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Does Being Successful Mean Performing Well?

– A Minor Field Study evaluating the success of the Jordan River Basin Water Regime and assessing the need for including performance in analyses of international environmental regimes

Bachelor thesis
in Political Science
MFS, Spring term 2009
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Words: 9973

Abstract

Research on international environmental regimes has previously focused on regime effectiveness. In this thesis effectiveness is explained to be an unsatisfying measure of success as it leaves out sustainability aspects and effects on the domestic level. This study adds the domestic level effects to the measure of effectiveness and evaluates whether the Jordan River Basin Water Regime is to be considered long-term successful or not. The aim of the study is to evaluate the success of the Jordan River Basin Water Regime and to develop the concept of measuring success in international environmental regimes by adding a previously missing dimension. Consequently results of previous research are also tested and the need for including the domestic level assessed. The results show, unlike previous research, that the Jordan River Basin Water Regime is not long-term successful and suggests domestic level effects need to be included in evaluations of success in international environmental regimes.

Key words; International environmental regimes, Sustainability, Successful cooperation, Jordan River Basin

I would like to give my sincere thanks to SIDA – Swedish International Development Cooperation Agency – for giving me the opportunity to go to Jordan on a minor field study to collect material for this thesis, to Annika Johansson – Counsellor of Regional Water Cooperation at the Embassy of Sweden Amman – for great help and support, and to all the informants who took their time to be interviewed and to share their knowledge with me.

Table of contents

- 1. RESEARCH PROBLEM..... 6**
 - 1.1 PROBLEM FORMULATION 6
 - 1.1.1 Overall objective..... 7
 - 1.2 THE CASE IN FOCUS: THE JORDAN RIVER BASIN WATER REGIME 8
 - 1.2.1 Water in Jordan 8
 - 1.2.2 The water regime 8
- 2. THEORETICAL FRAMEWORK 10**
 - 2.1 INTERNATIONAL REGIMES AND THE ENVIRONMENT 10
 - 2.2 PREVIOUS RESEARCH 11
 - 2.2.1 Young's concept of Effectiveness and Performance 11
 - 2.2.2 Sustainability aspects 12
 - 2.3 DEFINING SUCCESSFUL COOPERATION 13
- 3. AIM 14**
 - 3.1 IS THE JORDAN RIVER BASIN WATER REGIME A SUCCESSFUL CASE OF COOPERATION?..... 14
 - 3.2 QUESTIONS 14
- 4. RESEARCH METHOD AND MATERIAL 15**
 - 4.1 THE DESIGN OF THE STUDY 15
 - 4.1.1 Causality..... 16
 - 4.2 DELIMITATIONS..... 17
 - 4.2.1 Selecting the case 17
 - 4.2.2 Not evaluating effectiveness..... 17
 - 4.3 ANALYTICAL FRAMEWORK 17
 - 4.3.1 Operationalisations..... 17
 - 4.4 CONCLUSION CRITERIONS 20
- 5. RESULTS AND ANALYSIS 21**
 - 5.1 THE ECOLOGIC ASPECT 21
 - 5.2 THE ECONOMIC ASPECT 24
 - 5.3 THE SOCIAL ASPECT 28
 - 5.4 THE RESULT CONCLUDED 32
- 6. CONCLUSIONS 32**
- 7. REFERENCES 35**
- 8. APPENDICES..... 37**
 - 8.1 LIST OF INFORMANTS..... 37
 - 8.2 INTERVIEW GUIDE 38

List of abbreviations

GDP – Gross Domestic Product

JVA – Jordan Valley Authority

MFS – Minor Field Study

MWI – Ministry of Water and Irrigation

NGO – Non-governmental organisation

UN – United Nations

UNDP – United Nations Development Program

1. Research problem

1.1 Problem formulation

In 1996 Marc Levy remarked in an article in *Global Environmental Change* that research on the consequences of international environmental regimes has become popular among students of international institutions (Levy 1996, p.395-397. Young 2002a, p.73). International environmental regimes are co-operative arrangements that occur between several states or actors concerning shared environmental problems.¹ Since 1996 interest has continued to rise, which is not surprising in a resource dependent world facing climate change, natural resource depletion and conflicts over scarce resources. Most research on international environmental regimes has focused on regime effectiveness – it evaluates how the state of the world differs from what it would have been without the regime (Young 2002a, p.73). The measure of effectiveness is based on indicators such as ratification of agreements, compliance with rules, behavioural change and the actual solving of the problem the regime is set out to deal with. It does not include the domestic level effects on the states involved. This is no surprise as traditionally there has been a distinction between international and domestic politics as academic subjects, and international political theories where the domestic level has been left out of the analyses has been produced (Stålgren 2006, p.44. Young 1989, p.59-62). Leaving out the domestic level when analysing international environmental regimes is however problematic as it also leaves out sustainability aspects such as ecologic sustainability, economic efficiency and social equity. As Tim O’Riordan and Andrew Jordan states previous analyses are incomplete;

“What is less edifying is that all regimes are inadequate in creating the conditions needed to achieve sustainability. Admittedly, none was designed with sustainability specifically in mind. But an ‘effective’ regime should be capable of being tested on this measure. A sustainability test would also require regimes to be examined on issues of justice and equity. May be the next round of effectiveness analysis will address these deficiencies.”
(O’Riordan & Jordan in Young 2002a, p.73)

Since the 1980’s, the concept of sustainability and sustainable development has grown strong and is now guiding most international aid and international cooperation approaches (Des Jardins 2006, p.74). Evaluating the success of such institutions without including sustainability aspects is hence a great shortcoming. There is thus a call for improvement as valid analyses of the success of international environmental regimes are important, because

¹ A full definition of international environmental regimes is to be found in section 2.1.

successful regimes hold great possibilities of contributing to development and to protect our environment.

In the Jordan River Basin an international environmental regime has developed managing Israel's and Jordan's shared waters. This case of cooperation has been said to be successful as it has been conflict-mitigating and resulted in peace and cooperation between two states. This can be exemplified by the words of Rolf Schwarz;

“Generally, it can thus be argued that Israel and Jordan have successfully resolved their bilateral water conflict and have now entered a period of peaceful cooperation, in which water issues form an essential element. Both sides have thus far been able to benefit from this state of peace.” (Schwarz 2004, p.54-55)

Schwarz concludes that the Jordan River Basin Water Regime is successful, but his results are based on effectiveness only. He hence states that the regime has a satisfying standard of effectiveness in order to be considered successful. As Schwarz's and others' research lack sustainability aspects the question arises whether such conclusions would stand if domestic level effects were added.

1.1.1 Overall objective

The overall objective of this thesis is to test whether the Jordan River Basin Water Regime is a long-term successful case of cooperation or not. There are reasons to question previous analyses on the subject as they have left out the domestic level and sustainability aspects. The regime's potential long-term success is assessed by including the domestic level, more specifically by evaluating how the water cooperation has affected Jordan ecologically, economically and socially. As a further dimension is added the concept of measuring successful cooperation is also being developed. By adding the domestic level and sustainability aspects, or what can be called the performance of the regime, this thesis sets out to include what previous researchers have neglected and consequently to provide a more valid analysis and to help fill a gap in our understanding of international environmental regimes.

1.2 The case in focus: The Jordan River Basin Water Regime

1.2.1 Water in Jordan

Jordan is situated in the Middle East, neighbouring Israel and the Palestinian territories, Iraq, Saudi Arabia and Syria. It is a semi-desert area and one of the fourth water poorest countries in the world.² Annual per capita water availability has declined from 3600m³/year in 1946 to 145m³/year in 2008, a level less than a third of the “water poverty line” of 500m³ per capita and year (Royal Commission for Water/MWI 2009, p.15). The scarcity of water resources in Jordan is caused by climatic conditions, pollution, population pressure, and by rapid development.

Surface water resources are found in the Jordan, Yarmouk and Zarqa Rivers and in a few valleys. All resources are however very small compared to other international rivers and are shared by countries with a history of conflict (Salameh, E & Bannayan, H. 1993). Nevertheless, water is indispensable of life and cooperation between riparian states has come about despite other conflicts. In 1994 Israel and Jordan signed a peace agreement in which allocation of water is a key part (Haddadin 2000). Water allocations are arranged according to Annex II of the 1994 Peace Treaty.³

1.2.2 The water regime

The water regime which has developed in the Jordan River Basin, between Jordan and Israel, is the case in focus of this thesis. It is the long-term success of the cooperation which the regime constitutes that is being assessed, hence also the long-term success of the regime.⁴ According to regime theory at least four events can be pointed out as constituting an international environmental regime in the Jordan River Basin. These are; (1) the “picnic table talks” in the 1950's through which low-key cooperation was conducted despite the presence of war, (2) The Johnston Plan which has served as a baseline for cooperation and agreements, (3) the 1994 Peace Agreement between Israel and Jordan which formalised a water regime, and (4) the Joint Water Committee which has been functioning also in periods of conflict (Jägerskog 2001, p.4. Schwarz 2004, p.48-49).⁵

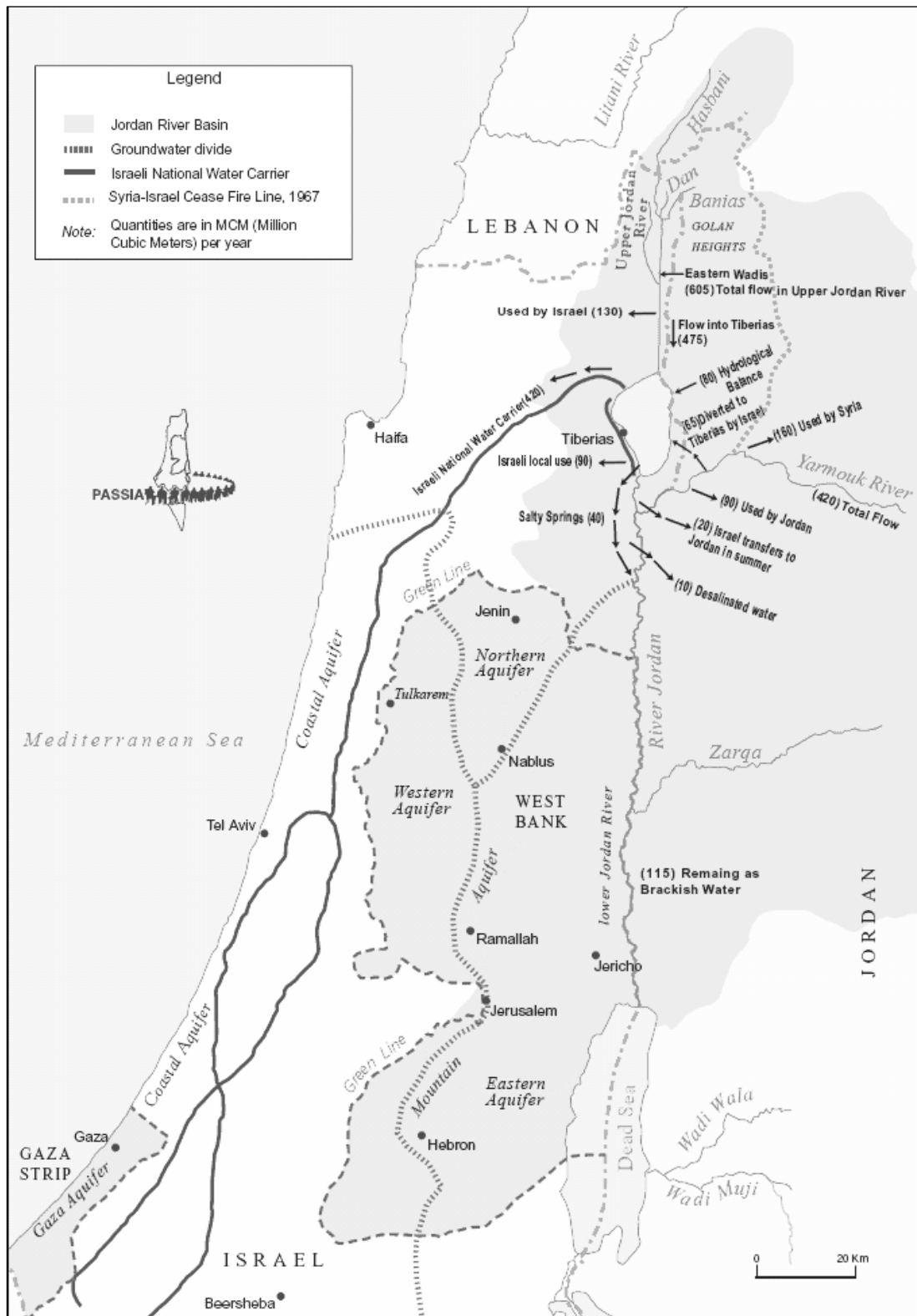
² Abbas al-Omari, interview May 4 2009, Amman

³ The Peace Treaty is available online at: <http://www.kinghussein.gov.jo/peacetreaty.html>

⁴ Successful cooperation and successful regime is used interchangeably in this study. The regime may be seen as constituting the cooperation and its only reason for being is the cooperation it is creating. The success of the regime is hence equal to the success of the cooperation it is creating.

⁵ For further discussions see e.g. Jägerskog, A 2001 or Schwarz, R. 2004

Figure 1. Water Balance and Use in the Jordan River Basin



(source: Passia 2002, p.4)

2. Theoretical framework

2.1 International regimes and the environment

Human beings play an important role in determining the future of our natural environment. How we value nature and coming generations define how our societies manage their natural resources and environment. The notion of the “tragedy of the commons”, where we all end up losing because of our quest for individual gains, makes absence of policy-making concerning collective action problems a big threat to sustainability.⁶ This is because when effective rules are absent the choice-making of rational egoists may prevent us from realizing common gains, and instead result in suboptimal outcomes for everyone involved (Young 1989, p.1-2,199). Realising that policy-making and cooperation is important for managing our natural environment does not however make it easy to achieve. Environmental policy-making has proved to be difficult because of the nature of environmental problems; they are often complex, have effect on different scales, and causes and impacts of the problems are not always well-known (Connelly & Smith 2003, p.124). In the 1980's Stephen Krasner and Robert Keohane amongst others came to the conclusion that international regimes were properly understood to efficiently manage collective action problems which make cooperation problematic at the international level (Young 1989, p.5). An international regime is a co-operative arrangement, more specifically defined by Krasner as the “*principles, norms, rules and decision-making procedures around which actors' expectations converge in a given issue area*” (Krasner 1983, p.1). Social institutions at all levels, domestic as well as international, have great influence on the behaviour of individual actors and they therefore determine the collective outcome within all social systems.

The reason for studying international regimes hence rests on the understanding of social institutions as determinants for policy-making and consequently our use of natural resources and our potential for overcoming collective action problems. In the environmental sector alone there are more than 130 international regimes. A common core in these regimes is the call for environmental sustainability, economic efficiency and democratic participation (Stålgren 2006, p.21).

⁶For a theoretical outline of the tragedy of the commons and collective action problems see e.g. Hardin, G. (1968) “The Tragedy of the Commons”, Science, New Series, Vol. 162, No. 3859, 1968, pp. 1243-1248

2.2 Previous research

Research on international environmental regimes can be divided into three phases (Helm & Sprinz 2000 p.630-631). The first phase of research focused on the rise of regimes and their potential to manage and resolve conflicts over environmental problems. This led to discussions of what effect the regimes would have and the second phase consequently focused on regime implementation and compliance. The third phase of research returned to the core question whether formed international regimes really matter, and methods of measuring effectiveness were developed (Helm & Sprinz 2000, p.647). The wish to evaluate the effectiveness of regimes and the ability to compare the effectiveness of different regimes has thus been the focal point of research on international environmental regimes.

The effectiveness of regimes may however not be the only concern if aiming to create successful regimes. Measures of effectiveness do not take in to account how the effectiveness is being achieved; neither who is paying for the effectiveness nor if its primary goals are desirable by the people who the regime is affecting (Young 2002b, p.15-16). Oran Young has criticised previous research on international environmental regimes for leaving out the domestic level effects. Young (2002b, p.16-17) states that a discrepancy between efficiency and social welfare on the domestic level is often to be found and suggests that performance, a measure which includes the previously neglected areas, should be added to evaluations of international environmental regime's success.

When previous researchers have concluded that the case of cooperation in the Jordan River Basin is successful the discrepancies between efficiency and performance as well as international and domestic politics have been neglected. Leaving out the domestic level and performance leaves us without knowing if, for example, the Jordan River Basin Water Regime is reaching a satisfying standard of effectiveness at the expense of social welfare and sustainability standards (Young 2002b, p.14). We can hence not tell from previous research whether the case of cooperation is long-term successful or not.

2.2.1 Young's concept of Effectiveness and Performance

The main theory this thesis builds upon is the work of Oran Young. Young has been said to provide the most inclusive concept of regime effectiveness and it thus appear accurate to use his definitions in this study (Helm & Sprinz 2000 p.632). According to Young, effectiveness has previously been used as the measure for success in environmental regimes. As a result

success has been measured based on evaluations of the regime's compliance with rules, behavioural changes caused by the regime, problem solving and whether the regime has reached its goals, movement towards a collective optimum and causality. These are areas that need to be included in an evaluation of a regime's success but Young highlights the possibility that an environmental regime which has causal effects on the problem may be regarded as a failure also in other areas than those measured by evaluating effectiveness (Young 2002b, p.14). Just examining the effectiveness of a regime is according to Young not satisfying when evaluating whether a case of cooperation is successful or not, as it is possible that a regime receives a high effectiveness score at the same time as it causes negative effects in other areas. The other areas which Young believe to be neglected are those concerning social welfare on the domestic level. In order to include the neglected areas Young introduces the concept of performance which takes a further step to examine the effects of a regime's accomplishments. Including performance ensures that the measure of success will reflect if an effective environmental regime is regarded as a failure in social welfare areas and how the effectiveness is being achieved. By evaluating the three welfare aspects of ecologic sustainability, economic efficiency and social equity, as these are domestic areas affected by the management of international environmental regimes, the previously neglected areas are included in the measure of success in international environmental regimes (Young 2002b, p.15). The importance of including performance is due to it providing a more valid picture of the achievements of a regime and because it means including sustainability concerns. In the following section the three aspects of performance will be shown to be equal to three sectors understood by most international cooperation institutions as necessary to integrate for achieving sustainability, and sustainability to be a prerequisite for successful cooperation. As will be explained in the following section, including performance means including sustainability aspects, which is why including performance in an analysis of international environmental regimes brings about an evaluation of the *long-term* success.

2.2.2 Sustainability aspects

Paradigms influence how actors understand their interests and therefore how they formulate policies, where resources are allocated and who will make final decisions. The paradigm of sustainability which emerged in the footsteps of the report "Our Common Future" and the 1992 UN Conference in Rio de Janeiro (the "Earth Summit"), has had great impact on decisions concerning our global environment (Conca & Dabelko 2004, p.229-233). Concepts of sustainability state that economic growth and environmental protection are not mutually

exclusive but build on the premises that *“poverty and economic stagnation are themselves environmentally destructive and that all forms of economic organisations and activity are not equal in their environmental impact”* (Conca & Dabelko 2004, p.229). This comes down to the understanding that there are environmentally friendly ways of production and economic development which alleviates poverty but minimizes negative impacts on the environment. The most common definition of sustainable development is found in *“Our Common Future”* saying that sustainable development is *“development that meets the needs of the present without compromising the ability of future generations to meet their own needs”* (World Commission on Environment and Development 1987, Part I, Chapter 2.I).

At the Earth Summit an action program called Agenda 21 was adopted to promote sustainable development. It calls on countries to adopt strategies for sustainable development which builds on and harmonizes three sectors; the ecologic, the economic and the social, in its policies (Regeringskansliet, Agenda 21). Integrating the three sectors in visions, plans and goals is hence the approach of the UN and its member countries and is seen as a requirement for achieving sustainability.

It is now visible that these three sectors are the same as the three aspects of performance. What is being added when performance is included in an analysis of a regime’s success may therefore be understood as sustainability aspects and a long-term approach to be taken. As mentioned in the problem formulation evaluations of success in a case of cooperation should include sustainability aspects because sustainability, which has just been explained, is a paradigm adopted by most international cooperation institutions and countries, and understood as a requirement for successful international development.

2.3 Defining successful cooperation

Aiming to evaluate the success of a case of cooperation, the question of what is considered to be successful cooperation, quickly arises. As has been explained, previous research assesses a regime's success by the effectiveness - the higher score the more successful. But as has been argued the consequences of being effective should also be taken into consideration. In order to be considered long-term successful the regime should not only be effective, it should also achieve high performance as it measures the effects on welfare and who pays for the effectiveness. Sustainability is also understood as a requirement by most international

organisations and countries and is included in the concept of performance. High performance in combination with high effectiveness is thus what is being sought after.

3. Aim

3.1 Is the Jordan River Basin Water Regime a successful case of cooperation?

The aim of this thesis is to evaluate the existing water cooperation in the Jordan River Basin, to test whether the Jordan River Basin Water Regime is a successful case of cooperation or not. By evaluating performance and adding it to previous research on effectiveness conclusions are made with support in established theories whether the Jordan River Basin Water Regime can be argued to be a long-term successful case of cooperation or not. Apart from that, this study questions conclusions made in previous research by assessing if results change when performance is added to the analysis. The importance of including performance is hence also examined. This study also develops the concept of measuring successful cooperation as it is adding a previously missing dimension. This thesis is carried out in order to improve our ability to create successful institutions for international development and for managing shared natural resources.

3.2 Questions

Certain questions work as a link between the theoretical framework and the empirical material and help to understand what is being looked for in the material in order to answer the aim of the study (Ekengren & Hinnfors 2006, p.65). The questions are derived from Young's theory of effectiveness and performance and applied to the case of the Jordan River Basin (Young 2002b, p.14-15).

- *The ecologic aspect - ecologic sustainability*
Is the Jordan River Basin Water Regime performing water management which is ecologically sustainable? Are water quantities and the quality of the Jordan River Basin robust, decreasing or increasing?
- *The economic aspect - economic efficiency*
Is the Jordan River Basin Water Regime performing water management which is economically efficient? Is money well-invested in the Jordanian water sector and water used efficiently?
- *The social aspect - social equity*
Is the Jordan River Basin Water Regime performing water management which is equitable to all? Who gains and who loses in the Jordanian society from the way water is being managed?

4. Research method and material

4.1 The design of the study

This thesis is a qualitative case study. The empirical material was collected through informant interviews during a nine-week field study in Jordan. The field study was funded by Sida, Swedish International Development Cooperation Agency, through its MFS (Minor Field Studies) scholarship programme.⁷ Material was collected, with support in theory, on the three aspects of performance. Who was being interviewed was based on the concept of centrality (Esaiasson et al. 2007, p.291) and finding relevant informants was researched in Jordan by attending meetings within the water sector in Amman and the Jordan Valley and by consulting the Counsellor of Regional Water Cooperation at the Embassy of Sweden Amman. Main actors were then contacted and meetings were arranged. An interview guide was used during interviews, which were semi-structured, and was tested in a pilot interview before being used.⁸ Interviews were conducted until qualitative differences in the material no longer existed. In total twelve interviews were conducted, including informants representing governmental organisations, Jordanian ministries, national- and international non-governmental organisations, international donors, the UN and research centres.⁹ The reason people were chosen from different levels and types of institutions was because they were expected to contribute with different perspectives and to have varying interests in the issue. This way more qualitative differences were believed to be revealed and the risk of the information to be skewed minimised. (Esaiasson et al. 2007, p.313-325)

Using interviews to collect material is a common method when aiming to develop theories or concepts, and can also be used in theory testing studies (Esaiasson et al. 2007, p.284-289. Kvale 1996, p.10). Informant interviews were chosen as the type of research method because of the lack of previous analyses regarding the domestic level and because the aim was to collect facts concerning the current situation. Respondent interviews, another common method of research interviews used in political science, were considered but decided not to be used because of validity problems concerning the selection of interviewees (Esaiasson et al. 2007, p.291-292). Informant interviews were believed to provide a better validity in this case as persons to be interviewed could be chosen on basis of centrality, and thus to be a more suitable method. The interviews were transcribed and the empirical material hence consists of

⁷ See http://www.programkontoret.se/Global/material/faktablad/mfs_english.pdf for information on MFS

⁸ Interview conducted April 20 2009, Jordan Valley

⁹ See list of informants in section 8.1.

printed interviews. Other primary sources used are the 1994 Treaty of Peace between the Hashemite Kingdom of Jordan and the State of Israel, and Jordan's Water Strategy 2008-2022.

The empirical material was analysed using an analytical scheme and was searched for occurrence of indicators. The analytical scheme is presented in section 4.3.2. The indicators were derived from Young's concept of performance and other literature used in this study¹⁰, and based on information given in the pilot interview – a common way for categorizing empirical material (Kvale 1996, p.197). Based on the results, the theoretical framework, the aim of the study and the conclusion criteria, conclusions were made concerning the long-term success of the Jordan River Basin Water Regime.

4.1.1 Causality

Causality between the water regime and the outcome of the performance indicators in the case of the Jordan River is not undisputable. Causality could turn out to be spurious if, for example natural fluctuations appeared to be the real cause behind low performance and not mismanagement by the regime (Young 2002b, p.12). Lack of causality would invalidate the study as the outcome of performance would not be related to the water regime and therefore not a correct measurement of the success of the regime. The empirical material was therefore analysed to determine whether there is causality or not. The interviews contained questions which relate the present situation of the Jordan River to the management of the water regime and the cooperation between Jordan and Israel. It also contained questions concerning what the situation would have been in absence of the regime, and as a result of such questions being asked comparisons over time were made by informants. It may still appear problematic that it is difficult to distinguish what effects are caused by the regime and what are caused by the government of each country respectively. However, I would argue that they are and should be intertwined as the government is a part of the regime and has agreed to its rules and decisions. It is therefore not relevant to distinguish.

Analysing the material it is obvious that the water regime, by determining the allocation and legal framework of the water sector, has causal effects on the performance indicators. Because it is also stated in the Peace Treaty, which formalised the regime, that water should be used in an equitable manner (social aspect), that the water should be protected from pollution and

¹⁰ See list of references in section 7.

harm (ecologic aspect), and that water efficiency should be improved (economic aspect), the water regime sets out to have effect on the three aspects being evaluated in this thesis (Treaty of Peace between the State of Israel and the Hashemite Kingdom of Jordan 1994).

4.2 Delimitations

4.2.1 Selecting the case

The reason for choosing the Jordan River Basin Water Regime as the case in focus is due to previous research stating it to be a successful case based on measures of effectiveness. It is therefore a suitable case for the objective of this study. Due to the geographical and political circumstances of the area the Jordan River Basin Water Regime is also a case which will tell us more about the problems of cooperation over transboundary water resources than would have, for example, a regime managing water in an area where money and water are abundant.

4.2.2 Not evaluating effectiveness

This thesis is not evaluating the effectiveness of the Jordan River Basin Water Regime. However, effectiveness has not been left out but results from previous research are being used. As just mentioned the case has been selected because previous research show the regime is satisfyingly effective to be considered successful. The exact level of effectiveness is however not known, but as the aim of this study is to determine whether the regime is long-term successful or not, and not to determine a specific level of success, it does not have negative effects on the validity. An ideal study of a case which effectiveness was unknown would need to evaluate both the effectiveness and the performance and would estimate exact levels of the two variables. Such a study would enable more conclusions to be made while this qualitative study can only point us in a direction concerning the success.

4.3 Analytical framework

4.3.1 Operationalisations

In order to add performance to the analysis of the Jordan River Basin Water Regime, the concept has been operationalised. The theoretical framework explained that social welfare is hovering over the question of performance as it includes effects on the society and the people affected by the regime, and the three aspects of it – ecologic sustainability, economic efficiency and social equity – were understood to be the same as the three sustainability sectors acknowledged by most international cooperation institutions. Dividing performance into the three aspects may be seen as the first step of operationalising performance. The

second step is adding specific questions to each aspect respectively. These questions clarify what is being looked for in the material in order to answer the aim. They are derived from Young's theory of performance and were presented in section 3.2. Based on the questions and empirics (what I have understood as being of importance from attending meetings and discussions within the water sector in Jordan and by conducting the pilot interview), indicators which apply the concept to the case of what is being studied were selected. They were selected aiming to provide answers to the questions, to catch the core of what is of interest and what is applicable to the case and thus to measure each aspect. Selecting the indicators may be seen as the third step of operationalising performance. The indicators were then organised in an analysis scheme and an interview guide was made. The interview guide was used during interviews and may be seen, together with the analysis scheme as the fourth step of operationalising performance.

4.3.2 Analysis instrument

Figure 2. Indicators of low and high performance for each aspect respectively

<i>Performance of the Jordan River Basin Water Regime</i>	
<i>Ecologic aspect</i> <i>Is the Water Regime performing water management which is ecologically sustainable?</i>	
Low Performance	High Performance
<ul style="list-style-type: none"> • Decreasing water levels • Pollution • Ruined ecosystems • Increased salinity • Over abstraction 	<ul style="list-style-type: none"> • Robust or increasing water levels • No negative impact on water quality • Natural ecosystems • Improving water quality • Rehabilitation
<i>Economic aspect</i> <i>Is the Water Regime performing water management which is economically efficient?</i>	
Low Performance	High Performance
<ul style="list-style-type: none"> • Ineffective (old/broken) distribution systems • Low know-how concerning water use and techniques • Water spent on water demanding crops, or crops that cannot be exported • Inefficient allocation between sectors • Money invested in the water sector does not show expected results on the ground 	<ul style="list-style-type: none"> • Effective distribution systems • Good know-how concerning water use and techniques • Well adapted crops • Efficient allocation between sectors • Money invested in the water sector show expected results on the ground
<i>Social aspect</i> <i>Is the Water Regime performing water management which is equitable to all?</i>	
Low Performance	High Performance
<ul style="list-style-type: none"> • System has built-in differences in distribution (discrimination) • System has built-in differences in access • System lacks transparency • Cheating (illegal wells or theft) 	<ul style="list-style-type: none"> • System does not have built-in differences in distribution • System does not have built-in differences in access • Transparent system • No cheating (no illegal wells or theft)

The indicators in the table should be understood as examples of indicators. The analytical scheme is thus not exhaustively complete but is believed to fairly answer the aim of the study. Furthermore, the indicators do not intend to be mutually exclusive. This is simply because the reality of the Jordan River Basin Water Regime, just like most real-world regimes, is more complex and unsystematic than any analytical scheme or ideal types (Young 1989, p.22). As the result of an indicator may differ between different areas or groups of people in the society an indicator may score both high and low if the indicator is not perfectly applicable to the case. It should then be understood as neither high nor low but needs to be further problematized. Naturally the indicator's impact on the environment or the water sector is differing and in that sense they vary in importance, but as indicators of performance they are understood to be equally important as they all indicate higher or lower performance by the water regime.

4.4 Conclusion criterions

Conclusions are based on the definition of success, hence the combination of the outcome of effectiveness and performance. The structure is pictured in figure 3 below. Previous research states that the effectiveness of the Jordan River Basin Water Regime is of satisfying standard to be considered successful but an exact level is not known. I will therefore predicate the conclusions on the understanding that the Jordan River Basin Water Regime is satisfyingly effective to be considered successful, and to this I add the outcome of performance. Exact levels of the total success of the regime cannot be suggested. The outcome of performance is measured by the occurrence of high and low indicators respectively. Because the indicators are understood to be equally important and are equal in numbers, it follows logically that a majority of low indicators indicates an unsuccessful regime concerning performance, while a majority of high indicators indicates a successful regime concerning performance. This is not an attempt to measure qualitative results in a quantitative manner but it explains how I interpret the results – occurrence of more high performance indicators than low performance indicators simply indicates a regime which performance is more high than low, it is hence on the “positive side” and believed to be achieving satisfying standards of performance. Once again, note that specific levels of success cannot be defined as a result of this qualitative study.

Consequently, as the effectiveness is known to be satisfying in the Jordan River Basin Water Regime it needs to score high on a majority of performance indicators to be concluded to be

successful altogether.

Figure 3. Structure for determining success

	Majority of low performance indicators	Majority of high performance indicators
Not satisfying standard of effectiveness	<i>A1 Unsuccessful</i>	<i>A2 Unsuccessful</i>
Satisfying standard of effectiveness	<i>B1 Unsuccessful</i>	<i>B2 Successful</i>

5. Results and analysis

The analysis has been conducted systematically by applying the analysis instrument to the empirical material. The material has been searched for occurrence of each indicator respectively. In the following sections the analysis is presented under each aspect, indicator by indicator (those which have occurred only) with a summarizing comment of the result in the end.

5.1 The ecologic aspect

Indicator: Decreasing water levels

The water levels in the Jordan River Basin have been, and are, decreasing.

”The amount of water flowing in the river, it is not the amount it should be. So ecologically you can say that the Jordan River is not a river anymore. It is like a drainage system where they somehow dump the wastewater. So the amount of water that used to flow in the river, like 1.2 billion [m³] is now converted to 70 million [m³].”

The greatest impact on water levels in the Jordan River is man-made diversions in the Yarmouk River by Syria, and in Lake Tiberias (Upper Jordan River) by Israel. The diversions have made the freshwater-flow from the north stop almost completely,¹¹ while poor quality water returned from agriculture is still released into the river. Diversions in combination with less rainfall and increased evaporation due to climate change reduce the flow in the river so that in summer wastewater is what keeps the river flowing.¹² Informants explain the state of the river and the problem of the diversions;

¹¹ See map in section 1.2.2
¹² Information given during interviews

“Since 1964 the Israelian stopped water running from the Upper Jordan River to Tiberias Lake to the Lower Jordan River and practically there is no fresh water in the Jordan River. It is almost whether saline water spring or drainage water or something like that.”

As pointed out by the informant the river is diverted since 1964, hence three decades before the Peace Treaty was signed. However the decrease in water quantity is still an indicator of low performance as the Peace Treaty states that Israel and Jordan should cooperate on the ecological rehabilitation of the Jordan River (Peace Treaty, Annex IV – Environment). Therefore it is an obvious failure that water levels have continued to decrease during the fifteen years the regime has been functioning.

Indicator: Pollution

“In the rivers and the wadis and the Jordan River it is heavily polluted, heavily polluted.”

“The Jordan River, you know how it is now. It is a sewage canal. And now to see it a trickle of sewage it is really disheartening.”

As the informants exemplify, the material tell of no improvement in water quality in the Jordan River Basin since the Peace Treaty. Waste from industries is being released into the river and as water levels decrease the concentration of pollution increases.¹³ Several informants claim Israel is releasing large volumes of wastewater into the river. Such information should however be interpreted bearing in mind there is a tendency of blaming other riparian states, especially in the tense political situation that frames this specific case. In order to evaluate the indicator it is however not of interest which of the riparian states that has the largest impact, as the ecologic situation of the river is both countries' common responsibility according to the Peace Treaty.

“The treaty said that both countries should look into the rehabilitation of the Jordan River and to prevent any dumping of any kind of waste. They are doing exactly the opposite. They are not making efforts to rehabilitate the river and they are dumping the waste.”

Indicator: Ruined ecosystems

As the Jordan River Basin is a freshwater ecosystem it is sensitive, and it has been destroyed by the deterioration of water quality and quantity. Apart from the fact that the ecosystem in

¹³ Information given during interviews

the Jordan River is already ruined a worrying governance approach appear in the material. In order to save the Dead Sea, which is drying up as the Jordan River does not supply it with freshwater anymore, the “Red-Dead Project” is now being assessed in Jordan, Israel and Palestine. Instead of restoring the natural flow of the Jordan River which would be beneficial also for the Dead Sea the “Red-Dead Project” aims to supply the Dead Sea with water from the Red Sea through a canal, were a desalination plant is also planned in order to supply the population with drinking water.¹⁴ One informant explains the consequences of the regime implementing solutions which are non-natural;

“I mean if we have the natural flow or part of the natural flow of the Jordan River we will not have to have the Red-Dead Canal, because the Dead Sea would be revitalised and we can bring life to Dead Sea by just having the natural flow for the Jordan River. Man made interventions in nature basically disturb the ecology and disturb human life development and the future of our generations, and that means we do not consider what we call intergenerational equity, our kids will have to pay more for water and it can't be sustainable.”

This implies that the approach of the water regime will create a future with non-natural ecosystems, an ecologically non-sustainable solution.

Indicator: Increased salinity

As stated by an informant below, the decreasing water level and the releases from agriculture into the Jordan River is making the salinity increase in the river.

“It [ecologic situation] is deteriorating, it's getting worse because you know, the less water, the more salinity, the more problem in the water”

Indicator: Over abstraction

“The water ministry, in the years of drought, especially last year, they had to over pump our aquifers in order to satisfy people and officials. This is my concern, and I hope I am wrong, because over pumping in the long run is disastrous, [...] But I hope they are wise enough not to do that.”

Over abstraction of water resources is, as implied by the informant, a serious problem as it ruins the quality of the resource by increasing the salinity and may lead to ruined ecosystems. Over abstraction has occurred at ministry level in years of extreme drought but wells in the

¹⁴ Information given during interviews

communities appear to be the main reason behind over abstractions.

“This [the use of unlicensed wells] is one of the main reasons where you have over-abstraction from underground waters. Especially now, like now you are seeing the...how do you say it...the aftermaths of the long years of abstracting more and more water.”

Figure 4. Result of the ecologic aspect

Ecologic aspect	
<i>Is the Water Regime performing water management which is ecologically sustainable?</i>	
Low Performance	High Performance
<ul style="list-style-type: none"> • Decreasing water levels (!) • Pollution (!) • Ruined ecosystems (!) • Increased salinity (!) • Over abstraction (!) 	<ul style="list-style-type: none"> • Robust or increasing water levels • No negative impact on water quality • Natural ecosystems • Improving water quality • Rehabilitation

To sum up, the Jordan River Basin Water Regime is not performing water management which is ecologically sustainable and 5 out of 5 low-performance indicators and 0 out of 5 high-performance indicators occur in the material. It is a worrying state of decreasing water levels, higher concentrations of pollution and salinity, and a ruined ecosystem. It appears to be mainly caused by man-made diversions of the natural flow.

5.2 The economic aspect

Indicator: Ineffective (old/ broken) distribution systems

The water supply system is old and suffers hard from the fact that water is pumped in the system once a week. Money to rehabilitate the network is lacking and as a result a great part of the water is lost. The percentage of losses given by the informant below is supported by other informants and it includes leakages as well as administrative losses.¹⁵

“I think the ministry is trying to be as efficient as they can. But also we have another problem which is the age of the water supply [system]. So the water supply [system] is too old and there is a lot of water lost from leaks. It is actually high, about maybe between 40% and 45 %.”

¹⁵ Administrative losses are losses due to handling the water, for example spillage.

Another form of losses is caused by illegal use of wells and theft, as these are volumes not controlled by the Ministry of Water and Irrigation. These volumes can hence not be directed to where they are most needed or most efficiently used.

“A lot of people they brake the pipes, they put dirt over it and nobody knows they are taking that much. Because of the high loss in the network, the government or the agency cannot really calculate the in and out.”

Indicator: Low know-how concerning water use and techniques, and Good know-how concerning water use and techniques

The material shows a divide between know-how concerning domestic and agricultural water use and also between large scale and small scale farms. In domestic water use there is a need for improved awareness among the population, as this informant imply;

“In the cities and so on, I think we lack a lot of awareness, really. People still planting lawns in their yards, other they water hose their cars, you know...like they wash it. Others don't care if the facet is dripping like all night long. All these practices really need for people to take care of it, every drop counts in the city.”

Concerning water for agriculture the know-how appears to be better in general but there is a divide between large scale farms and small scale farmers. Large farms use high-tech tools and techniques, and they are well-educated in their field, while many small scale farmers still use old techniques and lack know-how of efficiency and best water use. As implied by an informant;

“The small farmers, they are using the same methods that their parents had but [...] Ministry of Agriculture is working on changing the crop patterns, but it is not getting very far. There is a dilemma between the big farmers and the small farmers. The big farmers they have new technology, export all the products to Europe, most of them.”

Within the country there are most certainly a group of people with great knowledge and expertise in water use and techniques. What seem to be lacking is for the public to take part of this know-how and apply it on an individual level.

Indicator: Water spent on water demanding crops, or crops that cannot be exported, and Well-adapted crops

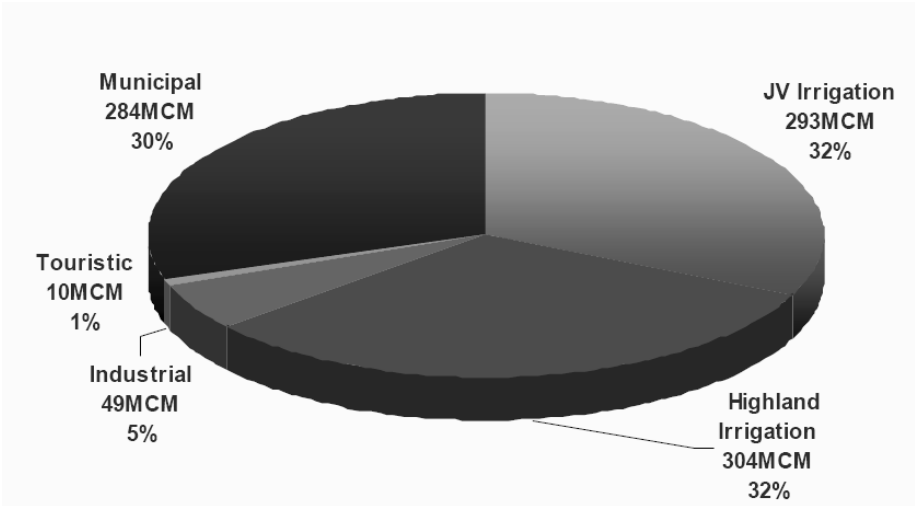
“We have to invest in capacity building for farmers how to change his mentality to go and change cropping pattern. To explain him the advantages, to introduce him the new varieties, to give him the seed and the know-how.”

As this informant suggests know-how and using well-adapted crops go hand in hand. The same structure therefore applies to this indicator as the previous one. Consequently many large scale farms have switched crops to less water demanding ones or crops that at least give a big economic return when exported. Many small scale farmers are however still farming the crops of previous generations which are not well-adapted to the water scarcity. There is also water spent on crops that do not benefit Jordan as a whole;

“I think there is a misuse of water and there are a lot of things that are planted for personal profits you know, but not for the sake of the country”

Indicator: Inefficient allocation between sectors

Figure 5. Water allocations between sectors, 2007



(source: Royal Commission for Water/MWI 2009, p.11)

The agricultural sector absorbs a large share of Jordan's water resources through irrigation, which is shown in figure 5 above. The material shows there is disbelief towards spending the largest share of water in the agricultural sector while it is believed to be better invested in other sectors. The disbelief originates from the problem of water being indirectly exported in agricultural products and the understanding that water could contribute more to the GDP if it was invested in other sectors, e.g. industry or tourism. Today about 65 % of Jordan's available water is spent in agriculture, while the agricultural sector only contributes to the GDP by 2%. The economical benefits from export are also said not to be felt by the majority of the society but to benefit a few wealthy families.

"I know from the statistics that 63 % of [...] water is for agriculture, but agriculture is not significant for the GDP and not significant for Jordan itself. You know the big farmers is who is benefiting from that"

The agriculture lobby is however strong in Jordan and supplying the agriculture sector with less water would be difficult politically.

Indicator: Money invested in the water sector does not show expected results on the ground

In Jordan most international aid organisations are involved in the water sector and large sums of money are being invested in water projects. The material shows there are results from this money; there have been improvements compared to ten years back and a lot of work is being carried out. The Peace Treaty is an important factor for opening up the possibility of investments and projects, as many organisations before the agreement were reluctant to invest in a country which was politically unstable.

"So all of these projects, huge projects, were like launched because of the Peace Treaty because donors were not interested to support anything where you have a conflict."

Nevertheless, the material shows that much of the aid does not show result on the ground. There is a common understanding that *"they [donor's money] evaporate before they reach the ground."* The money is understood to be spent on fancy gatherings and workshops and the projects to lack coordination. Results on the ground are not as obvious as expected, as an informant words it;

"I have been in the sector for the last 20-25 years; I believe a lot of things have been done, or redone or undone. We don't want to reach a state that we are throwing money on the problem. And unless we think of long term, the big picture I am afraid we are throwing money on the problem. It is a pity to see a lot of international money is being spent down the drain."

Better coordination could improve the efficiency and improve the results and is much called for as Jordan is very dependent on international investments and aid.¹⁶

¹⁶ Information given during interviews

Figure 6. Result of the economic aspect

<i>Economic aspect</i> <i>Is the Water Regime performing water management which is economically efficient?</i>	
Low Performance	High Performance
<ul style="list-style-type: none"> • Ineffective (old/broken) distribution systems (!) • Low know-how concerning water use and techniques (!) • Water spent on water demanding crops, or crops that cannot be exported (!) • Inefficient allocation between sectors (!) • Money invested in the water sector does not show expected results on the ground (!) 	<ul style="list-style-type: none"> • Effective distribution systems • Good know-how concerning water use and techniques (!) • Well adapted crops (!) • Efficient allocation between sectors • Money invested in the water sector show expected results on the ground

To sum up, the material provides a less uniform picture concerning the economic aspect than that of the ecologic aspect. 5 out of 5 low-performance indicators and 2 out of 5 high-performance indicators occur in the material. The regime is thus not performing water management which is economically efficient or sustainable - the inefficient allocation between sectors and the lack of results from invested money appear to be the greatest deficits.

5.3 The social aspect

Indicator: System does not have built-in differences in distribution (the authority's policy and aim of distribution)

97 % of Jordanian households are connected to the municipal water network. The distribution in this system is equal to all in terms of absence of discrimination or differences between certain groups of people. When asked if it is an equitable system one of the informants said; *“As far as I know [...] the distribution is fair and square to everybody. People get the water which is available, in everywhere.”*, and another said; *“For sure it is not distributed more quantities for this rich area or this quantity for that poor area. I assure that!”* and similar reactions are common amongst the informants.

Distribution appears to be equitable in the policy of Ministry and Water and Irrigation however due to the small amounts of water and the technical shortages there are problems in

distributing water to certain locations. The average amount of available water is lower in rural areas than in the urban Amman-region where reliability on getting water is also higher. The difference between rural and urban areas is the only systematic difference that can be revealed from the material. However, it seems to be caused by technical short-comings, such as the poor network and because the expansion of the network has not kept up with the expansion of new settlements. It is therefore not built into the system but appears to be a matter of lacking funds. Other differences appear; at the end of the pipe or on elevations pressure tend to be lowered and less water delivered. This, however, are differences which do not continuously affect a certain group of people, and differences vary with the amounts of available water, hence they are not systematic. When asked if certain groups of people are affected more than other by the water shortages one informant answer;

“No, I believe all people. But it is harsh...harder for vulnerable people or less privileged people because if you have money you can buy water. You can import water from...Sweden! So it's... it's the poor's problem.”

This comment reflects that even without systematic differences in the distribution system there may be groups that are more vulnerable than others to shortages of water.

Indicator: System has built-in differences in access (how the authority's policy and aim affects people's access-ability)

As just mentioned, about 97% of Jordanian households are connected to the municipal water network. This does not mean that 97 % of Jordanian households receive water through the network. The access depends on your ability to buy a subscription. To pay for water is a normal procedure in most countries but in Jordan there is no social security network that would pay for your subscription if you cannot afford it.¹⁷ Governmental programs of power alleviation have been conducted but usually people who cannot afford a subscription have to buy water from tanks which may not be an option due to lack of money, take water from wells which are often illegal and in which the water quality is not controlled, or they will have to collect rainwater or take water from their neighbours.¹⁸ How many people that are in this situation cannot be told as there seem never to have been a study assessing how many people that are not subscribed.¹⁹

An informant explains what happens when water runs out;

¹⁷ Information given during interviews

¹⁸ Information given during interviews

¹⁹ Information given during interviews

“Me: And what happens if you run out of water?”

Informant: I have to buy it by tanks.

Me: So there is water that people can buy?

Informant: There is, yes

Me: And does it get expensive or...?

Informant: Well there is serious problem, yeah, because the demand and supply equation apply. [...]When you have a problem there is a lot of demand and you can pay 3 JD/m³. [US\$ 4, 50/m³]

Me: So in that aspect there is a difference between richer and poorer?

Informant: Of course. Poorer really can't afford it. And these are most affected really by water shortage, if there is a problem these people are the first ones to... because they are living in rural areas and they don't have a good connection system so if there is a problem they are the first ones who do not receive water so they have to rely on buying water. They don't have good storage facilities...you know all this...”

Poor people hence appear to be the first ones to be left without water in times of extreme shortages. In times of shortages poor people are also left without the possibility to buy water from other sources and are hence more vulnerable to shortages than people who can afford to buy water when their own supply runs out. Extreme water shortages are frequent in Jordan and in order to be equitable the system has to take into account how people get water during those periods. Considering there is no safety network for those who cannot pay, water shortages are common and the system relies to a great extent on people's ability to pay, I understand the material as the system is having built-in differences in access.

Concerning water which is supplied by the government to those with a subscription the tariff system benefits the use of small amounts of water as the price of water per cubic meter rises with greater use. It is a tariff system which increases equity in water access as prices of basal water use is kept down while more luxurious use is highly charged.

Indicator: Transparent system

The material provides a picture of a transparent water system. As one informant said;

“It is information that cannot be hidden even if the authorities try to not to publish it. It is so obvious to people that our dams are there and the wells are there and so on. My only concern in this particular issue, transparency, is that the water ministry, in the years of drought, especially last year they had to over pump our aquifers in order to satisfy people and officials.”

Every year a water balance is made by the water authorities. The available quantity of water in the dams and other resources, like wells and the Peace water from Israel, is then compared to historical data and the expected flow in the rivers. Based on this information the authorities announce the available quantity of water and make the yearly balance sheet for each sector. According to regulations domestic water is a priority and what is left is for irrigation. However there is a limitation in the reduction quantity for irrigation purposes. Allocations are then announced in previous time.²⁰ What the informant above is saying about over abstractions implies there may be short-comings in how the authorities administer the resources. On the other hand this has obviously come to the knowledge of the public since the informant is talking about it. All in all the system hence appear to be transparent.

Indicator: Cheating

Cheating is a problem as it reduces the chances of the authorities to distribute water equitably. The main concerns of cheating in the system are the use of illegal wells and theft.

“The illegal wells is also a big problem in the country. The administry did their best to control it but it is still there and it needs to be addressed.”

The use of unlicensed wells is also a problem of equity because the water abstracted from them is water which is often sold in times of extreme shortages. The quantities which are taken illegally are hence common goods which are taken away from the majority of the society and sold back to them. Illegal use is also occurring among poor people who cannot afford a subscription to the water network.

“But also in some cases we have people that cannot pay so they have kind of illegal wells, they are using the water and not in a sustainable way.”

²⁰ Information given during interviews

Figure 7. Result of the social aspect

<i>Social aspect</i>	
<i>Is the Water Regime performing water management which is equitable to all?</i>	
Low Performance	High Performance
<ul style="list-style-type: none"> • System has built-in differences in distribution (discrimination) • System has built-in differences in access (!) • System lacks transparency • Cheating (illegal wells or theft) (!) 	<ul style="list-style-type: none"> • System does not have built-in differences in distribution (!) • System does not have built-in differences in access • Transparent system (!) • No cheating (no illegal wells or theft)

To sum up, the system appears to be transparent and have no deficits in equity in its distribution-policies, however the lack of funds and first of all lack of water still make distribution difficult to certain areas. The system's high dependency on people's ability to pay is however a deficit in equity concerning access. Another problem is the cheating in terms of illegal wells and theft which the regime has not succeeded to address. 2 out of 4 low-performance indicators and 2 out of 4 high-performance indicators occur in the material concerning the social aspect.

5.4 The result concluded

An analysis of the empirical material concerning the performance of the Jordan River Basin Water Regime provide us with the result that 12 out of 14 low-performance indicators and 4 out of 14 high-performance indicators occur. The low-performance indicators are hence in an uncontested majority.

6. Conclusions

The objective of this thesis has been to evaluate the success of the Jordan River Basin Water Regime. It has also aimed to test conclusions made in previous research on the Jordan River Basin Water Regime in order to examine the importance of including performance. A further underlying objective has been to develop the concept of measuring success in cooperation by adding a previously missing dimension in research on international environmental regimes. Results of this study show that the Jordan River Basin Water Regime is not successful concerning performance as it scores low on a majority of the performance indicators.

Recalling the questions asked to the material it can be concluded that the Jordan River Basin Water Regime is not performing water management which is ecologically sustainable as the water quality is deteriorating and water quantities are decreasing. It is not performing water management which is economically efficient as money is not well-invested in the Jordanian water sector and water is spent in a non-efficient way in the agricultural sector. There are positive elements concerning this aspect but as of today it is not sustainable altogether. The regime is in essence performing water management which is equitable to all but due to technical difficulties and reliability on people’s ability to pay there are deficits. From the way water is being managed, poor people and people living in rural or alleviated areas are losing, while people in the Amman-region are gaining.

Results from previous research however show that the effectiveness of the Jordan River Basin Water Regime is reaching satisfying standards to be considered successful. The combination of satisfying standards of effectiveness and a majority of low-performance indicators puts the Jordan River Basin Water Regime in box B1 below. The conclusion should hence be made that the *Jordan River Basin Water Regime is not a long-term successful case of cooperation.*

Figure 8. Success in the Jordan River Basin Water Regime

	Majority of low performance indicators	Majority of high performance indicators
Not satisfying standard of effectiveness	A1 <i>Unsuccessful</i>	A2 <i>Unsuccessful</i>
Satisfying standard of effectiveness	B1 <i>Unsuccessful</i> (!)	B2 <i>Successful</i>

The conclusion that the Jordan River Basin Water Regime is not to be considered long-term successful differs from conclusions made in previous research. Including performance hence appear to have effect on the results and implies previous analyses may be misleading. The result of this study supports Young’s theory that a regime which scores high on effectiveness may be causing negative effects in other areas and hence underlines the need for including performance and sustainability aspects in analyses on international environmental regimes.

Bearing in mind that this is a case study the possibility of making general conclusions is very limited and the result should not be transferred to other cases or understood as a correlation between effectiveness and performance. However the result does show that adding performance to an evaluation of success in international environmental regimes may provide different conclusions than those previously made, and it is therefore recommended to be tried out in other cases.

The results provide us with new knowledge concerning the Jordan River Basin Water Regime. The assessment of performance indicators give a basic idea of which areas the regime need to improve, how this should be done and why deficits figure are questions for further research to tackle. The situation on the Israeli side is also an area for further research to examine which could contribute with additional knowledge concerning the structure and success of the Jordan River Basin Water Regime.

This study has contributed to the field of research by providing an example showing that performance is of importance for our understanding of success of international environmental regimes. It has hence helped to fill a gap in our understanding of the Jordan River Basin Water Regime and has suggested a way to further develop the concept of measuring success in international environmental regimes.

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8. Appendices

8.1 List of informants

- Ali Adwan, Team Leader Jordan Valley Authority, Water Resources Management in Irrigated Agriculture, Amman 14/5/2009
- Mona Barghout, Swiss International Development Agency, Amman 19/5/2009
- Amal Dababseh, Environment Analyst, UNDP Jordan, Amman 10/6/2009
- Tayseer Ghezawi, Deputy Secretary General, Irrigated Agriculture / Jordan Valley Authority, Amman 30/4/2009
- Odeh al-Jayyousi, Regional Director, IUCN (International Union for Conservation of Nature), Amman 10/5/2009
- Sanad al-Kataba, Deputy Minister of South Ghor Municipality, Jordan Valley 20/4/2009
- Munqeth Mehyar, Chairperson Friends of the Earth Middle East, Amman 12/4/2009
- Sameeh al-Nuimat, Project Manager Care International Jordan, Salt 11/5/2009
- Abbas al-Omari, Associate Researcher, Water and Environment Research and Study Centre, Amman 4/5/2009
- Mohammad Shatanawi, Professor at Faculty of Agriculture University of Jordan, former minister at the Ministry of Water and Irrigation, Amman 5/5/2009
- Laith al-Waked, General Executive Manager MIRRA (Methods for Irrigation and Agriculture), Amman 27/4/2009
- Rania al-Zoubi, Mercy Corps, Amman 19/5/2009

8.2 Interview guide

Introductory questions

- Could you tell me a little about your job concerning water?
- Is there a certain part of your job, or certain issue that you have a greater passion for?

Thematic questions

- How would you describe the water situation in Jordan?
- How would you describe that the Jordan-Israeli cooperation in the Jordan River Basin is working (well, bad, improving, deteriorating...)
- What do you see are the greatest challenges or obstacles to cooperation? What are the greatest successes? Greatest gains?

If we now put focus on the domestic, or national, level I am mostly interested in how the water management is affecting people in Jordan and the Jordanian society.

Ecologic sustainability

- What is the water quality in the Jordan River Basin?
- Are water levels robust, decreasing or increasing?
- How has the ecologic condition changed since the Peace Treaty?
- What do you think would be the likely situation if there was no cooperation?

Economic efficiency

- Would you say water is being managed in an economically efficient way in Jordan? (losses, efficiency, sectors)
- Are there more preferable ways of managing water in the region?
- Are donor's money well invested in the water sector in Jordan?
- What would be the likely situation if there was no cooperation?

Social equity

- How is the available water in Jordan distributed amongst people?
- Do you see any systematic differences between people's access to water? (geographical, economical, ethnic...)
- What would be the likely situation if there was no cooperation?

Follow-up questions

- Could you please give me an example of...?
- Could you explain again what you said about...?