. However, this logic of unity is still quite absent in Iraq as politicians utilize ethnic and sectarian divides. In order to create water policies it is also necessary for various Ministries relating to the water sector to come together in the consideration of common cultures, shared visions, mutual trust, and solidarity on the future of water resources in Iraq.

When assessing the necessary components of water institutions, Iraq seems to be lacking in the gears that comprise the machinery of an institution. With individuals that are new to governance, organizations that lack strategically lack direction besides various projects attempting to rebuild infrastructures, and a state of inappropriate norms and values that have been carried over from previous dysfunctional regimes. Thus, Iraq can be stated as still struggling in a proto-institutional setting, where the beginnings of an institution are being formulated. Earlier it was stated that March and Olsen proposed that routines arose naturally in the creation of institutions. Routines signified the patterned behavior that institutions impose upon organizations and individuals to create the ‘logic of appropriateness.’ This

¹⁰⁴ Le Billon, Philippe. (2005) “Corruption, Reconstruction and Oil Governance in Iraq.” *Third World Quarterly*. Vol. 26. No. 4/5. pg 685-703. (pg. 686)

¹⁰⁵ Le Billon. (2005) pg. 687

paper is not discrediting this theoretical claim; rather, there is not a theoretically specified time frame of which routines must be established. It is this paper's supposition that routines do arise naturally in a stable democratic setting, but it takes a significant period of time of which Iraq has not had as of yet to build or yet stabilize. Iraq only held its first democratic elections as of 2005, in the western world of more 'stable' institutions it took centuries to develop institutions to shape behaviors in the establishment of 'rules of the game.' Thus, Iraq must not be criticized too sharply as it is still in the process of development in the new environment of the post-Saddam regime.

The final theoretical implication of analysis describes Iraq as not yet having an inclusive political process in institutions. The purpose of the analysis of institutions was to examine the product the machine creates. This product of water governance as discussed in the normative analysis of 'effective' governance is not yet the good water governance that seeks to be accountable and transparent in order to create a participatory democratic means of equitable distribution and goal oriented water management. Hence, when March and Olsen identified the distinction between two models of how organizations function as a result of institutions, there were aggregative processes and integrative processes to governance. Iraq appears to still be functioning as an aggregative process in which organizations and its individuals are operating mainly for personal gain, whether this be power, prestige, or political advancement of some sort. Although there is not specific evidence of this it is a supposition that is being made to understand why organizations are not functioning according to the 'logic of appropriateness.' The water institution in Iraq will become integrative once individuals within organizations realize their appointment is based upon fulfilling the goals and strategies of the institutions in order to create 'effective' governance of water resources. Perhaps this is why organizations are failing to create a public policy towards water, as it allows the organizations to function in a manner of personal wills without having to be restrained by official water policies. But this might be pushing the envelope too far in assumptions.

6. Conclusion

The process of using a metaphorical model of a machine helped visualize water institutions in this paper. Utilizing Water Institutions as the dependent variable of analysis was envisaged as the machine. The independent and intervening variables of components were visualized as the cogs or wheels that made the institutional machine operate. Competence and integrity were described as the 'oil' which makes the machine smoothly function. And overall the machine's purpose was to generate water governance to be applied to the water sector.

The final conclusions of this thesis for water institutions in Iraq may seem bleak; as the analysis showed many areas that Iraq is lacking in some manners in the creation of institutions and the functioning of its current proto-institution. The current situation in Iraq regarding water resources is not great as many citizens lack access to clean water provided by functioning infrastructures and the environment is still being damaged due to inefficiencies. However, optimistically viewing the situation allows us to state that Iraq has simply not had enough time to fully establish good water governance because the institutional machine still is being operated upon. The mechanics, which signify international organizations, are still assisting in rebuilding water infrastructure and are addressing institutional rebuilding as can be seen in the 2007 conference "The Road to 2050 – Iraq Waters". The UNDP's efforts to address institutional and policy issues to optimize the management and use of water resources in collaboration with the Government of Iraq demonstrates the will to tackle hurdles of water institution creation in Iraq.

Overall this paper gave a great insight into not only how Iraq is rebuilding a state that can appropriately deal with water resources, but to other states that are currently dealing with rebuilding a state and its institutions in a post-conflict environment. This thesis intended to adequately undertake an institutional analysis and pursued the objectives of addressing institutional creation and assessment. The machine model greatly assisted in the objectives and provided a visualization that I have not seen in other evaluations of institutions. As Iraq

is still imbedded in the process of reconstruction, research has not placed considerable focus on a case study analysis of the situation in this particular fashion, which this paper has offered.

It is recognized that the institutional approach taken to address the water governance deficiencies in Iraq had much of the focus on the individuals in Iraq. From the problems of insiders and outsiders, lacking norms and values of individuals, and such; it seems the institutional approach in Iraq may be a bit premature. Perhaps with the absence of established institutions, it is behaviorist approach may have been more fruitful in discovering the 'real' issues facing Iraq on its road to water development. This is not to say that institutions do not 'matter', rather it is behaviors in Iraq that need to be 'controlled' through the establishment of governmental and managerial norms and values towards water as a recognized priority. This I believe comes about through the creation of institutions, however the chicken or the egg question comes to mind in asking, which comes first institutions or individual choices? In the model that was created, the individual cog was placed at the end of the machine to signify that individuals have the last input. But perhaps at this stage in Iraq, the autonomous actions of individuals may operate outside of the apparatus of the machine due to the machinery still being largely deficient.

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Appendix 1

Iraqi Strategic Review Board: Project Proposals Approved by Iraq Strategic Review Board

Strategies on Water Policy and Water Institutions

Meeting No. 6

- Develop Environmental Awareness. Project Cost: US\$2,100,000
- Improvement of Water Supply and Drainage Provision through Rehabilitation of Pumping Stations/ FAO-UNDP-UNIDO. Project Cost US\$13,463,000

Meeting No. 7

- Water Quality Control and surveillance in Iraq. WHO UNDG Trust Fund. Project Cost US\$2,931,420

Meeting No. 8 (8 August 04)

- Dohuk Water Extension Programme, Duhok, Project cost US\$5,700,000
- Dukan Water Programme, Sulaimania/Dukan. Project Cost US\$9,600,000
- Karbala Emergency Water and Sewerage Upgrad, Karbala/Karbala. Project Cost US\$17,400,000
- Al Samawa Water Supply Project, Al-Muthana/Smawa. Project Cost US\$13,430,000
- Major Rural Water Rehabilitation, Meysan/Majar. Project Cost US\$2,200,000
- Beji-rural Water Rehabilitation, Salah Al Din/Beji. Project Cost US\$2,200,000
- Al Hussainia Municipality Rehabilitation of Water Services. Diyala/Al Hussainah. Project Cost US\$9,750,000
- Kenaan-Rural Water Rehabilitation. Diala/Kenaan. Project Cost US\$2,200,000

Meeting No. 9 (17/8/04)

- Capacity Building in Water Institutions of Iraq. Project Cost \$3,275,550 (UNESCO). For Ministry of Water Resources

Meeting No. 10 (Sept. 2, 2004)

- Extension and Modifaction of Al-Rasheed Water Treatment Plant. Project Cost US\$8,784,000 (WB ITF)
- Rehabilitation and Renewal of old potable water networks and house connections in Za'afarania. Project Cost US\$18,480,000 (WB ITF)
- Rehabilitation of Pumping Station 2B in Sharkk Dijla WTP. Project Cost US\$3,933,000 (WB ITF)

Meeting No. 11 (Oct. 28, 04)

- Center for Institutional Reform and Governance in Iraq, ESCWA. Project cost US\$1,410,048 (Funded by UNDG ITF)

Meeting No. 12 (2004/11/28)

- Emergency Water Supply, sanitation and Urban reconstruction Project. Project cost US\$90,000,000 (Funded by WB ITF)
- Emergency Baghdad Water Supply, Sanitation and project. Project Cost US\$65,000,000 (Funded by WB ITF)
- Emergency Rehabilitation of Karama Water Treatment Plan- Line 1. Project cost US\$2,211,722 (Funded by UNDG ITF)
- Legal Database Related to Iraqi Legislation and Regulations (ESCWA) Project cost US\$2,035,735

Meeting No. 13 (2005/2/12)

- Emergency Environmental Management Project. Project Cost US\$25,000,000 (Funded by WB ITF) for Ministry of Environment
- Capacity Building & Institutional Strengthening. Project Cost US\$3,018,710. By UNDP (Ministry of Municipalities & Public Works)
- Strengthening the Institutional & Training Capaities of Iraqi CSO. Cost US\$1,603,309. By UNDP (Ministry of Planning & Development Cooperation)

Meeting No. 14 (2005.6/16)

- Petrochemical Works Reverse Osmosis Unit Refurbishment. Cost US\$1,500,000 (UK Dept for International Development)
- Service Reservoirs & Elevated Storage Towers. Total Cost for five projects US\$4,500,000 (UK Dept for International Development)
- Water Authority Training Centre. Cost US\$1,000,000 (UK Dept for International Development)

Meeting No. 15 (2005/07/07)

Meeting No. 16 (2005/08/03)

Meeting No. 17 (2005/08/10)

Meeting No. 18 (2005/08/17)

- Ministry of Municipalities & Public Works. Cost US\$74,000,000 (Rehabilitation of Ramadi sanitation in Al-anbar US\$14m., Ghmas water project in Al-dewaniya US\$20m., Alfajir water project in Thi-Qar US\$20m., Altaliaa water project in Babil US\$20m.) Funded by International Development Agency

Meeting No. 19 (2005/08/24)

- Emergency water and sanitation and health support for southern Iraq. Cost US\$5.9m. . Funded by UNDG Trust Fund.

Meeting No. 20 (2005/08/31)

- Rehabilitation and conservation of Kaharez (the traditional water conveyance system) in Northern Governorates (phase 1) Cost US\$1m. By UNSECO and FAO

Meeting No. 21 (2005/10/17)

- Karkh sewage treatment plant expansion project. Proposed Project for Japanese soft loan.
- Shak Dijla Water Treatment plant expansion project. Proposed Project for Japanese soft loan.
- Baghdad water supply system improvement project. Proposed Project for Japanese soft loan
- Erbil Water supply and sewerage system improvement. Cost US\$6m. KOICA
- Improvement of Drainage Conditions in Major Agricultural Areas: Connection of Ramadi main Drain was approved 19/5/2004. Cost US\$5,367,300 By FAO. The Ministry of Water Resouce is asking for ISRB approval to shift the fund from Ramadi Drain project to another drain project of the same nature which is the Hilla/Hashmya Drain at the same cost. (Approved)

Meeting No. 22 (2005/11/16)

Meeting No. 23 (2005/12/7)

Meeting No. 24 (22/2/2006)

- Training Programme for the Water Management Technology in Irrigated Farms. JICA, Germany, France, Jordan and UNESCO (Approved)

Meeting No. 25 (14/3/2006)

Meeting No. 26 (2006/3/29)

Meeting No. 27 (2006/05/17)

- Improvement of water supply and drainage provisions through the rehabilitation of pumping stations. FAO (Request for additional budget US\$12.2m.) Ministry of Water Resources. Approved
- Addressing Short and Long Term Water and Sanitation Needs for the Umm Qasr Region. UNDP. Project cost US\$1,020,000 (Ministry of Municipalities and Public Works/Directorate of Municipalities-Basra Governorate, Municipality of Umm Qasr) Approved.

Meeting No. 29 (2006/6/20)

- Emergency Water Supply to un-served/underserved/vulnerable areas in Baghdad and the IDPs. UNICEF. Project Cost US\$1,058,663 (Approved)

Meeting No. 30 (2006/8/8)

- Additional Fund for the project Emergency water supply and urban projects. Project cost US\$90m. additional fund request US\$25m. Approved

Meeting No. 31 (2006/9/20)

Meeting No. 32 (2006/10/11)

- Support for Environment Management of the Iraqi Marshlands. Postponed.

Meeting No. 33 (2006/11/21)

- Rehabilitation of water distribution Networks in Al-Bat'ha and AL-Nasir town. Cost US\$1,529,051. UNOPS. Postponed for the absence of related ministry and donars.
- Water Quality Control and Surveillance in Iraq (Phase 2). Cost US\$4,297,643. WHO-UNICEF. Approved.
- Extension of Iraqi Second Multi-Sector Institutional Capacity Building Project. Cost US\$3m. WB

Meeting No. 34 (2007/1/10)

- Water and Sanitation/Rehabilitation of Sewerage Facilitation selected locations in Basrah city (Al Mofaqyia) Cost US\$1,535,706. UNICEF. Postponed.
- Rehabilitation/Extension of Water & Sewer networks in selected location in Kirkuk city. Cost US\$2,958,400. UNICEF. Postponed for the absence of KRG Rep.
- Rehabilitation of Water Distribution Systems in Sidakan and Rawanduz. Cost US\$2,496,475. UNOPS. Postponed.
- Rehabilitation of Takia Water Distribution System, Cost US\$2,006,340. Postponed.
- Concept Note on Water Policy in Iraq. UNDP. Approved in Principle (The concerned committee should finalize the project document and budget allocation in coordination with UNDP)

Meeting No. 35 (2007/2/14)

- Rehabilitation of water distribution Networks in Al-Bat'ha and AL-Nasir town. Cost US\$1,529,051 UNOPS. Approved.
- Water and Sanitation/Rehabilitation of Sewerage facilities in selected location in Basrah city (Al Mofaqyia) Cost US\$1,535,706 UNICEF.
- Rehabilitation/Extension of Water & Sewer networks in selected locations in Kirkuk city. Cost US\$2,958,400. UNICEF
- Rehabilitation of Water Distribution Systems in Sidakan and Rawanduz. Cost US\$2,496,475. UNOPS.
- Rehabilitation of Takia Water Distribution System. Cost US\$2,006,340. UNOPS.
- Rehabilitation of Water Supply systems in select location in Wasit Governorate. Cost US\$1,655,590. UNICEF
- Water and Sanitation: Extension of storm water & sewer network in select location in Kerbala governorate. Cost US\$1,948,598. UNICEF.
- Emergency Water Supply and Sanitation for Abu Al-Khaseeb. Cost US\$1,993,350. UNDP. Postponed.

- Rehabilitation and maintenance of traditional irrigation schemes in resettle areas. Cost US\$3,598,077. FAO
- Water Sector support program project partnering Agreement. Cost US\$38,500,000 and US\$5,225,688 through ministry of finance and Nasayria pumping station US\$20,000,000. Total Cost US\$63,725,688

Meeting No. 36 (2007/4/4)

Meeting No. 37 (2007/6/6)

Meeting No. 38 (2007/9/10)

- Emergency Water Supply and Sanitation for Abu Al-Khaseeb. Cost US\$1,983,268. UNDP. Approved.

Meeting No. 39 (2007/9/10)

Meeting No. 40

Meeting No. 41 (2007/11/28)

- Training in Capacity Development in Water and Wastewater Sector. (Euro 685,893) French Ministry of Finance

Meeting No. 42 (2008/2/25)

- Southern Al-Jazeera Irrigation project in south-western Mousel: Implementation of the main tunnel concrete lining across Jabil Sheikh Ibrahim along 19 km with Cost US\$223,000,000 and Equipping full provision for the generation and pumping station with cost US\$100,000,000 (Ministry of Water Resources) Funded by Japanese Soft Loan Projects.
- Supply full equipment provision for Water and Sanitation project (Sectoral Loan) in Baashika, Ramadi and Tallafer
- Towards Sustainable Development in Inland Fisheries in Iraq. Cost US\$3,000,007. FAO
- Project for the Provision of Equipment of Solid Waste and Sewerage management, for the Ministry of Municipality and Public Works. Cost 3,643,036,000 Yen. Funded by Japanese International Cooperation System.

Meeting No. 43 (2008/4/30)

- Iraq Emergency Water Supply project. Cost US\$108,000,000. Financed by WB/IDA Loan.

Meeting No. 44 (2008/7/17)

Meeting No. 45 (2008/9/22)

- Water Security and Safety for the vulnerable communities in Suleimaniyah city to avert cholera outbreak, Cost US\$5,776,863. UNICEF, WHO.

- Construction of Residual Sludge Lagoons at Sadr R3 Water Treatment Plant. Cost US\$4,161,176. Funded by a grant from United States Department of Defense for Iraqi Ministry of Water Resources.

Meeting No. 46 (2008/12/3)

- Institutional Strengthening Project Start-up. Cost US\$60,000. Funded by UNEP for Ministry of Environment.

Meeting No. 47 (2009/2/11)

- Irrigation and Drainage Schemes Rehabilitation and Water Resources Management Program. Cost. 120,000,000 Funded by IBRD loan for Ministry of Water Resources.
- Letter of Agreement between Tatweer and Ministry of Water Resources. The agreement aims to enhance training abilities through technical assistance and survey operation of Taji Irrigation District Canal 42. Cost. US\$96,938
- Letter of Agreement between Tatweer and Ministry of Water Resources. Enhance the abilities of trainers through technical assistance and needed equipment purchase for training centers. Cost \$49,909
- Tender Project for Research of Water Resources Strategy Implementation/ Second Phase. Ministry of Planning to approach Donors for securing a grant to complete the second phase of water and land resources in Iraq, according to council of ministers decision on Jan. 20, 2009.
- Project proposal from Ministry of Water Resources. Cost US\$138,200,000. Ministry of Water Resources to reprioritize the project proposals, due to limited amount of US grant (US\$250,000,000) that has to be shared between different sectors. The share of MoWR should not exceed US\$30-40 million

