

Why states cooperate over shared water: The water negotiations in the Jordan River Basin

Anders Jägerskog

Linköping Studies in Arts and Science

In the Faculty of Arts and Science at Linköping University research is pursued and research training is conducted within six broad problem areas known as themes, in Swedish *tema*. These are: *Child Studies*, *Communication Studies*, *Gender Studies*, *Health and Society*, *Technology and Social Change*, and *Water and Environmental Studies*. Jointly they publish the series Linköping Studies in Arts and Science.

Distributed by:
Department of Water and Environmental Studies
Linköping University
S-581 83 Linköping
Sweden

ISBN 91-7373-749-6
ISSN 0282-9800

© Anders Jägerskog and the Department of Water and Environmental Studies, 2003.

Cover photo: Andre Maslennikov
Cover design: Dennis Netzell
Layout: Monika Thörnell
Printed at Unitryck, Linköping 2003

Contents

Acknowledgements	8
List of Abbreviations	11
1 Introduction	13
1.1 Introduction	13
1.2 The water question in the Middle East peace process	15
1.3 Research question	20
1.4 Limitations	23
1.5 Research methodology	24
1.6 Information collection and material	26
1.7 Outline of the dissertation	31
2 Theoretical considerations: Reflections on water with regard to conflict and cooperation in the international arena	32
2.1 Introduction	32
2.2 Theories of the relationship between science and politics	33
2.2.1 The role of discourses in the political process	36
2.3 Negotiation theory	39
2.3.1 Negotiations and risk theory	42
2.4 Regime theory	46
2.4.1 How do regimes come into existence?	50
2.5 The actor (agent) and structure debate	54
2.5.1 'Simple' views of structure–agency	56
2.5.2 Dialectic understanding of structure and agent: a bridge?	58
2.6 An analytical model for the analysis of interstate relations	62
2.6.1 The relevance of the model	63
2.7 Conclusions	66

3	Water in the Arab - Israeli conflict: background, and historical and present situation	69
3.1	Introduction	69
3.2	The geography and hydrology of the Jordan River Basin	69
3.3	The historical use of water in Palestine and Jordan	76
3.4	Conflicts over water: past disputes	80
3.5	International and regional dimensions: the decline of the Arab-Israeli conflict	87
3.6	International water law perspectives	89
3.7	Israeli, Palestinian and Jordanian water management: different constraints and opportunities	92
3.8	Conclusions	96
4	The water negotiation process	97
4.1	Introduction	97
4.2	Water in the multilateral track	97
4.3	Water in the bilateral tracks: agreements and outcomes	100
4.3.1	Water in the track two efforts	106
4.4	The Israeli-Palestinian water negotiation process	108
4.4.1	Opportunities and obstacles	108
4.4.2	Risk in the negotiations – perceived and ‘real’	111
4.5	The Israeli-Jordanian water negotiation process	115
4.5.1	Opportunities and obstacles	115
4.5.2	Risk in the negotiations – perceived and ‘real’	117
4.6	Conclusions	120
5	Science and politics in the water negotiations	122
5.1	Introduction	122
5.2	Experts in the Israeli-Palestinian water negotiations	122
5.3	Experts in the Israeli-Jordanian negotiations	125
5.4	The epistemic communities approach: a critique	128
5.5	The importance of politics: the determining power of the ‘sanctioned discourse’	130
5.6	Conclusions	134

6	Assessment of cooperation: an analysis of the post-agreement phase	136
6.1	Introduction	136
6.2	The Israeli–Palestinian Joint Water Committee: institutionalized cooperation?	137
6.2.1	Implementation as seen from an actor–structure perspective: the Israeli–Palestinian case	141
6.3	The Israeli–Jordanian Joint Water Committee: institutionalized cooperation?	143
6.3.1	Implementation as seen from an actor–structure perspective: The Israeli–Jordanian case	148
6.4	A water regime in the Jordan River Basin: a means for lowering tensions on shared transboundary water?	149
6.4.1	Limitations of regime theory in the Jordan River Basin case	150
6.5	Conclusions	151
7	Water as a means for cooperation: concluding comments	153
7.1	The research questions revisited	153
7.2	Main contributions	157
7.3	Policy relevance	159
7.4	Areas for future research	160
Appendix 1		
	List of people interviewed	162
Appendix 2		
	Treaty of peace between the state of Israel and the Hashemite Kingdom of Jordan, October 26, 1994	165
Appendix 3		
	Israeli-Palestinian Interim Agreement on the West Bank and the Gaza Strip Washington, D.C., September 28, 1995	171
Appendix 4		
	Agreement on the Gaza Strip and the Jericho Area, May 4, 1994	175
	References	177

Acknowledgements

Throughout the doctoral journey I have had the pleasure of receiving comments, criticism and a great deal of encouragement from a large number of people. This has definitely contributed to improving the quality of the thesis. Even more important than that is the friendships I have made as a result of a shared interest in water and politics. My supervisor, Jan Lundqvist, has been a constant supporter and guide in the process, providing comments on drafts quickly, freely sharing his knowledge and always happy to take time to engage in discussions. In particular I have enjoyed drinking a cup of coffee in your room and discussing the next steps of the work.

When I spent the spring term of 2001 at the School of Oriental and African Studies (SOAS), University of London, as a visiting research student, Tony Allan gave generously of his time, sharing his expertise on water issues in the Middle East and important contacts. Since then he has been a constant supporter, offering guidance on both theory and research strategy. Kai Wegerich at SOAS and Jeroen Warner at Wageningen University have also been good friends, always questioning my theoretical ideas and making sure they are sound. Greg Shapland from the British Foreign and Commonwealth Office and Stephen Merret from SOAS also encouraged me with their comments. Tony Turton from Pretoria University, South Africa, has always been enthusiastically encouraging of my efforts to apply international relations theory in the fields of water.

In Jordan special thanks go to Tarek Tarawneh who provided me with all the necessary connections among people in the water field in Jordan. In Jerusalem, Robin Twite from the Israel/Palestine Centre for Research and Information (IPCRI) has been helpful in many ways.

At the Swedish Institute for International Affairs (SIIA), Anders Mellbourn and Kjell Davén kindly offered me a place to work while in Stockholm. Also at SIIA, Elisabeth Corell helped me greatly. Whether in discussing theoretical ideas, writing articles or commenting on the thesis, her assistance was always useful, stimulating and fun.

Through my involvement in Green Cross International (GCI) I had the honour of working with the late Jan Danielson whose energy and empathy for both people and nature are an example to us all. May his memory remain. At GCI in Geneva Fiona Curtin and Bertrand Charrier also gave me useful comments on ideas in the research.

At the Swedish International Development Cooperation Agency (Sida), Bengt Johansson has been a good supporter, giving me the opportunity to test if my research ideas could actually 'fly' in real life. At the Stockholm International Water Institute (SIWI), Malin Falkenmark has been a good source of both knowledge and support, always welcoming new ideas. Also at SIWI, Anders Berntell, Ulf Ehlin, Johan Kuylensstierna and Dave Trouba provided me with opportunities to engage in dialogue with the parties in the Jordan River Basin.

Geoff Gooch and Per Jansson from the Political Science Department at Linköping University have been helpful in providing comments on chapters on different occasions. My fellow D-99s at TEMA have also provided comments, as well as being good company when I have been in town. Helena Lindholm Schulz from Gothenburg University gave me useful comments early on in the process.

At the Stockholm International Peace Research Institute (SIPRI) the people in the library gave me a place to sit during the final months of my work and provided good lunch company. Eve Johansson has been of much help in tidying up my English. Thanks also go to Monika Thörnell, who converted what was a Word document into a book.

The respondents were all forthcoming with information and enthusiastically shared their views. Without their contribution the thesis would have been much less comprehensive and the research process much less fun.

My parents, Lars and Kerstin, have always encouraged and supported me. The discussions with my biggest fan, Grandpa Gunnar, on Middle Eastern politics and all the other important issues in life have been truly invigorating. To Agnes and Hedda, my wonderful daughters - you help me to see what is important in life. To the love of my life - Elin, my wife and best friend, thanks for your love, encouragement and support. Without you life would not have become as good as it indeed is.

This research was supported by:

The Department for Water and Environmental Studies, Linköping University

The Swedish Foundation for International Cooperation in Research and Higher Education (STINT)

Yngve and Maud Möllers Stipendiefond

Olof Palmes Minnesfond

Folke Bernadottes Minnesfond

Helge Ax:son Johnsson Stiftelse

Kungliga Vitterhetsakademien

Forskraftstiftelsen Theodor Adelswärds Minne

Linköping, September 2003

Anders Jägerskog

List of abbreviations

bcm	Billion cubic metres
CSBM	Confidence- and security-building measure
DFID	Department for International Development (UK)
DOP	Declaration of Principles (Oslo Accords)
EU	European Union
GNP	Gross national product
ILA	International Law Association
ILC	International Law Commission
IPCRI	Israel/Palestine Centre for Research and Information
JWC	Joint Water Committee
mcm	Million cubic metres
MWGWR	Multilateral Working Group on Water Resources
PLO	Palestine Liberation Organization
PWA	Palestinian Water Authority
UNRWA	United Nations Relief and Works Administration
UNTSO	United Nations Truce Supervision Organization
USAID	United States Agency for International Development

CHAPTER 1

Introduction

1.1 Introduction

What we call Man's power over Nature turns out to be a power exercised by some men over other men with Nature as its instruments. C.S. Lewis, *The Abolition of Man* (New York)

Water is the source of life. In many religions it is portrayed as something sacred – a gift from God. Water is required for almost all a society's activities, such as the very visible ones of washing and cooking, but also in less visible areas such as food production. While in certain areas access to clean water is plentiful, in many parts of the world this is not the case.

It is therefore no surprise that increasing attention is being given to the importance of the world's water resources and aquatic systems. The rising demand for water is due to a variety of factors, such as population growth and urbanisation. The sustainable management of water resources is extremely important in the developing world, which is continually faced with a lack of the financial resources, infrastructure and human resources needed to improve water management. Today, more than 45 per cent of the world's population lives in internationally shared river basins. The increasing pressure on the limited freshwater resources in places such as the Middle East, Southern Africa and Southern Asia makes greater and deeper knowledge of how to manage transboundary waters essential.

While it was previously assumed that shared waters could and would be a source of conflict and even war, it has been demonstrated more recently that they can serve as a strong unifying force if addressed in a coherent manner. A database compiled by Aaron Wolf's institution at Oregon State University, comprising all the water agreements on international watercourses (<http://www.transboundarywaters.orst.edu/>), shows that states tend to find ways to reach agreement rather than to engage in conflict over shared water resources. There is still a need, however, to understand *why* and under *what conditions* such coopera-

tion occurs. Furthermore, it is of interest to analyse the *quality* of that cooperation.

The aim of this study is to analyse why and under what conditions cooperation between Israel and the Palestinians and between Israel and Jordan has taken place and how it has functioned in the water sector. The study focuses on the water aspects of the respective peace negotiations as well as the implementation of what has been agreed upon. It therefore moves beyond the existing material which states that trans-boundary water cooperation does occur – material which is ample in a quantitative sense – by exploring why cooperation has occurred in the Jordan River Basin.

This study is centred on foreign policy decision making in a situation of resource scarcity. The specific instance is the water *problématique*, one of the central questions in the peace process in the Middle East. Hitherto, the overall Arab–Israeli negotiations have been dissected and analysed extensively¹ but most of these analyses have not focused exclusively on specific issues such as water. They are of a more general nature, dealing with the overall conflict.

For students of international relations the question of what determines foreign policy decision making has long been an area of dispute. Some argue that reasons for decisions are to be found in the international *structures*, while others propose explanations which highlight the role of international as well as national *actors*.² Since knowledge about water management in the Middle East region is quite advanced, a pertinent question in the thesis revolves around how this knowledge is incorporated into the negotiation process and its outcome.

‘Experts’ in this study are seen as scientific experts who act as advisers to the respective parties to negotiations.³ *How and to what extent* are experts on water able to influence the negotiations?

1 See e.g. Aggestam, Karin, *Reframing and Resolving Conflict: Israeli–Palestinian Negotiations 1988–1998* (Lund: Lund University Press, 1999); Flamhaft, Ziva, *Israel on the Road to Peace. Accepting the Unacceptable* (Boulder, Colo. and Oxford: Westview Press, 1996); and Makovsky, David, *Making Peace with the PLO: The Rabin Government’s Road to the Oslo Accord* (Boulder, Colo.: Westview Press, 1996).

2 The concepts of structure and actor are elaborated on in section 2.5.

3 For a more thorough definition of experts see section 2.6.1 below

1.2 The water question in the Middle East peace process

In the Middle East and North Africa (MENA) the average per capita availability of water is extremely low in absolute terms and in international comparison. The MENA region today has 1 percent of the total freshwater of the world and 5 per cent of the total population of the world. Since water is the key to survival and to a well-functioning environment, there is a risk that political conflicts in areas with limited water resources will be especially critical. In Jordan, Israel and the Palestinian areas the availability of water is extremely low. All these countries/entities have a much lower availability of water than the 1000 cubic metres (m³) of renewable water per person per year which is used as a benchmark for water scarcity and which, for example, the World Bank uses.⁴

The most severe water scarcity in the world is in the Middle East. The region essentially ran out of water in the 1970s.⁵ The deficit is particularly alarming in the states and entities in the Jordan River Basin. Currently in Gaza and the West Bank the availability of water is well below 100 m³ of renewable water per person/year, while Israel has, on average, less than 300 m³ of renewable water per person/year and Jordan around 100 m³. (As a comparison Sweden has around 20 000 m³) Population growth, which is a result both of a high birth rate among the Palestinian and to some extent the Jordanian population, and of immigration to Israel, makes for increasingly severe pressure on the already scarce water resources and potentially even higher risks for water-related conflicts. Another factor that complicates matters further is the comparatively large share of the available water that goes to the Israeli settlers in the West Bank and Gaza compared to the share that is accessible to the Palestinians.⁶

Since shortage of water makes it an extremely sensitive asset for Israel, the Palestinian Authority and Jordan, some predict that it will be an issue of serious dispute, if not a reason for violent conflict and even

4 Falkenmark, Malin, 'Fresh water: time for a modified approach', *Ambio*, 15/4 (1986), pp. 194–200.

5 See e.g. Allan, Tony [J. A.], *The Middle East Water Question: Hydropolitics and the Global Economy* (London and New York: I. B. Tauris, 2001)

6 Jägerskog, Anders, 'Vattnet i Mellanöstern: En källa till konflikt eller samarbete?' [Water in the Middle East: source of conflict or cooperation?], *Världspolitikens Dagsfrågor*, 4 (2000).

wars.⁷ However, although all the parties are well below the water scarcity level, and although there are various opinions about the role of water as *a* factor that has contributed to the Arab–Israeli conflict, water has not been *the* factor that has caused violent conflict.⁸ Fears of water-related conflicts in the region are natural, but the shortage of water is so acute that even if one party were to capture the whole resource it would still face a situation of water scarcity, in addition to severe social and political tensions. Hence, cooperation is needed in such a situation.

A just and sustainable agreement on water is of the utmost importance since, quite apart from mitigating risks of conflict, it would have the potential to affect the process of economic and social equalization between the entities as well as their social and economic development. Inherent in such an agreement would, ideally, be a high degree of cooperation since cooperation, besides reducing the risk of conflict, would create greater transparency in the economic sphere which would greatly benefit development in the areas of Jordan and the Palestinian Authority.⁹

While there are still violent elements to the political conflict between Israel and the Palestinian Liberation Organisation (PLO)/Palestinian Authority and between Israel and the Arab world at large, the water question *can* thus be viewed as a positive area for growing cooperation,

7 See e.g. Starr, Joyce R., 'Water wars', *Foreign Policy*, 82 (spring 1991), pp. 17–36; and Bulloch, J. and Darwish, A., *Water Wars: Coming Conflicts in the Middle East* (London: Victor Gollancz, 1993). These sources should, however, rather be seen as examples of how knowledge can be very misleadingly constructed. For example, they ignore the mitigating role that international food trade has had on the water conflict in the region and the fact that water has been more of a source of cooperation and coordination in the region than of conflict?. For a general critical view on the relation between war and water see Turton, Anthony, 'Water wars: enduring myth or impending reality?', *Africa Dialogue*, 2 (2000), pp. 165–76; and Allan, *The Middle East Water Question*.

8 For a more critical assessment of the role of water in the Arab–Israeli conflict see e.g. Isaac, Jad, 'Core issues of the Palestinian–Israeli water dispute', in Kurt R. Spillman and Günther Bächler (eds), *Environmental Crisis: Regional Conflicts and Ways of Cooperation: Report of the International Conference at Monte Verita, Switzerland, 3–7 October 1994*, Occasional Paper no. 14 (Zurich: Environment and Conflict Project (ENCOP), Sept. 1995); and Wolf, Aaron T. and Hamner, Jesse H., 'Trends in transboundary water disputes and dispute resolution', *Water for Peace in the Middle East and Southern Africa* (Geneva: Green Cross International, 2000), pp. 55–66.

9 Lonergan, Steve, 'Water resources and conflict: examples from the Middle East', in Nils Petter Gleditsch (ed.), *Conflict and Environment*, NATO ASI Series 2: Environment, Vol. 33 (London: Kluwer Academic, 1997), pp. 375–84.

and as such it is a particularly useful case to study. This cooperation is widely recognized as necessary for the future of the states in the region.¹⁰ In the negotiations between Israel and the Palestinians an interim agreement has been reached (the Interim Agreement of September 1995) including water issues, which will eventually be substituted by the final agreement between Israel and the Palestinians, and between Israel and Jordan an agreement already exists on water within the peace treaty of October 1994.¹¹

It is important to understand how it has been possible to reach agreement on the issue of water, which at first glance seems like a zero-sum game (that is, one party's gain implies an equal loss on the part of the other) in this water-scarce region. One problematic factor with the agreements is their bilateral nature. Bilateral agreements are an obstacle to a perspective that covers the whole Jordan River Basin, which is needed if sustainable use of the resource is to be achieved. Moreover, because they are bilateral, the agreements are rather fragile since any future allocations to another state (in this case Lebanon or Syria) could lead to a dispute over the allocations agreed upon between Israel and Jordan and between Israel and the Palestinian Authority. While the achievement of these agreements on water is a positive sign, the water problem in the region cannot be said to have been solved, since the scarcity of water will only intensify.

10 See e.g. Tessler, Mark, *Israel at Peace with the Arab World* (Abu Dhabi: Emirates Center for Strategic Studies and Research, 1995), pp. 12–13; Rabi, Ayman, 'Water: a means for confidence-building and cooperation in the Jordan River Basin', in *Water for Peace in the Middle East and Southern Africa* (Geneva: Green Cross International, 2000), pp. 33–8; and Shuval, Hillel, 'The water issues on the Jordan River Basin between Israel, Syria and Lebanon can be a motivation for peace and regional cooperation', in *Water for Peace in the Middle East and Southern Africa*, pp. 39–54.

11 For a good description of the water agreements see Liebszewski, Stephan, *Water Disputes in the Jordan Basin Region and their Role in the Resolution of the Arab-Israeli Conflict*, Occasional Paper no. 13 (Zurich: Environment and Conflict Project (ENCOP), Aug. 1995). It is important, however, to acknowledge the differences between the 1994 Israeli–Jordanian agreement on water and the 1995 Israeli–Palestinian interim agreement on water. The former is detailed on water issues while the latter is sparse on details and refers most of the crucial issues to the final status negotiations. This means that Israel still has control over most of the water resources in the West Bank and Gaza. In the 1995 agreement, however, Israel did, for the first time, acknowledge Palestinian water rights in the West Bank. For the whole of the Israeli–Jordanian peace treaty see <<http://www.israel-mfa.gov.il/mfa/go.asp?MFAH00pa0>>; and for the Israeli–Palestinian interim agreement see <<http://www.mfa.gov.il/mfa/go.asp?MFAH00qd0#app-40>> or <<http://www.nad-plo.org/fact/annex3.pdf>>.

Drawing on the increasing interdependence in international relations, Elhance has coined the term '*hydrological interdependence*'. As rivers and underground aquifers between countries located in shared basins cross the national boundaries of states, three areas of concern among the different riparian states arise: the sovereignty, the territorial integrity and the national security of the riparian states. Since the trans-boundary water resource links all the states together in a complex system of interdependence in the spheres of economics, politics, environmental policies and security, the dynamics of the relationship become especially vulnerable in a situation of a growing water scarcity. Hydrological interdependence in a water-scarce river basin creates both a potential for conflicts between the riparian states and incentives for interstate cooperation. The reason for the vulnerable nature of the relationship between the riparian states is the upstream–downstream *problématique*. This means, for example, that if an upstream state decides unilaterally to withdraw a certain amount of the common water resource the effect on the downstream state(s) could be rather severe, depending on the relative water scarcity in the other riparian states.¹²

Increased global interdependence in food trade is an important, although not always acknowledged, factor that could reduce the stress generated by scarcity of water. While states in the Middle East can hardly pursue a policy of food self-sufficiency, they can import 'virtual water', which is the water embedded in water-intensive commodities such as grain. The scarce water resource should instead be reallocated from agriculture to economically more viable products that are less water-intensive. Hence, importing more water-intensive products can effectively decrease the competition over the scarce water resources in the Middle East. However, these ideas are not fully accepted within the 'sanctioned discourse'¹³ in the Middle East because they are politically stressful.¹⁴ They challenge the dominant realist view of the state as a

12 Elhance, Arun P., *Hydropolitics in the 3rd World: Conflict and Cooperation in International River Basins* (Washington, DC: United States Institute of Peace Press, 1999), pp. 12–14.

13 'Sanctioned discourse' is a term coined by Charles Tripp at the University of London School of Oriental and African Studies (SOAS). It refers essentially to a normative paradigm within which certain hypothesis might be raised while others cannot.

14 Allan, Tony [J. A.], *Global Systems Ameliorate Local Droughts: Water, Food and Trade*, SOAS Occasional Paper no. 10 (London: University of London, School of Oriental and African Studies, 1999).

unitary actor.¹⁵ These perspectives point to the need for an analysis of the domestic politics, political ideologies and various interest groups in the basin to be included in any analysis.

Governments often consult experts/scientific advisers to get advice on complex environmental issues as well as to legitimize political decisions.¹⁶ Experts are likely to assume an important role in the negotiation process because the complexity of the water issue makes it hard for diplomats to negotiate. Consequently, examination of the influence¹⁷ that experts/advisers have on the negotiation process and its outcome is important. This issue is even more important when we consider the findings of Allan, who argues that scientists are aware of the fact that the Middle East has run out of water while the public and the politicians do not perceive the water deficit.¹⁸ An examination of the role

15 Dinar, Shlomi, 'The Israeli-Palestinian water conflict and its resolution: A view through international relations theory', Paper presented at the International Studies Association, 40th Annual Convention, Washington, DC, 16–20 Feb. 1999.

16 Corell, Elisabeth, *The Negotiable Desert: Expert Knowledge in the Negotiations of the Convention to Combat Desertification*, Linköping Studies in Art and Science (Linköping: Linköping University, 1999), p. 23.

17 The concept of influence is not a straightforward one or easy to define, partly because it is related to another concept that is also difficult to define, namely the concept of power. In the political science literature power is discussed first and foremost in terms of how states are able to influence each other. For example, Holsti defines power as the 'general capacity of a state to control the behavior' of other states. Holsti, Kalevi, J., *International Politics: A Framework for Analysis* (London and Toronto: Prentice-Hall International, 1988), p. 141. Moreover, he views influence as an *aspect* of power. Scruton sees influence as a *form* of power, although one distinct from control, coercion, force and interference. Scruton, R., *A Dictionary of Political Thought* (Basingstoke: Macmillan, 1996). Cox and Jacobson point out the importance of the context within which influence is exercised. Cox, R. W. and Jacobson, H. K., *The Anatomy of Influence: Decision Making in International Organization* (New Haven, Conn.: Yale University Press, 1973), p. 4.

While most of the discussions and debates on influence deal with state-to-state interactions, it is also increasingly recognized that there are other levels of influence. The particular aspects of influence that will be investigated in this study involve the influence scientific experts have on a negotiation. Haas discusses the role of 'epistemic communities' on policy making and argues that scientific consensus on an issue can be a basis for influence on policy making. Haas, P., *Saving the Mediterranean: The Politics of Environmental Cooperation* (New York: Columbia University Press, 1990). The role and influence or lack thereof by scientific experts is thoroughly discussed in chapter 5.

18 Allan, Tony [J. A.], *The Middle East Water Question: Hydropolitics and the Global Economy* (London and New York: I. B. Tauris, 2001), p. 7. However, to argue that politicians do not at all perceive the water deficit may be to exaggerate. Rather, political circumstances make it almost impossible for them to act on that knowledge as it is

of experts or advisers in negotiations is provided in section 5.2 and 5.3. Furthermore, when analysing the influence of experts/advisers on negotiations it is also important to discuss the science–policy dialogue. The effectiveness of that dialogue is the measurement of the influence experts/advisers can have in a negotiation.

Although the water scarcity issue is most serious in the Middle East it is by no means limited to that region. Even though every region has its own specific characteristics and conflict features there are also similarities. Thus, a greater insight into the mechanisms being discussed within the Middle East peace process to mitigate the water conflict there can offer useful help in studying other regions of hydrological interdependence. Hence, the insights gained through the study of the role of experts and advisers in the Middle East might be helpful in other cases of transboundary water negotiations.

While the focus of this study is on the role of water in the Arab–Israeli conflict, I am fully aware that the water issue is intimately linked with other issues in the peace process, such as the question of Jerusalem and the refugee problem. A positive development in the peace process in general is likely to affect the water negotiations positively, while a negative development will affect them negatively.

To summarize, the Israeli–Palestinian and Israeli–Jordanian negotiations on water can provide a model of water conflict management in a situation of acute water shortage.

1.3 Research question

This thesis will investigate the issue of water in the Middle East peace process. Building on the basic assumption that water has played and will play an important role in the Arab–Israeli conflict and its tentative resolution, the overall aim is to identify factors that have contributed to the resolution of those aspects of the conflict on which agreement has so far been reached.

Identifying the aim of the thesis and the related questions has not been a straightforward process. Rather, the questions have evolved during the course of the research. While it was originally hypothesized that water was key to the resolution of the Middle East problem, it is now acknowledged that, while it is indeed a central issue, it is subordi-

not politically feasible to do so. Thus, their perceptions should rather be seen as a result of the political reality within which they are bound to act.

nate to issues higher up on the political agenda such as refugees and the status of Jerusalem. Furthermore, during the process of information collection and interviewing people involved it was increasingly evident that, while scientific experts are important in the process, they are less important than originally hypothesized. For more on the research process see section 1.5.

Some observers argue that its scarcity is not *the* water problem in the Middle East: rather the problem is institutional.¹⁹ Hence, how is cooperation²⁰ institutionalized? The purpose is to understand *why* and *under what conditions* cooperation on water has occurred in the Jordan River Basin. I limit my research to those areas dealt with within the peace process which started in 1991. The link between the strategies that have proved successful and future challenges is obvious. If we can identify the factors that up until now have proved helpful as conflict resolution/transformation mechanisms we will have a clear advantage as we attempt to cope with the problems of today and tomorrow.

19 Allan, *The Middle East Water Question*.

20 Cooperation is by no means an uncontested term. Keohane has made a useful distinction in Keohane, Robert O., 'International institutions: two approaches', in Friedrich Kratochwil and Edward D. Mansfield (eds), *International Organization: A Reader* (New York: HarperCollins, 1994), pp. 44–57. Cooperation is sharply distinguished from both harmony and discord. Keohane argues that when there is harmony between two actors the policies pursued by each actor automatically facilitate the attainment of the goals of the other actor. When discord prevails the actions taken by each actor effectively hinder the attainment of the others' goals. Regardless of whether harmony or discord characterizes relations between two actors, there is no incentive for either of them to change its behaviour. Cooperation, as distinct from harmony (and definitely as distinct from discord), 'requires that the actions of separate individuals or organizations - which are not in pre-existent harmony - be brought into conformity with one another through a process of policy co-ordination'. Cooperation is, accordingly, dependent on each party changing his/her behaviour as a reciprocal act. Using this definition we are able to measure the *c* which would have been obtained in the absence of cooperation.

Wendt, Alexander, 'Anarchy is what makes states of it: the social construction of power politics', in Kratochwil and Mansfield (eds), *International Organization: A Reader*, pp. 77–94, furthermore, discusses the institutionalization of cooperation. He argues that: 'The process by which egoists learn to cooperate is at the same time a process of reconstructing their interests in terms of shared commitments to social norms. Over time, this will tend to transform a positive interdependence of *outcomes* into a positive interdependence of *utilities* or collective interest organised around the norm in question'. Wendt argues that this constructivist approach to negotiation focuses on how the expectations that are produced by the behaviour affect interests and identities. This process of institutionalization of cooperation is one in which actors internalize new understandings of self and other.

Research done so far on the post-agreement phase is not extensive: most of the research focuses on the reasons for conflict. Hence, a perspective that assesses the way cooperation is achieved and agreements are reached, and which also analyses the cooperation in the post-agreement phase, would be beneficial for the understanding of how to mitigate water-related conflicts. The research will concentrate on water-related negotiations and the ensuing water cooperation between Israel and Jordan, and between Israel and the Palestinian Authority.

Research on the relevant contributory factors which up until now have helped to manage and resolve water issues in the Arab–Israeli realm and the analysis of the ongoing cooperation should concentrate on the following areas:

- How does the interplay between the structures and the actors affect the process and outcome²¹ of the negotiations? In particular, do experts/advisers influence the actions taken by the negotiators and if so in what ways and to what extent?²² For a theoretical overview of the questions, see the model in section 2.6
- Cooperation was built into the agreements reached between the different parties through the establishment of Joint Water Committees (JWCs). It is therefore important, especially since conflict rather than cooperation has been the rule both between Israel and Jordan and between Israel and the Palestinians, to analyse *how* and *under what conditions* the cooperation on water has worked in the post-agreement phase.²³ The research question is: What is the quality of

21 By process I mean the negotiations and with outcome the agreement.

22 Experts/advisors are presumed to be of great importance in the negotiations on water as environmental problems (to which water belongs), due to a high degree of complexity, implies a strong need for scientific expertise. For a helpful work on the influence of experts/advisers on international environmental negotiations see Corell, Elisabeth, *The Negotiable Desert: Expert Knowledge in the Negotiations of the Convention to Combat Desertification*, Linköping Studies in Art and Science (Linköping: Linköping University, 1999).

23 The analysis of the post-agreement phase deals with what happens after agreements are reached. An analysis of what happens after an agreement is signed seldom gets the attention of the scholars. Rather, the focus of textbooks and writings on water in the Middle East has centred on the content of the agreements and the water conflict in general. An analysis of the post-agreement phase is obviously easier and perhaps more relevant in the Israeli–Jordanian case since a peace agreement exists between them. However, the Israeli–Palestinian case will also be analysed as an interim agreement have been signed between them and a Joint Water Committee exists both between Israel and Jordan as well as between Israel and the Palestinian Authority.

the cooperation that has followed the Israeli–Palestinian Interim agreement and the Israeli–Jordanian Peace Agreement?²⁴ Drawing on regime analysis, among other tools, the cooperation (meaning an assessment of the implementation process) within the institutions created for joint management will be analysed.

1.4 Limitations

The focus of the analysis is on the negotiation process with regard to water between Israel and the Palestinians and Israel and Jordan, respectively. In addition, the post-agreement phase is analysed. The water negotiations between Israel and the Palestinians and between Israel and Jordan can be seen as separate events. However, since they deal with water resources which cross national boundaries, and all three parties are part of the same basin, it is better not to treat them as separate events. By the same reasoning it would seem logical also to include the other states in the basin – Syria and Lebanon. However, as negotiations with these two latter have not progressed as far as the other two, they are not included in the analysis here.²⁵ Neither are the water relations between Jordan and Syria included, although they would merit an analysis in their own right. The time and space constraints of this dissertation do not permit a detailed analysis of these additional cases.

Nor are the process and outcome of the multilateral working group on water resources, which was established after the Madrid meeting in 1991 and held its latest meeting in December 1996, incorporated into the analysis, except as a brief description and only in so far as they provide a framework for the analysis of the bilateral water negotiations between Israel and the Palestinians and Israel and Jordan. This is be-

24 While the massive work of Aaron Wolf in compiling a database that comprise all the water agreements on international watercourses (available at <<http://www.trans-boundarywaters.orst.edu/>>) shows that states tend to find ways to reach agreement, rather than engage in conflict on shared water resources, there is still a need to evaluate and analyse the quality of those agreement in the post-agreement phase. Thus, an analysis of the water cooperation between Israel and the Palestinian Authority, and between Israel and Jordan, will enhance our knowledge of the implementation process after agreement is reached.

25 Negotiations on shared waters between Israel and Syria were part of the peace negotiations that took place during 1999 after Ehud Barak (of the Labour Party) was elected prime minister in Israel. However, these negotiations did not end in a peace agreement or any sort of interim agreement. Between Israel and Lebanon there have been no substantive negotiations on their shared waters.

cause the working group has not been the place for substantial negotiations between the parties but rather a forum for discussions.

The time period covered ranges from the initiation of the bilateral negotiations in 1992–3 up to December 2002. Other aspects, such as the low-key water cooperation and coordination that have been ongoing between Israel and Jordan since the 1950s, are also included in the general analysis.

1.5 Research methodology

The choice of a research strategy depends on the purpose of the study, since that will guide the kind of information one is interested in finding. This dissertation is a case study²⁶ of a qualitative nature since that method is considered to be the most appropriate when analysing a contemporary event or process such as the water negotiations and the implementation of the agreements reached. By using a qualitative method it is possible to investigate issues such as why cooperation has occurred and how it has functioned. It should also be noted that as a researcher I interpret the information received from the respondents as well as the information gathered from literature studies.

The study focuses on how actors and structures have affected the water negotiations and implementation process between Israel and the Palestinians, and Israel and Jordan. Thus it is an analysis that focuses predominantly on process, but also on outcome.²⁷ The thesis draws on several disciplines. Coming from a political science and international relations background, the theoretical framework for the thesis has been supplemented and enriched with perspectives from sociology and science studies.

The qualitative case study method is seen as appropriate when an analysis seeks to improve the understanding of the dynamics behind social and political processes in areas where contentious issues are discussed.²⁸ According to Yin, the strength of single case study data collection is that it permits the researcher to use several different sources

26 For more on case study research see Yin, Robert K., *Case Study Research: Design and Methods*, 2nd edn (London: Sage, 1994).

27 By process I mean the negotiations and by outcome I mean the actual agreements of the negotiations.

28 Merriam, Sharan B., *Case Study in Research Education: A Qualitative Approach* (San Francisco, Calif., Jossey-Bass, 1988), p. 11.

in detail. Furthermore the case study method is often used in empirical studies that involve context-dependent contemporary events.²⁹ In addition, studies that rely on cases are more likely to result in unexpected findings.³⁰ This observation is also shared in my experience of gathering information.³¹ I started the research process with an expectation that scientific experts would be important contributors to and influence the negotiation process and its outcome. However, during the progress of the research it became apparent that a larger focus on the role of domestic structures for the formulation of policy was needed in addition. Indeed, they were more important.

The qualitative case study method is frequently criticized for not allowing generalizations to be made, and this argument has some validity. However, other observers argue that ‘generalizability need not be a problem in qualitative research’.³² Still, if we contrast case study research with larger quantitative comparative studies there is an apparent trade-off between their respective advantages. In a quantitative comparative study one will have the possibility of making generalizations but will inevitably lose in detail, while in the qualitative case study one will gain in terms of in-depth knowledge and lose in terms of the possibility of making generalizations. My own reason for choosing the qualitative case study method is related to the acknowledgement that context is imperative to understanding the water negotiations. Without recognition that the water issue is inherently linked to other political issues, the analysis and conclusions will be lacking crucial elements.

It is sometimes argued that a sharp line should be drawn between inductive and deductive approaches. However, as indicated above, the methodology I have used is neither fully deductive nor fully inductive. Rather, I favour another approach, outlined by Layder, who proposes the use of adaptive theory since it recognizes the interplay between theory and empirical material. He argues that: ‘The theory both adapts to, or is shaped by, incoming evidence at the same time as the data themselves are filtered through (and adapted to) the extant theoretical mate-

29 Yin, *Case Study Research. Design and Methods*, p. 23.

30 Platt, Jennifer, ‘What can case studies do?’, *Studies in Qualitative Methodology*, 1 (1988), pp. 1–23.

31 On the interviews see section 1.6.

32 Silberman, David, *Interpreting Qualitative Data: Methods for Analysing Talk, Text and Interaction* (London: Sage, 1993), p. ix.

rials that are relevant at hand'.³³ By using this approach I have had the opportunity to formulate and reformulate theoretical ideas on the basis of my empirical findings. This approach has also enabled me to use theoretical tools from other disciplinary backgrounds such as sociology and negotiation theory.

In addition to being an analysis of the research questions posed above, the dissertation is also in part descriptive in that it provides a history of the water situation in the Jordan River Basin as well as an account of the process of implementation of the water-related parts of the respective agreements.

All in all, it is acknowledged that an analysis of a contemporary and ongoing process, which the water negotiations and implementation process are, has its limitations in terms of the archival material which would be accessible if a historical case were being analysed. However, it is my aim to provide enhanced knowledge and understanding through an analysis of an ongoing process of moving from conflict to cooperation.

1.6 Information collection and material

The material for the research was collected from the period September 1999 to December 2002. Interviews have been the main source of information since relatively little has been written on the water negotiations and the implementation of the agreements. In addition, I have used newspaper reports, Internet sources, various official documents and secondary material.³⁴

It is, of course, important to recognize that access to information concerning negotiations between states on highly sensitive issues such as water can be constrained. In particular, the ongoing (or at least not finalized) negotiation between Israel and the Palestinians obviously restricts what the respondent can, will or want to say in an interview. Access to the people who have been involved has been fairly unprob-

33 Layder, Derek, *Sociological Practice: Linking Theory and Social Research* (London: Sage, 1998), p. 38.

34 The main newspaper sources are the *Jordan Times*, *Ha'aretz* and the *Jerusalem Post*. In addition useful information has been found on the Internet with regard to negotiation documents, press releases and so on from the Israeli Ministry for Foreign Affairs (<<http://www.israel-mfa.gov.il/mfa/home.asp>>), the Jordanian Ministry for Water and Irrigation (<<http://www.mwi.gov.jo>>) and the PLO's Negotiation Support Unit (<<http://www.nad-plo.org/index.html>>).

lematic in terms of the willingness of the respondents to meet me. However, as a result of the al-Quds Intifada which started in September 2000, the opportunities for unrestricted travel, in particular in the West Bank and Gaza, have been limited. This has delayed interviews and in a very few cases resulted in cancellations.

Interviews have been an important method of data/information collection, first of all because there are practically no available written sources on the negotiation process.³⁵ Second, well-established contacts have enabled first-hand information to be gleaned from many of the participants and experts to the negotiations; and the oral information provides an important opportunity to 'check' and deepen the understanding of such written texts as exist. Third, interviews serve as an important way to test hypotheses and tentative conclusions. Fourth, interviews are believed to be particularly useful since the research is concerned with a recent and ongoing process. This means that the 'stories' the respondents are telling are relatively fresh. Finally, since this research has a social constructivist angle and deals with processes of convergence in values in the movement from conflict to cooperation, personal interviews are deemed to be of particular importance.³⁶

I have used in-depth semi-structured interviews as they have allowed me to 'steer' the interviews while at the same time allowing the respondent to elaborate where he/she feels it necessary to do so.³⁷

The respondents were identified according to three important criteria. The main aim in the selection process was to find the people who have been most prominent in the negotiations and the implementation process. The advantage of this is twofold. It helps to reduce workload and simultaneously helps to communicate with those persons who have been most active in the process. The persons presumed to be most important were:

35 A notable exception is the personal account written by the top Jordanian water negotiator Munther Haddadin. See Haddadin, Munther, *Diplomacy on the Jordan: International Conflict and Negotiated Solution* (Boston, Mass. and London: Kluwer Academic, 2001).

36 Kvale, Steinar, *Interviews: An Introduction to Qualitative Research Interviewing* (Thousand Oaks, Calif.: Sage, 1996), pp. 11, 38, 42.

37 These 'semi-structured interviews' may be described as an open-ended discussion of a predominantly exploratory nature. See Lantz, Annika, *Intervjumetodik: Den professionellt genomförda intervjun* [Interview method: the professionally conducted interview] (Lund: Studentlitteratur, 1993), pp. 17–22.

- Negotiators and diplomats mandated by their government/leadership, at various times, to conduct the negotiations.
- Scientific experts on the water issue who are assisting or have assisted the negotiation teams, both nationals and experts from the international academic community.
- Officials who are participating or have participated in the Joint Water Committees for the implementation of the agreements and joint management of the shared waters. These include people from the Israeli Defence Forces (IDF) who participate in the JWC and as a result of the occupation influence the process in the case of Israel and the Palestinians.

Having identified these important respondents I have, in addition, interviewed various government officials, academics specializing in water, employees of different ranks in the respective water authorities, and people coming from groups which have a particular interest in water issues, such as representatives of farming organizations, on the assumption that discussions with these people would contribute to my understanding of the norms, rules, principles and constructed realities that are an important part primarily of the domestic structures but also of the international structures, which are seen as important influences in the water negotiation and implementation processes in the Jordan River Basin.

On the interviews it should be noted that there were variations related to the positions of the respondents. Scientific experts and academics were, quite naturally, in general forthcoming in the sense of expressing their views and positions on the various matters raised. In addition they were relatively easy to contact and arrange meetings with. Diplomats, negotiators and people involved in the JWCs were also relatively easy to contact and arrange meetings with. Not surprisingly, however, they were less forthcoming with information. In terms of sensitive and conflictual or contentious issues, and in particular with relation to negotiating tactics and positions, the information gathered was limited, at least when it came to the Israeli–Palestinian process, since it is still ongoing. Respondents were not interested in commenting on whether they had been close to agreement in the water part of the negotiations, presumably because such information could indicate the willingness of a party to compromise on issues in the negotiations, and such willingness is not something they are interested in letting the other side know about. Still, it is believed that

this has not affected the extent to which I was able to gather the information I needed in order to penetrate the research questions.

As a researcher I have interpreted the information the respondents provided me with as well as their expressions (body language and facial expressions) when they have refrained from giving an answer. It is of course difficult to make a fair and informed judgement of the information I have received. In order to increase the validity of the interpretations, the text of the draft thesis has been sent to a limited number of participants and respondents as well as outside observers for their comments. None has disputed the truth of any part of the content. Only in one case has there been a request to delete a reference to a specific person.

It was also evident that the processes by which water policies are decided are not very transparent, and that social hierarchies within the different parties are decisive for what can or cannot be said in an interview. For example, political hierarchies and personal relations can be influential for decision making. Thus, the importance of including the context in which decisions are taken is further underlined.

As the Israeli-Palestinian negotiations have been going on, with more or less lengthy interruptions, since 1991, and the work of implementing the Israeli-Jordanian agreement of October is continuing it has, of course, been important to meet people who have been involved at different stages in the negotiation process as well as in the process of implementation. This is important for the analysis of all three parties but is particularly important when considering the case of Israel, where political shifts have occurred during this period. It is therefore important to try to discern whether the different Israeli governments (Labour and Likud) have pursued different strategies and agendas in the water negotiations and the Joint Water Committees.

It has been important in the interviews and discussions to try to discern what different strategies various experts deploy so as to be able to get their views adopted by the negotiators. Is there the possibility of alignments between experts as a result of shared perspectives even though they might be of different nationalities? If so, how does this affect the process and outcome? It is also interesting to investigate whether the different parties are more or less keen on different solutions where water management is concerned. Are technical solutions, including more effective water use and desalination, favoured or is there pressure for a virtual water solution as elaborated above? If so, are there political motivations for those choices? Furthermore, is joint management favoured

over separate management? In terms of the relationship between scientific experts and the politicians/diplomats receiving their advice it has to be acknowledged that, while scientists deal with precision, the task of the politicians is to deal with imprecision.³⁸ Thus, while scientific experts are likely to perceive their advice as not being fully utilized, the politicians may have used parts of it at the same time as balancing it against other advice and interests.

In total 39 interviews were conducted. The responses were all documented in manuscript and in some cases the interviews were taped. The respondents were asked if they would prefer not to be taped as well as if they wished to be anonymous and preferred not to be cited. While most had no objection to being taped or cited, some participants preferred not to be. It can be assumed that there are a variety of reasons for this. For example, if a person is participating in a negotiation he/she might not want his/her views to be exposed in public. In addition the respondent's position within the social or political hierarchy might be such that the free expression of his/her views could be damaging to him/her. The interviews which were not taped and which are not to be cited are still deemed very important as they provide an important opportunity to check hypotheses and tentative conclusions.

On another note, it is important to recognize that validity and reliability might be affected by the timing of the interview. For example, if an interview was given at a time of great tension in the overall political conflict this would be likely to affect the 'story' the respondent provided. While most of the people interviewed were still active in either the negotiations or the JWCs, some had not been active in those processes for some time. This might affect the stories they tell, both in terms of whether they view them in a positive or a negative light and in terms of the accuracy of the information provided.

Most of the interviews took place in Jordan, the Palestinian areas and Israel, while some took place outside the region, mainly in Europe. All were conducted in English. As mentioned above, they were semi-structured. A set of general questions was prepared. However, after I made a brief presentation of the research many of the respondents quickly, and often enthusiastically, started to express their views on the water negotiations and the process of implementation. Thus the semi-structured manner in which the interviews were conducted should be

38 Allan, Tony, Professor, Dept. of Geography, University of London, School of Oriental and African Studies (SOAS), Personal communication, London, UK, 23 Oct. 2001.

seen as a frame in which the respondents should feel free to elaborate on the issues at stake. It is presumed that this approach is also a helpful in trying to elicit as much important information as possible. The interviews lasted on average around 45 minutes. A list of the people interviewed can be found in Appendix 1.

1.7 Outline of the dissertation

After this introductory chapter, the study is divided into six chapters. Chapter 2 presents an overview of the theoretical considerations for the thesis. The theories elaborated in chapter 2 are used mainly for the analysis in chapters 4, 5 and 6. Within an overall framework of an actor-structure approach, the chapter attempts to provide a theoretical foundation using theories of the relationship between science and politics, negotiation theory, risk theory and regime theory. Chapter 3 is mainly descriptive and gives a general background to the water question in the Jordan River Basin. It includes a brief account of the geography and hydrology of the basin as well as a historical perspective on water use in the region. It also relates the water issue to the general Arab-Israeli conflict and gives an account of international water law perspectives on the dispute.

Chapter 4 is concerned with the water negotiations. Drawing on negotiation theory, international relations theory, risk theory and theories of the relationship between science and politics, the chapter briefly discusses the multilateral 'track' before analysing the bilateral tracks (including 'track two' efforts) between Israel and the Palestinians and between Israel and Jordan. In the respective negotiations, obstacles and risks – both 'real' and perceived – are analysed. Chapter 5 analyses the role of experts in the negotiation and draws upon theories of the relationship between science and politics as well as discourse analysis in assessing the role of epistemic communities for the formation of water policy and subsequently for the negotiating positions taken by the parties in the process. It highlights the importance of politics as a factor for understanding the water negotiations and the implementation of the agreements. Chapter 6 assesses the implementation of what has been agreed upon in the cases of both the Israeli-Palestinian and the Israeli-Jordanian negotiations. Using regime theory the chapter discusses the implementation work of the Joint Water Committees. Finally, chapter 7 revisits the research questions, presents the main contributions of the study, identifies areas of policy relevance and highlights important areas for future research.

CHAPTER 2

Theoretical considerations: Reflections on water with regard to conflict and cooperation in the international arena

2.1 Introduction

This chapter presents the theoretical framework used in the thesis. The theoretical ideas outlined in this chapter are mainly used for the analysis made in chapters 4, 5 and 6. The present chapter is influenced by international relations theory but also draws on other disciplines. The discourse on environmental security¹ has been a growing area of international relations theory since the early 1980s and many have also suggested that transboundary water, and indeed water that crosses sensitive political borders in the Middle East, is an example of an environmental security issue. Initially, this was also the theoretical framework I used to explore the water negotiations and the emerging water cooperation in the Jordan River Basin. However, it became gradually apparent that it was not an adequate tool for investigating the research questions. While the environmental security discourse does provide a point of departure for thinking about security in terms other than tra-

1 See e.g. Ullman, Richard H., 'Redefining security', *International Security*, 8/1 (summer 1983); Tuchman Mathews, Jessica, 'Redefining security', *Foreign Affairs*, 68/2 (1989); Homer-Dixon, T., 'Environmental scarcities and violent conflict', *International Security*, 19/1 (1994); Dokken, K. and Graeger, N., 'The concept of environmental security: political slogan or analytical tool?', in *PRIO Report*, 2/95 (1995); Tickner, J. Ann, 'Re-visioning security', in Ken Booth and Steve Smith (eds), *International Relations Theory Today* (Cambridge: Polity Press, 1995); Elliot, Lorraine, *The Global Politics of the Environment* (Basingstoke: Macmillan, 1997); Lowi, Miriam R. and Shaw, Brian S., *Environment and Security: Discourses and Practices*, International Political Economy Series (New York: Macmillan Press and St Martin's Press, 2000); Levy, Marc A., 'Is the environment a national security issue?', *International Security*, 20/2 (1995); Deudney, Daniel, 'The case against linking environmental degradation and national security', *Millenium*, 19/3 (1990); Stern, Eric K., 'Bringing the environment in: the case for comprehensive security', *Cooperation and Conflict*, 30/3 (1995); and Lowi, Miriam (1999), 'Water and conflict in the Middle East and South Asia: Are environmental issues and security issues linked?', *Journal of Environment and Development*, Vol. 8, No. 4.

ditional military ones, it did not offer sufficient tools for a closer analysis of the negotiation or implementation process.

Drawing on the principles advanced in adaptive theory,² which recognizes the interplay between theory and empirical material, I have reformulated theoretical ideas on the basis of my empirical findings. This meant that as the empirical investigation progressed new theoretical ideas were tested in order to be able to investigate the research questions posed. It became evident that in order to dissect the reasons behind the cooperation other approaches than those offered in the environmental security literature were needed. First, theories of the relationship between science and politics were needed in order to explore the role of scientific experts in the negotiations. Second, as a complement to these theories and as a tool for situating water in the wider political processes, theories on discourses are included. Third, negotiation theory is included since it is important for understanding the process of the negotiations. Third, regime theory³ had to be included for the investigation of the evolution and quality of the cooperation in the post-agreement phase. Lastly, an account of the actor (agent)–structure debate is included since this approach enables an exploration of the conditions under which the water negotiations as well as the implementation of what has been agreed upon have taken place. The actor–structure framework can also take in all the theoretical perspectives used under ‘one roof’. Using actor and structure, a model for the analysis of the negotiations is developed. As the study progressed it was found that a combination of these perspectives was the most useful in exploring the research questions of why and under what conditions states cooperate over shared waters in the Jordan River Basin.

2.2 Theories of the relationship between science and politics

In today’s society experts play an increasingly important role. We listen to experts who give advice, for example, on what we should or should not eat, how to exercise, how to invest our money and so on. It has been argued that ‘experts play an ever more influential role in defining and

² See Layder, Derek, *Sociological Practice: Linking Theory and Social Research* (London: Sage, 1998).

³ Regime theory is closely linked to what political economists call institutional theory.

controlling fundamental social problems'.⁴ In both the public and the private sector, experts give advice on policy issues.⁵ Increasingly, scientific knowledge and scientific experts have become a vital component of the political policy process. This is particularly apparent when highly complex environmental problems are dealt with. Scientists who possess scientific knowledge are important not only in identifying policies of risk management but also in the process of identifying risks.⁶ As this research deals partly with the role of experts (scientific) in the water negotiations it is imperative to discuss how science and politics are related.⁷

In general, analysis of the role of science in the policy process has been based on the implicit assumption that scientific consensus leads to political consensus. However, this need not be the case, especially not in situations where scientific uncertainty on an issue prevails. Furthermore, when dealing with issues in a conflict, scientific provision of knowledge about those issues might be affected by other factors than the purely scientific. Thus, the scientific knowledge presented can hardly be labelled a fully "objective account".⁸ An example of this might be science, or scientists, who draw inspiration from ideology or politics. Politics and ideology also matter for scientific experts. The experts do have their own interests – both self-interest and altruistic – but at the same time they are used as a legitimizing or de-legitimizing force by others (including politicians) to suit their own interests. Brante argues that 'the more important political consequences an issue has, the more likely it is that a polarisation and controversies within the scientific expertise occurs'.⁹ Furthermore, Sundqvist argues that scientific experts can reach very different results and conclusions on an issue but

4 Jasanoff, S., 'Science and norms in global environmental regimes', in F. O. Hampson and J. Reppy (eds), *Earthly Goods: Environmental Change and Social Justice* (Ithaca, N.Y.: Cornell University Press, 1996), p. 173.

5 Jasanoff, S., 'Science and norms in global environmental regimes', p. 173.

6 Skodvin, Tora, *Structure and Agent in the Scientific Diplomacy of Climate Change* (Oslo: University of Oslo, Department of Political Science, in cooperation with Unipub forlag, Akademika AS, 1999), pp. 3–4.

7 More on the role of experts is found in section 4.4.3, 4.5.3 and 6.2. A definition of an expert is found in section 2.6.1

8 See e.g. Latour, Bruno, *Science in Action* (Cambridge, Mass.: Harvard University Press, 1987); and Hacking, Ian, *The Social Construction of What?* (Cambridge, Mass.: Harvard University Press, 1999).

9 Brante, Thomas, *Vetenskapens sociala grunder: En studie av konflikter i forskarvärlden* [The social basis of science: a study of conflicts in the world of research] (Stockholm: Raben & Sjögren, 1984), p. 13 (my translation).

still maintain that they have scientific proof for their respective stands. Scholars in the study of experts argue that this is because scientific experts are part of and influenced by their cultural, social and political surroundings.¹⁰ What seems to be a central problem in the theories of the relationship between science and politics discourse is whether scientific knowledge about an issue is a result of strategies used by the powerful or the result of objective research. It is indeed difficult to distinguish. There is generally a tendency either to overestimate the role of scientific knowledge or to underestimate it.¹¹ It must be acknowledged that knowledge about an issue that is politically sensitive, such as the water issue in the Middle East, is inevitably 'constructed' by those steering the discourse. Thus the knowledge does not reflect an objective reality but rather a constructed reality.

To summarize, we should acknowledge the increasing interdependence between science and politics rather than looking at science and politics as operating in separate spheres. Science should not be regarded as an external factor that sometimes affects political decisions and thereby creates cooperative international regimes.¹² In this study, the reciprocal relationship between scientific knowledge and politics is emphasized. Hence regimes are seen as shaped both by scientific knowledge and by political factors.¹³ Lidskog and Sundqvist argue that when dealing with environmental governance the sociology of scientific knowledge approach has identified three central findings. First, knowledge never moves freely; second, the value of science is the result of negotiations; and, lastly, science and policy are co-produced (interdependent). Consequently, scientific consensus on an issue is not enough for the creation of an environmental regime (at least if it is to be effective). It also needs to be accepted in the political discourse.¹⁴

10 Sundqvist, Göran, *Vetenskapen och miljöproblemen: En expertsociologisk studie* [Science and environmental problems: a sociological expert study] (Gothenburg: University of Gothenburg, Department of Sociology, 1991), p. 104.

11 Hjorth, Ronnie, 'Introduction', in Ronnie Hjorth (ed.), *Baltic Environmental Cooperation: A Regime in Transition*, Water and Environmental Studies (Linköping: Linköping University, 1996), pp. 14–15.

12 International regimes will be elaborated further in section 2.4.

13 Sundqvist, Göran and Lidskog, Rolf, 'The role of science in environmental policy', *ASTA Annual Report 2000: International and National Abatement Strategies for Transboundary Air Pollution* (2000), pp. 25–6.

14 Lidskog, Rolf and Sundqvist, Göran, 'The role of science in environmental regimes: the case of the LRTAP', *European Journal of International Relations*, 8/1 (forthcoming).

2.2.1 The role of discourses in the political process¹⁵

A complement to the theories of the relationship between science and politics is the analysis of discourses in society. An inclusion of domestic discourses and their subsequent effect on foreign policy decision making on water is an essential ingredient in the thesis. In addition, these ideas are also useful in explaining why seemingly good and rational advice from outsiders (meaning international scientific water advisers) is sometimes unexpectedly turned down.

The lion's share of the studies that deal with international relations tends to treat every state/nation as an unproblematic singular unit. This approach is a gross simplification. In order to understand why nations choose the policies they pursue in the international arena one needs to study thoroughly the domestic political context since the policies pursued internationally are likely to be a reflection of the domestic discourse. Thus, the need for governments to be in line with their respective domestic discourses in their pursuit of international policies is key to understanding foreign policy. In the words of Stein, 'analyses that ignore the context in which negotiations take place, ...the impact of cultural, social, institutional, political and psychological factors or processes of communication and choice, are inadequate as explanations of international negotiations'.¹⁶

In the 1970s the French social scientist Michel Foucault distinguished between coercive power (which usually rests with the state through its control of military forces) and 'discursive' power.¹⁷ While the former refers to the use of force, the latter is a result of the interaction of interests, which form a consensus on an issue. Discourse is thought to cover all forms of spoken interaction – formal and informal – as well as written texts of all kinds.¹⁸

Some discourses become accepted or 'sanctioned' within a society. The sanctioned discourse sets limits within which policies have to be

15 Part of this section builds on Jägerskog, Anders, 'The power of the sanctioned discourse: a crucial factor in determining water policy', *Water, Science and Technology*, 47/6 (2003).

16 Stein, Janice Gross, 'International negotiation: a multidisciplinary perspective', *Negotiation Journal*, 4 (1988), p. 230.

17 Foucault, Michel, *Power and Knowledge* (New York: Pantheon, 1980).

18 Potter, Jonathan and Wetherell, Margaret, *Discourse and Social Psychology: Beyond Attitudes and Behaviour* (London: Sage, 1994), p. 36.

pursued, that is, it indicates what avenues may be politically feasible.¹⁹ It represents what may be said, who may say it and also how it is to be interpreted. Turton has described sanctioned discourse, when talking about water, as something that is best understood as a form of 'hydropolitical ideology'. This is a particularly useful term as it is associated with and draws on other ideologies in society, such as nationalism.²⁰ It is helpful in explaining why people who are confronted with the same scenarios or events nevertheless describe their experience in quite different ways. The rationale for explaining events in one way or another is often a result of the surrounding social context and the particular discourse that has been sanctioned. In a related line of thinking, the sociologist Pierre Bourdieu argues that the dominant knowledge or view in a society is dominant not because it represents a 'higher level' of knowledge but because it is formulated from a position of greater power in the social hierarchy. This position depends on economic, social and cultural capital.²¹

The concept of sanctioned discourse could also be seen as related to Kuhn's description of a scientific paradigm: certain methods and ways of viewing the world become institutionalized and thus effectively work as 'boundaries' for what is feasible.²² While it is extremely hard to put forward ideas that run contrary to the sanctioned discourse in a given society, it is similarly hard to change or indeed challenge the ruling scientific paradigm.

In the creation of the sanctioned discourse, various 'discursive actors' have special interests or stakes. However, interests and power positions will determine the outcome of this 'discursive battle'. While politicians, in both democratic and non-democratic regimes, are in a position to influence the discourse, they are not able to exercise full control over it. Discourse analysis is useful in explaining why they sometimes choose not to implement the water policies which would seem to be the most rational from a scientific perspective. Allan argues

19 Allan, Tony [J. A.], *The Middle East Water Question: Hydropolitics and the Global Economy* (London and New York: I. B. Tauris, 2001), pp. 182–3.

20 Turton, Anthony., 'The political dynamics of institutional development in the water sector: South Africa and its international river basins', Unpublished draft of a DPhil thesis, Department of Political Sciences, University of Pretoria, 2002.

21 Bourdieu, Pierre, *Kultursociologiska texter, i urval av* [Cultural sociology texts, selected by] Donald Broady and Mikael Palme (Lidingö: Salamander, 1986), pp. 282–3.

22 Kuhn, Thomas, *The Structure of Scientific Revolutions* (Chicago: Chicago University Press, 1962).

that the role of politicians is mainly to legitimize 'that which is determined by the "discourse"'.²³ While that is true it can be added that politicians have a stake in the discursive battle as they possess certain economic, social and cultural capital. A useful distinction when analysing how discourse affects policy is the one made by Hajer, who argues that actors in a given area (such as the water sectors) create coalitions that subscribe to the same narratives. He calls these 'discourse coalitions'. These coalitions can consist of government officials, water professionals, journalists and so on.²⁴

Thus it is of interest to analyse connections and possible alliances between the domestic (and international) actors and domestic and international structures²⁵ that are active and have the economic, social and cultural capital to influence the internal discourse within a state which sets the boundaries for the formulation of its foreign policy. In addition it is helpful to locate different individual cognitive orientations within their ideational system of national cultures, which are constituted in the discursive domain.²⁶ The actors obviously seek support from the structures in their creation of narratives or story lines. Hence the structures function as an enabling (or de-enabling) tool for the actors who simultaneously, in the discursive process, reform and recreate the structures in what can be described as a mutually constituting process.

For a deeper understanding of why a certain discourse becomes sanctioned it is useful to include aspects of risk theory.²⁷ In certain cases issues might be termed risks although from a scientific perspective they would not be characterized as such, or in some cases not termed risks although from a scientific perspective they would be characterized as such. An example analysed in this study is the fact that the issue of what to do when there is a drought in the Jordan River Basin is not included in the peace treaty between Jordan and Israel. The reason for this is that certain issues are characterized as risks within the sanctioned discourse. Thus actors use the notion of risk as a tool for sanc-

23 Allan, *The Middle East Water Question*, p. 182.

24 Hajer, Maarten, *The Politics of Environmental Discourse: Ecological Modernization and the Policy Process* (Oxford: Clarendon Press, 1995).

25 For more on this see section 2.5.

26 Jönsson, Christer, *Communication in International Bargaining* (London: Pinter, 1990).

27 See also section 2.3.1.

tioning their respective story lines. Accordingly, risk is something socially constructed by those actors who possess the discursive power.²⁸

In sum, it is found that the idea of looking at discourse, and indeed identifying the 'sanctioned discourse', is crucial to understanding water policy decision making (as well as decision making in other sectors). If we fail to acknowledge the explanatory power of this line of thinking we run the risk of reaching oversimplified conclusions, such as 'the policy-makers do not understand water issues', instead of acknowledging that the power of the discourse perhaps limited their policy options.

2.3 Negotiation theory

The reason for including negotiation theory is that it will help to reveal the influence *perceptions* of water have had in favour of the resolution of the conflict or its continuation. Furthermore, negotiations are presumed to be an important tool for the establishment of water regimes, which are a central theme of this thesis. As will be explored below, valuable insights into the water negotiation process can also be gained by combining the theories on negotiations and the theories on risk.

Negotiation is characterized as a *positive-sum* exercise because both parties can gain from a clear outcome and there are no gains to be made from a situation in which they do not have contact. This might not be the case if one or both parties have been forced to the negotiating table. In such a case there might be a preference for the status quo. Since water issues seem to be coordinated or the subject of cooperation in the Jordan River Basin more often than other issues it is important to try to discern why cooperative measures have been perceived as something that resembles a positive-sum exercise. In that respect negotiation theory is perceived as providing tools for the analysis.²⁹

28 Jägerskog, Anders, 'Risk and negotiations: water in the Arab-Israeli case', in J. A. Allan (ed.), *Environmental Management in Asia and Africa: Responding to Uncertainty and Risk* (forthcoming).

29 There exists a considerable amount of literature that deals with the analysis of negotiations. Key works include Schelling, T. C., *The Strategy of Conflict* (Cambridge, Mass.: Harvard University Press, 1960); Iklé, F. C., *How Nations Negotiate* (New York: Harper and Row, 1964); and Raiffa, H., *The Art and Science of Negotiation* (Cambridge, Mass: Belknap Press and Harvard University Press, 1982). Other important works include Hopmann, T. P., *The Negotiation Process and the Resolution of International Conflicts* (Colombia, S.C.: University of South Carolina Press, 1998); Zartman, W. I. (ed.), *International Multilateral Negotiation* (San Francisco, Calif.: Jossey Bass, 1994); Kremenyuk, V. A. (ed.), *International Negotiation: Analysis, Approaches,*

Negotiated agreements are bound to be unstable unless all parties have an interest in adhering to them. There is always a risk that a change in government might overturn a negotiated solution, but it is recognized that this risk decreases considerably if the agreements are sponsored by major world powers.³⁰

A comparative approach to the different negotiations in the area of the Jordan River Basin will, besides highlighting perceptions,³¹ also place the water aspect of the conflict in its proper place within the larger political conflict. This is needed since much of the research on water and conflict tends to overestimate the role of water as a factor in the conflict,³² while other observers at the same time fail to recognize it. Negotiation theory will also help to discern the role of the experts/advisers in influencing the strategies chosen by the negotiators.

In any effort to resolve an international dispute, negotiations play an integral part. The social-psychological approach to negotiations³³ focuses on the actors in the negotiations. This is helpful in this study since it will assist in discerning the role of the negotiators in reaching agreement on the water issue. While the focus will be directed at the negotiators, the structures in which the negotiators are situated will also be taken into account. By relating actor and structure,³⁴ the aim is

Issues (San Francisco, Calif.: Jossey Bass, 1991); and Sjöstedt, G. (ed.), *International Environmental Negotiation* (Newbury Park: Sage, 1993).

30 Eaton, Joseph W. and Eaton, David J., 'Negotiation strategies in international disputes', in Kurt R. Spillman and Günther Bächler (eds), *Environmental Crisis: Regional Conflicts and Ways of Cooperation: Report of the International Conference at Monte Verita, Switzerland, 3-7 October 1994*, Occasional Paper no. 14 (Zurich: Environment and Conflict Project (ENCOP), Sept. 1995).

31 For a description of general perceptions of the Arab states in the Arab-Israeli conflict see Kam, Ephraim, 'The threat perception of the Arab states', in Shai Feldman and Ariel Levite (eds), *Arms Control and the New Middle East Security Environment*, JCSS Study no. 23 (Tel Aviv: Tel Aviv University, Jaffee Center for Strategic Studies, 1994).

32 See e.g. Starr, Joyce R., 'Water wars', *Foreign Policy*, 82 (spring 1991), pp. 17-36; and Bulloch, J. and Darwish, A., *Water Wars: Coming Conflicts in the Middle East* (London: Victor Gollancz, 1993).

33 For a good overview of the social-psychological aspects of international negotiations see Druckman, Daniel, *Human Factors in International Negotiations: Social-Psychological Aspects of International Conflicts* (Beverly Hills and London: Sage, 1973).

34 Rothstein, Bo, 'Aktör-strukturansatsen: ett metodiskt dilemma' [The actor-structure approach: a methodological dilemma], *Statsvetenskaplig Tidsskrift*, 97 (1988), pp. 27-40 suggests that actor-related explanations are not purely dependent on actor-related factors (such as preferences) but are also formed in a context of structures. Both actors the structures therefore need to be included in order to explain a change in behaviour. Lundqvist, Lennart, 'Aktörer och strukturer' [Actors and structures], *Stats-*

to reach a deeper understanding of why the parties to the conflict have been able to agree on certain water issues.

In negotiation theory the focus is not exclusively on either the distribution of power between the parties or the potentially shared interests of the parties to a negotiation. Negotiated outcomes are not seen as being determined by power in the realist sense: the definition of power in a negotiation situation is rather determined by situational and behavioural characteristics of the particular situation. The analysis is process-oriented and focuses on the interaction among the parties, bargaining skills³⁵ and how resources (for example, a natural resource like water) are distributed. Thus power is seen as a multidimensional concept.³⁶

The literature on negotiation, through its focus on process rather than military and economic power, enlarges our understanding of how cooperation is achieved. Furthermore, it provides insights into why certain agreements are shaped in a specific way.³⁷ Putnam has described negotiations as a two-level game.³⁸ There is a national level on which domestic groups try to influence the state to adopt 'their' ideas as policy and an international level³⁹ on which national governments seek to satisfy the domestic interests groups through their policies. It should also be borne in mind that at the international level there are structures (such as world opinion, superpower influence and so on) that also af-

vetenskaplig Tidsskrift, 87 (1983), pp. 1–22 identifies 'structure' and 'actor'. A structure can, in general be seen as a 'system of relationships' or a 'pattern in nature'. Lundqvist discerns three different layers of structures. These are political structure that includes the authoritative distribution of power in a society, the economic structure, which includes the production of and distribution of goods and the social structure, which involves human relations and cultural patterns. An actor is typically given a consciousness and an ability to act, which contrast actors from structure. For more on the actor-structure debate see section 2.5.

35 These skills relate to what Turton (2001) describes as social ingenuity, which is identified as central in bringing about water regimes. Turton, Anthony, 'Towards hydro-solidarity: moving from resource capture to cooperation and alliances', *SIWI Proceedings*, Report 13, SIWI Seminar 2001 on Water Security for Cities, Food and Environment: Towards Catchment Hydrosolidarity (Stockholm: Stockholm International Water Institute), 2001. For more on water regimes see section 2.4.

36 Dinar, Shlomi, 'Negotiations and international relations: a framework for hydro-politics', *International Negotiation*, 5 (2000), pp. 375–407.

37 Dinar, 'Negotiations and international relations', p. 392.

38 Putnam, R., 'Diplomacy and domestic politics: the logic of two-level games', *International Organization*, 42/3 (summer 1998), pp. 427–60.

39 The international level is related to what I call the international structures.

fect the policies of individual states. These processes are the discursive process elaborated in sections 2.2.1 and 5.5.

This study explores why cooperation has occurred on the trans-boundary waters in the Jordan River Basin. Some factors that can facilitate an understanding of this cooperation are related to the dynamics of negotiations. Nations do not negotiate unless a conflict is seen as ripe for resolution. The sense of ripeness is a result of all parties viewing the conflict as mutually hurting.⁴⁰ It should be noted that it is not always the case that the parties involved in a conflict share the sense that their conflict is ripe for resolution, but sometimes outside pressure can bring them to the negotiating table. Furthermore, that a conflict is ripe for negotiation does not imply that it will be an easy task to reach an agreement, only that the parties agree on the fact that negotiation is preferable to the status quo. The fact that the water resource itself is in need of protective measures from all the parties that share it if it is to be a sustainable resource indicates that water conflicts are always characterized by a certain degree of ripeness, in particular in cases like that of the Jordan River Basin, where the degree of dependence on the resource that is shared is high. Thus a 'window of opportunity' for cooperation is created.⁴¹ Furthermore the situational and contextual factors are critical.⁴² In the case of the Jordan River Basin the situational and contextual aspects mean in particular the existence of a peace process. Hence, an analysis of the various structures in which the negotiations are situated is imperative.

2.3.1 Negotiations and risk theory

The significance of risk in negotiation is rarely considered. The risks involved in the water negotiations are of a natural-scientific nature and are at the same time politically and culturally determined. By merging risk theory and negotiation theory we are able to understand why some

40 Zartman, W. I., *Ripe for Resolution*, 2nd edn (New York: Oxford Press Oxford University Press, 1989).

41 Kingdon, J., *Agendas, Alternatives and Public Policies* (New York: HarperCollins, 1984).

42 Spector, B. I., 'Motivating water diplomacy: finding the situational incentives to negotiate', *International Negotiation*, 5 (2000), pp. 222–36.

risks are emphasized and others are de-emphasized.⁴³ In the case of the waters of the Jordan River Basin this aspect of the negotiation is particularly important since it pinpoints the ways in which water is subordinated to other, political priorities, which results in certain risks being de-emphasized. In addition, it is useful since it helps in identifying constructed realities within the respective societies that influence and effectively 'set the boundaries' for the negotiations.

In the literature on risk there are two main ways of interpreting risks.⁴⁴ First, there is the *natural-scientific objectivism* about hazards. This approach basically identifies risks using scientific techniques of observation, measurement and calculation. The strength of this perspective is that, through the instruments used, it enables risks to be categorized so that they are definable in terms of probability. However, the inherent weakness of the approach is that it fails to recognize that scientific 'facts' are situated and interpreted in cultural and political contexts. The critique of the natural-scientific approach brings us to the second approach, which is *cultural relativism*. The strength of this approach is that it emphasizes the contextual aspects of risk. At the same time it has an inherent weakness in that it fails to recognize the nature of 'real' hazards. Ulrich Beck argues for a third way to analyse risks – a *sociological perspective* – which is a combination of the two. He is interested in the 'cultural disposition' of groups and individuals when they single out certain issues as risks and ignore others. In this approach it is important to look at the symbols that drive individuals and societies to view certain matters as risks. Symbols that can 'touch a cultural nerve and cause alarm', of which water in the context of the Middle East is a good example, can help people focus on an issue while ignoring others.⁴⁵

Connected to the sociological perspective is the social constructivist theory. Risks are seen as being socially constructed through the influence of contextual factors.⁴⁶ While some issues which are perceived as risks are emphasized in the constructed reality of the individuals participating in a negotiation, other issues are de-emphasized. In this per-

43 The remainder of this section is based on Jägerskog, Anders, 'Risk and negotiations: water in the Arab-Israeli case', in J. A. Allan (ed.), *Environmental Management in Asia and Africa: Responding to Uncertainty and Risk* (forthcoming).

44 Beck, U., *Ecological Politics in an Age of Risk* (Cambridge: Polity Press, 1995).

45 Beck, *Ecological Politics in an Age of Risk*, p. 47.

46 Contextual factors are seen to be a variety of things. They concern perceptions and history as well as structural parameters such as cultural dispositions, social surroundings etc.

spective perceptions of risks are a product of the socio-cultural context in which they are generated, be it scientific expert knowledge or lay knowledge. Hence, the risks defined are given prominence through social interaction.⁴⁷

Another influential thinker on risk is Mary Douglas, who also argues that risk is best analysed through the prism of culture. An anthropologist, she holds that individuals should be seen in their social environment. Douglas argues in her 'cultural theory' that it is possible to understand how some issues which might be perceived as risks are emphasized and others are de-emphasized through looking at the institutions that are created in cultures and which set limits for action.⁴⁸ The process whereby certain aspects of risk have been emphasized or de-emphasized in the negotiations in the Jordan River Basin is clearly evident. For example, Jordan and Israel jointly choose to de-emphasize the issue of provisions in the event of drought in their agreement. As discussed in section 4.5.2, this was partly a result of historical and cultural factors.

The idea of relating risk to the culture and social environment leads us back to discourse analysis. Through a combination of risk theory and discourse analysis we can understand how the discourse in a society or state can work as a prism through which certain water issues are seen as risks while others are not. Some issues might be termed risks, although from a scientific perspective they would not be characterized as such, simply because of political constraints. Simultaneously, others, which are scientifically seen as risks, are not regarded as such because of political considerations.

In order to point out the variable significance of risk it is also necessary to examine both the scientific and the cultural-political discourse. Kopagen points out the importance of various myths within which issues such as water and territory play a part. To understand risk perceptions in the Middle East case it is important to acknowledge the specific cultural and social-psychological context in which the water issue is situated.⁴⁹ It is also important to acknowledge that there is a ten-

47 Lupton, D., *Risk* (London and New York: Routledge, 1999).

48 Douglas, M., *Risk and Blame: Essays in Cultural Theory* (London and New York: Routledge, 1992).

49 Kopagen, Nina, 'The perception of water as part of territory in Israeli and Arab ideologies between 1964 and 1993: toward a further understanding of the Arab-Jewish conflict', MA thesis, University of Haifa, 1995.

dency among scientists to downplay uncertainty when communicating scientific results to decision makers.⁵⁰

Another feature that is presumed to be central in the analysis of risk is the notion of 'otherness'. When discussing risks, individuals and societal groups are prone to identify other individuals or societal groups as the source of risk. This is particularly evident in cases where the 'other', in one way or another, threatens to overtake the self – or, in the case of water, claims or uses a water resource which is perceived to belong to oneself.⁵¹

Bar-Siman-Tov deals with the issue of uncertainty and risk in the process of moving from war to peace. He points to the fact that uncertainties pose dilemmas in negotiations as states aim to reach agreements. When a state makes a concession in a negotiation it takes a risk since it cannot be certain what it will gain (or indeed lose) by making that move. Hence, risk management strategies are deemed very important in the conduct of negotiations. However, Bar-Siman-Tov views risks as largely objective, identifiable and definable in terms of probability, and his ideas are thus not as useful as a tool for identifying socially constructed risk.⁵² This concept relates back to the issue of culture and identity, which are identified as crucial elements for negotiators dealing with water in the Arab–Israeli context. This is so since their identity is rooted in the parties' respective cultures, which largely dictate how they view and react to each other's proposals in the negotiations.⁵³

Risk theory and negotiation theory have in common the assumption that cultural features are important. The social constructivist approach of Douglas and other risk theorists seems to be very relevant in negotiation situations. The various perceptions of risk that negotiators hold are consequently seen as being influenced by cultural features stemming from the different contextual circumstances of which the negotiators are a part. That said, it is important to point out that it is not solely the cultural context that determines perceptions of risk. It must also be ac-

50 Wynne, B., 'Managing and communicating scientific uncertainty in public policy', Paper presented at the Harvard University Conference on Biotechnology and Global Governance: Crisis and Opportunity, Apr. 2001.

51 Lupton, *Risk*, Routledge.

52 Bar-Siman-Tov, Y., *Uncertainty and Risk-Taking in Peacemaking: The Israeli Experience*, Davis Occasional Papers no. 71 (Jerusalem: Hebrew University of Jerusalem, 1999).

53 Faure, Guy Olivier and Rubin, Jeffrey Z., 'Lessons for theory and research', in Guy Olivier Faure and Jeffrey Z. Rubin (eds), *Culture and Negotiation: The Resolution of Water Disputes* (Newbury Park, London and New Delhi: Sage, 1993), pp. 216, 226–7.

knowledge that there are scientifically sound grounds for risk perceptions as well. Sjöstedt has pointed out that states negotiating a transboundary issue might choose a solution that involved a technical risk rather than one that involved a political risk.⁵⁴

A further useful notion when considering risk and negotiation is the concept of 'follow-through'. It is useful to analyse agreements in retrospect as we are then able to identify which issues of risk are incorporated and which are not. One way to handle risks, both those that have been incorporated into an agreement and those that have been left out,⁵⁵ is to establish some joint conflict management or conflict resolution mechanism that can subsequently deal with situations of risk as they evolve.⁵⁶ The joint mechanism for such tasks can become institutionalized and as such help the management of issues that surface. These ideas are well developed in regime theory.⁵⁷ Indeed, as Sjöstedt shows, risk management is naturally carried out within the regimes established to cope with transboundary issues.⁵⁸ It is argued that such risk management is actually taking place in the Jordan River Basin in the Joint Water Committees.

2.4 Regime theory⁵⁹

Evidently, there are some contained mechanisms that guide the actions of the parties in a river basin. In the international relations literature these mechanisms are referred to as regimes. Within the literature that deals with international waters a concept that is receiving increased attention is that of *water regimes*. This concept is a central feature for

54 Sjöstedt, G., 'International negotiation and the management of transboundary risk', in J. Linneroth-Bayer, R. E. Löfstedt and G. Sjöstedt (eds), *Transboundary Risk Management* (Londo: IIASA and Earthscan, 2001).

55 One should acknowledge that various issues might be left out of an agreement both on purpose and because the people involved were not able to identify them.

56 Zartman, W. I., *Negotiations as a Mechanism for Resolution in the Arab-Israeli Conflict*, Davis Occasional Papers no. 72 (Jerusalem: Hebrew University of Jerusalem, 1999).

57 See e.g. Jägerskog, Anders, 'Contributions of regime theory in understanding interstate water cooperation: lessons learned in the Jordan River Basin', in A. R. Turton and R. Henwood (eds), *Hydropolitics in the Developing World: A Southern African Perspective* (Pretoria: African Water Issues Research Unit (AWIRU), 2002).

58 Sjöstedt, G., 'International negotiation and the management of transboundary risk'.

59 This section builds on: Jägerskog, 'Contributions of regime theory in understanding interstate water cooperation'.

this thesis as it provides an analytical framework for assessing the quality of the cooperation in the post-agreement phase. In addition, it helps us understand why cooperation on water has occurred in the Jordan River Basin in spite of political conflict. John Waterbury argues that 'the process of regime formation itself – legislating, data-gathering, formal institution-building and negotiating – can provide momentum, the creation of new institutional interests and expertise, and, occasionally, "tipping" moments that lead to formal co-operation'.⁶⁰

Many international relations scholars try to understand why international cooperation occurs in spite of the presumed anarchic nature of the international system. Some try to explain the cooperation through regime theory. Others argue, from a realist perspective, that regime theory confuses the field of international relations theory.⁶¹ Furthermore, Kütting argues that regime theory concentrates too much on action and behaviour and thereby misses the wider social and historical process.⁶² Thus, regime theory is not seen as an all-encompassing theory but rather as one theory that offers insights into the institutional aspects of the water cooperation in the Jordan River Basin.

The most commonly used definition of an international regime is that of Krasner:

implicit principles, norms, rules, and decision-making procedures around which actors' expectations converge in a given area of international relations. Principles are beliefs of fact, causation, and rectitude. Norms are standards of behaviour defined in terms of rights and obligations. Rules are specific prescriptions or proscriptions for action. Decision-making procedures are prevailing practices for making and implementing collective choice.⁶³

The particular concern in regime analysis is the normative institution, dealing with a specified issue, which states create and subscribe to vol-

60 Waterbury, John, *The Nile Basin: National Determinants of Collective Action* (New Haven, Conn. and London: Yale University Press, 2002), p. 35.

61 See e.g. Strange, Susan, 'Cave! Hic dragones: a critique of regime analysis', in S. Krasner (ed.), *International Regimes* (Ithaca, N.Y.: Cornell University Press, 1983).

62 Kütting, Gabriella, *Environment, Society and International Relations: Towards More Effective International Agreements* (London and New York: Routledge, 2000), pp. 19–22.

63 Krasner S., 'Structural causes and regime consequences: regimes as intervening variables', in S. Krasner (ed.), *International Regimes* (Ithaca, N.Y.: Cornell University Press, 1983), p. 1.

untarily as a means of self-regulation in the international arena.⁶⁴ Keohane holds that:

International regimes are useful to governments. Far from being threats to governments (in which case it would be hard to understand why they exist at all), they permit governments to attain objectives that would otherwise be unattainable. They do so in part by facilitating intergovernmental agreements. Regimes facilitate agreements by raising the anticipated costs of violating others' property rights, by altering transaction costs through the clustering of issues, and by providing reliable information to members. Regimes are relatively efficient institutions, compared with the alternative of having a myriad of unrelated agreements, since their principles, rules, and institutions create linkages among issues that give actors incentives to reach mutually beneficial agreements. They thrive in situations where states have common as well as conflicting interests.⁶⁵

These regimes are considered to exist in areas such as international trade, monetary policy, security and arms control, and the use of natural resources. One might see them as an intermediary between the power structures of the international system and the political bargaining which takes place within it. In fact, regimes can become embedded in a normative framework for action and thereby increase the political salience of certain issues.⁶⁶ Furthermore, they may also function as a vehicle for international learning and the converging of states' policies.⁶⁷ The social interaction which takes place in a regime fosters a convergence in value orientation and thereby creates incentives for a further institutionalization of cooperation.⁶⁸ Wendt has clarified the institutionalization of cooperation in the international arena. He argues that: 'The process by which egoists learn to cooperate is at the same

64 Mayer, P., Rittberger, V. and Zürn, M., 'Regime theory: state of the art and perspectives', in V. Rittberger (ed.), *Regime Theory and International Relations* (Oxford: Clarendon Press, 1993), pp. 391–430.

65 Keohane, R., *After Hegemony* (Princeton, N.J.: Princeton University Press, 1984), p. 97.

66 Keohane, R., 'The analysis of international regimes: towards a European–American research programme', in Rittberger (ed.), *Regime Theory and International Relations*, pp. 23–45; and Keohane, R. and Nye, J. (1989), *Power and Interdependence* (New York: HarperCollins, 1989).

67 Haas, P., 'Do regimes matter? Epistemic communities and Mediterranean pollution control', in Friedrich Kratochwil and Edward D. Mansfield (eds), *International Organization: A Reader* (New York: HarperCollins, 1994), pp. 128–39.

68 Mayer, Rittberger and Zürn, 'Regime theory: state of the art and perspectives'.

time a process of reconstructing their interests in terms of shared commitments to social norms. Over time, this will tend to transform a positive interdependence of outcomes into a positive interdependence of utilities or collective interest organized around the norm in question'.⁶⁹

This constructivist approach to the institutionalization of cooperation focuses on how the expectations that are produced by the behaviour affect interests and identities. This process of institutionalization is one in which actors internalize new understandings of self and other and, furthermore, move towards increasingly shared commitments to the norms of the regime. Thus there is a strong behavioural component in the international regime theory. Whereas an international treaty is a legal document stipulating rights and obligations, a regime is a social institution in which the behaviour of its actors constitutes the regime.⁷⁰ Thus a regime is often based on an informal understanding and usually does not take the form of a written document.

Applied to water relations within the international system, regime theory is thus a relevant tool in the analysis of how compromise solutions might be found as well as for an analysis of ongoing cooperation.⁷¹

Water regimes have been identified by Haftendorn as existing 'when the affected states to a conflict observe a set of rules designed to reduce conflict caused by use, pollution or division of a water resource or the reduction of the standing costs and the observance over time of these rules'.⁷²

Haftendorn distinguishes between general water regimes and those intended for a particular conflict. An example of a general one is the 1997 United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses, the aim of which is to establish general principles for the use of transboundary water resources. An ex-

69 Wendt, Alexander, 'Anarchy is what makes states of it: the social construction of power politics', in Kratochwil and Mansfield (eds), *International Organization: A Reader*, p. 87.

70 List, M. and Rittberger, V., 'Regime theory and international environmental management', in A. Hurrell and B. Kingsbury (eds), *The International Politics of the Environment* (Oxford: Clarendon Press, 1992), pp. 85–109.

71 du Plessis, Anton, 'Charting the course of the water discourse through the fog of international relations theory', in H. Solomon and A. R. Turton (eds), *Water Wars: Enduring Myth or Impending Reality?*, Africa Dialogue Series no. 2 (Umhlanga Rocks: African Centre for the Constructive Resolution of Disputes (ACCORD), Green Cross International and the African Water Issues Research Unit (AWIRU), 2000), pp. 9–34.

72 Haftendorn, H., 'Water and international conflict', *Third World Quarterly*, 21 (2000), p. 65.

ample of a regime dealing with a specific watercourse is the Rhine regime, which stemmed from an agreement on chemicals and chlorine. The regime has been beneficial in that it has managed to bring problematic issues to the fore and facilitated the settlement of disputes.⁷³ Another example of a general water regime is the Southern African Development Community (SADC) Protocol on Shared Rivers.⁷⁴ There are also examples of more specific regimes in Southern Africa. The Orange/Senqu River Basin Commission (ORACOM) is a regime that is fairly well established and functioning despite border tensions between the two riparians, South Africa and Namibia.⁷⁵

It might be argued that the common understanding between Israel and Jordan on the use of the disputed waters of Jordan River Basin, reached in UN-sponsored talks during a period when they were *de jure* in a state of war, is a good example of a water regime that greatly reduced the tension between the two adversaries. As such, the water regime could be seen an example of a confidence- and security-building measure (CSBM).⁷⁶ Dinar argues that the USA viewed cooperation on water issues in the Jordan Basin as a tool for the creation of peace in the region.⁷⁷ Regime development, connected as it is to neo-liberal institutionalism, is an important factor when discussing cooperative responses to water conflicts.⁷⁸

2.4.1 How do regimes come into existence?

A variety of explanations exist as to why regimes come into existence. Realists tend to focus on the interests of hegemonic states. In their

73 Haftendorn, 'Water and international conflict', pp. 51–68.

74 Southern African Development Community, Protocol on Shared Watercourse Systems in the Southern African Development Community (SADC) Region, SADC Council of Ministers, Gaborone, Botswana, 1995.

75 Turton, Anthony [A. R.], Personal communication, 11 July 2001.

76 For a good discussion on CSBMs see Jones, Peter, *Towards a Regional Security Regime in the Middle East: Issues and Options* (Stockholm: Stockholm International Peace Research Institute (SIPRI), 1998).

77 Dinar, Shlomi, 'Negotiations and international relations: a framework for hydro-politics', *International Negotiation*, 5 (2000), pp. 378–9.

78 du Plessis, A., 'Charting the course of the water discourse through the fog of international relations theory', in H. Solomon and A. R. Turton (eds), *Water Wars: Enduring Myth or Impending Reality?*, Africa Dialogue Series no. 2 (Umhlanga Rocks: African Centre for the Constructive Resolution of Disputes (ACCORD), Green Cross International and the African Water Issues Research Unit (AWIRU), 2000), p. 21.

view, regimes are created by the powerful hegemons because they serve their interests. Consequently, when the power of a hegemon declines the regime also weakens. Neo-liberals, on the contrary, focus on the *demand* for regimes. They view norms not only as a reflection of sheer power but as being likely to be demanded regardless of the existence of a hegemon as they will enable states to estimate the costs and benefits of action more accurately. When a regime is in place a state is able to interpret and value the actions of self and other and determine if it is in line with agreed principles.⁷⁹ The regime might, furthermore, help states to coordinate their behaviour so that they can avoid collectively suboptimal outcomes.⁸⁰

Another explanation of regime formation is the view that a crisis or shock might precipitate the formation of a regime.⁸¹ This understanding is closely connected to Hajer's *emblematic events*, which he sees as being necessary in order to raise awareness of environmental degradation and vulnerability.⁸² Yet another explanation for the formation of regimes is that offered by Haas and by Adler and Haas.⁸³ They do not focus so much on interests or dramatic events but argue that a regime can stem from communities of shared knowledge. Experts in a specific issue area are termed *epistemic communities*. The emphasis is on how these experts play an important role in the articulation of complex problems, such as water management issues or pollution control.

The epistemic communities approach is the one that will be elaborated upon most in this thesis as it emphasizes the role of expert communities in the formation of policy innovation and the institutional

79 Mansfield, E., 'The role of regimes', in Friedrich Kratochwil and Edward D. Mansfield (eds), *International Organization: A Reader* (New York: Harper Collins, 1994), pp. 95–6.

80 Hasenclever, A., Mayer, P. and Rittberger, V., *Theories of International Regimes* (Cambridge: Cambridge University Press, 1997).

81 Young, O., 'The politics of international regime formation: managing natural resources and the environment', in Friedrich Kratochwil and Edward D. Mansfield (eds), *International Organization: A Reader* (New York: HarperCollins, 1994).

82 Hajer, M., *The Politics of Environmental Discourse: Ecological Modernization and the Policy Process* (Oxford: Clarendon Press, 1996).

83 Haas, P., 'Do regimes matter? Epistemic communities and Mediterranean pollution control', in Friedrich Kratochwil and Edward D. Mansfield (eds), *International Organization: A Reader* (New York: HarperCollins, 1994), pp. 128–39; and Adler, E. and Haas, P., 'Knowledge, power, and international policy coordination', *International Organization*, 46/1 (1992), pp. 367–90.

processes leading up to the formation of a regime.⁸⁴ Haas holds that regimes may be transformative, which lead to the empowerment of new groups of actors who can change state interests and practices.⁸⁵ Members of an epistemic community might also have a decisive influence on the construction of policy in an area and, since the communities are international, this might also lead to a general convergence of policies internationally.

Related to the epistemic communities approach are the ideas of Turton.⁸⁶ He argues that there is a great need for social capital in the creation of regimes. Using Homer-Dixon's theory of ingenuity,⁸⁷ he argues that first *technical ingenuity* and second *social ingenuity* are needed in order to establish water regimes. The technical ingenuity concerns the 'hard' side of the issue and is data-intensive, while the social ingenuity concerns issues such as the ability of actors to legitimize the hard data through negotiations. If these characteristics are present the conflict potential in an international river basin can be institutionalized within a water regime.

Whatever the forces presumed to be important in regime creation, there is agreement that it is a long-term process. It typically spans the lifetime of several governments and is likely to face setbacks. This is particularly the case when a potential regime is not supported by strong domestic groups. Waterbury holds that states should work towards the creation of an enabling environment for the facilitation of regime creation.⁸⁸

The more general water conventions, such as the UN Convention on the Law of the Non-Navigational Uses of International Water Courses, whose aim is to establish general principles for the use of transbound-

84 See section 5.4 for a critique of the concept.

85 Haas, P., 'Do regimes matter? Epistemic communities and Mediterranean pollution control'

86 Turton, Anthony [A. R.], 'Towards hydrosolidarity: moving from resource capture to cooperation and alliances', Keynote address 18 Aug. 2001 at the SIWI Seminar 2001 on Water Security for Cities, Food and Environment: Towards Catchment Hydrosolidarity. *SIWI Proceedings*, Report 13 (Stockholm: Stockholm International Water Institute), 2001.

87 For the theory see Homer-Dixon, T., *The Ingenuity Gap* (London: Jonathan Cape, 2000). A loose definition of ingenuity could be 'ideas that can be used to solve practical, technical and social problems, such as the water problems arising from water management'.

88 Waterbury, John, *The Nile Basin: National Determinants of Collective Action* (New Haven, Conn. and London: Yale University Press, 2002), p. 54.

ary water resources, have seen the extensive involvement of the water expert community. Although the principles of these conventions are of a general nature they may serve as a baseline for interstate water relations. In fact, the general international principles have led to the formation of regional water regimes. This has been brought about when riparians have together adopted norms, rules and principles and thereby incorporated a higher degree of cooperation among themselves.⁸⁹

The interdependence of the states that share a river basin creates the potential both for conflict and for cooperation. Interestingly, most cases show that, rather than producing a violent confrontation, a situation of water scarcity has resulted in cooperation.⁹⁰ The agreements or treaties the cooperation has led to are, however, often of rather poor quality and do not cover all relevant issues. This fact underlines the importance of an analysis of the post-agreement phase. This is particularly true in the Jordan River Basin, which is still characterized by political conflict. Even though there might be agreement on whether a water regime exists in a river basin it is still important to assess the *quality* of the cooperation that takes place within the area.

How can the quality and strength of a presumed water regime be assessed? Regime theory offers some tools. Hasenclever, Mayer and Rittberger maintain that one should analyse the *effectiveness*, *robustness* and *resilience* of regimes. The effectiveness of a regime is dependent on whether its members abide by its norms and rules, while robustness means the 'staying power' of a regime in the face of exogenous challenges. Resilience refers to the ability of the regime to adapt itself to changing circumstances.⁹¹

89 Haftendorn, H., 'Water and international conflict', *Third World Quarterly*, 21 (2000), pp. 51–68.

90 Wolf, Aaron T. and Hamner, Jesse H., 'Trends in transboundary water disputes and dispute resolution', *Water for Peace in the Middle East and Southern Africa* (Geneva: Green Cross International, 2000).

91 Hasenclever, A., Mayer, P. and Rittberger, V., *Theories of International Regimes* (Cambridge: Cambridge University Press, 1997). For more on the effectiveness of regimes see Kütting, Gabriella, *Environment, Society and International Relations: Towards More Effective International Agreements* (London and New York: Routledge, 2000), pp. 30ff.

2.5 The actor (agent) and structure debate

In many of the theories elaborated above it is argued that, in order to understand the water negotiations and their result, it is necessary to look both at the surroundings (the structures) and at the actors participating in the negotiations and the committees established as an outcome of the negotiations. Through an analysis of these factors a contextualization of the water negotiations is achieved.

Iterating Wegerich, I find the actor–structure approach useful in an analysis of institutional/regime aspects of the water relations in the Jordan River Basin.⁹² The actor–structure approach elaborated here is seen as a general framework for the thesis besides being a tool in the dissection of the negotiation process. It is also, in a sense, a description of the mindset with which this problemshed is approached.⁹³ It highlights the need to view the roles of both actors and structures in influencing the outcome of the water negotiations and the ensuing cooperation or non-cooperation. The theory on actor–structure is also helpful for an understanding of how the various sanctioned discourses which are essential for understanding water policy are created.⁹⁴ Arguing along the lines of Dinar, who highlights the need to include domestic politics, interest groups and political ideologies in an analysis of the water relations in the Jordan Basin, the actor–structure approach is helpful in identifying and analysing these features.⁹⁵ While social scientists have tried for many years to solve what they call the structure–agency problem, I argue, in concordance with Hay, that ‘it is not so much a problem as a language by which ontological differences between contending narratives might be registered’.⁹⁶

Different schools of thought will be examined – purely actor-oriented approaches and structural approaches, as well as ideas on how

92 Wegerich, Kai, *Institutional Change: A Theoretical Approach*, SOAS Occasional Paper no. 30 (London: University of London, School of Oriental and African Studies, 2001).

93 A problemshed captures the operational context in which decision makers and their problems exist. Allan, Tony [J. A.], *The Middle East Water Question: Hydropolitics and the Global Economy* (London and New York: I. B. Tauris, 2001), p. 337.

94 For more on this see sections 2.2 and 5.5.

95 Dinar, Shlomi, ‘The Israeli–Palestinian water conflict and its resolution: a view through International Relations theory’, Paper presented at the International Studies Association, 40th Annual Convention, Washington, DC, 16–20 Feb. 1999.

96 Hay, Colin, ‘What place for ideas in the structure–agency debate? Globalisation as a “process without a subject”’, Paper presented at the Conference on Evaluating Cutting Edge Social Science Research, University of York, 25–26 Mar. 2000.

to link actor and structure. In the aftermath of the Cold War the debate on what determines action in the international arena has been intense. This discussion is important as it addresses different views on the issues of *explaining* and *understanding* events,⁹⁷ that is, different views on how *change* occurs. Are actors unaffected by the circumstances in which they are situated and are they, furthermore, able to make rational choices? Or do actors act only as a result of structures (e.g. the sanctioned discourse or regime features in a society) over which they have little or no control? The exposé of the theoretical actor–structure debate is intended to provide a framework for the analytical model arrived at in section 2.6. The model is intended to be an important tool for the analysis of the research questions in that it visualizes what factors (both actor-related and structural) affect the outcome of the negotiations.

A central problem in the actor–structure debate is how to bridge the gap between the agency-centred (or actor-oriented) approaches and the structural approaches. One possible way to study international relations is to focus on the intention and motivation of actors, which gives the actor-oriented approach primacy over the structural one. The emphasis of that approach is on the preferences, intentions, beliefs and cognitive frames of actors. In this study an account of the actors who take part in the negotiations and the various committees is important since they bring with them various motivations, beliefs and intentions that will affect their behaviour in the negotiations and thereby also the outcome. Examples of such features are ideas of what an equitable division of the waters in the basin would be, ideas about the nature of and reasons for the Arab–Israeli conflict, and beliefs about how the other party will act or want to act. The structural perspective focuses on how structural features, such as ideology and interest groups, constrain and determine action.⁹⁸ In this case examples of structural features are the influence of the farming lobby on water policy in Israel and Jordan (and to a lesser extent in the Palestinian areas), which af-

97 Hollis and Smith argue that there are two distinct ‘stories’ told in the social sciences today. One is the ‘inside’ story, which thrives on nineteenth-century ideas of history and its being written from the ‘inside’. This approach focuses see the actor as the only starting point for analysis and its focus is on the intentions, perceptions and *understanding* of a social situation. The other, ‘outside’ story is built upon the natural science tradition and can be called a search for causes so as to *explain* events. Hollis, Martin and Smith, Steve, *Explaining and Understanding International Relations* (Oxford: Clarendon Press, 1990).

98 Aggestam, Karin, *Reframing and Resolving Conflict: Israeli–Palestinian Negotiations 1988–1998* (Lund: Lund University Press, 1999), p. 26.

fects the room for manoeuvre that each party has in a negotiation or committee. Furthermore, the perception that agriculture (and thereby water) is an integral part of each of these societies – is another structural factor that affects what may or may not be pursued in a negotiation or a committee.

Hay has differentiated the various positions in the structure–agency debate. He discerns four positions – structuralism, intentionalism, structuration theory and critical realism – all of which will be discussed below.⁹⁹ Before elaborating on the different approaches to the actor–structure debate, however, it is important to emphasize that the dilemmas of the agent–structure *problématique* are distinct from the level-of-analysis debate.¹⁰⁰ The level-of-analysis debate centres on the question of what the most relevant level for analysis in international politics is. Consequently, the levels are mere referent points for *where* things happen rather than *why* things happen, which the agent–structure approach attempts to grasp.¹⁰¹ This study is not concerned with the level-of-analysis debate per se. Rather, it is concerned with the role of actors as they are presumed to play an important role in the negotiations on water. At the same time it is regarded as essential to understand the structural incentives (and disincentives) for action.

2.5.1 ‘Simple’ views of structure–agency

Structuralism sees structures as the adequate explanatory variable. A structuralist approach seeks to explain societal events by analysing the social and political structures in which actors are present. Examples of these structural features are the prevailing discourse within a society or the regime features around an issue which have been discussed above in this chapter. The structures are, however, regarded as situated outside the immediate perception of the actor. This makes them largely unobservable for the actor and hence impossible for him or her to take into

99 Hay, Colin, ‘Structure and agency’, in David Marsch and Gerry Stoker (eds), *Theory and Methods in Political Science* (London: Macmillan, 1995).

100 Aggestam, *Reframing and Resolving Conflict*, p. 27.

101 For more on the levels-of-analysis debate see Hollis, Martin and Smith, Steve, *Explaining and Understanding International Relations* (Oxford: Clarendon Press, 1990), pp. 7–9; Buzan, Barry, ‘The levels of analysis problem in international relations reconsidered’, *International Relations Theory Today* (Cambridge: Polity Press, 1995); and Buzan, Barry, Waever, Ole and de Wilde, Jaap, *Security: A New Framework for Analysis* (Boulder, Colo. and London: Lynne Rienner, 1998), pp. 5–7.

account. Structures, which are seen as an autonomous feature of the social system, are thus seen as constraining action and even largely determining it. Structures relate to what Bourdieu calls *habitus*, which essentially refers to the effect on an individual's behaviour of established practices in his or her immediate environment. According to Bourdieu the *habitus* produces individuals based on structures which are generated by history.¹⁰² There are problems associated with the structuralist world view. An obvious objection, for instance, is that it almost completely neglects the role of individuals. Furthermore, the seemingly pre-determined nature of things can easily be argued to produce a passivity and fatalism, as individuals are in any case 'passive dupes of structure'.¹⁰³ In the case of water negotiations, some of the features considered to be structures are existing international water law, the characteristics of the international system, domestic and international interest groups involved in the water discourse, and the prevailing practices of the water sector in a particular state.

The opposite of structuralism is *intentionalism*. According to this approach, in connection with the water negotiations actors would be the negotiators and the focus is on what they bring with them into the negotiations. Experts in the negotiations would also be considered as actors since they are a major source of information and advice through their expertise. Intentionalism is an 'insider' account of social and political interaction. This approach does not consider structures as unimportant in understanding events, although it sees them as less relevant than structuralists consider them. On the other hand, in this approach structures are seen as a product of human agency – in contrast to the structuralist view, which assumes that social structures exist irrespective of the behaviour of individuals.¹⁰⁴ In the eyes of intentionalists events are the outcome of the direct intentions, motivations and self-understandings of the actors involved. Intentionalism tends to reject deterministic assumptions and seek explanations in the 'uniqueness and "richness" of social and political interaction in a given setting'.¹⁰⁵

Since the intentionalist approach is connected to rational choice theories, one leading criticism of it is that hardly any rational action

102 Bourdieu, Pierre, 'Structures, habitus, practices', in Pierre Bourdieu (ed.), *The Logic of Practice* (Cambridge: Polity Press, 1990), pp. 52–65.

103 Hay, 'Structure and agency', pp. 193–5.

104 Roberts Clark, William, 'Agents and structures: two views of preferences, two views of institutions', *International Studies Quarterly*, 42 (1998), p. 250.

105 Hay, 'Structure and agency', pp. 195–6.

takes place that is unaffected by the social structures. It is thus argued that a thorough understanding of context, which in this study relates back to features such as regime characteristics and prevailing discourse, is needed in order to encourage rationality.¹⁰⁶ A further criticism of an approach that is preoccupied with actors is that an actor only possesses what has been called a 'bounded rationality' which is to do with the limited nature of each actor's freedom under the prevailing structural constraints.¹⁰⁷ In this study this has to do, for example, with the fact that, even though an actor might have what can be seen as a rational or fair opinion as to how to pursue or negotiate an issue such as the division of water, he/she might still have to consider the view of powerful interest groups such as the agricultural lobby.

2.5.2 Dialectic understanding of structure and agent: a bridge?

It is sometimes argued that agency-focused approaches and structuralism constitute two distinct approaches to international relations which ought to be separated and not fused. But there are obviously important stories to tell through a fusion of the two.¹⁰⁸ Hence, the two approaches should not be considered as alternatives. Giddens argues that the social sciences must be able to bridge the gap between them; 'action and structure stand in a relation of logical entailment: the concept of action presumes that of structure and vice versa'.¹⁰⁹ It is particularly

106 Hay, 'Structure and agency', pp. 195–6.

107 Simon, Herbert, *Models of Bounded Rationality* (Cambridge, Mass.: MIT Press, 1997).

108 Examples of those who argue that the approaches should be separated because their theoretical differences make them incompatible are Hollis, Martin and Smith, Steve, *Explaining and Understanding International Relations* (Oxford: Clarendon Press, 1990); and Smith, Steve, 'Foreign policy theory and the new Europe', in Walter Carlsnaes and Steve Smith (eds), *European Foreign Policy: The EC and Changing Perspectives in Europe* (London: Sage, 1994). Proponents of a fusion are, for instance, Giddens, Anthony, *Central Problems in Social Theory: Action, Structure and Contradiction in Social Analysis* (London: Macmillan, 1984); Carlsnaes, Walter, 'In lieu of a conclusion: compatibility and the agency–structure issue in foreign policy analysis', in Carlsnaes and Smith (eds), *European Foreign Policy*; and Wendt, Alexander, 'Bridging the theory/meta-theory gap in international relations', *Review of International Studies*, 17/4 (1991), pp. 383–92.

109 Giddens, Anthony, 'Agency, institution and time–space analysis', in K. Knorr and A. V. Gicouvel (eds), *Advances in Social Theory and Methodology: Toward an Integration of Micro- and Macro-sociologies* (Boston, Mass.: Routledge and Kegan Paul, 1981), p. 171.

useful for this study to use an analytical frame that incorporates both actors and structures because such an approach incorporates the other theoretical perspectives deemed important in the analysis.

Structuration theory and critical realism constitute two attempts to bridge the gap between the structure and agent approaches.

Structuration theory builds upon the idea of the *duality of structure and agency*, which views agent and structure as two sides of the same coin. Giddens holds that 'the constitution of agents and structure are not two independently given sets of phenomena'.¹¹⁰ Rather, they are mutually constitutive and dependent on each other. Giddens argues that actors continuously produce and reproduce society through their action. The actions are, nevertheless, not pursued under conditions of their own choosing but are rather situated in time and space. Consequently, Giddens argues that social structures are both constituted by human agency, and but are at the same time in the midst of this constitution.¹¹¹ Actors are defined as having a 'practical consciousness', which means that human action is never fully determined by factors that the actor is unable to control. On the other hand, Giddens does not assert that humans have a full understanding of their situation; rather he argues that they are knowledgeable and reflexive agents who are able to make a reasoned choice.

Rules and resources constitute structures. The rules are created and reproduced to a great extent by the social interaction among actors. The processes that led to the law on the non-navigational uses of international watercourses are a good example of how interaction and negotiation among actors produce and reproduce a structure. Resources, on the other hand, are divided into two groups, allocative and authoritative. The allocative resources concern the capacity to affect the material environment, whereas authoritative resources concern the power to control the activities of actors.¹¹² The allocative resources are related to what Ohlsson and Turton¹¹³ call social adaptive capacity and what

110 Giddens, Anthony, *The Constitution of Society: Outline of the Theory of Structuration* (Berkeley, Calif.: University of California Press, 1984), p. 25.

111 Giddens, Anthony, *New Rules of Sociological Method* (London: Basic Books 1976).

112 Johansson, Thomas, 'Anthony Giddens och det senmoderna' [Anthony Giddens and the Late Modernity], in Per Månson (ed.), *Moderna samhällsteorier: Traditioner, riktningar, teoretiker* [Modern theories of society: traditions, direction, theoreticians] (Smedjebacken: Rabén Prisma, 1995), pp. 398–403.

113 Ohlsson, Leif, *Environment, Scarcity and Conflict: A Study of Malthusian Concerns* (Gothenburg: University of Gothenburg, Department of Peace and Development Research, 1999); and Ohlsson, Leif and Turton, Anthony [A. R.], *The Turning of a*

Homer-Dixon calls ingenuity.¹¹⁴ In terms of the water negotiations this refers both to the ability of the parties to produce technical water infrastructure and the capacity of the actors involved in the negotiations to produce relevant background papers, negotiation techniques and so on. The authoritative resources refer mainly to the relative power distribution between the negotiating parties.

Another effort to overcome the problem of agent and structure is found in *critical realism* and is greatly inspired by Bhaskar.¹¹⁵ While it stems from structuralism it is still based on a dialectic understanding of agent–structure. In this approach different layers of structure are believed to condition agency and in that sense limit the choice of strategy by the agent. Nevertheless, structure is seen as *both* an ever-present material reality *and* a consequence of human agency. Social and political structures are partly known to the actors and certain structures favour certain strategies. Thus, the critical realist approach is offered as a critical guide to political strategy and intervention.¹¹⁶

In his elucidation of critical realism Hay has made a useful summary of its underlying premises. Human agency acquires meaning and occurs only in relation to already structured settings, which simultaneously constrain and enable actors since structures determine the range of possible action. In the sense of this study the actions of negotiators, members of the Joint Water Committees and water experts are only meaningful and possible to understand within the context, consisting, for example, of the regime features in the Jordan River Basin or the prevailing sanctioned discourse within the societies of the states involved, in which they take place. It is also within that context that their actions acquire meaning since they relate to the structures in a constraining (or enabling) way. Structures can be defined in various ways. An example put forward is that the action of others (for instance, a group of individuals) represents a structure for an individual who is not part of the group. In addition, structures are not seen as determining outcomes directly. Rather, they constitute the frame in which action can be pur-

Screw: Social Resource Scarcity as a Bottle-neck in Adaption to Water Scarcity, SOAS Occasional Paper no. 19 (London: University of London, School of Oriental and African Studies, 1999).

114 Homer-Dixon, T., *The Ingenuity Gap* (London: Jonathan Cape, 2000).

115 Bhaskar, Roy, *The Possibility of Naturalism: A Philosophical Critique of Contemporary Human Sciences* (Brighton: Harvester, 1979); and Bhaskar, Roy, *Scientific Realism and Human Emancipation* (London: Verso, 1986).

116 Bhaskar, *The Possibility of Naturalism*.

sued. Thus it is through the actions of the negotiator or Joint Water Committee member that the farming lobby or strategic/military interests materialize as a structure.

Structural constraints are seen as either *physical*, which refers to the spatial and temporal properties of a setting, or, *social*, which refers to the consequences of previous human action or inaction on a structured context. While on certain occasions they act as constraints, they might also be seen as resources or as facilitators. In the context of this research a physical structural constraint is the geographic and hydrological features of the Jordan River Basin. A social structural constraint in the water negotiations is, for example, the decision in 1955 that the Johnston plan¹¹⁷ should not be adopted as an agreement. On the other hand, since the main issues of the plan have provided a base for a 'tacit' understanding among the riparians (which resembles a water regime), in the basin it is an enabling structure. Hay concludes:

Strategic action is the dialectical interplay of intentional and knowledgeable, yet structurally-embedded actors and the preconstituted (structured) contexts they inhabit. Actions occur within structured settings, yet actors have the potential (at least partially) to transform those structures through their actions. This impact of agents upon structures may be either deliberate or unintended.¹¹⁸

While simultaneously affecting structure, actors can through their action also enhance their own awareness of structures and the facilitating and constraining factors they constitute. A *strategic learning* occurs on the part of the actors which enables them to create a new strategy for action which might prove more successful. Not only can the strategic learning affect the outcome of interaction through an improved strategy, but the structure might also have been affected by the actions carried out by an actor in such a way that it might be more constraining or more facilitating/enabling.¹¹⁹ Unlike rationalist theories, in which ideas and interests are seen as constant, this constructivist approach considers how identities and ideas are redefined in the process of inter-

117 The Johnston plan of 1955 (or the Unified Plan, which is its official name) is a comprehensive plan for the Jordan River Basin put forward by the US for the allocation of the water resources of the basin. On the mission by US envoy Eric Johnston, see section 3.4 below.

118 Hay, Colin, 'Structure and agency', in David Marsch and Gerry Stoker (eds), *Theory and Methods in Political Science* (London: Macmillan, 1995), pp. 200–1.

119 Hay, 'Structure and agency', pp. 201–2.

action. Simultaneously, the structures are also reproduced and altered by the discursive actions of agents.¹²⁰

Two general criticisms of Bhaskar's concept of critical realism concern his use of analogies from natural science and the vagueness of his notion of social structure.¹²¹ Nevertheless, critical realism provides a useful tool in the analysis of how action can have an effect (though not necessary the intended effect) on the structures. In addition it provides a frame for analysing strategic action and strategic learning within the negotiation context. As a large part of this study focuses upon interaction between negotiators, and between negotiators and experts, it is of the utmost importance to be able to identify the enabling/constraining characteristics of the structures.

2.6 An analytical model for the analysis of interstate relations

The analytical model below provides an important part of the analytical framework. It depicts the complex interplay between actors, who are identified as negotiators and experts, and structures, which are identified as domestic and international. This section also attempts to synthesize the various theoretical perspectives discussed in this chapter.

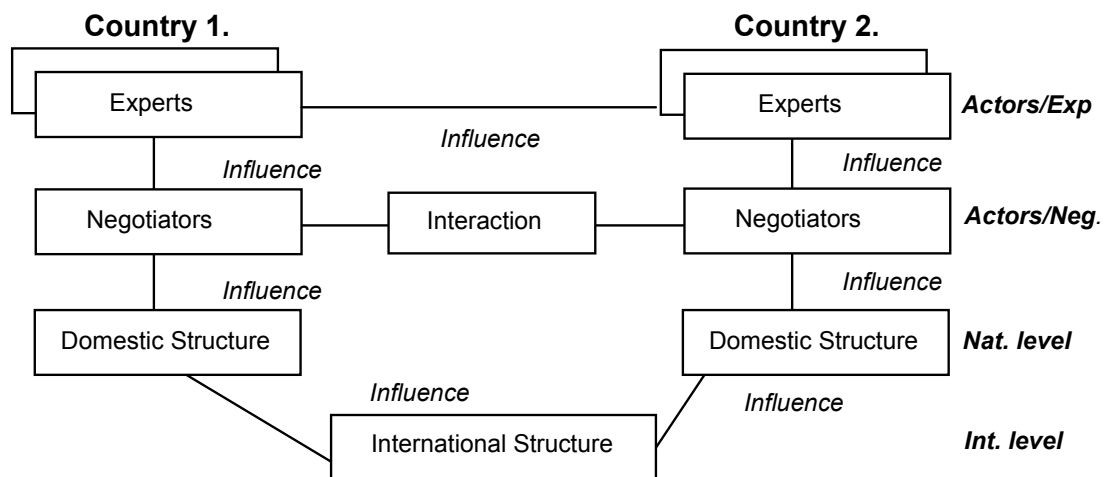


Figure 1: A bilateral model of the complex relationship between actor and structure and the influence experts have on negotiators

120 Copeland, Dale C., 'The constructivist challenge to structural realism: a review essay', *International Security*, 25/2 (fall 2000), pp. 187–212.

121 Patomäki, Heikki, *After International Relations: Critical Realism and the (Re)construction of World Politics* (London and New York: Routledge, 2002), pp. 99–121.

2.6.1 The relevance of the model

The model attempts to capture the process by which states move from conflict to agreement. Thus, it is predominantly process-oriented. That is the reason for including negotiation theory, which is a process-oriented approach. Since the model deals with the effects of interaction it therefore also deals with the outcome.

Research on conflict and cooperation today lacks a dynamic theoretical perspective that combines actor and structure.¹²² Furthermore, a focus on an actor–structure approach will help to identify reasons for *change*¹²³ from conflict to cooperation. I intend to clarify the relation between structure and actor in order to get a deeper understanding on how the transformation of conflict occurs and particularly the possible role of scientific expertise here. Above I have discussed different ways in which actor and structure can be conceptualized. Hay stresses the importance of the *contextualization of agency*, which means that we ought to contextualize social and political action within the structural context in which it takes place. In this study the seemingly ever-present political conflict in the Middle East region represents such a context, in the widest sense. In relation to the other theoretical perspectives highlighted in this chapter, features that are part of the structures have also been discussed. These theoretical perspectives are thought to provide the tools with which the research questions can be addressed within their proper cultural, social and political context.

The influence of the discourse in the respective societies, which is formed by an interaction of the various interests in those societies, is an important structural feature that must be taken into account. The relationship between scientific knowledge, which is provided by scientific experts, and politics (and politicians) is an issue that must also be incorporated into the framework of analysis. In essence the outcome of

¹²² Aggestam, Karin, *Reframing and Resolving Conflict: Israeli–Palestinian Negotiations 1988–1998* (Lund: Lund University Press, (1999), pp. 39–41.

¹²³ Change is a commonly used concept in international relations. It is usually not, however, defined in a precise way. Moreover, scholars do not agree on a definition. Sztompka (1993) has made a useful distinction between ‘change of’ and ‘change in’. ‘Change of’ is concerned with the change of an entire structural system while ‘change in’ refers to the changes that occur on the individual level as a result of interaction. This research will consider ‘change in’ as the most useful concept as we are dealing with smaller changes that occur in the interaction process. These ‘smaller’ changes can, however, add up in the longer run and result in something which might be considered a structural transformation, and hence a ‘change of’. Sztompka, Piotr, *The Sociology of Change* (Oxford and Cambridge: Blackwell, 1993).

this relationship is determined within a discourse. The selection (conscious or unconscious) of focal issues in the negotiations by the actors is to a great extent a result of the discourse and thus a reflection of the structural boundaries for action. Furthermore the implicit rules, norms and so on of the regimes (on water) that are presumed to exist in the Jordan River Basin present another structural feature within which agents (actors) are bound to act. This leads on to risk theory which helps identify how the issues that are deemed as risks are predominantly culturally and politically informed rather than 'objective' risks. This is because the process of determining what constitutes a risk takes place within a society that is governed by a discourse (or circumscribed by structures).

Thus we need to be constantly aware that external features, such as discourses, influence the context as well as the actors' strategies, intentions and actions. At the same time the actors constantly recreate, through their actions, structures such as discourse. This is important as a mutually constitutive relationship between actor and structure is assumed in the model. Furthermore, Hay argues that structures provide resources and opportunities for the powerful while at the same time constraining the less powerful. Thus structure and agency are a question of political power.¹²⁴ A discussion on asymmetry is therefore needed, as asymmetries 'tend to generate conflicting notions of the nature of just and fair solutions'.¹²⁵ The interaction is seen as a process of communication and negotiation where actors communicate and bargain (formally and informally). It is assumed that the interaction process affects both actors and structures. I assume that actors are basically rational and self-reflective¹²⁶ and that the strategies embarked upon

124 Hay, Colin, 'Structure and agency', in David Marsch and Gerry Stoker (eds), *Theory and Methods in Political Science* (London: Macmillan, 1995), pp. 205–6. Lundqvist also points out that structures can be both limiting and enabling but adds an important aspect in this regard, which relates to actors' ability to influence the structures. Even if the actor is conscious of the structures' effect on his/her choices or possible avenues for action it is difficult for him/her to affect them. However, a consciousness of them might bring about attempts to change them. Lundqvist, Lennart, *Implementation Steering: An Actor-Structure Approach* (Lund: Studentlitteratur, 1987), pp. 48–50.

125 Albihn, Cecilia, 'The global security challenge to negotiation: toward the New Agenda', *American Behavioural Scientist*, 38/6 (1995), p. 926.

126 By rational and self-reflective I mean that actors are knowledgeable and to make sense of both their own action and the opponents' action within the interaction process. This does not mean that actors are rational in the sense that their interests and ideas are constant. Rather, actors re-evaluate positions taken as a result of the process of interaction.

may change over time. A degree of 'political learning' occurs in the interaction process that might lead to perceptions of the 'other' altering during the negotiations. The structures are also affected by the interaction process, which can create new patterns of relationship, perceptions of reality and behaviour.¹²⁷ Thus, I assume that agent and structure should be seen as mutually constituting each other.

The actors are both the actual *negotiator(s)*, who has/have been mandated by his or her government to conduct negotiations on water, as well as the *expert(s)*, who is/are scientific advisers specializing in water. These experts range from people dealing with hydrology and geography to those working on security issues. Following Sundqvist,¹²⁸ I define as an expert a person who is positioned in the borderland between science and politics and who possesses scientific knowledge with which it is possible to make prognoses and political recommendations. Thus an expert is a scientific adviser in political circumstances. In this research I will deal with advisers to the Israeli, Palestinian and Jordanian teams of negotiators as well as advisers to the members of the Joint Water Committees. The experts are not always nationals of the countries.

Because of the complexity of the issue, in many aspects of a negotiation on water the negotiators have to rely on information presented to them by experts/advisers. Although experts often tend to view problems in a similar way, ideology and political opinions may as well influence their scientific understanding. The fact that decision makers have to base their understanding of issues on expert opinions highlights the need for an approach that also includes experts/advisers in the analysis. The bargaining and negotiation process is the place where the interaction takes place and the *change* occurs. Hay has made a useful distinction in highlighting the *situated actor*, who is an actor located in a structured social context. In his model, the action of an actor is determined simultaneously by the strategy and intention of the situated actor *as well as* the structural context, exemplified by the dominant features of a discourse in a society, the prevailing risk perceptions (constructed or 'real') or the regime characteristics.¹²⁹

127 Aggestam, *Reframing and Resolving Conflict*, p. 40.

128 Sundqvist, Göran, *Vetenskapen och miljöproblemen: En expertsociologisk studie* [Science and environmental problems: a sociological expert study] (Gothenburg: University of Gothenburg, Department of Sociology, 1991), pp. 14–15.

129 Hay, 'Structure and agency', p. 190.

The context in which the negotiators act is circumscribed by the structures. The structures are seen as constituting facilitating as well as restraining conditions. They can be defined in a variety of ways. In this study structures will mean mainly patterns of social relationships, practices and shared perceptions of reality which generate norms, rules and behaviour, for example, an international regime or the sanctioned discourse in a society. These structures are to a great extent the outcome of the past actions of agents. Thus, structures are continuously recreated by agency and if not only by agency, at least to a great extent by agency.¹³⁰ It is assumed that actors have a degree of autonomy in relation to the structures; this follows from the assumption that actors are presumed to be knowledgeable and reflective. The structures have also some degree of autonomy visavis the actors in that they are difficult to perpetuate and control.¹³¹

Two different structural levels are identified. First, there are *international structures*, for example, the international system, international water law (e.g. the Helsinki rules and the UN convention on the non-navigational uses of international watercourses), world opinion, super-power influence and the influence of bilateral and international donors.¹³² Second, the *national structures* (or domestic structures) are, for example, the government's philosophy and orientation, the prevailing socio-economic and security interests, national attributes (such as the dominant religion or national ideology – Zionism in the case of Israel) and powerful interest groups (in the case of water this means predominantly the agricultural lobby). The national structures correspond very closely to what has been described in section 2.2.1 as the sanctioned discourse in a society or state.

2.7 Conclusions

The aim of this chapter has been to present a theoretical framework for the analysis to be made in the thesis in the particular circumstances of

130 Lundqvist, Lennart, *Implementation Steering: An Actor-Structure Approach* (Lund: Studentlitteratur, 1987), p. 40.

131 Lundqvist, *Implementation Steering*, p. 47.

132 On the 1966 Helsinki rules and the 1997 UN Convention of the Law of Non-Navigational Uses of International Watercourses, see section 3.6 below. For more on the role and influence of donors see Trottier, Julie, *Hydropolitics in the West Bank and Gaza Strip* (Jerusalem: PASSIA, 1999), pp. 177, 194–208.

the Jordan River Basin. The theoretical framework has been developed throughout the research process in which empirical findings have influenced the choice of the theoretical avenues finally used.

With a view to providing a suitable overall framework for the analysis, the actor–structure debate has been one point of departure. It is concluded that neither a predominantly structural approach nor a principally actor-dominated approach in itself offers a useful frame. Rather an approach that combines influences from both actors and structures is found to be suitable as a ‘mindset’ with which to approach the water negotiations and the general water relations in the Jordan River Basin. This helps to contextualize the water issue within the wider political circumstances in the basin. It is also a useful way to assemble the theoretical perspectives ‘under one roof’.

The structures are divided into two groups. First, there are the international structures, for example, the influence of the international system/community, international water law and donor influence. The water regime(s) presumed to exist is/are also an important international structure. Second, there are national structures, for example, government orientation, the influence of interest groups such as the farming lobby, and ideology. The sanctioned discourse in a society, described above, is an important national structure. The actors are the actual negotiator(s), the members of the Joint Water Committees and the scientific experts providing advice to those. The approach in the thesis is constructivist in that it acknowledges the interplay between structures and actors. The analytical model put forward in section 2.6 tries to depict how both structures and actors affect each other, in addition to the process and the outcome.

In addition to the dialectic understanding of the actor–structure debate other theoretical avenues are explored in order to illuminate the research problem. Coming from a political science/international relations background I have discussed various approaches to interstate behaviour and what is decisive for the outcome of those relations. Starting from the environmental security debate, I found that it did not provide the necessary theoretical tools for the analysis. In dissecting the research questions, I found theories of the relationship between science and politics, negotiation theory, discourse analysis and risk theory to be more relevant. Regime theory was particularly important for the analysis of the post-agreement phase and implementation.

While acknowledging the important role of the state as an actor, I do not confine the analysis to viewing it as a unitary actor. Rather, an account of the domestic factors is needed for a more comprehensive analysis.

The connection between water and security is seen as important, not predominantly because water affects security 'objectively' but because water is often perceived or, for that matter, portrayed as a matter of security.

I argue that an analysis of the political relations between the parties over water needs to include an account of domestic politics and interest groups as well as an analysis of the historical and cultural perspectives on water in the Jordan River Basin. In particular, the domestic and international sanctioned discourses, which are influenced by structures and actors, are useful analytical instruments that are needed in order to reveal the factors that influence decisions and thereby the development of policy alternatives with regard to the water negotiations, as well as the work that has followed in the Joint Water Committees. Related to the use of discourse analysis, theories of the relationship between science and politics perspective are important in particular for the way in which I view the role of experts in the negotiations. While it has been assumed that scientific consensus leads to policy decisions, I argue that scientific advice has to be put into its proper context in order to be properly understood.

CHAPTER 3

Water in the Arab - Israeli conflict: background, and historical and present situation

3.1 Introduction

This chapter provides the general background to the Arab–Israeli conflict and the role of water within it, and an account of the historical and present hydropolitical situation. As such it provides a framework for the analysis in chapters 4, 5 and 6. The geographical and hydrological situation is briefly depicted. This general overview places the water *problématique* in its hydropolitical context. Indeed, the Israeli–Arab water conflict should not be analysed as separate from the overall political conflict.¹ A thorough account is provided of the wider interstate relations in the region and the different states' differing capacities to address the water issues adequately from both a political–social and a hydrological standpoint.

3.2 The geography and hydrology of the Jordan River Basin

Before embarking on a political analysis of the water in the Jordan River Basin, an account of the geographical and hydrological situation is needed.² This is important as experts, politicians, officials and the public sometimes have conflicting views on the resource itself. While experts might have ideas based on a scientific understanding of the hydrology of the region, the politician and the public are likely to have ideas that are as much, or even more, based on or determined by poli-

1 Feitelson, Eran, 'The ebb and flow of Arab–Israeli water conflicts: are past confrontations likely to resurface?', *Water Policy*, 2 (2000), pp. 343–63.

2 For a general description of the principles of hydrology see Ward, R. C. and Robinson, M., *Principles of Hydrology*, 3rd edn (London: McGraw-Hill, 1990).

tics and ideology.³ Hence, the issue of *political feasibility* is highly likely to distort the way the facts about the basin figure in the international water discourses. An account of the geography and hydrology of a region should therefore be accompanied by an analysis of how the different geopolitical and hydrological observations are used by the different actors in the discourse on water.

At the heart of the water dispute between Israel and Jordan is the Jordan River and its drainage basin. Between Israel and the Palestinian Authority, the heart of the water dispute is the Jordan River drainage basin and the aquifers in which the water moves, which flow mainly west from the heights of the West Bank towards the Mediterranean into Israel.

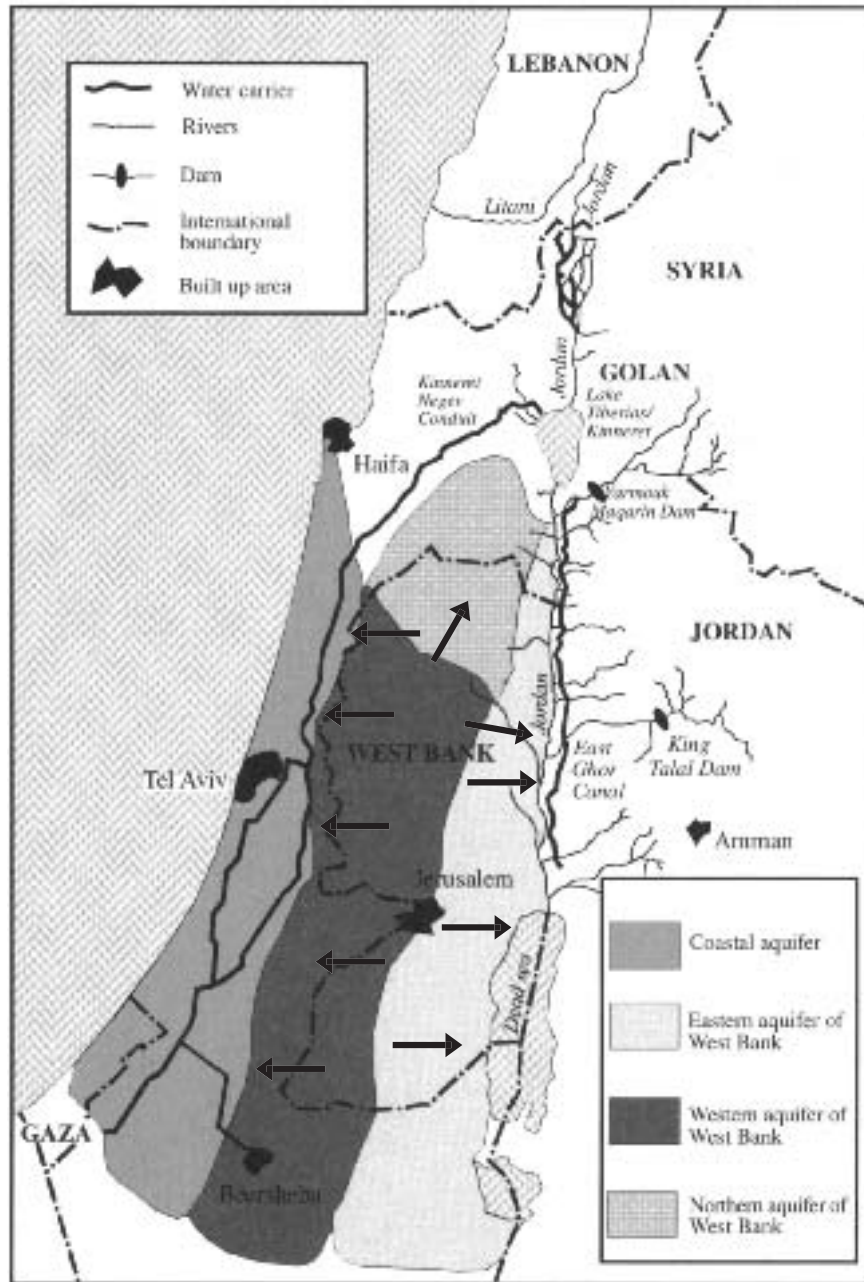
The sources of the upper Jordan River are three major springs. One of these, the Hasbani, has its source in Lebanon, while the Dan has its source in Israel and the Banias has its source in the Israeli-occupied Golan Heights. The Hasbani, the Dan and the Banias unite 6 kilometres (km) inside Israel and flow into the Hula Valley where they are joined by some smaller tributaries. The upper Jordan River then flows south into Lake Tiberias/Kinneret before it continues southward towards the Dead Sea. Lake Tiberias/Kinneret covers 166 km² and when its level is 213 metres (m) below sea level it stores 538 million cubic metres (mcm) of water.⁴ Around 10 km south of Lake Tiberias/Kinneret the Jordan is joined by another main tributary, the Yarmuk, which has its source in Syria and flows through Jordan.⁵ It is the main water source for Jordan. Actually, Jordan does not use any water from the Jordan River directly but draws its water from its tributaries before they discharge into the river.⁶

3 Allan, Tony, Personal communication, London, UK, 23 Oct. 2001.

4 These figures are highly contested and different accounts exist. Shapland, Greg, *Rivers of Discord: International Water Disputes in the Middle East* (London: Hurst & Co., 1997), p. 9 shows that figures for the inflow to Lake Tiberias/Kinneret vary between a low figure of 500 mcm per year and a high figure of 790 mcm per year. This is typical of all the figures presented in this conflict.

5 Isaac, Jad, 'Core issues of the Palestinian-Israeli water dispute' in Kurt R. Spillman and Günther Bächler (eds), *Environmental Crisis: Regional Conflicts and Ways of Co-operation: Report of the International Conference at Monte Verita, Switzerland, 3–7 October 1994*, Occasional Paper no. 14 (Zurich: Environment and Conflict Project (ENCOP), Sept. 1995); and Kliot, Nurit, *Water Resources and Conflict in the Middle East* (London: Routledge, 1994), pp. 173–6.

6 Haddadin, Munther, 'Water issues in the Hashemite Jordan', *Arab Studies Quarterly*, 22/2 (2000), pp. 63–77. For a good in-depth elaboration of the water resources of the Hashemite Kingdom see Salameh, Elias and Bannayan, Helen, *Water Resources of Jor-*



Map produced by Yassir Mohiedin

For Israel and Jordan the Jordan River Basin (which includes its tributaries) is of immense importance as both states withdraw large percentages of their water from it. For the other riparian states in the basin – Syria and Lebanon – the Jordan River Basin is not as important as it is for Israel, Jordan and the Palestinian areas since Lebanon gets the greater part of its water from the Litani and Awali rivers while Syria receives most of

dan: Present Status and Future Potentials (Amman: Friedrich Ebert Stiftung and Royal Society for the Conservation of Nature, Amman, 1993).

its water from the Euphrates and the Orontes. Moreover, the quantity of water in the Jordan River is constantly declining along the course of the river because more water is withdrawn from it than is renewed each year. This is especially significant in years of drought. The decline in the flow threatens the quality of the water as saline water can infiltrate and salinize the water, making it impossible to use. Agricultural drainage water, draining into the river from both sides of the river, is accelerating the deterioration of the water quality.⁷ Hence, the water problem is not only one of quantity but also of quality.⁸

In addition to the dispute over surface water, which is the main issue of dispute between Israel and Jordan, there is the dispute over the groundwater of the mountain aquifer between Israel and the Palestinian territories. The mountain aquifer, is divided in the western aquifer, which flows from the highest parts of the West Bank westwards, and the north eastern aquifer that flows north-east into Israeli territory and the eastern aquifer that flows east towards the Jordan River.⁹ The eastern aquifer is not considered to be a transboundary water resource as its flow is almost entirely within the West Bank.¹⁰ These aquifers are recharged through the precipitation that falls over the West Bank. The recharge is subject to major variations as precipitation over the area varies considerably from year to year. These variations obviously complicate the relations among the riparians, and this is particularly evident in years of drought. The variations in water availability are in a sense possible to account for. If the parties could agree to negotiate allocations on the basis of 'reliable' water and include provisions for the allocation of the 'non-reliable' extra water, the problem of allocation in times of drought would be more easily dealt with. These ideas are iterated by Kolars who points out the (rather obvious) fact that data on river flows are multi-year averages and thus not a rational base for yearly allocations. He also points out that the Jordan River Basin is

7 Jägerskog, Anders, 'Vattnet i Mellanöstern: En källa till konflikt eller samarbete?' [Water in the Middle East: source of conflict or cooperation?], *Världspolitikens Dagsfrågor*, 4 (2000), p. 12; and Haddadin, 'Water issues in the Hashemite Jordan', pp. 63–77.

8 Wolf, Aaron T. and Hamner, Jesse H., 'Trends in transboundary water disputes and dispute resolution', *Water for Peace in the Middle East and Southern Africa* (Geneva: Green Cross International, 2000), p. 64.

9 Assaf, Karen, al Khatib, Nader, Shuval, Hillel and Kally, Elisha, *A Proposal for the Development of a Regional Water Master Plan* (Jerusalem: Israeli/Palestine Center for Research and Information (IPCRI), 1993), pp. 5–8.

10 Assaf et al., *A Proposal for the Development of a Regional Water Master Plan*, p. 5.

subject to high seasonal and multi-annual variances in precipitation and attendant stream flow.¹¹ Consequently, it would be irrational not to take these features into account.

In the conflict between Israel and the Palestinians a further source of dispute is the Israeli coastal aquifer, which runs along the Mediterranean coast and connects from Israel into the Gaza aquifer, which underlies the Gaza Strip. There is a general agreement that the Gaza aquifer is an extension of the coastal aquifer in Israel, although there are different views on the extent to which they are connected.¹² Still, there is a general agreement that the flow in the aquifer is predominantly east-west, which seems to indicate that Israeli activities north of the Gaza Strip will not affect the part of the aquifer beneath the Gaza Strip very much, nor will activities in the Gaza strip affect the Israeli coastal aquifer very much.¹³

Having outlined the hydrological features of the region, it is important to view them in their political context. It must be borne in mind that the figures presented by hydrologists from each side as well as international experts are much debated, as they tend to differ. They differ, rather predictably, according to national and political lines.¹⁴ In much of the literature on the water resources of the Middle East the focus when discussing water availability is on the *blue water*,¹⁵ which is the water in *surface* resources such as rivers, streams and the groundwater. Allan calls this *evident* water. What is overlooked is the *green*

11 Kolars, John, 'The spatial attributes of water negotiation: the need for a river ethic and advocacy in the Middle East', in Hussein A. Amery and Aaron Wolf (eds), *Water in the Middle East: A Geography of Peace* (Austin, Tex.: University of Texas Press, 2000), pp. 250-1.

12 For the generally agreed view among Israeli and Palestinian hydrologists see Assaf et al., *A Proposal for the Development of a Regional Water Master Plan*, pp. 10-11. For an elaboration of a Palestinian view and a critique of some Israeli views see Elmusa, Sharif, *Water Conflict: Economics, Politics, Law and the Palestinian-Israeli Water Resources* (Washington, DC: Institute for Palestine Studies, 1997), pp. 42-7.

13 Shapland, *Rivers of Discord*, p. 12.

14 For a sample of different studies and figures see Salameh, Elias and Bannayan, Helen, *Water Resources of Jordan: Present Status and Future Potentials* (Amman: Friedrich Ebert Stiftung and Royal Society for the Conservation of Nature, Amman, 1993); Elmusa, *Water Conflict*; and Dolatyar, Mostafa and Gray, Tim S., *Water Politics in the Middle East* (London and New York: Macmillan and St Martin's Press, 2000). See also examples in Shapland, *Rivers of Discord*, p. 9 where he gives instances of the high and low figures varying by as much as 40 per cent.

15 The terms 'blue' and 'green' water are coined by Malin Falkenmark in Falkenmark, Malin, 'Fresh water: time for a modified approach', *Ambio*, 15/4 (1986), pp. 194-200.

water, which is the soil moisture. This water is included in what Allan calls *non-evident* water. Obviously, there are differences between different soil profiles which determine their capacity to hold water. Fine-textured soil holds water better than coarse-textured soil and it is thus easier for the vegetation to intercept the soil water on its way to the groundwater in a fine-textured soil.¹⁶ The evident water in the region can be seen to consist of surface water, groundwater, reused urban waste water, desalinated water and water imported through pipelines and tankers. The non-evident water is the soil moisture, the reused water and the virtual water, which is the significant amount of water embedded in the foodstuffs that are traded into the region.¹⁷

A situation of water scarcity is generally taken to be one in which less than 1000 m³ of renewable water per person/year is available. Water availability in the states in the Jordan River Basin is lower than this.

Table 1. Freshwater consumption per person and year in Israel, The Palestinian Authority Areas (the West Bank and Gaza) and Jordan

	Consumption in m ³ /person and year
Israel	341
West Bank (Palestinians)	82
Jewish settlers (West Bank)	550
Gaza (Palestinians)	~50*
Jewish settlers (Gaza)	~1700**
Jordan	<200

* The figure for Gaza is approximate since there are diverging estimates on the total population of Gaza.

** Most of the water for the Jewish settlers in Gaza is not taken from the water that is beneath Gaza but from the Israeli water system.

Source: Figures are for the years 1998-1999. They are based on information from Haddad, Marwan, personal communication, 2003 and World Resources Institute 1998-1999.

Israel, Jordan and the West Bank and Gaza essentially ran out of water a long time ago but they are still coping. This is mainly due to the large proportion of virtual water that is traded into the region, although wa-

16 Allan, Tony [J. A.], *The Middle East Water Question: Hydropolitics and the Global Economy* (London and New York: I. B. Tauris, 2001), p. 41.

17 Allan, *The Middle East Water Question*, p. 41 ff.

ter-saving technologies and increased use of reused waste water have also been helpful in this regard.¹⁸

While the scientific ideas on how to best approach the water problem in the Middle East might be quite clear¹⁹ – to achieve strategic water security the states should strive to secure supplies through importing virtual water – it is a rather different matter to get these ideas adopted in the different national discourses on water. The concept of ‘insiders’ and ‘outsiders’ is helpful in this regard. While insider knowledge about water tends to be more determined by politics than by scientific findings, views of outsiders, who are not a part of the politics of the region, tend to be more attuned to scientific understanding. Essentially, the importing of virtual water has been an ameliorating factor that has enabled the states of the region to ‘solve’ their water problems without too much friction. The presence of cheap subsidized grain on the international food market from which the states in the region have covered their water deficits has evidently not created the circumstances in which the insiders take it into account. Why is that? Clearly, it is because politics are at the centre of the discourse. An important feature of this thesis is concerned with how perceptions of water, both in the political sphere and among the public, are translated into the negotiations on water and their outcomes. Consequently, it is important to include the idea of insiders and outsiders in the analysis since the ideas and constellations of these groups and their effect on the respective discourses are presumed to be influential in the negotiations.

18 Jägerskog, Anders, ‘Vattnet i Mellanöstern: En källa till konflikt eller samarbete?’ [Water in the Middle East: source of conflict or cooperation?], *Världspolitikens Dagsfrågor*, 4 (2000).

19 Perhaps most forcefully shown in Allan, Tony [J. A.], *Global Systems Ameliorate Local Droughts: Water, Food and Trade*, SOAS Occasional Paper no. 10 (London: University of London, School of Oriental and African Studies, 1999). These arguments and the societal changes they entail are also discussed in e.g. Lundqvist, Jan et al., *New Dimensions in Water Security: Water, Society and Eco System Services in the 21st Century*, FAO Report (New York: United Nations Food and Agricultural Organization, 2000).

3.3 The historical use of water in Palestine and Jordan²⁰

Water was an issue of political importance in the Jordan River Basin long before the State of Israel was created in 1948. The Zionist movement did early on consider water an important asset to a future Jewish state in Palestine. This was for ideological reasons, since the development of agriculture was a very important feature in Zionism.²¹ The central theme in the Zionist ideology was to establish a 'national home' for the Jewish people in Palestine, and the development of settlements was thus considered a first priority in the nation-building efforts. The Jews that made *aliyah*²² were strongly encouraged to build new settlements and not settle in the main urban centres, since rural settlements would further the political objectives of Zionism.²³ Indeed, consideration of the watershed boundaries was essential in the Zionist proposals for the borders of the Jewish national home.²⁴ The importance of water was further heightened by the British government's declaration that its policy towards Jewish immigration to Palestine would be determined by the 'absorptive capacity' of the territory: agriculture was a key factor in the evaluation of its absorptive capacity.²⁵ It is even argued that water was an ideological feature in itself within Zionism, the basic rationale for this being that agriculture, which is an ideological feature in Zionism, is impossible without water.²⁶

20 For an elaborate discussion on the history of water use in Palestine and Jordan and various plans for how to utilise its water see Haddadin, Munther, *Diplomacy on the Jordan: International Conflict and Negotiated Solution* (Boston, Mass. and London: Kluwer Academic, 2001).

21 Trottier, Julie, *Hydropolitics in the West Bank and Gaza Strip* (Jerusalem: PASSIA, 1999), pp. 40–3.

22 *Aliyah* is Hebrew and means 'to go up'. The emphasis is, hence, on the Jews going up to their land.

23 Dolatyar, Mostafa and Gray, Tim, S. (2000), *Water Politics in the Middle East*, MacMillan and St Martin's Press, London and New York, pp. 96–8.

24 Wolf, Aaron, *Hydropolitics along the Jordan River: Scarce Water and its Impact on the Arab–Israeli Conflict* (Tokyo: United Nations University Press, 1995). Wolf also provides a thorough historical description of the role of water in the mandate period leading up to the creation of the State of Israel. Not only does he deal with the Zionist aspirations; he also presents the Arab position and how the British and the French handled their proposals.

25 Trottier, *Hydropolitics in the West Bank and Gaza Strip*, pp. 43–4.

26 Galnoor, Itshak, 'Water planning: who gets the last drop?', in R. Bilski et al. (eds), *Can Planning Replace Politics? The Israeli Experience* (The Hague: Martinus Nijhoff, 1980).

According to Sharif Elmusa, the Palestinian perceptions concerning water were not as ideologically coloured as those of the Zionists. Rather, for the Palestinian peasants working the land was a lifestyle and had more cultural connotations than ideological. Furthermore, the social developmental and social engineering ideas that were evident among the Jewish immigrants in Palestine had not entered the Palestinian social fabric in the period of the mandate (1919–48). Hence, no large Palestinian irrigation projects had been undertaken. Accordingly, there were major differences between the Jewish settlers in Palestine and the Palestinians already living there. The Zionists had a vision of creating a national home while the Palestinians already lived there.

The perceptions of water and agriculture among Palestinians changed after the emergence of Israel as many of them were dispossessed of their land.²⁷ Nina Kopagen has dealt with the different approaches towards water and territory within the ideologies of Zionism, pan-Arabism, Arab nationalism and Islam and their evolution over time. She finds that both Arab and Israeli (Zionist) perceptions of water are strongly influenced by the political ideology and there is a shared perception that water is sacred and belongs to the people. Kopagen argues, furthermore, that a change in the perceptions of water occurred between the 1960s and the mid-1990s. In Israel, water moved from being a top priority resource for the nationalists to being one that can be negotiated and even given away. In the Arab states (and Palestine) water has moved from being a pan-Arab resource to being a national resource, which implies a disposition towards claims of sovereignty over it.²⁸

An acknowledgement of the various discourses on water, which to a great extent are inspired by deeper psychological characteristics, is of the utmost importance when analysing the water negotiations as they provide a necessary background for the analysis. Indeed, it is useful to place water within the specific Middle Eastern context.

The acquisition of land by Jews in Palestine from 1920 to 1939 added to the numbers of landless Arab peasants. Because of the unreliable nature of the market for food in the aftermath of the First World War, the Arab peasants had fallen into debt and seized the opportunity to sell their plots of land to Jewish immigrants. However, the Arab

27 Elmusa, Sharif, *Water Conflict: Economics, Politics, Law and the Palestinian-Israeli Water Resources* (Washington, DC: Institute for Palestine Studies, 1997), pp. 282–7.

28 Kopagen, Nina, 'The perception of water as part of territory in Israeli and Arab ideologies between 1964 and 1993: toward a further understanding of the Arab-Jewish conflict', MA thesis, University of Haifa, 1995.

peasants had a hard time finding work as farm labourers, as the Jewish agricultural sector naturally favoured Jewish immigrants in their workforce. The violent social clashes that took place in the late 1920s were regarded as a result of fear on the part of the Arabs in Palestine of Jewish immigration and subsequent land acquisition. Proposals were made by the British for the development of extensive irrigation projects, which would enable further immigration by Jews without harming the Arabs.²⁹ The British met two main obstacles in their effort to develop a general agricultural policy in Palestine under the Mandate. First, since there had never been a general agricultural policy before and the Ottomans had not intervened in earlier periods, almost every Arab village had developed its own customary water laws³⁰ and it was therefore difficult to enforce a homogeneous approach to the development of water. Second, the Jewish community were investing in agricultural development of their own while simultaneously resisting British efforts to do the same. Thus water played a role in the events leading up to the UN partition plan in 1947, as the inability of the British to control the water resources and the social clashes which were partly a result of this contributed to the process leading up to partition. Furthermore, the development of a Jewish hydraulic network during the same period contributed to the emergence of the State of Israel.³¹

The hydropolitical and geopolitical aspects of the state formation process are clearly intertwined. At the time of the UN Resolution 181 of 1947, which called for a partitioning of Palestine into a Jewish and an Arab state, Jewish agricultural settlements had been established in the upper part of the Jordan River Basin and were included in the new state.³² It can be argued that the Zionist leaders in Palestine put the emphasis on spreading the Jewish agricultural settlements so as to obtain as large share of mandate Palestine as possible. Consequently, the development of a hydraulic network was considered essential.³³ Pier-

29 Trottier, *Hydropolitics in the West Bank and Gaza Strip*, pp. 44–8.

30 These customary laws are actually still, to a large extent, in place in the Palestinian territories. See Trottier, *Hydropolitics in the West Bank and Gaza Strip*.

31 Trottier, *Hydropolitics in the West Bank and Gaza Strip*, pp. 46–9.

32 Dolatyar, Mostafa and Gray, Tim, S. *Water Politics in the Middle East* (London and New York: MacMillans and St. Martin's Press, 2000), p. 98.

33 For an account of the role of water in the delineation of the boundaries of the Jordan River Basin see Wolf, Aaron, “‘Hydrostrategic’ territory in the Jordan Basin: water, war, and Arab–Israeli peace negotiations”, in Hussein A. Amery and Aaron Wolf (eds), *Water in the Middle East: A Geography of Peace* (Austin, Tex.: University of Texas Press, 2000). Wolf concludes that water had much less impact in the delineation

Paolo Faggi uses the concept of a 'territorialization process' which is useful here. He distinguishes between two processes of "development of a hydraulic network. The first is the logic of production, which is straightforward and emphasizes increasing agricultural production. The second, the strategic logic, aims at occupying space and is unspoken. By creating massive hydraulic works the state creates new conditions which only it can manage.³⁴ This seems to be applicable to the work pursued by the Zionist agencies in the mandate period. By creating a hydraulic network and starting other hydraulic activities they encouraged a process of territorialization.

Having discussed the role of water in the mandate period in Palestine, we should also take a closer look at what became the Hashemite Kingdom of Jordan. Jordan until its independence in 1946 was also a part of the British mandate in the region. While the Jews in Palestine brought capital to invest in hydraulic networks, no such investments were made in Transjordan, as it was called at the time. Indeed, the British maintained that the level of cultivable land in Transjordan showed that it was not a good idea to absorb more water users as those already present were stretching the limits. Furthermore, the fact that the British 1926 granted the Jewish engineer Pinhas Rutenberg a 70-year concession for the development of hydropower on the Jordan River hampered the development of agriculture on both sides of the river as Rutenberg's company, the Palestine Electricity Corporation, had veto power over the development of irrigated agriculture. The problems of the agricultural sector in Transjordan were further increased by a series of droughts in the 1920s and 1930s.³⁵ Rutenberg managed to establish a

of borders than is often claimed. One might, however, argue that it has had an indirect impact in that it was used in the 'territorialization process' which included the provision of water networks to the different Jewish settlements in mandate Palestine. Indeed, as Wolf himself writes (p. 75), 'In the case of partition, it became clear to the Zionists that, at a minimum, three areas were needed for a viable Jewish state: the Galilee region with the Jordan headwaters, the coastal zone with the population centers, and the Negev desert, to absorb "the ingathering of the exiles". In the late 1930s, the Jewish Agency, sensing that partition was imminent, set out on an intensive settlement program building fifty-five farm communities between 1936 and 1939. The emphasis on site location was in the northern Galilee, to reinforce the projected boundaries and to guarantee the inclusion of what Jordan headwaters were left from the Mandate process.'

34 Faggi, Pierpaolo, 'La territorialisation hydraulique du Sorou: le cadre théorique', 2000, Paper available at <<http://www.geogr.unipd.it/PVS/3faggi.pdf>>.

35 Tell, Tariq and Dodge, Toby, 'Peace and the politics of water in Jordan', in J. A. Allan (ed.), *Water, Peace and the Middle East: Negotiating Resources in the Jordan Basin* (London and New York: I. B. Tauris, 1996), pp. 171-2.

power station at the junction of the Yarmuk and Jordan rivers, although it was destroyed in the 1948 war that followed the declaration of the State of Israel.³⁶

3.4 Conflicts over water: past disputes

There is ample literature dealing with the water question and its role in the different Arab–Israeli confrontations since the emergence of the State of Israel in 1948.³⁷ This thesis will therefore not go into great detail on the conflicts in which water has been a part. Nevertheless, it is important to have an account of them as many of the issues that were subsequently part of the negotiation process have some of their origins in these confrontations and disputes.

In 1948 when the British had departed from Palestine and the Zionists had subsequently declared the State of Israel, Egypt, Jordan, Syria,

36 Soffer, Arnon, *The Conflict over Water in the Middle East: Rivers of Fire* (Oxford and New York: Rowman & Littlefield, 1999), pp. 155–6.

37 See e.g. Starr, Joyce R., 'Water wars', *Foreign Policy*, 82 (spring 1991), pp. 17–36; Bulloch, J. and Darwish, A., *Water Wars: Coming Conflicts in the Middle East* (London: Victor Gollancz, 1993); Tell and Dodge, 'Peace and the politics of water in Jordan'; Hillel, Daniel, *Rivers of Eden: The Struggle for Water and the Quest for Peace in the Middle East* (New York and Oxford: Oxford University Press, 1994); Kliot, Nurit, *Water Resources and Conflict in the Middle East* (London: Routledge, 1994); Sherman, Martin, *The Politics of Water in the Middle East: An Israeli Perspective on the Hydro-Political Aspects of the Conflict* (London: Macmillan, 1999); Isaac, Jad and Shuval, Hillel, *Water and Peace in the Middle East* (Amsterdam: Elsevier, 1994); Haddad, Marwan, 'Water resources in the Middle East: conflict and solutions', in J. A. Allan (ed.), *Water, Peace and the Middle East: Negotiating Resources in the Jordan Basin* (London and New York: I. B. Tauris, 1996); Naff, T and Matson, R., *Water in the Middle East: Conflict or Cooperation?* (Boulder, Colo.: Westview Press, 1984); Soffer, *The Conflict over Water in the Middle East*; Shapland, Greg, *Rivers of Discord: International Water Disputes in the Middle East* (London: Hurst & Co., 1997); Dolatyar, Mostafa and Gray, Tim S., *Water Politics in the Middle East*, Macmillan and St Martin's Press, London and New York; Wolf, Aaron, *Hydropolitics along the Jordan River: Scarce Water and its Impact on the Arab–Israeli Conflict* (Tokyo: United Nations University Press, 1995); Haddadin, Munther, *Diplomacy on the Jordan: International Conflict and Negotiated Solution* (Boston, Mass. and London: Kluwer Academic, 2001); Lonergan, Steve, 'Water resources and conflict: examples from the Middle East', in Nils Petter Gleditsch (ed.), *Conflict and Environment*, NATO ASI Series 2: Environment, Vol. 33 (London: Kluwer Academic, 1997), pp. 375–84; Liebszewski, Stephan, *Water Disputes in the Jordan Basin Region and their Role in the Resolution of the Arab–Israeli Conflict*, Occasional Paper no. 13 (Environment and Conflict Project (ENCOP), Aug. 1995); and Lowi, Miriam, *Water and Power: The Politics of a Scarce Resource in the Jordan River Basin* (Cambridge: Cambridge University Press, 1993).

Lebanon and Saudi Arabia went to war against the newly established state. The Jewish focus in the event of partition would be to keep three zones that were considered important. These areas were the Galilee region in the north, which included the Jordan headwaters, the coastal zone where the bulk of the Jewish population was living and the Negev in the south, so as to be able to absorb future immigration.³⁸

Access to water was seen as fundamental for the Jewish state, but it would be 'hydrofiction' to think that it was the main strategic consideration for the Zionists in the war. Indeed, Wolf argues that water played a minor role. The importance of water was generally acknowledged but it was not the main focus of strategic planning.³⁹ Furthermore the Jewish leadership had in fact struck a deal with the Hashemite King Abdullah on the sharing of Palestine between the new Jewish state and Jordan. The armistice line, also known as the 'green line', was negotiated before the war and granted Jordan the West Bank of the Jordan River. That gave Jordan access to the western aquifer as well as to a large part of the Jordan River south of Lake Tiberias/Kinneret.⁴⁰ This also indicates that the foremost priority of the Zionists was not water. Hence a subordination of the water issue to other 'high political issues' was evident.⁴¹

As a result of the war, two of the main sources of the northern Jordan River originated outside Israel and only 25 per cent of the total discharge originated within its borders. The Banias River, which is a tributary of the northern Jordan River, originates in the Golan Heights, which belonged to Syria, and the other source was the Hasbani, which originates in Lebanon. Thus, Syria and Lebanon had an upstream position and had control over the bulk of the water flowing into Lake Tiberias/Kinneret. At the same time Jordan was a lower riparian to Syria, Lebanon and Israel as far as the Jordan River is concerned, while it was

38 Wolf, Aaron, "'Hydrostrategic' territory in the Jordan Basin: water, war, and Arab-Israeli peace negotiations', in Hussein A. Amery and Aaron Wolf (eds), *Water in the Middle East: A Geography of Peace* (Austin, Tex.: University of Texas Press, 2000), p. 80.

39 Wolf, Aaron, *Hydropolitics along the Jordan River: Scarce Water and its Impact on the Arab-Israeli Conflict* (Tokyo: United Nations University Press, 1995), pp. 42-3.

40 Trottier, Julie, *Hydropolitics in the West Bank and Gaza Strip* (Jerusalem: PASSIA, 1999), pp. 49-50.

41 Lowi, *Water and Power*.

an upper riparian with regard to the mountain aquifer, where Israel was a lower riparian.⁴²

In the aftermath of the war major demographic changes took place in Palestine and in Jordan. Many of the Jews who had survived the horrors of the Second World War were absorbed in Israel, and at the same time many of the Arabs living in the part of Palestine that became Israel emigrated or were forced to migrate⁴³ to other Arab states, of which the Hashemite Kingdom absorbed the lion's share. It is estimated that around 450 000 of the total of 700 000–900 000 Palestinian refugees settled in Jordan (which included the West Bank).⁴⁴ The most suitable place for resettling those who came to Jordan was considered to be in the Jordan Valley in Azraq and Shirah. Needless to say, irrigation was an important component in accommodating them and providing them with livelihoods.⁴⁵ It is easy to agree with Munther Haddadin who argues, rather differently from most analysts of the water shortage in the region, that:

The water problem in Jordan is not natural but is man made in most of its aspects...For over two millennia the water resources of the country have been fluctuating around a stationary average and none of the immigrants carried with him/her a bucket full of water. With the natural resource availability running around a stationary average and the population steadily and, on several occasions, abruptly increasing, the results have been a huge tilt on the population-resource balance.⁴⁶

42 Feitelson, Eran, 'The ebb and flow of Arab-Israeli water conflicts: are past confrontations likely to resurface?', *Water Policy*, 2 (2000), p. 345.

43 It is a tricky question whether the Arabs who lived in the part of Palestine that became the State of Israel were forced to migrate, emigrated of their own free will or were told by Arab leaders to evacuate the land so that the Arab armies could 'push the Zionists into the Mediterranean'. Although there is some evidence for all three explanations, it seems that the majority of them were forced to migrate. The evidence for this case is growing stronger and stronger, to a great extent through the efforts of the 'new historians' in Israel. See e.g. Morris, Benny, *Israel's Border Wars* (Oxford: Clarendon Press, 1993).

44 Wolf, Aaron, *Hydropolitics along the Jordan River: Scarce Water and its Impact on the Arab-Israeli Conflict* (Tokyo: United Nations University Press, 1995), p. 44; Tell, Tariq and Dodge, Toby, 'Peace and the politics of water in Jordan', in J. A. Allan (ed.), *Water, Peace and the Middle East: Negotiating Resources in the Jordan Basin* (London and New York: I. B. Tauris, 1996), p. 176; and Haddadin, Munther, 'Water issues in the Hashemite Jordan', *Arab Studies Quarterly*, 22/2 (2000), pp. 63–77.

45 Tell and Dodge, 'Peace and the politics of water in Jordan', pp. 176–7.

46 Haddadin, Munther, 'Water issues in the Hashemite Jordan', pp. 63–4.

Indeed, it is evident that an account of the politics of the region is a necessary component of the analysis of the water shortage.

In the period after 1948 the various governments in the region announced unilateral projects for the exploitation of the Jordan River Basin. Israel continued working on a national water plan which had been started even before independence and whose essential ingredient was a water transfer from the north to the south.⁴⁷ Feitelson argues that the water resource appropriation era after 1948, in which water in Israel was taken for domestic use, industry and irrigation, was driven by a massive settlement effort on the part of the new state. In 1951 Israel announced plans to drain the Huleh Swamps, to divert part of the flow of the northern part of the Jordan River and to construct a national water carrier to bring water from the north to the coastal plain and the Negev. The Israeli drainage of the Huleh Swamps, which were situated in the demilitarized zone between Israel and Syria, led to a series of border skirmishes between them. While one aim in draining the swamps was to reduce evaporation and thereby produce more water for irrigation, another was to further Israel's control over the demilitarized zone between it and Syria.⁴⁸ Also in 1951, Jordan announced a plan for its East Ghor Canal, which was to divert water from the Yarmuk River before it reaches the Jordan River. That move led to strong Israeli protests.⁴⁹

The USA had long argued that a settlement of the water disputes in the region had to be part of a comprehensive Middle East peace. It therefore sent an envoy, Eric Johnston, to the region 1953 to try to encourage cooperation over the water resources. Johnston tried to mediate a comprehensive settlement of the Jordan Basin allocations. The ideas were based on an earlier management plan for the Jordan River Basin drawn up by the Tennessee Valley Authority. The United Nations Relief and Works Administration (UNRWA) had commissioned it and it was based on the view that the basin should be considered as a

47 Shapland, Greg, *Rivers of Discord: International Water Disputes in the Middle East* (London: Hurst & Co., 1997), p. 13.

48 Feitelson, Eran, 'The ebb and flow of Arab-Israeli water conflicts: are past confrontations likely to resurface?', *Water Policy*, 2 (2000), pp. 345-8.

49 Jägerskog, Anders, 'Vattnet i Mellanöstern: En källa till konflikt eller samarbete?' [Water in the Middle East: source of conflict or cooperation?], *Världspolitikens Dagsfrågor*, 4 (2000), pp. 12-13.

single hydrological unit.⁵⁰ However, the political circumstances were very problematic. Although Johnston managed to get the parties to agree on allocations in principle, the agreement failed, as it was not *politically feasible* at that moment in time. While Israel agreed to the plan, first and foremost because it was acknowledged in the plan as a legitimate riparian, the Arab states were reluctant to sign an agreement, primarily because it would mean implicit recognition of Israel. Thus, the political circumstances prevented an agreement.⁵¹ Another result of the UNRWA efforts was that representatives from Israel and Jordan started to have regular meetings – the so-called picnic table talks – to discuss allocations and other water-related issues. These efforts have helped the states to reduce tension and the risk of conflict between them. It actually promoted a kind of tacit understanding between the parties.⁵²

Shapland identifies another feature of the tacit understanding between Israel and Jordan with regard to allocations as stipulated by Johnston. He highlights the fact that the USA provided funding for both the Israeli National Water Carrier and the Jordanian East Ghor Canal Project. The US funding was actually only granted on the condition that each side agreed to the other's plans.⁵³ While the Israeli National Water Carrier, which was completed in 1964, supplied the coastal areas and the Negev with water, the East Ghor Canal diverted water from the Yarmuk to the Jordan Valley and provided water for irrigation. The East Ghor Canal was part of the efforts embarked upon to deal with the large percentage of the Palestinian refugees who had settled in Jordan.⁵⁴

While Jordan tacitly agreed to Israeli development of the water resources in the basin, other Arab states did not. Indeed, from 1955 up until 1964 the Arab states considered different military options to stop this development. After 1964 they concluded that it was not feasible to

50 While a basin, by definition, is a single hydrological unit, it was politically sensitive to view the Jordan River Basin as such.

51 Shapland, *Rivers of Discord*; and Feitelson, 'The ebb and flow of Arab-Israeli water conflicts', p. 348.

52 Zaslavsky Dan, Personal communication, Haifa, Israel, 30 Apr. 2001. See also section 4.3 below.

53 Shapland, *Rivers of Discord*, p. 16.

54 Trottier, Julie, *Hydropolitics in the West Bank and Gaza Strip* (Jerusalem: PASSIA, 1999), pp. 56–7. For a comprehensive elaboration of the effects of the East Ghor Canal Project see Sutcliffe, Claud R., 'Change in the Jordan Valley: the impact and implications of the East Ghor Canal Project, 1961–1966', unpublished PhD thesis, Princeton University, 1969.

stop the Israeli diversion by military force. Instead they opted for a diversion scheme in which both the Hasbani and the Banias were to be diverted while a dam was to be built on the Yarmuk in order to prevent the Jordan headwaters from reaching Israel. These efforts provoked a military response from Israel, which attacked the structures on a number of occasions during 1965 and 1966, effectively stopping construction. These incidents are often seen as a prelude to the 1967 war; some argue that they were part of the chain of events leading up to the war. The incidents evidently raised the tensions in the region, but it would be hydrofiction to assume that they were a direct cause of the war.⁵⁵ Haddadin furthermore argues that the pause in the construction of the diversion scheme was a result of inter-Arab quarrels.⁵⁶

After the 1967 war Israel extended its control over the water sources in the Jordan River Basin. Through its territorial conquest it had assumed control over the Banias and areas along the northern bank of the Yarmuk in the Golan, the West Bank and the Gaza Strip.⁵⁷ Israel thus enhanced its 'hydro-strategic' position as well as its military-strategic position. By the acquisition of two out of the three sources of the upper Jordan River and through increased control of the Yarmuk River, Israel effectively blocked further Arab efforts to divert the flow from reaching Israel proper. Through the conquest of the West Bank it also obtained control over the different parts of the mountain aquifer, of which two are of vital importance.⁵⁸ Feitelson points to the important fact that Israel after the war had control over 42 per cent of the discharge into the Jordan Basin as compared to the 25 per cent it had before. Including the control over the West Bank aquifers, Israel now had control over 80 per cent of the surface and groundwater resources it uses.

55 Wolf, Aaron, "'Hydrostrategic' territory in the Jordan Basin: water, war, and Arab-Israeli peace negotiations', in Hussein A. Amery and Aaron Wolf (eds), *Water in the Middle East: A Geography of Peace* (Austin, Tex.: University of Texas Press, 2000), pp. 87–8; and Shapland, *Rivers of Discord*, pp. 16–17. See also Mendzini, Arnon, *The River Jordan: The Struggle for Frontiers and Water, 1920–1967* (London: London University, School of Oriental and African Studies, Water Issues Group, 2000) for a depiction of the documentary evidence regarding the role that water played, or indeed did not play, in the strategic planning of the State of Israel.

56 Haddadin, Munther, *Diplomacy on the Jordan: International Conflict and Negotiated Solution* (Boston, Mass. and London: Kluwer Academic, 2001).

57 Shapland, *Rivers of Discord*, p. 17.

58 Jägerskog, Anders, 'Vattnet i Mellanöstern: En källa till konflikt eller samarbete?' [Water in the Middle East: source of conflict or cooperation?], *Världspolitikens Dagsfrågor*, 4 (2000), p. 14.

The asymmetrical power relations, Israel having assumed a hegemonic position, permitted Israel to start using more of the water resources.⁵⁹ As mentioned above, Israel uses much more water on a per capita basis than either the Palestinians or Jordan. In the West Bank, which was put under military regulations after 1967, Israel ruled that any drilling must be licensed. Between 1967 and 1990 Israel permitted 23 Palestinian wells to be drilled, which meant that by 1995 only 18 per cent of the water pumped in the West Bank was used by Palestinians.⁶⁰

In 1969 tensions rose again as Israel suspected that Jordan had over-utilized its East Ghor Canal. As a result Israel bombed the canal on one occasion. It is, however, possible that the bombing was not only a result of suspicions that Jordan was overutilizing the canal but also a 'punishment' for its functioning as a safe haven for the PLO, who conducted raids into Israeli territory and could then return to Jordan. Hence, water was not the only focus but it was linked to another issue. The tense situation was calmed through secret negotiations, facilitated by the USA, in which Israel agreed to refrain from attacking the canal while Jordan promised to stop the activities of the PLO in its territory. Jordan fulfilled its promise shortly thereafter in the Black September campaign in 1970 when in fact it did more than merely stop the activities of the PLO; it also evicted them from Jordan, albeit for other reasons than water.⁶¹

After Israel invaded Lebanon in 1982, there were those who argued that the invasion had partly been for Israeli reasons connected with water and that Israel would divert the Litani River in southern Lebanon.⁶² However, these ideas seem unreasonable on both rational and technical grounds as, for example, Wolf, Shapland and Soffer argue.⁶³ Indeed, af-

59 Feitelson, Eran, 'The ebb and flow of Arab-Israeli water conflicts: are past confrontations likely to resurface?', *Water Policy*, 2 (2000), p. 350.

60 Trottier, Julie, *Hydropolitics in the West Bank and Gaza Strip* (Jerusalem: PASSIA, 1999), p. 60.

61 Jägerskog, 'Vattnet i Mellanöstern', pp. 14–15. For a description of the harsh Jordanian expulsion of the Palestinian Fidayin see e.g. Susser, Asher, *On Both Banks of the Jordan: A Political Biography of Wasfi al-Tall* (Ilford: Essex and Portland, Oreg.: Frank Cass, 1994).

62 For examples see Naff, T., 'Testimony on the Jordan River before the Committee on Foreign Affairs', US House of Representatives, Washington, DC, 26 June 1990; and Hewedy, Amin, *Militarization and Security in the Middle East: Its Implications on Development and Democracy* (Tokyo: United Nations University, 1989).

63 Wolf, Aaron, *Hydropolitics along the Jordan River: Scarce Water and its Impact on the Arab-Israeli Conflict* (Tokyo: United Nations University Press, 1995); Shapland,

ter Israel's retreat from the security zone it had proclaimed in southern Lebanon, it seems even more unlikely that there was a water imperative in the 1982 invasion, despite earlier Zionist interest in the Litani.

3.5 International and regional dimensions: the decline of the Arab-Israeli conflict

As concluded above, the question of water cannot be accurately analysed if it is treated separately from the overall conflict.

The Middle East, probably as much as any other region, was an arena for the Cold war superpower struggle. The predominantly bipolar structure of world politics which previously, by and large, determined the behaviour of states no longer exists.⁶⁴ The international system today is not characterized by the seemingly stabilizing factor that the fear of mutual nuclear destruction which characterized the relations between the superpowers provided. The break-up of the Soviet bloc had other effects on the Middle East as well. The Soviet withdrawal from the region, which actually started before its collapse, removed an important patron for the Arab states. The structural transformation that this implied meant that the USA was elevated as the sole superpower in the region. That meant that the former Soviet clients, which were anti-Israeli and anti-American, were forced to moderate their position. The Soviet transformation, initiated under Mikhail Gorbachev in the mid-1980s and continued by Russia under President Yeltsin, also made Russia a much more acceptable partner for joint conflict resolution in the Middle East. Hence the transformation of the Soviet Union

Greg, *Rivers of Discord: International Water Disputes in the Middle East* (London: Hurst & Co., 1997); and Soffer, Arnon, *The Conflict over Water in the Middle East: Rivers of Fire* (Oxford and New York: Rowman & Littlefield, 1999). For an interesting and in-depth analysis of the ideas see Amery, Hussein A., 'A popular theory of water diversion from Lebanon: towards public participation for peace', in Hussein A. Amery and Aaron Wolf (eds), *Water in the Middle East: A Geography of Peace* (Austin, Tex.: University of Texas Press, 2000), pp. 121–49. Amery argues that it is feasible to divert water from the Litani River and that the Jewish leadership has, throughout Zionist history, expressed interest in doing so. However, he concludes that it is not likely that any considerable amount was diverted during the Israeli occupation.

64 Maoz, Zeev, 'Regional security in the Middle East: past trends, present realities and future challenges', in Zeev Maoz (ed.), *Regional Security in the Middle East: Past Trends, Present Realities and Future Challenges*, (London: Frank Cass, 1997), p. 1; and Safty, Adel, *From Camp David to the Gulf* (Montreal and New York: Black Rose Books, 1992), pp. 254–5.

and the subsequent elevation of the USA as the sole external power in the region created the circumstances in which the USA, in the aftermath of the Gulf War, could successfully convene the Madrid Peace Talks in 1991.⁶⁵ All this brought about a clear weakening of the radical Arab forces which opposed a settlement with Israel.

Another important feature for understanding the regional relations and features of the Middle East is to understand the Arab states' sometimes ambivalent relation to pan-Arabism and state sovereignty. The rhetoric of pan-Arabism, perhaps most forcefully employed by President Nasser of Egypt in the 1950s and 1960s (and later also by both Mohammar Khaddafi in Libya and Saddam Hussein in Iraq) seemed to indicate the pre-eminence of the pan-Arab *umma* over the nation states of the region⁶⁶ but, in spite of fervent pan-Arab rhetoric, which was directed against the formation of nation states, the formation of an Arab state system is evident. Indeed, while the pan-Arab ideology talked about brotherhood and unity, the situation on the ground indicated a clear preoccupation on the part of the Arab leaders with state formation in the wake of the decolonization of the Arab lands.

Divisive strategies and conflict have characterized inter-Arab relations more than integration, cooperation and united action. Even wars, such as the Yemen war 1972, border clashes between Algeria and Morocco and the 1991 Gulf War are indications of this.⁶⁷ For most of the time since 1948 the Palestinian cause has been at the centre of inter-Arab relations, at least in a rhetorical sense. Even though the Arab states supported the PLO, some of them wanted at the same time to champion the Palestinian cause themselves. This is evident in the policies pursued at various times by, for example, Jordan and Syria.⁶⁸ Perhaps the ultimate evidence of the overriding importance of state sovereignty over pan-Arab ideas is the course of action pursued by Anwar al-Sadat, who, when Egypt's interests called for it, made peace with Is-

65 Miller, Benjamin, 'Great powers and regional peacemaking: patterns in the Middle East and beyond', in Maoz (ed.), *Regional Security in the Middle East*.

66 For an elaboration of the foundations of the pan-Arab ideas see Tibi, Bassam, *Arab Nationalism: Between Islam and the Nation State*, 3rd edn (London and New York: Palgrave Macmillan, 1997).

67 Tibi, Bassam, *Conflict and War in the Middle East: From Interstate War to New Security*, 2nd edn (London: Macmillan, 1998), pp. 197–200.

68 Sela, Avraham, *The Decline of the Arab–Israeli Conflict: Middle East Politics and the Quest for Regional Order* (Albany, N.Y.: State University of New York Press, 1998).

rael in 1979 without prior consultations with other Arab leaders.⁶⁹ It seems as though realpolitik and not ideological pan-Arab ideas has been firmly at the core of most Arab states' foreign policies.

Thus, with the end of the Cold War and the decline in pan-Arabism, Arab-Israeli relations changed their nature in the 1990s. The peace process is at the very core of Middle East politics today.⁷⁰ Indeed, much effort has been directed towards finding cooperative solutions between the adversaries in the Arab-Israeli conflict. A large part of these efforts have been concerned with joint projects on environmental issues, of which water is most prominent.⁷¹

While the explanations for the different peace efforts may differ between scholars, the brief account of the regional and international context provided above is helpful as it enables us to put the developments in the region in their proper context.

3.6 International water law perspectives

International water law did not start to develop substantially until after the Second World War. The International Law Association (ILA), which is a private body of international lawyers, established the Helsinki Rules in 1966. The principles incorporated in its legal framework were, however, contested by some states when they were debated in the UN. In 1970 the UN therefore directed its own legal advisory body, the International Law Commission (ILC), to study the law on watercourses for purposes other than navigation. After over 20 years of studies the ILC provided in 1994 a draft proposal which was adopted by the UN General Assembly in May 1997 as the Convention of the Law of Non-Navigational Uses of International Watercourses.⁷²

69 Rubin, Barry, 'The geopolitics of Middle East conflict and crisis', *Middle East Review of International Affairs*, 2/3 (Sept. 1998). These ideas are iterated in Sela, *The Decline of the Arab-Israeli Conflict*. For an 'insider' account of the dramatic event see Heikal, Mohamed, *Secret Channels: The Inside Story of Arab-Israeli Peace Negotiations* (London: HarperCollins, 1996). For an interesting personal account from Sadat himself see el-Sadat, Anwar, *In Search of Identity: An Autobiography* (London: Collins, 1978).

70 Sela, *The Decline of the Arab-Israeli Conflict*.

71 Feitelson, Eran, 'The ebb and flow of Arab-Israeli water conflicts: are past confrontations likely to resurface?', *Water Policy*, 2 (2000), pp. 343-63.

72 See UN General Assembly Resolution 51/229, 21 May 1997. For a good discussion on the pros and cons of the Convention see McCaffrey, Stephen, 'The contribution of the

While the Helsinki Rules dealt, in principle, only with surface water resources, the new convention (as well as other international conventions) deals with transboundary groundwater resources as well.⁷³ In general there seems to be agreement among international water law experts that the principles of international water law apply equally to surface water and groundwater resources, but this is not always the case among the governments of the world.⁷⁴ Furthermore, since few states, as of today, have signed or ratified the law on the non-navigational uses of international watercourses, it has not yet entered into force.⁷⁵

International water law is ambiguous and vague, and its proper application is therefore often problematic. However, as Isaac has pointed out, it is only through such ambiguity that international water law can fulfil its role as a means of conflict resolution. Thus the weakness of international water law can be seen as a necessary feature.⁷⁶ These thoughts are reiterated by Wolf who argues that it is best to think of international water law 'in terms of guidelines for conflict resolution'.⁷⁷ In any case, international law in principle has no compulsory jurisdiction, no direct enforcement mechanism and no judiciary power to oversee the implementation of the basic rules. However, as McCaffrey points out, most states tend to observe the international law as non-compliance entails costs.⁷⁸

Three main principles can be seen as contesting within international water law. The first principle, which the upstream riparian is inclined

UN Convention on the law of the non-navigational uses of international watercourses', *International Journal on Global Environmental Issues*, 1/ no. 3/4 (2001), pp. 250–63. See also Wolf, Aaron, 'Criteria for equitable allocations: the heart of international water conflict', *Natural Resources Forum*, 23/1 (1999), pp. 3–30.

73 However, the ILC convention only deals with groundwater that is associated with a surface watercourse. There are also other rules, such as the Bellagio Draft Treaty on Ground Water of 1989.

74 Shuval, Hillel, 'Proposal for an equitable resolution of the conflicts between Israelis and the Palestinians over the shared water resources of the Mountain Aquifer', *Arab Studies Quarterly*, 22/2 (2000), pp. 33–62.

75 McCaffrey, Stephen, 'The contribution of the UN Convention on the law of the non-navigational uses of international watercourses'

76 Isaac, Jad, 'Core issues of the Palestinian–Israeli water dispute', Applied Research Institute, Jerusalem, <<http://www.arij.org/pub/corissues/>>.

77 Wolf, Aaron, 'Criteria for equitable allocations: the heart of international water conflict', *Natural Resources Forum*, 23/1 (1999), pp. 3–30.

78 McCaffrey, Stephen C., 'Water, politics and international law', in Peter Gleick (ed.), *Water in Crisis: A Guide to the World's Fresh Water Resources* (London and New York: Oxford University Press, 1993).

to use, is the 'sovereignty principle'. The second, which the downstream riparian will assert, is the historic rights principle or the principle of 'prior use' of the water. In between those seemingly unbridgeable positions is the third principle, that of 'equitable utilization'. On this principle it is argued that states sharing a watercourse should, in their respective territories, utilize an international watercourse in an equitable and reasonable manner. The principle furthermore emphasizes that the states sharing the water should take into account the sustainability of the resource and highlights the duty to cooperate in protecting it. Related to the principle of equitable utilization is the principle that one riparian should not cause 'significant harm' to another. Furthermore, if and where such harm has been inflicted it is the duty of the state that has caused the harm to eliminate or mitigate the harm.⁷⁹ The principle of equitable utilization is supposed to be a mediating principle that takes into consideration both prior historic use and where the source of the water is found. In addition it considers the possible alternative sources that each state might have at its disposal, the possibility of compensation and the economic and social needs of each state.⁸⁰ The principle could be very significant in the Palestine-Israel case as the Palestinian negotiators had begun by 2000 to see the utility for them of such an outcome.⁸¹

Still, as the international water law concepts so far developed contain incompatible principles it is fairly predictable which principles the different parties in the Jordan River Basin will opt for. In the conflict between Israel and the Palestinians this is evident. The Palestinians claim that the water that falls on the West Bank and ends up in the mountain aquifer, of which almost 90 per cent is currently extracted after it has flowed into Israel, should be allocated for their use. This claim is obviously based on the sovereignty idea – the water that falls on our territory is also ours. Essentially, the Palestinians argue that it is their legitimate right to have access to this water. In addition to the sovereignty-based claim they usually also base their claim on the needs of their population. Israel, on the other hand, emphasizes its historic use of the water of the mountain aquifer and the principle of prior use. Israel argues that the water has been developed at great expense and that

79 Wolf, 'Criteria for equitable allocations', pp. 3–30.

80 Shuval, Hillel, 'Proposal for an equitable resolution of the conflicts between Israelis and the Palestinians over the shared water resources of the Mountain Aquifer', *Arab Studies Quarterly*, 22/2 (2000), pp. 33–62.

81 Allan, Tony, Personal communication, Linköping, Sweden, 6 Mar. 2003.

it is vital to Israel. The Israelis have used it for some 60–80 years (although mostly since 1967).⁸² This shows how the two parties have resorted to different sets of principles in their reasoning.

In the Israeli–Jordanian situation the claims and counterclaims are not so clearly opposed to each other as in the Israeli–Palestinian case. Both Israel and Jordan are in dependent positions for most of their water – Israel in relation to Lebanon, and the Palestinians and Jordan mainly in relation to Syria – while both emphasize needs and prior use.⁸³ Furthermore, as the parties have had a mechanism for conflict resolution through their picnic table talks, the conflict has not been intense.⁸⁴

3.7 Israeli, Palestinian and Jordanian water management: different constraints and opportunities

It is important in any attempt to address the water issue in the negotiations to have a clear view of the different water management situations and development stages that Israel, Jordan and the West Bank and Gaza are in as well as of the historical development of the respective catchment states or entities.

It is important that for a variety of reasons the parties started to develop their water resources at different times and devoted different resources to this. Over the first decade after its independence, Israel appropriated and developed around 1 billion cubic metres (bcm) of groundwater. Later through the construction of the National Water Carrier in the 1960s another 400 mcm were developed. By 1967 Israel was using 1.6 bcm of water per year, of which 80 per cent was used in agriculture.⁸⁵ In order to be able to develop its water resources in such a way as to cover all of its territory, it chose to nationalize the water.

82 Shuval, Hillel, 'Proposal for an equitable resolution', pp. 33–62. Shuval offers, furthermore, a very useful list of the main Palestinians as well as Israeli claims and concerns with regards to the mountain aquifer. See also Allan, Tony [J. A.], *The Middle East Water Question: Hydropolitics and the Global Economy* (London and New York: I. B. Tauris, 2001), pp. 280–1.

83 Kliot, Nurit, *Water Resources and Conflict in the Middle East* (London: Routledge, 1994), pp. 262–4.

84 Zaslavsky, Dan (Israeli Water Commissioner 1991–2), Personal communication, Haifa, 30 Apr. 2001.

85 Allan, J. A., 'The political economy of water: reasons for optimism but long term caution', in J. A. Allan (ed.), *Water, Peace and the Middle East: Negotiating Resources in the Jordan Basin* (London and New York: I. B. Tauris, 1996), pp. 82–4.

The 1959 Water Law emphasized that the state needed the water so as to be able to serve the needs of its people and the development of the state.⁸⁶ In 1985 Israel's consumption of water reached 2 bcm per year, although it declined in the years that followed as a result of droughts and only reached 2 bcm per year again in the mid-1990s.⁸⁷ However, following the droughts of 1998–2001 the Water Commissioners Office in Israel is making drastic cuts and intends to bring down water use considerably.⁸⁸

Since the establishment of the state, when agriculture was strong, Israel has turned itself into a modern political economy that does not rely on agriculture for its sustainability but rather on its advanced high-technology industry.⁸⁹ The share of its gross national product (GNP) accounted for by agriculture has declined continuously (at present it is 2–3 per cent) and fewer and fewer people are employed in the sector (a rough estimate today is that around 3–4 per cent of the economically active population work in the sector). It is also worth mentioning that Israel is the leading producer of highly advanced irrigation techniques which enable Israeli farmers to be effective water users. This should be compared with the situation in Palestine and Jordan, which suffer from large water losses due to poor technique and management.⁹⁰

The water resources in the West Bank and Gaza were not much developed prior to 1967, and the bulk of the water used there was consumed by agriculture. There are clear problems in obtaining figures on water use in the West Bank and Gaza. It is, nonetheless, generally assumed that the aquifer under Gaza yields around 50 mcm per year. In spite of this, water withdrawal is believed to be around 100–150 mcm per year, which explains the deteriorating quality of that water.⁹¹ In 2002 the Palestinians were saying that they used around 270 mcm/year in

86 Trottier, Julie, *Hydropolitics in the West Bank and Gaza Strip* (Jerusalem: PASSIA, 1999), pp. 54–5.

87 Allan, 'The political economy of water', p. 84. The figures for Israel after 1967 also include the use of the Palestinians in the West Bank and Gaza.

88 For an extensive overview of the Israeli water development and water planning up until the late 1970s see Galnoor, Itshak, 'Water planning: who gets the last drop?', in R. Bilski et al. (eds), *Can Planning Replace Politics? The Israeli Experience* (The Hague: Martinus Nijhoff, 1980), pp. 137–215.

89 Allan, Tony, Personal communication, London, UK, 23 Oct. 2001.

90 Lavy, Viktor, *Water: Consumption, Prices, Technology and Government Policy: A Comparative Study of Jordanian, Palestinian and Israeli Farmers in the Jordan Valley* (Jerusalem: Maurice Falk Institute for Economic Research in Israel, 1997).

91 Allan, 'The political economy of water', p. 84.

the West Bank and Gaza together.⁹² The West Bank is thought to provide around 850 mcm per year if brackish water is included and 620 if it is excluded. Since the war in 1967 Israel has administered the water of the West Bank and Gaza and all drilling of new wells has to be approved by Israel. From 1967 to 1990 Israel issued only 23 new drilling permits to Palestinians. At the time of the Taba agreement in 1995 (also called the Interim Agreement on the West Bank and Gaza Strip of September 1995) it is estimated that the Israelis were using 82 per cent of the water that comes from the West Bank and the Palestinians only 18 per cent.

While the Israeli economy has transformed itself the Palestinian economy is still reliant on agriculture to a sizeable extent. At present agriculture accounts for around 15 per cent of the GNP of the Palestinian territories and around 15–20 per cent of the population work in the sector.⁹³ Moreover, as the West Bank and Gaza have been and still are under occupation, there has been no ambitious water development plan for these areas. Today, when the Palestinians have self-rule over parts of the occupied territories, they are dependent on the donor community for water projects and will continue to be so for quite some time into the future. The donors grant rather large sums for water development projects in the West Bank and Gaza, and there is a lack of Palestinian institutions that can manage this in an appropriate way. The role of the donors and the extent of interference by them are therefore considerable. This contributes to both ideas and efforts being directed towards putting the greater part of the water management in the hands of the Palestinian 'state in the making', in contrast with the local arrangements that have persisted in many areas of the West Bank throughout the occupation.⁹⁴

Water development in Jordan has followed a similar pattern to that of Israel in terms of infrastructure development.⁹⁵ As in Israel and Palestine, the largest share of the water by far has been and is still being allocated to

92 Allan, Tony, Personal communication, Linköping, Sweden, 6 Mar. 2003.

93 The figure of 15–20 per cent is high but reflects the fact that since the beginning of the al-Quds Intifada in 2000 more people are involved in agriculture since many are not able to get into Israel for their work.

94 Trottier, Julie, *Hydropolitics in the West Bank and Gaza Strip* (Jerusalem: PASSIA, 1999). Trottier provides an extensive and interesting analysis of the role of donors in the Palestinian water sector.

95 For a good general description of water management and policy making in Jordan see Schiffler, Manuel, *The Economy of Ground Water in Arid Countries: Theory, International Expertise and a Case Study of Jordan* (London and Portland, Oreg.: Frank Cass, 1996).

agriculture. After the completion of the East Ghor Canal in the mid-1960s there was a major increase in the amount of water being allocated to irrigated agriculture.⁹⁶ The project, which was funded by the United States Agency for International Development (USAID), played a major part in the efforts to deal with the Palestinian refugees who had settled in Jordan and who were identified by the USA as a major obstacle in the resolution of the Arab-Israeli conflict. While there were similarities between Israel and Jordan in some aspects there were also large differences. Jordan had to cope with a dramatic increase in the number of people through the influx of many Palestinian refugees.⁹⁷ The total amount of water used in Jordan is around 1 bcm per year, while the safe yield is thought to be around 800 mcm per year. Jordan's economy is not as developed and diverse as Israel's; it is more like that in the West Bank and Gaza. Although Jordan relies on agriculture for a smaller share of its GNP than do the Palestinians (a rough estimate would be around 3–5 per cent) and it has fewer people employed in that sector (around 7–10 per cent), it still allocates a large proportion of its water to the sector (around 80 per cent). Still, water and agriculture are perceived as important in the Jordanian society and water allocation policies are deeply rooted in the 'national' ideology (included national security ideas) as well as in the self-interest of those farmers who are involved in large-scale irrigated agriculture. Hence, there are strong political reasons why allocations are not changed.⁹⁸

Social adaptive capacity,⁹⁹ which Ohlsson and Turton identify as a way to mitigate the effects of natural resource scarcity, is low in Jordan and even lower in the Palestinian areas, but at a high level in Israel. Thus, it is easier for Israel to adapt to a situation in which less water is allocated to agriculture.

96 Allan, 'The political economy of water', p. 84.

97 Trottier, *Hydropolitics in the West Bank and Gaza Strip*, p. 57; and Haddadin, Munther, 'Water issues in the Hashemite Jordan', *Arab Studies Quarterly*, 22/2 (2000), pp. 63–77.

98 Allan, 'The political economy of water', p. 88.

99 The concept refers to the ways in which societies and their citizens are able to adapt to changes caused by natural resource scarcities. A high level of social adaptive capacity is dependent on levels of education, a diversified economy, well-functioning institutions and so on.

3.8 Conclusions

All too many accounts of the water issue within the Arab–Israeli conflict fail to contextualize the issue. Hence, I have aimed to place the water negotiation within the geographical and hydrological as well as the historical and socio-political context. This is important since the water issue is connected to many other issues in both the societal and the political sphere.

Political feasibility is central to any analysis of the water issue. While there may be scientifically robust ways in which to deal with the water scarcity problem and ideas about how to do so, it is more important to analyse the political frame in which ideas are supposed to be implemented. For example, the idea that water security could be achieved by importing water-intensive foodstuffs, which can be viewed as a scientifically robust approach to the problem, is not possible to implement as an official policy in the region for political reasons. However, it is still the practice that is followed as a result of the scarcity.

An analysis of the political context implies that we also ought to take the international and regional dimensions – with the end of the Cold War and the subsequent decline of the Arab–Israeli conflict – into account. In addition we need to highlight the role of water as a central ideological feature in both Zionism and Arab nationalism.

CHAPTER 4

The water negotiation process

4.1 Introduction

The focus of this chapter is on the bilateral negotiations between Israel and Jordan, and between Israel and the Palestinian Authority.¹ There is also a brief analysis of the multilateral track on water as it relates to and provides part of the context to the bilateral tracks. The opportunities and obstacles are analysed taking into account how the actor-related specifics as well as structural features affect the negotiations. In addition, using negotiation theory and risk theory, the 'real' as well as the perceived risks in the negotiations are scrutinized. The overall aim is to analyse the issue of water within the wider national, regional and international political context. Spector and Gross Stein² argue that such an approach is necessary in order to understand the actual negotiations as well as their outcomes.

4.2 Water in the multilateral track

In the aftermath of the Gulf crisis and Iraq's 1990 invasion of Kuwait, coupled with the end of the Cold War, the rules of engagement were drastically changed. As the USA had been able to muster an alliance, including the majority of the Arab states, to eject Iraq from Kuwait, it

1 The outcomes of these negotiations (the agreements) have been analysed in great detail by authors such as Shapland, Greg, *Rivers of Discord: International Water Disputes in the Middle East* (London: Hurst & Co., 1997); Trottier, *Hydropolitics in the West Bank and Gaza Strip*; and Dombrovsky, Ines, 'The Jordan River Basin: prospects for cooperation within the Middle East peace process?', in Waltina Scheumann and Manuel Schiffler (eds), *Water in the Middle East: Potential for Conflicts and Prospects for Cooperation* (Berlin: Springer, 1998). This chapter therefore aims to analyse the negotiation process and those factors that are assumed to affect the negotiations. However, in section 4.3 a brief analysis of the agreements is presented.

2 Gross Stein, Janice, 'International negotiation: a multidisciplinary perspective', *Negotiation Journal*, 4 (1988), p. 230; and Spector, B. I., 'Motivating water diplomacy: finding the situational incentives to negotiate', *International Negotiation*, 5 (2000), pp. 222–36.

subsequently also reassessed its Middle East strategic thinking. While previously it had enjoyed strong links to Israel, now it had constructed good links to many Arab states and wanted to maintain these. Israel's previous role in the US strategic thinking was, of course, also changed through the fall of the Soviet Union. The USA no longer had the great need for Israel as a counterbalance to Soviet penetration in the region. With the regional scene changed, US President George Bush was in a position to convene the Madrid Peace Talks in October 1991.³ Indeed, the Bush administration saw a 'window of opportunity' and was determined not to lose it.⁴

While the Israelis, under the leadership of Yitzhak Shamir, only went to Madrid reluctantly, the Palestinians⁵ (although formally they were a part of the Jordanian delegation) were much more positive as they saw it as a moral victory for their cause. The Madrid talks were both multilateral and bilateral in nature and were a starting effort at finding a comprehensive solution to the problems of the Arab-Israeli conflict. The multilateral talks⁶ addressed five different issues – arms control, refugees, economic development, the environment and water – in the hope of fostering regional cooperation. These talks were also partly intended to facilitate progress in and work as a catalyst for the bilateral talks, which Israel was to hold with each of the Arab delegations.⁷ The multilateral talks covered different issue areas defined on the basis that they crossed national boundaries and thus needed a multilateral approach. The talks were 'open' to both regional and 'extra-regional' parties.⁸

3 King, John, *Handshake in Washington: The Beginning of Middle East Peace?* (Reading: Ithaca Press, 1994), pp. 59–60.

4 For a detailed and thorough analysis of the way in which both the Israelis and the Palestinians came to accept coming to the negotiating tables in Madrid in 1991 see Aggestam, Karin, *Reframing and Resolving Conflict: Israeli-Palestinian Negotiations 1988–1998* (Lund: Lund University Press, 1999), chapter 6. Aggestam argues that the Madrid meeting can be seen as a behavioural turning point in that Israelis and Palestinians sat together at a negotiating table for the first time.

5 The Palestinians did not include any members from the PLO as it was illegal for Israelis to meet with PLO members. The law was changed in late 1992 just before the Oslo meetings started.

6 For a good general discussion and analysis of the multilateral talks see Peters, Joel, *Pathways To Peace: The Multilateral Arab-Israeli Peace Talks* (London: Royal Institute of International Affairs, 1996).

7 King, *Handshake in Washington*, pp. 61–3.

8 Spiegel, Steven L. and Pervin, David J., 'Introduction', in Steven L. Spiegel and David J. Pervin, *Practical Peacemaking in the Middle East: The Environment, Water, Refu-*

The first multilateral meeting on water was held in Vienna in 1992. In the discussions on water there has been a clear tension in that Israel has urged that the focus of the multilateral talks should be on technical aspects of the water problems in the region while political discussions on water rights should be the topic of the bilateral discussions. The Arab states have argued on the contrary that technical cooperation cannot be discussed unless the respective water rights are clearly established. Consequently, progress on the multilateral talks has been limited.⁹ Since March 1997, because of Arab uneasiness about the Israeli government's decision to build new settlements in the Arab parts of Jerusalem, and later because of the al-Quds Intifada, the multilateral water talks have been stalled and the Arab League has recommended its members not to participate in the talks.¹⁰ The last meeting of the Multilateral Working Group on Water Resources (MWGWR) was held in Muscat, Oman, in December 1996.

In the MWGWR the following items have been on the agenda:

1. Enhancement of water data availability
2. Water management practices including conservation
3. Enhancement of water supply
4. Concepts of regional water management and cooperation.¹¹

Although the multilateral water talks have been important as a means of confidence building they are clearly subordinate to the bilateral talks. This is particularly evident in the highly artificial division of the waters for the purposes of the talks into 'existing water resources', 'additional water resources developed pursuant to bilateral agreements' and 'new and additional water resources'. This limits the options for an integrated approach to the management of the water resources in the region.¹²

gees, and Economic Cooperation and Development, Vol. II (New York and London: Garland, 1995), pp. 5–6.

⁹ Jägerskog, Anders, 'Vattnet i Mellanöstern: En källa till konflikt eller samarbete?' [Water in the Middle East: source of conflict or cooperation?], *Världspolitikens Dagsfrågor*, 4 (2000), p. 16.

¹⁰ Dombrovsky, 'The Jordan River Basin', p. 101.

¹¹ For a good chronology of the multilateral water negotiations and a discussion of what the separate meetings have focused upon and their and the achievements made, see Biswas, Asit et al., *Core and Periphery: A Comprehensive Approach to Middle Eastern Water* (Delhi: Oxford University Press, 1997), chapter 4.

¹² Dombrovsky, 'The Jordan River Basin', pp. 101–2.

4.3 Water in the bilateral tracks: agreements and outcomes

The 'two-track' option for negotiation that the Madrid Conference initiated consisted of both bilateral and multilateral negotiations, and as such met both the Arab states' requirement for an international conference and the Israeli requirement for bilateral tracks. The bilateral talks continued in Washington after Madrid but did not produce very much of substance.¹³ A change of government in Israel in early 1992, which brought the Labour Party to power, shifted the emphasis away from the official track in Washington to the secret channel in Oslo. Already before assuming power in Israel the Labour Party had investigated the possibilities of dealing directly with the PLO. The separate negotiations between Israel and the PLO in Oslo subsequently resulted in the Declaration of Principles (DOP) in September 1993. Among the issues addressed in the DOP was water. In Article 4, paragraph 7, of that agreement the establishment of a Palestinian Water Authority is called for. In Annex III (paragraph 1) of the accord water is in focus:

[t]he two sides agree to establish an Israeli–Palestinian Continuing Committee for Economic Cooperation, focusing, among other things, on the following: 1. Cooperation in the field of water, including a Water Development Program prepared by experts from both sides, which will also specify the mode of cooperation in the management of water resources in the West Bank and Gaza Strip, and will include proposals for studies and plans on water rights of each party, as well as on the equitable utilisation of joint water resources for implementation in and beyond the interim period.¹⁴

An interesting feature in this paragraph is that it includes the principle of equitable utilization (which is not by any means to be seen as meaning equal). It is a main principle in the ILC's Convention on the Non-Navigational Uses of International Water Courses adopted by the UN General Assembly in May 1997.¹⁵ In Annex IV plans for regional development programmes are described which include:

13 Aggestam, Karin, *Reframing and Resolving Conflict: Israeli–Palestinian Negotiations 1988–1998* (Lund: Lund University Press, 1999), pp. 158–60.

14 For the whole text of the Declaration of Principles see: <http://www.mfa.gov.il/mfa/go.asp?MFAH00q00> or <http://www.nad-plo.org/fact/agree1.html>

15 See section 3.6 above.

1. The development of a joint Israeli–Palestinian–Jordanian Plan for coordinated exploitation of the Dead Sea Area
2. The Mediterranean Sea (Gaza)–Dead Sea Canal
3. Regional desalination and other water development projects
4. A regional plan for agricultural development, including a coordinated regional effort to prevent desertification.

The above articles from the DOP were supposedly intended as a ‘road map’ for the negotiations that were to follow. In the interim agreement reached in Cairo on May 4, 1994 the Palestinian control over water increased somewhat.¹⁶ The agreement provided for the establishment of the Palestinian Water Authority (PWA) which should take responsibility for the water supply. Still, many Palestinians in the West Bank and Gaza were dependent on Israel for their water supply as Mekorot (the Israeli water company) was responsible for the water supply in the settlements and the military areas.¹⁷ A further limitation to the power of the PWA is that all regulations it proclaims have to go through a Joint Water Committee consisting of both Israelis and Palestinians (see below). The committee had the power to decide whether proposed legislation was inconsistent with the agreement. In addition, the agreement stipulates that the PWA should ‘prevent any harm to the water resources’.¹⁸

About a year after the Cairo Agreement, in September 1995, the parties signed the Taba Interim Agreement on the West Bank and the Gaza Strip in which Israel, in Article 40, acknowledged Palestinian water rights for the first time.¹⁹ This was a clear advance for the Palestinian position. However, the whole water issue was regarded as one of the difficult issues and its final solution was thus postponed to the permanent status negotiations. The parties agreed to coordinate the use of the shared waters in the interim period. In order to manage that coordination, a Joint Water Committee was established. The parties also agreed to cooperate in the protection of the shared resources and to set up

16 What is referred to as the Cairo Agreement is also called the Agreement on the Gaza Strip and Jericho Area. In Annex II, Article 31 the clause relevant to water appears. Article 31 is reproduced in Appendix 4.

17 Shapland, Greg, *Rivers of Discord: International Water Disputes in the Middle East* (London: Hurst & Co., 1997), pp. 31–2.

18 Trottier, Julie, *Hydropolitics in the West Bank and Gaza Strip* (Jerusalem: PASSIA, 1999), pp. 64–6.

19 This is also referred to as Oslo II or Oslo B or the Interim Agreement on the West Bank and the Gaza Strip. Article 40 is reproduced in Appendix 3.

joint supervision and enforcement teams and Israel also agreed to enhance the supply of water to the Palestinians, primarily through development of new sources in the eastern aquifer.²⁰ Although this might appear advantageous from a Palestinian perspective, the agreement basically maintains the existing allocations for Israel: it is based on the principle of prior use (for the Israelis), while the 'new' water (for the Palestinians) is supposed to come from hitherto unexploited sources. It is also important to point out that the agreement remains somewhat ambiguous as to exactly what water resources it refers to, how they should be developed and who should be financially responsible for their development.²¹

The water part of the Taba agreement seems to favour Israel. It is important, however, to be aware of the linkages between the different areas in the negotiations. Indeed, as Shapland points out, water is an important part but 'far from being the most important thing at stake'.²² While Dombrovsky and Trottier provide a sound analysis of the water part of the agreement they do not place the water clauses within the larger political context in which they belong.²³ The discussion on water rights was definitely not something the Palestinians wanted to postpone to the permanent status negotiations but it may have been seen as a necessary sacrifice in order to get the perceived greater good of a major extension of the Palestinian-controlled territory.²⁴ Thus, while a study of the water agreements is relevant and important, we need to put these agreements into the larger negotiating context.²⁵ Indeed, the main concern and interest of the Israeli side in all the negotiations has been its security, while it might be argued that the Palestinians' main interest revolves around gaining as much independent territory as possible.

20 Shapland, *Rivers of Discord*, pp. 32–33; and Feitelson, Eran, 'The ebb and flow of Arab–Israeli water conflicts: are past confrontations likely to resurface?', *Water Policy*, 2 (2000), pp. 351–2.

21 Dombrovsky, Ines, 'The Jordan River Basin: prospects for cooperation within the Middle East peace process?', in Waltina Scheumann and Manuel Schiffler (eds), *Water in the Middle East: Potential for Conflicts and Prospects for Cooperation* (Berlin: Springer, 1998), p. 99.

22 Shapland, *Rivers of Discord*, pp. 32–33

23 Dombrovsky, 'The Jordan River Basin'; and Trottier, *Hydropolitics in the West Bank and Gaza Strip*.

24 Shapland, *Rivers of Discord*, p. 33.

25 A more comprehensive account of the outcome of the negotiations (in particular the 1995 Taba Interim Agreement) is found in Shapland, *Rivers of Discord*.

The Israeli–Palestinian DOP had noticeable repercussions on Israeli–Jordanian relations as well. Israel had previously, for many decades, wanted to achieve a peace settlement with Jordan so as to be able to avoid dealing with the PLO. The DOP was the ultimate sign that Israel had, finally, aborted the ‘Jordanian option’.²⁶ While King Hussein could not possibly go further than the Palestinian leadership were prepared to and reach a peace with Israel, since a large portion of his population was Palestinian, the DOP gave a green light to further exploration of the possibility of a peace treaty with Israel.²⁷ While the Hashemite Kingdom was initially disappointed that it had been left out of the Oslo process, it subsequently viewed it as an opportunity. Indeed, the existence of an Israeli–PLO agreement made the opposing domestic and regional forces less threatening. Furthermore, the pressure being applied by the USA and the economic benefits attached to a settlement further enhanced the process. Israel and Jordan, having long enjoyed a tacit understanding, reached a peace agreement in October 1994²⁸ in which the water question is dealt with extensively.

Just as the water agreement between Israel and the Palestinian Authority should not be viewed separately from the overall agreement, neither should the water clauses in the 1994 Peace Treaty between Israel and Jordan be viewed apart from the larger context. According to Ryan, the Hashemite regime expected a large economic pay-off from a treaty, as it would include trade and joint ventures with Israel, a boost for the Jordanian tourism industry and increased US economic and

26 Klieman, Aharon, ‘Israel’s “Jordanian option”: a Post-Oslo reassessment’, in Ilan Peleg (ed.), *The Middle East Peace Process: Interdisciplinary Perspectives* (New York: State University New York Press, 1998), pp. 179–80.

27 Some analysts suggested after Sadat concluded the 1979 peace with Israel that King Hussein would soon follow. However, they had not made a thorough analysis of the Jordanian political scene. While King Hussein might have wanted to conclude a peace with Israel he could not be expected to make such a move for several reasons: first, Jordan was externally vulnerable towards its Arab neighbours, so that it would be difficult for it to move in the same direction as Sadat, as he had been met by hostility from other Arab states and their populations; and, second, the Jordanian domestic scene, and particularly the Palestinian part, would not view such a move positively.

28 Ryan, Curtis R., ‘Jordan in the Middle East peace process’, in Ilan Peleg (ed.), *The Middle East Peace Process: Interdisciplinary Perspectives* (New York: State University New York Press, 1998), pp. 161–6. Treaty of Peace between the State of Israel and the Hashemite Kingdom of Jordan, available at <<http://www.mfa.gov.il/mfa/go.asp?MFAH00pa0>>. Article 6 and Annex II of the treaty, dealing with water, are reproduced in Appendix 2.

military aid.²⁹ For Israel the main concern was to move from the existing informal understanding with Jordan to a formal peace agreement. Indeed, the water question was only brought into the negotiations towards the end and was not the main focus of them, contrary to the impressions one gets from various textbooks which address the water parts of the agreement.³⁰ Too narrow a focus on the water issue involves the risk of missing the larger picture and ending up with a weak contextualization of the problem. Thus, for any authoritative statement on the water clauses to be possible, the problem has to be situated among the other issues being negotiated and its relative importance assessed alongside other, perhaps more important, issues.

It is important to have an account of the main water issues dealt with in the treaty. In terms of shared transboundary water resources, Israel and Jordan share the Jordan River and its tributaries, and Lake Tiberias/Kinneret serves as a reservoir for both.³¹ There had been a tacit understanding before between Israel and Jordan on water-related matters, but the 1994 Peace Treaty turned this understanding into a formal peace. Article 6 of the treaty is entirely devoted to water-related matters. In this article each party acknowledges, in concordance with the evolution of international water law, that it will develop its water resources without harming the other. Furthermore, they acknowledge the water scarcity and commit themselves to find and develop new sources partly through cooperative projects.³² In Annex II the details of the ways in which water is to be shared are outlined.³³ Israel has agreed to a ceiling of 25 mcm per year on its abstractions from the Yarmuk. These will amount to 12 mcm in the summer and 13 mcm in the winter (the summer is the period from 15 May to 15 October, and the winter is the period from 16 October to 14 May). Shapland notes that for Israel the treaty represents a turn for the worse where water is concerned, while the main benefit for it is the attainment of peace. It should, however, be noted that the volumes of water Israel has given up in the treaty are very small in comparison with its total water budget.³⁴ Furthermore, while the

29 Ryan, 'Jordan in the Middle East Peace Process', pp. 170–1.

30 Allan, Tony, Personal communication, 23 Oct. 2001.

31 Soffer, Arnon, *The Conflict over Water in the Middle East: Rivers of Fire* (Oxford and New York: Rowman & Littlefield, 1999), p. 177.

32 Israel–Jordan Peace Treaty, Article 6. See Appendix 2.

33 Annex II is reproduced in Appendix 2.

34 Shapland, Greg, *Rivers of Discord: International Water Disputes in the Middle East* (London: Hurst & Co., 1997), p. 29.

agreement gives additional water to Jordan, it is essentially based on the idea of 'prior use' and thus basically maintains existing allocations to Israel while seeking to exploit new resources for Jordan.³⁵ Allan furthermore states that the agreement does not reflect the water rights Jordan asserts. This can be seen as a result of water being subordinate to other issues in the negotiation.³⁶

An interesting and presumably trust-building aspect³⁷ of the agreement is that Lake Tiberias/Kinneret in Israel will act as a storage facility in the winter for Jordanian water. Israel takes 20 mcm from the Yarmuk each winter, stores it for Jordan during wintertime and releases it in the summer period. A pipeline to facilitate this was finished in 1995.³⁸ However, this arrangement can also be a feature that complicates relations. In the drought years of 1998–2000, Israel did not want to supply Jordan with the full amount stipulated in the agreement and a political crisis erupted. Israel argued that the parties should 'share the deficit' which the drought had created. Jordan, on the other hand, argued that Israel was obliged to supply it in accordance with the agreement. The crisis was resolved when Israel supplied the water. The situation shows that a presumed trust-building aspect, such as the storing arrangement, can also cause trust to deteriorate. It is stated in the agreement that Israel will help Jordan to find 50 mcm per year of 'new' water, presumably through desalination of water emanating from under Jordanian soil. However, this has still not been completely implemented. It is also worth mentioning in this regard that the agreement is purely bilateral. Thus it does not consider the claims from the other three riparians, Syria, Lebanon and the Palestinians in the West Bank.³⁹ However, as Shapland points out, since Syria and Lebanon are upstream the water aspects of the agreement do not affect them.⁴⁰

35 Dombrovsky, Ines, 'The Jordan River Basin: prospects for cooperation within the Middle East peace process?', in Waltina Scheumann and Manuel Schiffler (eds), *Water in the Middle East: Potential for Conflicts and Prospects for Cooperation* (Berlin: Springer, 1998), p. 99.

36 Allan, Tony [J. A.], *The Middle East Water Question: Hydropolitics and the Global Economy* (London and New York: I. B. Tauris, 2001), p. 219.

37 The issue of trust being built between the parties in the post-agreement phase is analysed in chapter 6, which deals with the water regime that is argued to exist in the Jordan River Basin.

38 Shapland, *Rivers of Discord*, p. 29.

39 Dombrovsky, 'The Jordan River Basin', pp. 99–100.

40 Shapland, *Rivers of Discord*, p. 31.

A clear disadvantage to the Jordanians in the agreement is that it does not deal with water quality. The Yarmuk River is fairly unexploited by industry and is accordingly not very polluted. The water in Lake Tiberias/Kinneret is, on the contrary, of a fairly poor quality. Hence it is a rather bad idea in terms of water quality for Jordan to store its Yarmuk water in the lake.⁴¹ However, according to Zafer Alem, Jordanian member of the Joint Water Committee between Israel and Jordan and head of Jordan Valley Authority, Jordan has received water of the same quality as it has supplied to Israel.⁴² This is also reiterated by the current Jordanian Minister for Water and Irrigation, Hazem El-Nazer, who was formerly a member of the Joint Water Committee and who also states that Israel supplies Jordan with water of the same quality as it supplies to Israel.⁴³ Thus the water quality issue has not been a particularly problematic aspect yet in Jordanian-Israeli relations.

4.3.1 Water in the track two efforts

The various 'track two' discussions, mainly between academics from the different parties, are worth elaborating upon when discussing the peace efforts in this regard. Track two discussions are not the same as the bilateral tracks of negotiation but rather academic exercises that involve people from each(all) sides. Indeed, these discussions might be seen as essential as a means of finding compromises to conflicting issues. Various conferences and seminars, in both informal and more formal settings, have addressed the water issue. These occasions have provided the parties with an opportunity to present and exchange views and to discuss their common water problem informally. As these meetings have been first and foremost events where water experts from the region and from international academia have participated, and the experts also figure in the water negotiations, a thorough account of them is important.

A particular initiative related to the Israeli-Palestinian talks on water has been the initiatives taken first by the Israel/Palestine Centre for Research and Information (IPCRI), which is a non-governmental organization (NGO) jointly led by Israelis and Palestinians, and later ini-

41 Trottier, Julie, *Hydropolitics in the West Bank and Gaza Strip* (Jerusalem: PASSIA, 1999), pp. 68–9.

42 Alem, Zafer, Personal communication, Amman, Jordan, 10 Mar. 2002.

43 El-Nazer, Hazem, Personal communication, Amman, Jordan, 11 Mar. 2002.

tiatives have been made by the Harry Truman Institute for the Advancement of Peace at the Hebrew University as well as the Palestinian Consultancy Group, an NGO set up to explore joint Israeli–Palestinian initiatives. The process started in the early 1990s with Israeli and Palestinian academics participating and discussing joint management issues. While these talks were organized mostly by academics, people with official status have participated (in their personal capacity) from time to time and thus enabled the talks to have some effect on the official level. One specific advantage, according to Dan Bitan, who facilitated the talks from the Israeli side, of having academics engaged in discussions is that they will be free to explore and tackle issues that officials cannot. In addition, some of the Palestinians (Marwan Haddad and Taher Nassereddin) who took part in the work of the Truman Institute and the Palestinian Consultancy Group were for a certain period part of the Palestinian teams that negotiated on water with Israel, thus enabling a direct link from the track two activities to the official line.⁴⁴ The results and work of these cooperative efforts in addressing joint management issues of shared aquifers has been published and widely circulated.⁴⁵

On the Israeli–Jordanian side another kind of track two effort has been the picnic table talks which took place in order to discuss water issues of common concern since the early 1950s. The meetings started after the Johnston mission to the region and were based on that plan even though the parties did not formally sign it.⁴⁶ However, they have not been the place for substantive negotiations but rather a forum for

44 Bitan, Dan, Personal communication, Jerusalem, 1 May 2001.

45 See e.g. Feitelson, E. and Haddad, M. (eds), *Joint Management of Shared Aquifers* (Jerusalem: Harry Truman Research Institute, Hebrew University and the Palestinian Hydrology Group, Jerusalem, Nov. 1994 [1995]); Feitelson, E. and Haddad, M. (eds), *Joint Management of Shared Aquifers* (Jerusalem: Harry Truman Research Institute, Hebrew University and the Palestinian Hydrology Group, Jerusalem, Nov. 1995 [1996]); Feitelson, E. and Haddad, M. (eds), *Joint Management of Shared Aquifers* (Jerusalem: Harry Truman Research Institute, Hebrew University and the Palestinian Hydrology Group, Jerusalem, May 1996 [1997]); Feitelson, E. and Haddad, M. (eds), *Joint Management of Shared Aquifers* (Jerusalem: Harry Truman Research Institute, Hebrew University and the Palestinian Hydrology Group, Istanbul, May 1997 [1998]); and Haddad, M., Feitelson, E., Arlosoroff, S. and Nassereddin, T. (1999), *Joint Management of Shared Aquifers: Final Report of Phase II* (Jerusalem: Harry Truman Research Institute, Hebrew University and the Palestinian Hydrology Group, Jerusalem, 1999).

46 Zaslavsky, Dan, Personal communication, Haifa, Israel, 30 Apr. 2001. On the Johnston mission see section 3.4 above.

handling issues of common concern.⁴⁷ According to Dureid Mahasneh, a Jordanian involved in the water negotiations, other meetings were also being held in North America and Europe in the search for ways to address the shared water issues but neither of these had any considerable impact.⁴⁸

4.4 The Israeli–Palestinian water negotiation process

4.4.1 Opportunities and obstacles

The opportunities and obstacles in the Israeli–Palestinian water negotiations need to be analysed in their context. Thus what might be seen as an obstacle in the water negotiation could, when linked to other issues in the negotiations, such as refugees or borders, actually be an opportunity. What can be seen as an opportunity and an obstacle can, of course, also be seen as a risk, and this will be dealt with in section 4.4.2.

With the end of the Cold War a ‘window of opportunity’ was presented to the states in the Middle East, as it was no longer an arena for the struggle between the superpowers. The involvement of the USA in particular in the aftermath of the Gulf War in bringing the states of the Middle East together at the Madrid Conference in 1991, and later the engagement by the Norwegians, helped the parties to use this opportunity. On a general political level the Oslo negotiations presented both Israel and the Palestinians with great opportunities. Israel was interested in reaching an end to its conflict with the Palestinians as well as the Arab world at large and had realized – in particular the leadership of the Labour Party had realized – that an end to a conflict and the promise of peaceful relations with the neighbours in the region lay through a dialogue with the PLO. The Palestinians, and in particular the PLO, had realized that here was a possibility of being recognized as the legitimate representatives of the Palestinian people by the Israeli state. Negotiation theory argues that parties to a conflict do not negotiate unless a conflict is ripe for negotiations. The sense of ripeness is a result of both parties feeling that the conflict is mutually hurting.⁴⁹ The mutually hurting

47 Mahasneh, Dureid, Personal communication, Amman, Jordan, 9 Mar. 2002; and Haddadin, Munther, *Diplomacy on the Jordan: International Conflict and Negotiated Solution* (Boston, Mass. and London: Kluwer Academic, 2001), p. 259.

48 Mahasneh, Personal communication, 9 Mar. 2002.

49 Zartman, W. I., *Ripe for Resolution*, 2nd edn (New York: Oxford University Press, 1989).

situation – for Israel through the Intifada and for the PLO through the danger of being sidelined by others in efforts to settle the Israeli–Palestinian conflict, felt among the Israeli Labour Party leadership and the PLO leadership, respectively – thus presented an opportunity.

Clearly, transboundary waters do no fit within the traditional security discourses of international relations.⁵⁰ This implies that there is an opportunity for cooperation over water resources. Entering into a joint management institution over a shared water resource does not represent a zero-sum game, in which the loss of one party is a gain to the other, but a positive-sum game in which cooperation is something that both parties can gain from.⁵¹ The need for joint management and cooperation is emphasized by people from both sides.⁵² Thus within the discourse on transboundary waters cooperative management is seen as the best option.

Using a functionalist/idealist approach to international relations one might also hypothesize that water can be a source for future cooperation on other issues. Such a development has not happened so far in the Israeli–Palestinian case. However, using a more realist reasoning, along the analytical lines of Lowi,⁵³ it can be argued that ‘high’ politics (such as national security concerns) decides what is agreed upon in areas of ‘low’ politics (such as water). Indeed, while water cooperation might be the best possible solution for all the parties in the basin, it is still Israel, which is in the hegemonic position in the basin, that dictates to a great extent what is acceptable and what is not.⁵⁴ Obviously, this hegemonic position of Israel is an opportunity for it and an obstacle for the Palestinians. The power asymmetry between the parties, with Israel being

50 See e.g. Hurrell, Andrew, ‘International political theory and the global environment’, in Ken Booth and Steve Smith (eds), *International Relations Theory Today* (Cambridge: Polity Press, 1995).

51 Wolf, Aaron T. and Hamner, Jesse H., ‘Trends in transboundary water disputes and dispute resolution’, *Water for Peace in the Middle East and Southern Africa* (Geneva: Green Cross International, 2000).

52 E.g. Kliot, Nurit, Personal communication, Jerusalem, 2 May 2001; Abed Rabbo, Alfred, Personal communication, Antalya, Turkey, 1 Nov. 2002; Jeusi, Anan, Personal communication, Amman, Jordan, 9 Mar. 2002; and Arlosoroff, Shaul, Personal communication, 1 May 2001.

53 Lowi, Miriam, *Water and Power: The Politics of a Scarce Resource in the Jordan River Basin* (Cambridge: Cambridge University Press, 1993).

54 Nicol, A., van Steenberg, F. et al., *Transboundary Water Management as an International Public Good*, Development Financing 2000 Study 2001:1 (Stockholm: for the Swedish Ministry for Foreign Affairs, 2001)

the stronger on issues such as human resources, military power and economics, is also an obstacle for the Palestinians in gaining the best outcome possible, while for Israel it is an opportunity that it can use to push its interest even harder.

The Palestinians also identified other obstacles. For example, as the Palestinians have repeatedly stated, the parties wanted to discuss and negotiate quite different agendas and issues. While Israel was interested in discussing cooperative ways to find 'new' or additional water, the Palestinians argued that the starting point has to be to identify the water rights. Only after they have been agreed is it possible to discuss other issues.⁵⁵ These discussions have also been part of the Joint Water Committee deliberations since the Interim Agreement.⁵⁶ A further obstacle for the Palestinians is the issue of water data. Since they have not had a functioning measuring system for a long time they need 'raw data' from the Israelis. According to the Palestinians they are only receiving processed data, which makes it difficult for them to make informed decisions and judgements.⁵⁷

In the Interim Agreement signed in Taba in 1995, Israel acknowledges that the Palestinians have water rights, which is partly a victory for the Palestinians. Still, what these water rights actually imply is not spelled out in the agreement but is to be negotiated as part of the final status negotiations. However, the water rights issue was discussed during the negotiations in spite of Israel wanting to postpone it, and according to Uri Shamir these were the hardest issues.⁵⁸ Thus, the fact that water rights are mentioned in the Interim Agreement at all can be seen as something of a victory for the Palestinians.

Above all it is important to acknowledge that water is inherently linked to other issues in the negotiations which are of greater political importance. The fact that water is subordinate to other issues, such as the Jerusalem issues or borders, implies that trade-offs between different issue areas can be and have been made. For example, in the Oslo II negotiations which lead to the Taba Interim Agreement the Palestinian

55 Jeusi, Anan, Personal communication, Amman, Jordan, 9 Mar. 2002; Attili, Shaddad, Personal communication, Amman, Jordan 9 Mar. 2002; Aliewi, Amjad, Personal communication, Amman, Jordan, 9 Mar. 2002; and Barghouti, Ihab, Personal communication, Ramallah, 27 Nov. 2002.

56 Ben-Meir, Meir, Personal communication, Kfar Masorik, Israel, 29 Apr. 2001.

57 Jeusi, Anan, Personal communication, Amman, Jordan, 9 Mar. 2002; and Aliewi, Amjad, Personal communication, Amman, Jordan, 9 Mar. 2002.

58 Shamir, Uri, Personal communication, Haifa, Israel, 30 Apr. 2001.

experts (and even some of the negotiators) on water went home from Taba in Egypt, where the negotiations were held, with the understanding that there would not be an agreement on water (or any other issue), but the next morning there was an agreement. Apparently someone who was responsible for the overall negotiations had decided that the water parts were acceptable since there was agreement on other issues.⁵⁹ This shows both that water is subordinated to other issues and that there are trade-offs between issue areas in the negotiations.

4.4.2 Risk in the negotiations – perceived and ‘real’

The risks in the water negotiations are both ‘real’ risks and constructed risks. On one level there are the ‘real’ risks definable by scientific observation and on another level there are the culturally constructed risks. However, the division between these two types of risk is not clear-cut: for example, a predominantly culturally influenced risk can be viewed or portrayed as a scientific (or real) risk. The problem of diverging risk perceptions which may all be based on expertise is highlighted by Sjöstedt⁶⁰ who shows that in the negotiations between Slovakia and Hungary on the dam on the Danube River the authorities made different use of experts, which lead to contrasting perceptions of risk. Hence, the combinatory perspective of Beck, which takes both natural–scientific aspects as well as cultural dispositions into account, is useful.⁶¹ Furthermore, as is pointed out by Meir Ben-Meir (a former Israeli head of the JWC and now an adviser to Israeli Prime Minister Ariel Sharon on water issues), some issues in negotiations are left vague, thus making it possible to avoid the division of risk, because otherwise it might be impossible to reach agreement.⁶²

The risks primarily perceived by the Israelis in the negotiation with the Palestinians concern water quality and quantity. Some Israelis argue that it might be risky for Israel to rely on water from the aquifers emanating from the West Bank as the Palestinians could pollute the water in these aquifers, thus reducing both quality and quantity.⁶³

⁵⁹ Jeusi, Personal communication, 9 Mar. 2002.

⁶⁰ Sjöstedt, G., ‘International negotiation and the management of transboundary risk’, in J. Linneroth-Bayer, R. E. Löfstedt and G. Sjöstedt (eds), *Transboundary Risk Management* (London: IIASA and Earthscan, 2001).

⁶¹ Beck, U., *Ecological Politics in an Age of Risk* (Cambridge: Polity Press, 1995).

⁶² Ben Meir, Meir, Personal communication, Kfar Masorik, Israel, 29 Apr. 2001.

⁶³ Soffer, Arnon, Personal communication, Haifa, Israel, 30 Apr. 2001.

These claims can, of course, be based on hydro-geological science but they might at the same time be influenced by a cultural disposition on the part of the Israelis not to view the Palestinians as trustworthy. In the case of the claim that the Palestinians could pollute the aquifers, the question can be asked why they would be interested in doing so when they are reliant on the aquifers themselves. The logical answer to this question suggests that the risk that some Israelis are highlighting here has more to do with a lack of trust of the Palestinians and is driven more by cultural dispositions than by natural-scientific arguments. It might be argued that this connects very much to what Lupton calls the notion of 'otherness', which means that groups are prone to identify other groups as the source of risk. That is particularly true in cases where the 'other' is perceived as threatening to overwhelm the 'self'.⁶⁴ As a result of the distrust, the Israelis are reluctant to give up the degree of control that they have over the West Bank waters. It is clear that some Israelis use the 'risk tool' when they describe what might happen if more control over water were given to the Palestinians as a way of sanctioning their narrative (although some Israelis emphasize the problems that would occur if Israel failed to share the management of, for example, the shared aquifers with the Palestinians⁶⁵).

Palestinians, on the other hand, focus on water rights,⁶⁶ with a particular emphasis on Palestinian sovereignty over water, as a starting point.⁶⁷ They see the main risk to themselves as not achieving what they view as their appropriate water rights. The Palestinian argument is connected to the land issue and is emotionally laden. Control or sovereignty over water is a symbol of importance for the long-awaited Palestinian state. This connects very much to the ideas of Kopagen, who emphasizes the cultural attachment to the land and water.⁶⁸ The over-emphasis on the issue of rights might lead to other risks being overlooked. One evident risk of focusing heavily on water rights as the top priority is that the Palestinians will achieve a less favourable deal in

64 Lupton, D., *Risk* (London and New York: Routledge, 1999), pp. 123–47.

65 Feitelson, Eran, Personal communication, Jerusalem, 24 May 2001.

66 Water rights obviously include entitlements to quantity of water, quality, place and time of delivery, and so on.

67 Jeusi, Anan, Personal communication, Amman, Jordan, 9 Mar. 2002; and Barghouti, Ihab, Personal communication, Ramallah, 27 Nov. 2002.

68 Kopagen, Nina, 'The perception of water as part of territory in Israeli and Arab ideologies between 1964 and 1993: toward a further understanding of the Arab-Jewish conflict', 1995, MA thesis, University of Haifa.

terms of water allocation. An agreement with Israel is likely to be based on the level of current use. If, on the other hand, the negotiators' emphasis shifted to the more vague principle of equitable utilization, Palestine could have a better chance of achieving larger allocations. The political-cultural history of the Arab-Israeli conflict is an important factor in understanding why some issues are de-emphasized and others are emphasized.⁶⁹ The fact that water rights are emphasized by the Palestinians can be seen as a result of their long history of having no rights, and the damage to their interests as a result of the occupation. As argued above, water is of less importance in the peace negotiations than issues such as Jerusalem, borders, settlements and the refugees. Obviously, this affects risk perceptions where water is concerned. Certain risks (loss of water) are de-emphasized by the parties when they stand to gain in areas that are politically more important. Thus a trade-off takes place between issue areas in the negotiations. Consequently, risk perception in the peace negotiations, involving various interlinked issues, is influenced by strategic choice and politics as well as by culture and history.

Another more natural-scientific risk aspect is highlighted by Palestinian academics - the fact that the Palestinians lack reliable water data for the West Bank and Gaza, which makes it nearly impossible to make good predictions of water quantities and quality of the waters under negotiation.⁷⁰ This is also emphasized by practitioners involved in the negotiations from the Palestinian side.⁷¹

The water negotiations should not be viewed as isolated events. First, we need to look at the actual agreements and at the various mechanisms that have been created as instruments to deal with the risks and conflict issues that might surface. Second, the water clauses of the agreement need to be put into a wider negotiation context. An awareness that a sacrifice might be made by one party on a certain issue (for example on water) in exchange for a reward in another area is imperative. Thus, some risk issues might be emphasized, de-emphasized or left out as mutually agreed 'vague' issues because of various complex negotiation linkages.

69 Douglas argues that the cultural aspects are important for a proper understanding of why some issues are de-emphasized and others are emphasized. Douglas, M., *Risk and Blame: Essays in Cultural Theory* (London and New York: Routledge, 1992).

70 Jeusi, Anan, Personal communication, Amman, Jordan, 9 Mar. 2002; and Abed Rabbo, Alfred, Personal communication, Antalya, Turkey, 1 Nov. 2002.

71 Attili, Shaddad, Personal communication, Amman, Jordan, 9 Mar. 2002.

When a state makes a concession in a negotiation it cannot be certain what it will gain (or indeed lose). The issue of effective risk management strategies and tools is, therefore, very important.⁷² Both the Israeli–Palestinian Interim Agreement and the Israeli–Jordanian peace agreement provide for a Joint Water Committee.⁷³ These committees are useful as both confidence-building measures and conflict resolution mechanisms. Thus, risks and uncertainties, both those that have been included in the agreements and those that have not been included, can be dealt with within these bodies. Indeed, as Ben-Meir, said: ‘Both parties acknowledge the importance that it [the JWC] stays in place’.⁷⁴ This is reiterated by a Palestinian member of the JWC, Ihab Barghouti, who maintains that it is an important body although its work is hampered by being linked to other political issues.⁷⁵ A retrospective, ‘follow-through’ analysis of the water negotiations helps us, as has been shown above, to examine the risks included in agreements as well as those that are not.⁷⁶ Furthermore, it gives us a view of the joint mechanisms established to deal with the risks. In this regard regime theory is relevant as it focuses on how joint mechanisms can become institutionalized and thereby generate norms and rules for conflict management so that the parties are better able to deal with common issues of dispute. The existence of such mechanisms has been manifested in the Israeli–Jordanian water relations during the recent periods of drought.⁷⁷

72 Bar-Siman-Tov, Y., *Uncertainty and Risk-Taking in Peacemaking: The Israeli Experience*, Davis Occasional Papers no. 71 (Jerusalem: Hebrew University of Jerusalem, 1999).

73 The JWCs are always led by one Israeli head and one Palestinian head in the Israeli–Palestinian case, and one Israeli head and one Jordanian head in the Israeli–Jordanian case. Decisions are made by consensus, thus giving each side veto power. Still, it is important to acknowledge the power asymmetry between the parties. While the formation of the JWC appears to be fair it should be noted that Israel has more resources and a larger cadre of experts at its disposal.

74 Ben Meir, Meir, Personal communication, Kfar Masorik, Israel, 29 Apr. 2001.

75 Barghouti, Ihab, Personal communication, Ramallah, 27 Nov. 2002.

76 Zartman, W. I., *Negotiations as a Mechanism for Resolution in the Arab–Israeli Conflict*, Davis Occasional Papers no. 72 (Jerusalem: Hebrew University of Jerusalem, 1999).

77 Jägerskog, Anders, *The Jordan River Basin: Explaining Interstate Water Cooperation Through Regime Theory*, SOAS Occasional Paper no. 31 (London: University of London, School of Oriental and African Studies, 2001).

4.5 The Israeli–Jordanian water negotiation process

4.5.1 Opportunities and obstacles

Like the Israeli–Palestinian water negotiations, the Israeli–Jordanian water negotiations and the main opportunities and obstacles need to be analysed in their proper socio-economic and political context.

For Jordan the signing of the DOP between the Palestinians and Israel in September 1993 was a signal that it could engage more seriously with Israel and pursue a search for a peace agreement. This had previously not been *politically feasible* for King Hussein, even though it is likely that he would have wanted to move in that direction earlier. Such a move would not have been positively viewed earlier in the Arab world and, furthermore, the domestic constituency in Jordan, in particular its Palestinian part (which comprises a majority of the population in Jordan) would be strongly opposed to it in the absence of any significant movement on the Israeli–Palestinian track. Thus, the DOP presented Jordan, and in effect also Israel, with an opportunity to pursue peace negotiations. An Israeli–Jordanian peace treaty was something that both Prime Minister Yitzhak Rabin and King Hussein were interested in and both saw this as a window of opportunity.⁷⁸ The situational and contextual factors, involving both the changes in the international system with the end of the Cold War and its repercussions on the region, were conducive to negotiations.⁷⁹ In fact the peace treaty in many aspects served to institutionalize the already working relationship that had existed for a long time between Israel and Jordan. In terms of water, the picnic table talks on technical matters pertaining to their shared water resources is one example of an ongoing effort that had contributed to building trust between the parties.⁸⁰

It has been emphasized above that Jordan also anticipated strong economic as well as military support from the USA should it arrive at a peace agreement with Israel. Prospects for support was also related to the water sector as there were various joint projects that could be pursued together with Israel (and also the Palestinians) with the support of

78 Al-Khasawneh iterates the interest of King Hussein in concluding a peace treaty with Israel and stated that the King believed in a 'new' beginning for the Middle East. Al-Khasawneh, Awn, Personal communication, The Hague, Netherlands, 27 Nov. 2001.

79 Spector, B. I., 'Motivating water diplomacy: finding the situational incentives to negotiate', *International Negotiation*, 5 (2000), pp. 222–36.

80 On the picnic table talks see Haddadin, Munther, *Diplomacy on the Jordan: International Conflict and Negotiated Solution* (Boston, Mass. and London: Kluwer Academic, 2001), pp. 259, 267, 272 and 434; and chapter 6.

the international donor community. An example is the newly revived joint proposal for building a piped connection between the Red Sea and the Dead Sea, which is described as essential if the Dead Sea is to be preserved and as offering associated benefits such as greater cross-border cooperation and an opportunity to address regional water needs.⁸¹ One obstacle in the negotiations on the waters in the Jordan River Basin (including groundwater) is that the negotiations and the agreements that follow are of a bilateral nature and do not include Syria and Lebanon. Because of the political situation in the region, and because water is intimately linked to other political issues, it has not been possible to arrive at a water deal for the whole basin. Above all, neither Syria nor Lebanon is prepared for a settlement with Israel.

Using a realist argument it might be argued that Israel is in a hegemonic position in relation to Jordan, just as it is in relation to the Palestinians. In terms of economic and military strength as well as human resources capacity (for example, Israel has a larger cadre of academics dealing with water) it is stronger than Jordan, which obviously also affects Israel's approach in water matters. This is an obstacle for the Jordanians and an opportunity for Israel since Israel can impose some of its views on the Jordanians. Still, if the upstream–downstream dimension is added to this equation it is clear that both parties are at one and the same time in upstream and downstream of each other. Israel is upstream since it has control over the Dan springs as well as Lake Tiberias in the Upper Jordan River, while Jordan is upstream since it controls a larger part upstream of the Yarmuk than Israel. This shows that in this case the waters that Israel and Jordan share are of a truly interdependent nature. Consequently, the water relations between the two parties cannot be seen as a zero-sum game. On the contrary, if both parties were to apply joint management the potential benefits would be huge. Joint management of the Jordan River Basin should rather be viewed as a positive-sum game. Thus, along a functionalist/idealist line of thinking, there is an opportunity for cooperation over the shared waters. In fact, there is a case for arguing that this understanding was already present between the two states prior to the peace negotiations, but that regional politics had prevented a formal institutionalization of the water cooperation prior to the agreement. As has been mentioned above and will be further elaborated in chapter 6, an informal arrangement for dealing with common water issues had already been in place since the 1950s.

81 For news on the Red Sea–Dead Sea connection see McCann, Bill, 'Revival for Red–Dead link', *Water 21* (International Water Association), Oct. 2002.

That said, it is important to note that there are some flaws to the functionalist argument that water cooperation leads to more cooperation since Israel, by linking water issues to other political areas, can maintain its hegemonic position within the basin and dictate what is acceptable to itself and what is not. A Jordanian academic attributes this to the power asymmetry between the two states.⁸²

4.5.2 Risk in the negotiations – perceived and ‘real’

In the Israeli–Jordanian peace negotiations the issue of water was even less important than it was in the Israeli–Palestinian negotiations. The reasons for this are the existence of a ‘tacit’ understanding between the two states on water issues based on their informal mutual adherence to the Johnston ideas as well as the regular water discussions known as the picnic table talks.

Having had ongoing interaction in discussing water issues, the parties have come to view each other in a favourable light. Still, it is possible to identify issues of risk and how they have been dealt with or not dealt with. In a retrospective analysis of the water clauses of the peace agreement of 1994 it is evident that one risk was not being dealt with in the 1994 negotiations. This is the issue of what to do when there is a drought. Fishländer argues that this is a conscious decision on the part of both parties since Israel favoured a ‘gentlemen’s agreement’ rather than a mechanism that would involve mediation or arbitration, which would be an option to settle disputes in times of drought one way or the other. The uncertainty about what to do when there is a drought as well as on other issues – such as the source of the additional 50 mcm of water, how the Dead Sea tributaries were to be divided and the scope of authority of the Joint Water Committee – suited not only Israel but also Jordan since they were able to ‘sell’ the agreement to their respective constituencies as a favourable one.⁸³ Thus, while the inherent risks of the agreement were evident for both parties, they chose to de-emphasize those risks since it suited their political agenda. This furthermore supports the notion within negotiation theory that parties often choose ambiguous formulations in a treaty in order to be able to agree if their interest in reaching an agreement is stronger than their interest in the issues that are left

82 Hussein, Iyad, Personal communication, Zarqa, Jordan, 7 Mar. 2002.

83 Fishländer, Itay, ‘Legal and Institutional Adaption to Climate Uncertainty: A Study of International Rivers’, 2003, Under review in the Journal Water Policy

vague. Using Rawlsian terminology, Waterbury calls this 'ignorance' and argues that it is useful in the design phase of a regime.⁸⁴ However, the ignorance/ambiguity is only useful when reaching agreement, and is problematic in the implementation process.

Droughts, as an issue not dealt with in the agreement, create a risk of relations between the states becoming strained. In the drought years 1998–2000, Israel did not want to supply Jordan with the full amount of water stipulated in the agreement and a political crisis erupted. Israel argued that the parties should 'share the deficit'; Jordan argued that Israel was obliged to supply it under the agreement. The crisis was resolved when Israel supplied the water.⁸⁵ The former Jordanian Minister of Water and Irrigation, Kamal Mahadin, who was minister at the time of the crisis, states that in the deliberations with the Israelis it was clear that they understood the problems.⁸⁶ Commenting on the crisis, the current Jordanian Minister of Water and Irrigation, Hazem El-Nazer, states that in spite of disagreements at times both sides are committed to abide by the agreement.⁸⁷ Still, as Shmuel Cantour, an Israeli water adviser, acknowledged, the issue is not settled once and for all, as discussions on it are still ongoing within the Israeli–Jordanian JWC.⁸⁸

Serious political conflicts resulting from disagreement over allocations in times of drought could actually have been avoided had the parties not mutually de-emphasized the issue of reliable and non-reliable water.⁸⁹ It might be argued that the negotiators took a calculated risk when they did not include the issue of drought in the agreement and instead argued that it should be solved within the JWC. Indeed, the Israeli water negotiator Uri Shamir argues that drought policies should be dealt with in the JWC.⁹⁰ This seems to be confirmed by a Jordanian negotiator and legal expert from Jordan, Awn Al-Khasawneh, who also sta-

84 Waterbury, John, *The Nile Basin: National Determinants of Collective Action* (New Haven, Conn. and London: Yale University Press, 2002), p. 37.

85 For newspaper reports of the crisis see e.g. Khatib, Ahmad, 'Tensions ease in the Jordan-Israel water dispute, officials say', *Jordan Times*, 7 Apr. 1999; Khatib, Ahmad, 'Israel agrees to provide Jordan with full share of water share', *Jordan Times*, 21 Apr. 1999; and 'Israel eases back on water cut for Jordan, but alters schedule', *Ha'aretz*, 22 Apr. 1999.

86 Mahadin, Kamal, Personal communication, Amman, Jordan, 9 Mar. 2002.

87 El-Nazer, Hazem, Personal communication, Amman, Jordan, 11 Mar. 2002.

88 Cantour, Shmuel, Personal communication, Tel Aviv, Israel, 30 Apr. 2001.

89 Reliable water is the water that is available even when there is a drought and non-reliable water is the water that exceeds the reliable amount.

90 Shamir, Uri, Personal communication, Haifa, 30 Apr. 2001.

tes that from a Jordanian perspective it is not bad that there are no drought provisions in the treaty.⁹¹ However, other water experts argue that the non-inclusion of drought provisions was a serious mistake.⁹² Perhaps the uncertainty arising from the possibility of droughts occurring was de-emphasized in the communication between the experts and the decision makers.

The issue of drought leads on to perceptions of risks in the negotiations. From a Jordanian perspective the arrangement of storing water from the Yarmuk in Lake Tiberias in Israel carries two main risks. The first is connected to the issue of drought. While Jordan is allowed to store water during the winter period in the lake it runs the risk of not receiving the stipulated amount in the summer if Israel were to say that there is a drought and stick to its argument that the parties should 'share the deficit'.⁹³ The second risk for Jordan is to do with water quality.⁹⁴ The water that Jordan stores in Lake Tiberias is of higher quality than the water in the lake.⁹⁵ Hence, Jordan runs the risk of receiving water of a worse quality than it gives. However, Zafer Alem, who is the director of the Jordan Valley Authority and deals with Israel through the Joint Water Committee, maintains that Jordan has received water of high quality from Israel since the agreement.⁹⁶

For Israel the main risk is the political risk which accompanies the non-existence of provisions for drought. Obviously, risks are also to be assessed in terms of the potential gains from taking certain risks. From a Jordanian perspective an obvious benefit of the water agreement is that it further opens the window of financing opportunities within its water sector.⁹⁷ This is also to a great extent true for Israel as well, as large donors are interested in financing 'peace projects' that involve Jordan, Israel and the Palestinians.

91 Al-Khasawneh, Awn, Personal communication, The Hague, Netherlands, 27 Nov. 2001.

92 Kliot, Nurit, Personal communication, Jerusalem, 2 May 2001.

93 It is important to point out, however, that Israel has supplied Jordan every year with the stipulated amount, if sometimes after rather harsh political dispute.

94 Water quality is, interestingly, absent from the Israeli-Jordanian Agreement on water.

95 Trottier, Julie, *Hydropolitics in the West Bank and Gaza Strip* (Jerusalem: PASSIA, 1999).

96 Alem, Zafer, Personal communication, Amman, Jordan, 10 Mar. 2002.

97 Hussein, Iyad, Personal communication, Zarqa, Jordan, 7 Mar. 2002.

4.6 Conclusions

In this chapter the water negotiations between Israel and Jordan and between Israel and the Palestinians have been analysed. While there are many similarities in the two negotiations and linkages between them, there are also many differences. The most salient is the fact that Israel and Jordan have arrived at a peace agreement that deals with water rights (or 'rightful shares'). The negotiations between Israel and the Palestinians are not yet finalized and have only resulted in an interim agreement. The focus in this chapter has been on the process of negotiations and what structural factors affected it rather than on analysing their outcomes and actual content. The actual implementation of what has been agreed upon will be dealt with in chapter 6 through the lens of regime theory.

While many of the obstacles and opportunities in the two sets of negotiations were rather similar, there were also differences. The end of the Cold War presented the parties with an opportunity for rapprochement and an end to the conflictual relations that had prevailed. The Israeli–Palestinian DOP presented Jordan with an opportunity to formalize the tacit understanding it had enjoyed with Israel in areas such as water.

One aim of this chapter has been to analyse how risk has been incorporated into the water negotiations in the Middle East peace process. Specific attention has been given to why some issues are seen as risks in the negotiations and other issues are not. In particular, what are the decisive political processes in this regard?

While it is important to highlight cultural factors, which risk theory does very well, it is equally important to situate the risks in their proper political circumstances. When a risk is situated in the wider negotiation context it may become apparent that some risks are emphasized or de-emphasized as a result of various linkages between different areas of the negotiations. The theory on discourse is useful in this respect: this will be further elaborated in chapter 5. It enables us to understand why some issues that might be termed risks are not part of the negotiations. Ben-Meir argues that the water agreements do not solve the problem of water scarcity.⁹⁸ The reason why measures that would be helpful in this regard are not included is that they are politically stressful. For example, the Palestinians would not agree to work simultaneously to find 'new' water and discuss water rights. Rather, they would like to finalize a division on

98 Ben Meir, Meir (2001) Personal communication, Kfar Masorik, Israel, 29 Apr. 2001.

what there is today first and then move on to discussions on 'new' water. It is also found that the issue of risk in the negotiations cannot be viewed in isolation, as the water issue is subordinate to more salient political issues in the negotiations. One party might overlook a risk in the water negotiations in order to gain something in another area. Hence, the issue of political feasibility and linkages between issues are identified as important.⁹⁹ For example, if one party were given the opportunity to gain something on the question of Jerusalem he would most likely be prepared to compromise on water. Thus a major conclusion seems to be that risk perception is not only culturally informed but also informed by politics, especially in negotiations.

To summarize, the primacy of politics guides the water negotiation process. Thus, it is imperative to analyse linkages and trade-offs between different areas in a negotiation if one is to understand why a negotiation process and the outcome (the agreement) take the form they eventually do.

99 On the issue of linkages, Munther Haddadin (Personal communication with the author, Delft, The Netherlands, 20 Nov. 2002) gives an example of the USA linking water to wider political issues in order to promote water cooperation in the multilateral talks in the Middle East. Since the 1991 Gulf War Jordan had been in a difficult position since it was seen as supporting Iraq. Aqaba was under siege during the whole negotiations by the US Navy, which put Jordan under certain pressure. Furthermore, in the multilateral talks Jordan had a special role since it was the only party taking part that was still at war with Israel (Syria and Lebanon were not part of the talks). Thus, it was in the interest of the USA for Jordan to continue to participate in good spirit. In 1993 the new US leader of the multilateral talks wanted to move the talks into the region. Jordan opposed that, arguing that it would send the wrong political signals if the talks were taken to the region before peace was concluded with Israel. However, the US invited Oman to host a multilateral water work group meeting. Haddadin says: 'I tried to shore up support to have it in another state outside the region and asked Canada and also received support for that proposal from Egypt and the Saudis. However, the US did not like this and there was a diplomatic fuss'. In the end, the USA offered to lift the blockade if a meeting was held in the region. That was acceptable to Jordan and King Hussein agreed. A meeting was held in Muscat in April 1994 and immediately after the meeting the blockade was lifted.

CHAPTER 5

Science and politics in the water negotiations

5.1 Introduction

Scientific knowledge and expertise have assumed an increasingly important role in politics and in particular in areas where complex environmental problems are dealt with.

In this chapter the involvement and role of scientific expertise in the Middle East water negotiations is analysed. In addition the role and influence of the sanctioned discourse¹ in the creation of water policy in Jordan, the Palestinian areas and Israel, which affect the positions taken in the negotiations, are analysed.

5.2 Experts in the Israeli–Palestinian water negotiations

As emphasized in the theoretical chapter, scientific knowledge has increasingly become inseparable from the political process. This is evident in cases where complex environmental issues are dealt with. At the same time the political interests of the parties in this particular negotiation are also decisive in the process of identifying what particular scientific advice should be taken into consideration. Thus, scientific agreement on an issue (for example, that it would be best to manage shared aquifers jointly) is only likely to be adopted as policy if that scientific consensus matches the political interests of the parties.

Since the water negotiations involve scientific matters, Israeli, Palestinian and international scientists have been fairly extensively involved in advising the negotiators of the two sides.² According to both Shamir and Jeusi, water scientists were instrumental in the water negotiations

¹ The concept will be more thoroughly discussed in section 5.5 below.

² In some cases Israel and the Palestinians have used scientific experts as negotiators as well—Uri Shamir in the case of Israel and Marwan Haddad in the Palestinian case.

since they were needed to help to simplify the complex water issue into something that a politician or negotiator can grasp.³ This view is iterated by Corell who states that the 'authority of science rests, in the eyes of policy-makers, in large part upon their ability to reduce the uncertainty and complexity that are characteristic of global environmental problems'.⁴

In the area of water expertise there is an asymmetry between Israel and the Palestinians. There are many Israeli experts and they have taken part to some extent in advising the negotiation team, for example, by writing background papers, participating in internal discussions, and evaluating proposals.⁵ The Palestinian side does not have such a vast cadre of experts. Consequently, the involvement of experts has been less on the Palestinian side than on the Israeli side. However, the limited involvement of Palestinian experts is not only due to a lack of expertise; it is also explained by the political culture of Palestinian society, which is characterized by a lack of transparency, according to one Palestinian water expert.⁶ According to Anan Jeusi, a Palestinian water scientist, it is obvious, particularly early on in the negotiations, that the Palestinians made many mistakes in the water negotiation as a result of not having experts and advisers that were as well informed as their Israeli counterparts.⁷ It was also partly a result of the Israel's de facto control over water in the West Bank and Gaza, which has helped Israel gather important water data while the Palestinian experts have not been able to do the same.

Acknowledging the relative Palestinian weakness in terms of human capacity and expertise in the negotiations, the British, Danish, Norwegian and Swedish governments, through the Adam Smith Institute, have supported the deployment to the negotiating teams of both Palestinian and international expertise. According to Jeusi, the particular benefit of this is an increased Palestinian appreciation of the cross-cutting issues, for example, how land and borders are related to water

3 Shamir, Uri, Personal communication, Haifa, Israel, 30 Apr. 2001; and Jeusi, Anan, Personal communication, Amman, Jordan, 9 Mar. 2002.

4 Corell, Elisabeth, *The Negotiable Desert: Expert Knowledge in the Negotiations of the Convention to Combat Desertification*, Linköping Studies in Art and Science (Linköping: Linköping University, 1999), p. 194.

5 Shamir, Uri, Personal communication, Haifa, Israel, 30 Apr. 2001.

6 Tammimi, Abdul Rahman, Personal communication, Ramallah, 25 Nov. 2002.

7 Jeusi, Anan, Personal communication, Amman, Jordan, 9 Mar. 2002.

issues.⁸ In addition, the UK Department for International Development (DFID) is supporting a joint British–Palestinian research project called the Sustainable Management of the Aquifers of the West Bank and Gaza (SUSMAQ), which is also intended to give advice to the Palestinians. However, a well-informed source states that the advice that exists in reports from the project seldom gets a wide circulation. In fact, the Palestinian Water Authority has not permitted the reports to be circulated to Palestinian water experts because some of the advice given in them does not conform to the existing view of the Palestinian political elite. Hence, the sanctioned discourse⁹ in the Palestinian areas works as an effective boundary against advice that is not politically feasible. Furthermore it is evident that the influence of outsiders is not vast.

In addition to the actual water negotiation there have been, as described above, various track-two efforts¹⁰ on water issues involving scientists of Israeli, Palestinian and international origin. These track two efforts have been mainly academic exercises but they have been important since there has been a sort of ‘pipeline’ in most cases to the various negotiation tracks.¹¹ This is particularly true for the Palestinians, where some of the people who were negotiating were also central to the track two efforts of the Truman Institute at the Hebrew University and the Palestinian Consultancy Group.¹² However, they have not stayed in the negotiation team throughout.

As noted above, scientific consensus on an issue is not enough to secure agreement on an environmental issue. The scientific consensus also has to be accepted by the policy makers.¹³ This seems to be highly applicable in the case of the Israeli–Palestinian water negotiations. One of the results of this is that the policy makers and negotiators seek out and make use of the scientific experts whose arguments feed into their own political perspective. For example, Alfred Abed Rabbo, who is a professor at Bethlehem University and Director of the Water and Soil Environmental Research Unit, was involved in a Palestinian water team preparing positions for the bilateral talks starting in Madrid. He argues that, once the bilateral talks really took off with Israel through the Oslo

8 Jeusi, Anan, Personal communication, Amman, Jordan, 9 Mar. 2002.

9 A deeper analysis of the sanctioned discourse is found in chapter 5.5.

10 See section 4.3.1.

11 Bitan, Dan, Personal communication, Jerusalem, 1 May 2001.

12 See section 4.3.1, and below in this section.

13 Lidskog, Rolf and Sundqvist, Göran, ‘The role of science in environmental regimes: the case of the LRTAP’, *European Journal of International Relations*, 8/1 (forthcoming).

process, politics became more involved and the politicians were more interested in experts whose advice suited their negotiation agenda.¹⁴ Another example of this is the results of the joint track two efforts of the Truman Institute and the Palestinian Consultancy Group. They assembled a group of academics focusing on the management of the shared aquifers, which concluded that joint management is imperative.¹⁵ These views have not really been incorporated into the agreement on water between Israel and the Palestinians.¹⁶

As is evident from the analysis above, the role of scientific expertise in the water negotiations between Israel and the Palestinians is not clear-cut or unproblematic. On the one hand, the policy makers or negotiators need their advice in order to be able to arrive at a reasonable agreement. On the other hand, they are not always interested in the advice of the scientific experts. Certain facts are deemed to be of such political importance that compromise is not possible, even if scientists argue the opposite. It should also be noted that sometimes it seems easier to make a compromise with the opponent than to get acceptance for the agreement back home. For example, while agreement was reached between Israel and the Palestinians in the Interim Agreement, it was criticized both in Israel and by the Palestinians.¹⁷

5.3 Experts in the Israeli–Jordanian negotiations¹⁸

As emphasized above, it is difficult to separate scientific knowledge from the political process. As in the Palestinian–Israeli negotiations, it is evident in the Jordanian–Israeli negotiations that the politicians take

14 Abed Rabbo, Alfred, Personal communication, Antalya, Turkey, 1 Nov. 2002.

15 Haddad, M., Feitelson, E., Arlosoroff, S. and Nassereddin, T., *Joint Management of Shared Aquifers: Final report of Phase II* (Jerusalem: Harry Truman Research Institute, Hebrew University and Palestinian Hydrology Group, 1999).

16 This could be attributed to the fact that there has been no real substantial negotiations (except for the unsuccessful negotiations in Camp David in 1999). Nevertheless, this view seems not to be in line with the sanctioned discourse of the political leadership in the two entities and it remains uncertain if it will be included even in the final agreement on water.

17 E.g. Abed Rabbo, Alfred, Personal communication, Antalya, Turkey, 1 Nov. 2002; Tammimi, Abdul Rahman, Personal communication, Ramallah, 25 Nov. 2002; Klot, Nurit, Personal communication, Jerusalem, 2 May 2001, and Soffer, Arnon, Personal communication, Haifa, Israel, 30 Apr. 2001.

18 On the role of experts and the role of 'epistemic communities' see also section 5.4.

the scientific advice that suits their political interest and agenda. The political obstacles to a settlement between Israel and Jordan were not as serious as the obstacles to a settlement of the Israeli–Palestinian conflict. Furthermore the idea of some sort of joint management (or at least increased coordination) of the common water resources, advocated by many experts, was in line with the political interests of the political elite on the two sides.

Scientific experts have been less intensively involved in the Israeli–Jordanian negotiations on water than in the Israeli–Palestinian negotiations. This is because the negotiations took place over a short period and there was therefore limited time for experts to evaluate proposals and so on. On the Jordanian side the top water negotiator, Munther Haddadin, was instrumental in evaluating negotiation proposals as well as in conducting the negotiations, as he confirms.¹⁹ By contrast, the Israeli negotiators were more of a team, although Noach Kinnarty was their leading and thus decisive negotiator.²⁰ Even though it has been emphasized that the role of politics is decisive in the negotiations it is important to bear in mind that the role of experts is still important. They help to reduce uncertainty for negotiators²¹ and their advice can provide decision makers with legitimacy for their decisions. For example, it might be argued that Israel uses expert advice as legitimization for not granting Palestinians drilling permits in the West Bank. While there is sometimes a political motivation behind those decisions, scientific advice adds legitimacy and is thus sought by the politicians.

In terms of experts there has been the same asymmetry in the Jordanian–Israeli negotiations as in the Israel–Palestinian negotiations: Israel is better equipped with specialists in the fields that the negotiations dealt with. For example, in terms of legal expertise, the only Jordanian involved was Awn al-Khasawneh, while Israeli had many more experts and could also rely on back-up from home. In order to compensate for this Jordan relied on an Australian and an East German lawyer as a

19 Haddadin, Munther, Personal communication, Delft, The Netherlands, 20 Nov. 2002.

20 Al-Khasawneh, Awn, Personal communication, The Hague, Netherlands, 27 Nov. 2001; and Salameh, Elias, Personal communication, Amman, Jordan, 6 Mar. 2002. See also Haddadin's personal account of the negotiations: Haddadin, Munther, *Diplomacy on the Jordan: International Conflict and Negotiated Solution* (Boston, Mass. and London: Kluwer Academic, 2001) (chapters 11 and 12).

21 Shamir, Uri, Personal communication, Haifa, 30 Apr. 2001.

backup and to get their 'second opinions'.²² However, compared to the asymmetry between Israel and the Palestinians, the difference between Israel and Jordan is not so vast. While the Palestinians lack access to important raw data as a result of the occupation, this is not the case for Jordan and it was consequently better equipped for negotiations on more equal terms.

In the negotiations it was evident that on occasions the political leaders did not act on the advice given to them by the scientific experts. For example, Uri Shamir, who was both an expert and a negotiator for Israel, says that on the issue of allocations of water to Jordan from Israel the Israeli officials conceded more than experts in Israel said was appropriate.²³ This shows that it is important for observers of negotiations to keep in mind the fact that linkages and trade-offs between different issues are an inherent factor in any negotiation involving more than one issue. In the case of allocations of water to Jordan, the political leadership in Israel must have deemed the potential political gains in ignoring the advice from their scientific advisers to be greater than the disadvantage of losing a certain amount of water. In the case of Jordan, the personal account of Munther Haddadin, the chief water negotiator for Jordan, shows that Jordan also made trade-offs between different issue areas in the negotiations and that its leadership at times made political decisions which were not in line with the what the advisers advocated.²⁴

As emphasized in the theoretical literature on the relationship between science and politics, there is no clear-cut relationship between scientific advice and the formation of policy. On the contrary, they are interdependent. Science is not at all times an objective account of how things are. Like anyone else, scientists are sometimes inspired by their own interests as well as ideology. Furthermore, even though scientific experts were part of the negotiations on water in the Middle East either by participating actively or through their roles as advisers, it is clear that political linkages and consideration of other issues that were negotiated to a great extent affected and determined the outcome of the water negotiations.

22 Al-Khasawneh, Awn, Personal communication, The Hague, Netherlands, 27 Nov. 2001.

23 Shamir, Uri, Personal communication, Haifa, 30 Apr. 2001.

24 Haddadin, Munther, *Diplomacy on the Jordan: International Conflict and Negotiated Solution* (Boston, Mass. and London: Kluwer Academic, 2001).

5.4 The epistemic communities approach: a critique

The two previous sections have analysed the particular influence of experts in the Israeli–Palestinian water negotiations and the Israeli–Jordanian water negotiations. The present section will make a critical analysis of the role of the scientific expertise in the water negotiations in the Jordan River Basin through the prism of the epistemic communities approach.

According to Corell the assumed role of scientists in international environmental politics is that they first agree on a set of facts that are thought to be ‘objective’ and then present them to politicians and decision makers, who are then to take informed decisions. However, Corell argues that, while scientists can indeed provide useful information to decision makers, it may well be the case that international cooperation on environmental issues takes place without any scientific consensus. In addition, science may be politicized so as to serve the interests of the politicians.²⁵

In the literature on the role of scientific expertise in international politics the *epistemic communities* approach put forward by Haas argues that scientists are central in the formation of policy on an international level involving state-to-state decisions. Essentially, international cooperation is explained as a result of scientific consensus on an issue that guides states so that they are able to make informed policy choices and this leads to a convergence of policies based on the consensus.²⁶ However, the argument that scientific consensus on an issue leads towards the creation of something that might be called a regime (see chapter 6 for more on regimes) can be questioned. Rather, science and policy are co-produced and if a regime is to be created it needs to be accepted within the political discourse.²⁷

As discussed above, experts have been involved in various capacities in the water negotiations. In particular the Israelis have used experts to prepare background materials, as participants in internal preparatory discussions and so on.²⁸ This applies to a lesser extent to the Palestini-

25 Corell, Elisabeth, *The Negotiable Desert: Expert Knowledge in the Negotiations of the Convention to Combat Desertification*, Linköping Studies in Art and Science (Linköping: Linköping University, 1999), pp. 164–5.

26 Haas, P., *Saving the Mediterranean: The Politics of Environmental Cooperation* (New York: Colombia University Press, 1990).

27 Lidskog, Rolf and Sundqvist, Göran, ‘The role of science in environmental regimes: the case of the LRTAP’, *European Journal of International Relations*, 8/1 (forthcoming).

28 Shamir, Uri, Personal communication, Haifa, Israel, 30 Apr. 2001.

ans and even less to the Jordanians. In some cases experts have also participated as negotiators and thus have had a 'dual' position.

In the epistemic communities approach it is argued that, if there exists a consensus on an environmental issue, such as (in this case) how the water resources should be managed in the Jordan River Basin, there exist suitable conditions for international cooperation. According to Nurit Kliot, there is a general consensus among most scientists, whether they are Israelis, Palestinians or Jordanians, regarding the crucial points in the water *problématique* in the Jordan River Basin. This includes an understanding that the transboundary aquifers and rivers are best managed jointly and agreement about the basic volumes of flows in rivers and aquifers.²⁹ Thus conditions for cooperation seem to exist according to the epistemic communities approach. There is also a fair level of cooperation and coordination in the basin, as the analysis of the ongoing cooperation and implementation in chapter 6 shows. Hence it might be tempting to conclude that this is first and foremost a result of the scientific consensus on the water issues. However, this does not give the whole picture.

First, the cooperation that is taking place within what can be called the water regime in the Jordan River Basin is subject to political influence. In the case of Israel and the Palestinians they have yet to reach a final water agreement and this will not happen until the other, more politically significant, issues are resolved. Second, it is evident from the interviews that all proposals and ideas brought forward are subject to political approval by the various leaderships and thus to a judgement as to what is politically feasible.³⁰ Third, in a multi-issue negotiation, such as the Israeli–Palestinian and Israeli–Jordanian negotiations, there is a wide range of linkages between issues and in the end various trade-offs are made between the political leaders which sometimes go against what may be perceived as the scientifically most sound way of approaching an issue. Fourth, the level of expert involvement in the water negotiations has been somewhat limited and asymmetric. While Israel has used experts for background work (one scientific expert, Uri Shamir, was also a negotiator) the Palestinians have used scientific expertise to a much lesser extent and Jordan has made almost no use of

29 Kliot, Nurit, Personal communication, Jerusalem, 2 May 2001.

30 E.g. Jeusi, Anan, Personal communication, Amman, Jordan, 9 Mar. 2002; and Shamir, Uri, Personal communication, Haifa, Israel, 30 Apr. 2001.

them.³¹ It is thus concluded that the influence of scientific expertise in bringing about international cooperation on water in the Jordan River Basin is limited. Even though scientific experts have been conveying the message to the negotiators and decision makers that transboundary cooperation over water is important and necessary, it is in the end a political decision to cooperate. And such a decision is influenced by many other considerations in addition to the advice of the scientific experts. Those other considerations, which are more decisive than scientific advice, are elaborated upon in section 5.5.

5.5 The importance of politics: the determining power of the 'sanctioned discourse'³²

In this section the importance of politics in the creation of water policy is scrutinized. Above it is argued that the role of scientific expertise, in terms of influence, in the water negotiations has been limited, and it is concluded that political feasibility plays a much greater role in the water policy creation process in the three entities and thus also influences the water negotiations more.

Because of the strategic importance of access to and control over fresh water in a river basin with limited supply, states are likely to develop a *hydraulic mission* which feeds in to a hydropolitical ideology.³³ In this section the various features of the sanctioned discourse/hydropolitical ideology among the parties in the Jordan River Basin are outlined.

It is argued by Feitelson that the discourse on water in Israel was largely determined by ideology from the 1940s up until the 1970s, which implies a strong emphasis on water allocations to agriculture

31 In the case of Jordan and Munther Haddadin, he himself can be viewed as an expert on the issues that were negotiated. However, Haddadin made limited use of 'second opinions' on the various proposals that were being negotiated.

32 Parts of this chapter are based on Jägerskog, Anders, 'The power of the sanctioned discourse: a crucial factor in determining water policy', *Water, Science and Technology*, 47/6 (2003)

33 Turton, Anthony, 'The political dynamics of institutional development in the water sector: South Africa and its international river basins', Unpublished draft of a DPhil thesis, Department of Political Sciences, University of Pretoria, 2002.

since it represents a central feature in Zionism.³⁴ Even though there has been a shift in the discourse towards more economic reasoning, the ideological preference for farming is still reflected in the disproportionate political power the agricultural sector enjoys in Israel: the agricultural sector possesses the cultural capital needed to deploy that political power. This is exemplified by the former Israeli Water Commissioner, Meir Ben-Meir, now an adviser to the Prime Minister Sharon on water issues, who argues that the Israeli emphasis on agriculture is here to stay for both cultural/ideological and strategic reasons.³⁵

The strategic argument is closely connected to the perception that giving up farming in the remote areas of Israel would constitute a strategic risk. Keeping agricultural settlements in the remote areas is important since they are seen as a 'buffer zone' against potential enemies. However, there are arguments for saying that the policy of using agricultural settlements as a tool in the strategic defence of the state has proved counterproductive. This was exemplified in the 1973 war when many Israeli soldiers were occupied evacuating agricultural settlers in the Golan Heights rather than fighting the Syrians. The inadequacy of buffer zones was also effectively shown during the Gulf War in 1991 when Iraq sent missiles directly into the heart of Israel. Hence, the policy of keeping agricultural settlements in strategic areas of the state seems to be based on a misguided perception of their strategic importance and is perhaps better explained by other political reasoning. The logic is as follows. 1. Israel's (misguided) policy of keeping agricultural settlements in strategic areas has to be explained by other reasons than their true strategic importance. 2. Its policy suits the argument of the farming community and there seem to exist a farming-military discourse coalition - to borrow the term from Hajer. This discourse coalition represents the dominant discourse on water in Israel. 3. Israel's main interest in the negotiations, from a water perspective, is to maintain the high levels of allocation. 4. It is also possible to trace the root of the arguments of the farming community and the strategic establishment in the domestic structures of the state and Zionism. 5. This perspective does not exclude cooperation on water issues in the region, but it limits the room for compromise solutions.

34 Feitelson, Eran, 'Implications of shifts in the Israeli water discourse for Israeli-Palestinian water negotiations', *Political Geography*, 21/3 (2002), pp. 293-318.

35 Ben-Meir, Meir, Personal communication, Kfar Masorik, Israel, 29 Apr. 2001; Shavit, Ari, 'Israel will annex if PA declares a state', *Ha'aretz* (English edn), 11 Apr. 2001; and Rinat, Zafir, 'Watered-down advice', *Ha'aretz* (English edn), 24 June 2001.

However, today it is possible to find challenges to the sanctioned discourse in Israel. It can be described as a 'discursive battle'.³⁶ In this sense there is a *differentiation* between various experts and water professionals in Israel (as well as in Palestine). On the Israeli–Palestinian water issue, besides the military–farming coalition, there is also a strong group of Israelis (and Palestinians as well) who argue for extended joint management of the shared aquifers.³⁷ This group emphasize the risk aspect when they argue that joint management is the only way to counter the risk of non-reversible decline in the water quality of the shared aquifers. The current Water Commissioner of Israel, Shimon Tal, argues along similar lines and advocates cuts in allocations to agriculture as a means of countering the water crisis.³⁸ However, because of the influence of the dominant discourse, requests for cutbacks on agricultural water are often refused.³⁹

The Palestinians, on the other hand, are stuck in the prevailing discourse that the starting point of any negotiation ought to be their water rights.⁴⁰ Haddad points to the fact that the Palestinians have long been denied self-rule and the right to develop and manage their natural resources.⁴¹ One water negotiator, Amjad Aliewi, argues that it is possible to discuss other issues such as pollution after the water rights of the Palestinians have been clearly established.⁴² This is iterated by another Palestinian water negotiator, Shaddad Attili, who maintains that the core of the Palestinian negotiating position is to do with securing water

36 An elaborate discussion on the various competing Israeli discourses can be found in Feitelson 'Implications of shifts in the Israeli water discourse for Israeli–Palestinian water negotiations'

37 Haddad, M., Feitelson, E., Arlosoroff, S. and Nassereddin, T. (1999), *Joint Management of Shared Aquifers: Final Report of Phase II* (Jerusalem: Harry Truman Research Institute, Hebrew University and the Palestinian Hydrology Group, Jerusalem, 1999).

38 Tal, Shimon, 'Water Commissioner Shimon Tal briefs foreign press', Israeli Ministry for Foreign Affairs, 2001, <<http://www.mfa.gov.il/mfa/go.asp?MFAH0k8s0>>; and Rinat, Zafir, 'Watered-down advice', *Ha'aretz* (English edn), 24 June 2001.

39 Cohen, Amiram, 'Sharon to help farmers get more water', *Ha'aretz* (English edn), 11 Apr. 2001.

40 Haddad, Marwan, 'The dilemma over Palestinian water rights', in Eran Feitelson and Marwan Haddad (eds), *Joint Management of Shared Aquifers: The Fourth Workshop* (Tel Aviv: Harry S. Truman Institute for the Advancement of Peace and the Palestine Consultancy Group, 1997).

41 Haddad, 'The dilemma over Palestinian water rights'.

42 Aliewi, Amjad, Personal communication, Amman, Jordan, 9 Mar. 2002.

rights.⁴³ The history of the conflict, in which the Palestinians have been subject to inequality and repression, and the strong tradition of farming among the Palestinians are integral parts of the domestic structure in Palestine. Hence the idea that water rights ought to be *the* starting point in any negotiation is deeply rooted in the history of the conflict. This very strong paradigm effectively sets the boundaries for what is feasible. Needless to say there are various discursive actors who reinforce this view and thus bolster the sanctioned discourse.

Inevitably, a negotiation in which water rights are discussed as a main principle must be based on figures of current allocation and use. Today the difference between the allocations Israel and those to the Palestinian areas is considerable. Thus the water rights that the Palestinians may obtain in a negotiation run the risk of being far too limited. A shift on the part of the Palestinians towards the principle of equitable utilization is likely to produce a better outcome.⁴⁴ But this is not part of the dominant Palestinian water discourse and consequently not on the table, in spite of international advisers pushing for it. It may well be that the power of the sanctioned discourse prevents the Palestinians from obtaining the best agreement possible. Another dominant feature in the Palestinian discourse is their insistence that the Palestinians' water problems are almost exclusively the fault of Israel.⁴⁵ This rhetoric is found among academics, water professionals and the media, as well as government officials. This is, of course, also a result of the Palestinians having been deprived of their rights and self-rule by Israel. Nevertheless, it is not a productive stand in a negotiation situation. Nor is it helpful in the work of improving Palestinian water management.

In Jordan, the argument is emphasized that the water scarcity in the country is man-made. It is estimated that the Hashemite Kingdom absorbed around 450 000 Palestinians after 1948. Irrigation was a crucial factor in accommodating them, thus putting pressure on Jordan's limited water resources.⁴⁶ Consequently, Jordanians argue that Israel is partly responsible for Jordan's water shortage. This is iterated by Dureid Mahasneh, who argues that it is not fair that Palestinian refugees from the West Bank should get Jordanian water while the occupant (Is-

43 Attili, Shaddad, Personal communication, Amman, Jordan, 9 Mar. 2002.

44 Allan, Tony, Personal communication, London, UK, 23 Oct. 2001.

45 Trottier, Julie, *Hydropolitics in the West Bank and Gaza Strip* (Jerusalem: PASSIA, 1999).

46 Haddadin, Munther, 'Water issues in the Hashemite Jordan', *Arab Studies Quarterly*, 22/2 (2000), pp. 63–77.

rael) is getting their water.⁴⁷ The dominant view among the discursive elite in Jordan was that peace would be beneficial since it would bring US economic and military aid.⁴⁸

As in Israel and the Palestinian areas, the advocates of virtual water are not strong in Jordan. This is, however, to be expected since Jordan, like the other entities, has a strong tradition of farming even though the agricultural sector today contributes a fairly small part (3–5 per cent) of gross domestic product (GNP). In addition, the food self-sufficiency argument, emphasizing a strong domestic base in food production, is strong in the Jordanian discourse.⁴⁹

5.6 Conclusions

An overall conclusion in this chapter is that any analysis of foreign policy decision making with regard to water (and other issues as well) needs to include features of the domestic discourse in order to be realistic.

With regard to expert involvement in the negotiations it is found that the scientific advice that they provide is helpful for the politicians as it enables them to reduce uncertainty, since the scientists assist in simplifying complex issues such as water. However, it is also clear that the politicians and their negotiators only take up scientific advice as long as the advice fits with their political agenda. Thus, scientific advice needs to be *politically feasible* in order to be adopted and incorporated into policy. Mere scientific consensus, which can be said to exist to some extent in the case of water in the Jordan River Basin, is not enough to explain why international cooperation occurs. Hence, the epistemic communities approach is not a strong variable with which one can explain the water cooperation in the basin. There needs to be a political sanctioning of proposed methods for cooperation. Cooperative structures, which are outlined in more detail in chapter 6, show that the regime features in the basin, which are the result of a variety of issues, such as the development of shared norms and rules for the management of the shared resource, are imperative for the development of cooperation. These regime features may well have been positively affect-

47 Mahasneh, Dureid, Personal communication, Amman, Jordan, 9 Mar. 2002.

48 Ryan, Curtis R., 'Jordan in the Middle East peace process', in Ilan Peleg (ed.), *The Middle East Peace Process: Interdisciplinary Perspectives* (New York: State University New York Press, 1998).

49 el-Nazer, Hazim, Personal communication, Amman, Jordan, 11 Mar. 2002.

ted by scientific expertise on both sides pointing in the direction of increased cooperation, but they are also a result of a demand from the parties for increased cooperation, as well as a result of pressure for cooperation from the international structures (mainly the USA) for increased cooperation.

The domestic structures to a great extent set the 'boundaries' within which policy decisions are taken. In Israel, it is found that there exists a form of farming–military coalition which dominates the water policy discourse in Israel. It holds the view that continued high allocations to agriculture are important for both cultural and strategic reasons. In Palestine, the dominant discourse tends to blame many of its water problems on Israel (which to some degree seems reasonable) but subsequently fails to address the Palestinians' own management problems in a sound way.⁵⁰

To summarize, it is found that the idea of looking at discourse, and indeed identifying the 'sanctioned discourse', is crucial to understanding water policy decision making (as well as decision making in other sectors as well). To fail to acknowledge the explanatory power of this line of thinking runs the risk of reaching simplified conclusions, such as that 'the policy makers do not understand water issues', instead of acknowledging that the power of the discourse perhaps gave them little choice.

50 Trottier, Julie, *Hydropolitics in the West Bank and Gaza Strip* (Jerusalem: PASSIA, 1999).

CHAPTER 6

Assessment of cooperation: an analysis of the post-agreement phase

6.1 Introduction¹

This chapter analyses the implementation of the water agreements between Israel and Jordan and between Israel and the Palestinians. It is important to note the differences between the former case, where a final agreement exists, and the latter, where there is only an interim agreement. While many analyses and textbooks on water in the Middle East have focused their attention on analysing the agreements on water *per se* in detail, this chapter will focus on what has happened to the agreements after their signing. In order to put the analysis into a theoretical context, regime theory is used. The regime theory is applied within the overall framework of an actor–structure approach.² This overall framework is not used as a specific analytic instrument but rather as a description of a general approach to the way in which particular changes from conflictual behaviour towards more cooperative behaviour have occurred.

It is hypothesized that the hydrological interdependence, that is, the transnational nature of the water on which they depend, of states that are riparians of an international river basin provides a rationale for cooperation.³ By analysing the work related to and done within the different Joint Water Committees called for in the water clauses of both the Israeli–Palestinian Interim Agreement of 1995 and the Israeli–Jordanian Peace Treaty of 1994 it is possible to arrive at some conclusions regarding the implementation of the agreements and the level of cooperation (or the lack of it).

1 This section is partly taken from Jägerskog, Anders, 'Contributions of regime theory in understanding interstate water cooperation: lessons learned in the Jordan River Basin', in A. R. Turton and R. Henwood (eds), *Hydropolitics in the Developing World: A Southern African Perspective* (Pretoria: African Water Issues Research Unit (AWIRU), 2002).

2 The discussion and analysis of structures and actors and how they affect the water negotiations and the implementation of what is agreed upon is not only found in this chapter but is intimately linked with the analysis in chapters 4, 5 and 7 as well.

3 Elhance, Arun P., *Hydropolitics in the 3rd World: Conflict and Cooperation in International River Basins* (Washington, DC: United States Institute of Peace Press, 1999).

6.2 The Israeli–Palestinian Joint Water Committee: institutionalized cooperation?

As stipulated in the Interim Agreement between Israel and the Palestinians, a Joint Water Committee was established after the signing of the agreement. This committee is supposed to implement the undertakings of the parties in Article 40 of the Interim Agreement, which deals with water and waste water.⁴ It is to be composed of an equal number of participants from each side and to reach decisions through consensus, which means that each side has a veto.⁵ Each side can call in experts to the committee as it sees fit. It should be noted that, while the actual decisions implementing the Interim Agreement are to be taken in the JWC, the committee is still under the political leadership of the State of Israel and the Palestinian National Authority. This means that when a sensitive water issue of political importance surfaces in the JWC it is passed up to a higher political level. This underlines the fact that water is very much connected to the politics in the region.⁶

While regime theory is not an approach that encompasses all the issues at stake it does increase our understanding of the institutional aspects of the cooperative behaviour that the parties have engaged in within the JWC. A regime analysis deals with well-defined issues around which parties create and subscribe to means of self-regulation in the international arena. The JWC could be described as such a regime.

As already mentioned, the JWC is to take decisions with regard to water projects in the West Bank by consensus. Palestinian participants in the JWC have stated that there was an expectation that the Palestinians would be able to get approval for projects in the JWC without much problem so that implementation of the Interim Agreement could proceed. However, according to the Palestinians taking part in the JWC and its subcommittees,⁷ there have been delays in decisions with regard

4 Article 40 is reproduced in Appendix 3.

5 This is a much stronger tool for the Israelis as the projects that are discussed in the JWC are to do with the occupied Palestinian areas.

6 For more on the Interim Agreement and the powers and limitations of the Joint Water Committee see Article 40 of the Interim Agreement at Appendix 3. See also the Israeli Ministry of Foreign Affairs at <<http://www.mfa.gov.il/mfa/go.asp?MFAH00qd0#app-40>> and the Palestine Liberation Organisation at <<http://www.nad-plo.org/fact/annex3.pdf>>.

7 The JWC has the right to form various subcommittees, which it has done, in order to work with specific issues such as technical matters. The decisions in these subcommittees are subject to approval of the JWC.

to decisions on permits to drill wells and so on.⁸ At the same time it has also to be acknowledged that some of the implementation problems – for example, the building of a pipeline in Gaza to receive 5 mcm water from Israel per year – are a result of the fact that the Palestinians have not been able to build the transmission line in Gaza.⁹ While the Palestinians attribute many problems and delays in decisions regarding Palestinian projects to Israeli unwillingness, the Israelis maintain that they have hydrological reasons for turning down Palestinian proposals.¹⁰ However, well-informed sources admit that Israel's refusals to agree on project proposals with the Palestinians are sometimes due to political rather than technical reasons.

A further reason, highlighted by officials in the PWA, which is delaying the implementation of the Interim Agreement, is the fact that the protocols/minutes from the JWC meetings need to be signed by all four members of the JWC (two Israelis and two Palestinians). This is a lengthy process that can take months to finalize. While this can be seen as normal committee procedure it is also possible for either side to withhold a signature as a political tool. According to Ihab Barghouti at the PWA, the Palestinians have raised the problems of getting approvals for projects with their Israeli counterparts in the JWC, who are mainly technical people, and maintain that many of the problems were due to not them but rather to the political leadership.¹¹ Another problem for the JWC is that the Interim Agreement has an inbuilt ambiguity. While it can be helpful when working towards an agreement to keep it ambiguous as regards particular points, the ambiguities become obstacles in the implementation stage, particularly if they involve politically sensitive issues.

Another impediment to swift implementation is the problem of funding for Palestinian projects. This problem is only minor since there are willing donors active in the Palestinians water sector.¹² The ongoing al-Quds Intifada, which started in autumn 2000, has also had a negative impact on the implementation of the agreement since there are various problems associated with the movement of PWA personnel as a result

8 Jarrar, Ayman, Personal communication, Delft, The Netherlands, 22 Nov. 2002; and Barghouti, Ihab, Personal communication, Ramallah, 27 Nov. 2002.

9 Jarrar, Personal communication, 22 Nov. 2002.

10 Cantour, Shmuel, Personal communication, Tel Aviv, Israel, 30 Apr. 2001.

11 Barghouti, Ihab, Personal communication, Ramallah, 27 Nov. 2002.

12 Jarrar, Ayman, Personal communication, Delft, The Netherlands, 22 Nov. 2002.

of closures, Israeli refusals to grant permits and so on.¹³ The Palestinians also highlight the fact that there is a difference depending on whether Likud or Labour is in power in Israel. According to Anan Jeusi, more project proposals are accepted in the JWC if Labour is in power in Israel than if Likud is.¹⁴ Thus, internal Israeli politics are intimately linked to what it is possible to do in the JWC.

Although various problems have hampered the implementation of the agreement, both parties acknowledge the importance of it being in place. Indeed, even in the midst of the latest tensions during the current Intifada, the work of the JWC continues. A joint statement of 31 January 2001 from the Israeli and the Palestinian heads of the JWC reaffirmed their commitment, despite exogenous challenges, to continue their cooperation. In the declaration the parties, represented by the head of the PWA, Nabil el-Sharif, and the head of the Israeli delegation to the JWC, Noach Kinarty, promised to take all necessary steps to keep water out of the conflict and also appealed to their respective constituencies to refrain from damaging water infrastructure.¹⁵

In the regime literature it is argued that regimes function as learning processes and can hereby also be a place for the policies of parties in a regime to converge, thus creating fertile ground for increased cooperation.¹⁶ Behaviour along these inherently constructivist lines of thinking is not immediately apparent in the Israeli–Palestinian water relations. However, both parties acknowledge that the joint mechanism for dealing with their transboundary waters is necessary.¹⁷ This is a result of an appreciation on both sides of the fact that they are linked by their hydrological interdependence. It is also acknowledged that a level of trust has been built in the JWC, in particular on a professional level.¹⁸ Thus the impediments to implementation seem to be related more to the politics of the region than to problems on a professional (meaning technical) level.

13 Jarrar, Personal communication, 22 Nov. 2002.

14 Jeusi, Anan, Personal communication, Amman, Jordan, 9 Mar. 2002.

15 Schiff, Zeev, 'Unlikely cooperation', *Ha'aretz* (English version), 13 Feb. 2001.

16 Mayer, P., Rittberger, V. and Zürn, M., 'Regime theory: state of the art and perspectives', in V. Rittberger (ed.), *Regime Theory and International Relations* (Oxford: Clarendon Press, 1993), pp. 391–430.

17 E.g., Barghouti, Ihab, Personal communication, Ramallah, 27 Nov. 2002; and Ben Meir, Meir (2001) Personal communication, Kfar Masorik, Israel, 29 Apr. 2001.

18 Barghouti, Personal communication, 27 Nov. 2002.

According to regime theory there are various ways in which regimes come into existence. The realist argument – that regimes are created by powerful hegemons because it serves their interests – seems to have some bearing in this case as it can be argued that the USA has seen a stabilization of the region and cooperation over water as fitting its interest. In addition, Israel, which can be portrayed as a regional hegemon, also views agreement with its Arab neighbours as something that would serve its interests, both from a strategic and from an economic perspective. At the same time, the neo-liberal argument for regime creation, which pinpoints the *demand* for regimes as the most important factor, also has a bearing in this case. This stems from the idea that by creating a regime the parties to the regime can more accurately estimate the costs and benefits of action. In other words the parties to the regime are in a better position to avoid suboptimal outcomes.¹⁹ In the case of Israel and the Palestinians the common appreciation of their hydrological interdependence has spurred a demand for joint management of the shared waters. The epistemic communities approach, which emphasizes shared knowledge,²⁰ seems to be less applicable in this case since the involvement of experts, or at least the adoption of their advice, is subject to the politics involved in the negotiations.²¹

It is concluded that the water relations between Israel and the Palestinians resemble a water regime. There exist principles, norms, rules and decision-making procedures (more or less well established), which are deemed necessary for a regime.²² These features are influenced by the power asymmetry, identified by Keohane and Nye²³ as a source of power for affecting outcomes, by which Israel is able to exercise a strong influence on the direction implementation takes.

In terms of effectiveness it is concluded that the members have generally abided by the rules of the regime. However, an impediment to the

19 Hasenclever, A., Mayer, P. and Rittberger, V., *Theories of International Regimes* (Cambridge: Cambridge University Press, 1997).

20 See e.g. Haas, P., 'Do regimes matter? Epistemic communities and Mediterranean pollution control', in Friedrich Kratochwil and Edward D. Mansfield (eds), *International Organization: A Reader* (New York: HarperCollins, 1994), pp. 128–39.

21 Abed Rabbo, Alfred, Personal communication, Antalya, Turkey, 1 Nov. 2002 and Tammimi, Abdul Rahman, Personal communication, Ramallah, 25 Nov. 2002.

22 See Krasner, S., 'Structural causes and regime consequences: regimes as intervening variables', in S. Krasner (ed.), *International Regimes* (Ithaca, N.Y.: Cornell University Press, 1983), p. 1.

23 Keohane, R. and Nye, J., *Power and Interdependence* (New York: HarperCollins, 1989).

effectiveness of the regime is that, while the Interim Agreement was supposedly negotiated in 'good will'²⁴ the political relations that inevitably affect the JWC have substantially slowed its implementation.

In terms of robustness and resilience the Israeli–Palestinian regime is a strong one. In spite of all the political problems during the current Intifada, the JWC and its subcommittees have continued to meet and co-ordinate water-related activities. Fadl Kawash, the director general of the Palestinian Water Authority, stated in late October 2002 in an interview in the *Jerusalem Post* that Palestinians were working together with their Israeli counterparts to prevent pollution of water through the JWC in spite of the Intifada.²⁵

6.2.1 Implementation as seen from an actor–structure perspective: the Israeli–Palestinian case

Two underlying questions in this thesis are how and why change occurs in the water relations in the Jordan River Basin. As has been discussed thoroughly in the theoretical chapter (section 2.5), neither structuralism nor an exclusively actor-centred approach will capture the whole question of why the water negotiations occurred as they did or why the implementation of the agreements has taken the form it has. It is important to adopt a dialectic approach to the issue at hand in order to understand why things are as they are.

When assessing the water negotiations and the work of implementing the agreement in the JWC it is clear that, if the professionals involved in the JWC were not subject to guidance by politicians (which is of course impossible), working relations would be much better and it would be possible to look at the various project proposals and so on from a purely technical perspective.²⁶ Yet, as Hay points out, agents/actors are never to be analysed apart from their context. He calls this the contextualization of agency, which means that the social and politi-

24 Interim Agreement, Article 40, <<http://www.mfa.gov.il/mfa/go.asp?MFAH00qd0#app-40>> or <<http://www.nad-plo.org/fact/annex3.pdf>>.

25 Muscal, Tal and Lahoud, Lamia, 'Eitam suspends approval for PA well drillings', *Jerusalem Post*, 23 Oct. 2002.

26 E.g. Barghouti, Ihab, Personal communication, Ramallah, 27 Nov. 2002; and Cantour, Shmuel, Personal communication, Tel Aviv, Israel, 30 Apr. 2001.

cal action of agents should be analysed within the structural context in which it takes place.²⁷

Thus, while the level of technical understanding between the people participating in the work of the JWC is high, the Israelis as well as the Palestinians are situated in a structural context (meaning, for example, the ongoing political conflict) which affects what they can and cannot do. Indeed, the structures work as a sort of 'boundary' for action.²⁸ Still, the actors also affect the structures. For example, although almost all of the cooperation between Israel and the Palestinians has been suspended as a result of the Intifada, the shared understanding among the participants in the JWC – that it is imperative to continue to have a functioning joint mechanism for water issues between the parties – has resulted in cooperation. The meetings of the JWC and its subcommittees have continued in spite of the outside political structures pointing in another direction.

In terms of structures it is important to note that the structure–agency issue is a matter of power as well. Hay has pointed out that structures can be enabling as well as constraining. He maintains that structures provide resources and opportunities to the powerful while at the same time they constrain the weaker party.²⁹ This issue, which can be seen as an issue of asymmetry in power, is emphasized by the Palestinians as a constraining factor since it is, according to their view, possible for Israel to pressure them in the sphere of water because they are more powerful in terms of economic size, military strength and so on.³⁰ Still, Israel as well can be seen as being constrained by the international structures (meaning, for example, influence and pressure from the international community) which demand a resolution of the conflict, including a settlement of the water dispute.

To summarize, it is essential to be aware that the political structures (international and national) are important for an understanding of why actors act in the way they do. While the actors who are part of the JWC agree on technical aspects of project proposals that are put forward in

27 Hay, Colin, 'Structure and agency', in David Marsch and Gerry Stoker (eds), *Theory and Methods in Political Science* (London: Macmillan, 1995).

28 The structures are part of what was discussed in chapter 5 as the sanctioned discourse, which sets limits for what it is politically feasible to do in different arenas.

29 Hay, 'Structure and agency', pp. 205–6.

30 Jarrar, Ayman and Yousef Awayes, 'Water from conflict to cooperation: Palestine and Israel case', Paper presented at the UNESCO-GCI PCCP-Water for Peace Conference in Delft, 21 Nov. 2002.

the JWC, the structures sometimes constrain them from acting on a shared understanding. At the same time, they do sometimes act 'against' what may be seen as a constraining factor, for example, when the Palestinian and Israeli head of the JWC jointly called for water to be kept outside the violence of the Intifada. Thus actors and structures are mutually constitutive in the interactive process of the JWC.

6.3 The Israeli–Jordanian Joint Water Committee: institutionalized cooperation?

Like the Interim Agreement between Israel and the Palestinians, the Peace Agreement between Israel and Jordan stipulates that a Joint Water Committee should be established. The JWC is to be composed of three members from each side and be able to call in experts whenever it is deemed necessary.³¹ The JWC that was created is responsible for the implementation of the water clauses of the Peace Treaty. Thus, in order to be able to assess the pace and quality of the implementation of the treaty, it is relevant to study the work of the JWC.

Before embarking on an analysis of the actual work of the JWC it is important to view the history of Israeli–Jordanian water cooperation and coordination. Water has been portrayed by some as a reason for conflict and even war in the Jordan River Basin. However, authors who focus on the potential for war, apart from ignoring the ameliorating factor of virtual water, have also tended to neglect that something that might be called a water regime has been in place regulating the water relations between Israel and Jordan since the early 1950s. The common understanding, reached in UN-led talks that started in the 1950s, on the use of the disputed waters of the Jordan River Basin between Israel and Jordan during a period when they were *de jure* in a state of war, is a good example of a water regime that greatly reduced the tension between two adversaries.³² As such the water regime could

31 See Treaty of Peace between the State of Israel and the Hashemite Kingdom of Jordan, Article 6 and Annex II. The treaty is available at <<http://www.mfa.gov.il/mfa/go.asp?MFAH00pa0>>.

32 UNTSO (the United Nations Truce Supervision Organization), which was put in place to supervise the truce between the parties, was the umbrella that was used for the meetings. However, Haddadin (Personal communication with the author, Delft, The Netherlands, 20 Nov. 2002) maintains that what has been labelled the picnic table talks is in fact nothing new but just an increased use of the UN mechanism that was put in place in 1949 to supervise the truce.

be seen as an example of a CSBM.³³ Dinar argues that the USA viewed cooperation on water issues in the Jordan Basin as a tool for the creation of peace in the region.³⁴ Consequently, the realist argument that the interests of hegemons create regimes seems to have some bearing in this case. However, there was also a *demand* for the regime from the countries, which fits the neo-liberal argument, regarding the nature of coordination of the shared water resources.³⁵

Regardless of how the regime came about, it has provided a means to build trust between the states and has facilitated the development of friendly relations. Furthermore, the 1955 Johnston plan³⁶ for the water management in the Jordan River Basin, which was facilitated by a US team of experts, can be seen as a part of a water regime (or the beginning of a regime), despite the fact that it was not formally recognized by the states.³⁷ The plan has been used as a sort of baseline for water relations in the basin. It shall be noted that, while some of the recommendations in the Johnston Plan were adhered to, many were not, which is quite in contrast with what many of the textbooks on water in the Middle East say.

The water agreement between Israel and Jordan, which is a part of the Peace Agreement signed 1994, can be seen as having enhanced and formalized the regime cooperation between the two states. The treaty, however, stipulates the rights and obligations of the two parties, while the regime concerns mainly the actual behaviour of the parties to the regime. Keohane holds that international regimes should be distinguished from specific interstate agreements and argues that a major function of regimes is to facilitate the making of agreements.³⁸ Young, however, does not agree. He argues that if that view of regime analysis were adhered to it would merely resemble an analysis of explicit bargaining.³⁹ In

33 For a good discussion on CSBMs see Jones, Peter, *Towards a Regional Security Regime in the Middle East: Issues and Options* (Stockholm: Stockholm International Peace Research Institute (SIPRI), 1998).

34 Dinar, Shlomi, 'Negotiations and international relations: a framework for hydro-politics', *International Negotiation*, 5 (2000), pp. 378–9.

35 Haddadin, Munther, Personal communication, Delft, The Netherlands, 20 Nov. 2002.

36 See also section 3.4 above.

37 Wolf, A., 'Water for peace in the Jordan River watershed', *Natural Resources Journal*, 33 (1993), pp. 797–839.

38 Keohane, R., *After Hegemony* (Princeton, N.J.: Princeton University Press, 1984).

39 Young, O., *International Cooperation: Building Regimes for Natural Resources and the Environment* (New York: Cornell University Press, 1989).

line with the argument of Young, I view the Israeli–Jordanian water relations as a water regime even though a formal agreement is in place.

Consequently the work of the JWC and the implementation of the water clauses of the Peace Treaty should not be viewed as separate from the history of water cooperation and coordination. Even before the actual treaty, principles and norms for the water relations between the parties existed. *Principles* involve goal orientation and beliefs at a general level in areas such as the environment and security. *Norms* describe general rights and obligations which operate mainly on the level of issue areas but are still at a very general level. Hence the basics of the regime were in place before the peace negotiations started. In a fully-fledged regime there are also *rules* which are specific prescriptions and proscriptions for action that are often stated in a formal agreement such as the water clauses in the Israeli–Jordanian treaty. In addition, there are *decision-making procedures* in a regime, which are prevailing practices for making and implementing collective choices. These can be seen to be manifest in the form of the JWC and its procedures for taking decisions.⁴⁰

The ways in which the water-related parts of the Jordanian–Israeli Peace Treaty and the Palestinian–Israeli agreement are being implemented are similar in some senses but at the same time very different since in the former case there exists a final peace treaty while in the latter there is only the Interim Agreement.

Allan argues that the implementation of the water parts of the Israeli–Jordanian Peace Treaty is not unproblematic but is happening at a reasonable pace.⁴¹ Below the various aspects of implementation are discussed, both those that may be viewed as problematic and those that have been effectively implemented.

Among the issues with which the JWC has had to deal are a number that have caused disagreements and thus delays. According to Haddadin, there has been a 'slippage of dates' on the part of Israel in the implementation of its commitments to Jordan. For example, according to the agreement Jordan shall be entitled to equal amounts of water in relation to Israel from the lower Jordan River. However, in order to decide the exact amount a survey of the existing Israeli use had to be

40 For the ingredients of a regime see Levy, M. A., Young, O. R. and Zürn, M., 'The study of international regimes', *European Journal of International Relations*, 1 (1995), pp. 273–4.

41 Allan, Tony [J. A.], *The Middle East Water Question: Hydropolitics and the Global Economy* (London and New York: I. B. Tauris, 2001), p. 219.

conducted and agreement has not been reached about how to conduct it. Thus, the Jordanian argument is that Israel is deliberately delaying action that is needed as background for the implementation of the water clauses of the treaty. Furthermore joint studies on water resources that were to benefit data exchange financed by the European Union (EU) were, as seen from a Jordanian perspective, delayed in part by Israel through its bureaucratic procedures. Dureid Mahasneh, who was the Jordanian head of the JWC from 1996 to 1999, argues even that the Israelis were obstructing the implementation of the treaty.⁴² One of the heads of the JWC from Israel, Meir Ben-Meir, also maintained that there were problems in the implementation of the agreement and the work of the JWC, although even so both parties recognized that it was imperative that the committee stay in place.⁴³

Furthermore, Haddadin also attributes implementation problems to ineffectiveness on the Jordanian side, thus recognizing that Israel was not the only problem. While the donors, in particular the EU, acted fast in securing financial support for joint projects, there were sometimes disagreements over which firms should carry out studies and also delays in processing agreed terms of reference for consultancies owing to the bureaucratic procedures of the parties. In addition, work to identify the additional water of 50 mcm per year for the benefit of Jordan has not seen much progress.⁴⁴ This is because there is disagreement as to who should bear the cost of the additional water. According to Israel it is Jordan that should bear the cost since the water is for its benefit. Not surprisingly, Jordan does not agree.⁴⁵ While Jordan has proposed that the additional 50 mcm should be taken from Lake Tiberias, Israel has proposed a scheme for reclamation of the Jordan River coupled with desalinated water from the saline springs of the Lake Tiberias and Bissan area. Until this has been implemented Israel has agreed, on a temporary basis, to supply Jordan with 25–30 mcm per year of Tiberias water.⁴⁶

It should also be noted that, from a Jordanian perspective, the changes in the political scene in Israel which brought Likud to power in

42 Mahasneh, Dureid, Personal communication, Amman, Jordan, 9 Mar. 2002.

43 Ben Meir, Meir, Personal communication, Kfar Masorik, Israel, 29 Apr. 2001.

44 Haddadin, Munther, *Diplomacy on the Jordan: International Conflict and Negotiated Solution* (Boston, Mass. and London: Kluwer Academic, 2001), pp. 412–5.

45 Shamir, Uri, Personal communication, Haifa, Israel, 30 Apr. 2001.

46 el-Nazer, Hazim, 'The partition of water resources in the Jordan River Basin: history and current development', Paper presented at the Conference on Water in the Mediterranean Countries: Management Problems of a Scarce Resource, Naples, 4–5 Dec. 1997.

1996 also affected its water relations with Israel.⁴⁷ According to Haddadin the meetings became intermittent and less productive, although some studies were implemented. On technical matters, however, the working relations between Israel and Jordan still functioned reasonably well.⁴⁸

Having noted the problematic aspects of the implementation process, it is also important to discuss the positive aspects. For example, the canal for storage of Yarmuk water from Jordan in Lake Tiberias was built quickly and was inaugurated by King Hussein at the beginning of July 1995. However, as was discussed in section 4.5.2 on risk in the negotiations, there are no provisions for what to do when there is a drought. This is a serious issue for the parties. Apart from the problems of 1999 when Israel did not want to supply Jordan with what was stipulated (although it eventually did), there has been no problem in the transfer of water from Israel to Jordan.⁴⁹ There has been a fear on the Jordanian side that the quality of the water that Israel releases to it in the summer is of much worse quality than what it receives from Jordan in the winter (from the Yarmuk).⁵⁰ However, according to Jordanians involved in the JWC, who are responsible for the water that comes from Israel, the water released has been of high quality.⁵¹ The joint project to bring water from the Red Sea to the Dead Sea, announced on 1 September 2002 at the World Summit for Sustainable Development in Johannesburg, can also be counted as evidence of positive tendencies. The aim of the project is to reverse the decline in the water table of the Dead Sea.⁵²

The effectiveness of the regime between Israel and Jordan has been limited since conflicts between them (not over water) have forced them not to abide by the rules of the water regime at all times. That said, it is

47 Mahadin, Kamal, Personal communication, Amman, Jordan, 9 Mar. 2002; and Haddadin, *Diplomacy on the Jordan*, p. 414.

48 Alem, Zafer, Personal communication, Amman, Jordan, 10 Mar. 2002.

49 Alem, Personal communication, 10 Mar. 2002; Mahadin, Kamal, Personal communication, 9 Mar. 2002; El-Nazer, Hazem, Personal communication, Amman, Jordan, 11 Mar. 2002; and Haddadin, *Diplomacy on the Jordan: International Conflict and Negotiated Solution*, p. 414.

50 Trottier, Julie, *Hydropolitics in the West Bank and Gaza Strip* (Jerusalem: PASSIA, 1999), pp. 68–9.

51 Alem, Zafer, Personal communication, Amman, Jordan, 10 Mar. 2002 and El-Nazer, Hazem, Personal communication, Amman, Jordan, 11 Mar. 2002.

52 See <http://www.johannesburgsummit.org/html/whats_new/feature_story33.htm>. See also Mutaz, Mango, 'Future of the Dead Sea: history will judge us', *Jordan Times*, 18 Dec. 2002.

apparent in the agreement from 1994 that many of the principles existing on the international level, such as the provision not to cause 'significant harm', have been incorporated. Furthermore, a joint institution (the Joint Water Committee) has been established in order to implement and monitor the principles agreed upon. It is positive to see that emphasis has been put on cooperation in the maintenance of the common resource.

It is concluded that the regime is a rather strong one in terms of its robustness and resilience. The last time it was severely challenged was during the drought in 1998–2000, which produced a disagreement over allocations in periods of drought between Israel and Jordan (see also section 4.5.2). This was partly because no provisions had been made for drought in the agreement from 1994. The conflict was, however, resolved and the norms, rules and principles that existed in the water regime contributed to this end.

6.3.1 Implementation as seen from an actor–structure perspective: The Israeli–Jordanian case

Above it was concluded that neither an approach that is confined to a structural analysis of the problems at stake nor an approach that is solely actor-oriented will give us a satisfactory picture of why some items have been implemented and others have not with respect to the water clauses of the Israeli–Jordanian Peace Treaty. The concept of a *contextualization of agency* put forward by Hay⁵³ is central for an understanding of the work of the main cooperative and implementation-oriented forum – the JWC. This essentially implies that every action in the JWC should be analysed in its broader political context.

The working relations within the JWC, on a professional level, can be seen as functioning rather well.⁵⁴ This stems from a joint professional understanding of the importance of having a function in place that enables cooperation on the shared waters. At the same time the institutionalization of the JWC as an arena for discussion, coordination and cooperation can be seen as a structure that enables the professional understanding to grow.

⁵³ Hay, Colin, 'Structure and agency', p. 190

⁵⁴ Alem, Zafer, Personal communication, Amman, Jordan, 10 Mar. 2002; Mahadin, Kamal, Personal communication, Amman, Jordan, 9 Mar. 2002; El-Nazer, Hazem, Personal communication, Amman, Jordan, 11 Mar. 2002; and Ben Meir, Meir, Personal communication, Kfar Masarik, Israel, 29 Apr. 2001.

However, there are also 'external' structures that can effectively constrain or enable the work in the JWC and, consequently, the implementation of the agreement as well. As mentioned above, the change in government in Israel from Labour to Likud affected the work of the JWC and was perceived by the Jordanian side as having delayed implementation. While the actors within the JWC (from both parties) had a wider range of avenues for action under a Labour government in Israel, the room for manoeuvre decreased during the Likud period. Thus, the surrounding political environment effectively sets the boundaries for what has been feasible in the water sector.

When assessing the influence of structural and actor-related reasons for cooperation (or non-cooperative behaviour) over water, it is important to acknowledge the positive impact (from a pro-cooperation perspective) that the characteristics of the water relations regime between Israel and Jordan have had.

6.4 A water regime in the Jordan River Basin: a means for lowering tensions on shared transboundary water?

At the beginning of this chapter it was hypothesized that transboundary waters created a rationale for cooperation through an acknowledgement of the hydrological interdependence of the parties. From the analysis made in this chapter, centring mainly on the respective JWCs, it is concluded that the arrangements for handling the shared waters between Israel and Jordan and between Israel and the Palestinians can justifiably be called a water regime. It is clearly understood by all parties that the cooperative structures the JWCs provide are essential for the management of the water resources they share.⁵⁵

A good example, which shows that the importance of transboundary water cooperation is understood not only at the state-to-state level but also at the local level, can be found in the cross-border cooperation between the Israeli city of Emeq Hefer and the Palestinian city of Tulkarem. The 'green line'⁵⁶ divides those cities but their respective leaders

55 Alem, Personal communication, 10 Mar. 2002; Mahadin, Personal communication, 9 Mar. 2002; El-Nazer, Personal communication, 11 Mar. 2002; and Ben Meir, Meir, Personal communication, Kfar Masorik, Israel, 29 Apr. 2001.

56 The border between Israel (pre-1967) and the West Bank which was part of Jordan under the armistice line of 1948.

are engaged in an ambitious programme to manage their shared water.⁵⁷ Thus local initiatives also contribute to the building and further institutionalization of the water regime in the region.

6.4.1 Limitations of regime theory in the Jordan River Basin case

While regime theory contributes to our understanding of how water cooperation might come about it has, like any other theory, its limitations. An obvious objection to functionalist regime theory is that it is somewhat blind to the fact that water may be subordinate to much more important areas of dispute. The hierarchy of issues is important in this regard. A hydropolitical realist objection to the focus on water experts would be that it is the interests of the powerful that make regimes come about. Hence, the cooperation between Jordan and Israel would be a result rather of US interests than of anything else. Furthermore, Kütting argues that regime theory concentrates too much on action and behaviour and thereby misses the wider social and historical process.⁵⁸ Thus, while a regime exists, it is not an all-encompassing explanation but rather a way through which insights into the institutional aspects of the water cooperation in the Jordan Basin are to be found.

Considering the role of experts and epistemic communities, it is debatable whether the experts exert such a great influence as epistemic communities theory claims.⁵⁹ Furthermore, in a world where policy makers increasingly tend to consult scientific experts, there is also a growing scepticism about their expertise, especially since complex issues are often characterized by both social and scientific controversy.⁶⁰

57 Itzkovitz, Nahum, Personal communication, Antalya, Turkey, 2 Nov. 2002; and Feitelson, Eran, Personal communication, Jerusalem, 24 May 2001.

58 Kütting, Gabriella, *Environment, Society and International Relations: Towards More Effective International Agreements* (London and New York: Routledge, 2000), pp. 19–22.

59 The problems of the epistemic communities approach, which gives experts a strong role in the formation of regimes, were discussed in chapter 5.4.

60 Corell, Elisabeth, *The Negotiable Desert: Expert Knowledge in the Negotiations of the Convention to Combat Desertification*, Linköping Studies in Art and Science (Linköping: Linköping University, 1999).

6.5 Conclusions

The focus of analysis in this chapter has been on the actual implementation of the agreements (both final and interim) between the parties in the Jordan River Basin. The case of Israel and the Palestinians is different from the Israeli–Jordanian case in that the agreement to be implemented is an interim one, while Israel and Jordan are working with the implementation of a final agreement.

Within an overall actor–structure theoretical framework, regime theory has been used to analyse the implementation process, which has mainly taken place within the respective Joint Water Committees. It is concluded that it is imperative to analyse the actions of actors in the committees within their proper structural context, which means that an account of linkages between water and other political issues have been incorporated into the analysis.

With regard to the implementation of the various parts of the agreements it is concluded that they are often being implemented somewhat painfully. That said, it is also evident that in the Israeli–Palestinian case many parts of the interim agreement awaiting implementation are being delayed despite a general understanding on part of the professionals (among experts) that implementation should be carried through.⁶¹ Furthermore, while the ambiguities that exist in the agreements are useful when trying to reach an agreement, they work as obstacles in the post-agreement phase when they are to be implemented. For example, the lack of provision for drought in the Israeli–Jordanian agreements has served to create tension between the parties and has thus tested the robustness of the agreement. It is concluded that the power asymmetry between the parties, which is particularly evident in the case of Israel and the Palestinians, effectively gives Israel the upper hand in the decisions with regard to the implementation of the agreements.

Furthermore, it is noted that, in comparison, the Israeli–Jordanian cooperation and implementation of the agreement can be described as fairly smooth while the Israeli–Palestinian cooperation and implementation of the Interim Agreement have encountered obstacles. These obstacles cannot be attributed to problems of cooperation on a professional level. They are rather the result of the surrounding political cir-

61 Politically sensitive issues, such as the locations for the drilling of Palestinian wells in the West Bank, are generally blocked by Israel for hydrological reasons but it seems that there are often political reasons for those decisions. This is also unofficially acknowledged by Israeli officials.

cumstances which are much more sensitive and problematic in the case of Israel and the Palestinians than in the case of Israel and Jordan.

In spite of the problems in implementation there exists a kind of contained mechanism that guides the action of the parties. This can be called a water regime. While this does not imply that there are no problems in the sector, it is concluded that the evolving principles, norms, rules and decision-making procedures resemble a water regime. In addition, during times of pressure on the regime, such as the drought in 1999, which resulted in strained relations between Israel and Jordan, or the Intifida between Israel and the Palestinians that started in September 2000, the water regime has showed robustness and resilience although its effectiveness has been hampered.

Hence it is concluded that the international water regimes that exist might be seen as a conflict-mitigating factor since they promote basin-wide interstate cooperation and thereby increase water security. The analysis of the water cooperation in the Jordan River Basin through the prism of regime theory has been helpful in explaining why cooperation has occurred in spite of the significant political conflict. When a convergence of values has occurred within a regime and the cooperation has been institutionalized it is more difficult than one might think to reverse or end this cooperation.

CHAPTER 7

Water as a means for cooperation: concluding comments

7.1 The research questions revisited

The focus of this thesis is on foreign policy decision making in circumstances of water scarcity. In particular the study focuses on how the issue of water has been treated in the interstate negotiations within the peace process between Israel and the Palestinians, and between Israel and Jordan. In addition, the post-agreement phase is analysed.

The main aim of the thesis, as outlined in chapter 1, is to explain why and under what conditions cooperation between Israel and Jordan and between Israel and the Palestinian Authority has occurred and how it has functioned in the water sector. In order to address the main research problem I investigated two sets of questions.

First, how does the interplay between actors and structures affect the negotiation process and its outcome and in particular, what is the role of scientific experts in this process?

On the basis of an overall actor–structure framework of analysis, the factors that were important in affecting the process and the outcome have been identified. It is concluded that the negotiations on water, both between Israel and the Palestinians and between Israel and Jordan, have been intimately linked to the other issues on the negotiating table. Furthermore, water has been subordinate to other politically more salient questions in the negotiations. Naturally, there have also been trade-offs between different issues in the negotiations.

In terms of how the structures have affected the water negotiations it is evident that the larger events on the international arena with the end of the Cold War in the early 1990s presented a window of opportunity for the states in the Middle East and for outside parties as well to work for a settlement of the Arab–Israeli conflict. While such a development was something that some leaders of the region had long wanted, it had not been politically feasible to explore such an option earlier. It is concluded that the transboundary nature of shared water-

courses, which does not fit the traditional security discourses, presented an opportunity to the parties in the Jordan River Basin for coordination and cooperation. Within the discourse on transboundary waters in the region there is an understanding that cooperative management is the best option since it represents a positive-sum game rather than a zero-sum game. At the same time it is also found that this knowledge is not always translated into action aimed at promoting such cooperation. Using realist reasoning it is argued that the interstate structures in the basin, with Israel as a regional hegemon being in a position to largely dictate what options are acceptable or not, imply that cooperation has not always taken place. Applying the idealist/functionalist school of thought, the basic water cooperation and coordination that have taken place can be attributed to the understanding among the parties in the basin that their hydrological interdependence makes cooperation necessary.

The differences between the Israeli–Jordanian negotiations and the Israeli–Palestinian negotiations should also be noted. While between Jordan and Israel there had been a tacit understanding on many issues even before the Peace Treaty was signed in 1994, the conflict between the Palestinians and Israel is still very much alive. The agreement between Jordan and Israel can be seen as a formalization of the already working relations between the two states in which water was a central part. As a result of the more strained relations between the Palestinians and Israel they have not yet reached the final status negotiations in which agreement is supposed to be reached on the hard questions, including the water issue. Thus the surrounding political issues of outstanding importance, such as the Jerusalem question, the settlements and the refugee problem, which are major elements in Israeli–Palestinian relations, have not been nearly as conducive to agreement as was the case between Israel and Jordan.

With regard to structural features it is also important to note that the decision making on the shared waters cannot be seen as something separate which a state or entity does as a unitary actor. It is found that, in order to fully understand the water policies the respective parties have chosen, it is necessary to include features of the domestic discourse, such as the influence of interest groups, ideology and culture. The ‘sanctioned discourse’ sets the ‘boundaries’ for what it is feasible to do and thus, to a great extent, dictates the room for manoeuvre that the decision makers have. For example, in the case of Israel there exists a form of a farming–military (Israeli Defence Forces) discourse coali-

tion, which nurtures the view that continued high allocations of water to agriculture are important for both cultural and strategic reasons. This coalition to a great extent determines what objectives or options can and cannot be pursued in Israel's water relations with the Palestinians and Jordan.

The changes that have taken place on the Israeli political scene during the period covered by this research, during which there have been both Labour-led and Likud-led government coalitions, also provided an opportunity to analyse how the different parties acted with regard to Israel's water relations with its neighbours. While participants in the JWCs on the Jordanian and Palestinian sides acknowledged that it was harder to get projects approved when Likud was in power than when Labour was in power in Israel, it is at the same time concluded that the changes of government in Israel did not alter the cooperation and coordination to any significant extent. I conclude that this can be attributed to the development of a water regime which had taken place in the basin. Indeed, when cooperation and coordination over water have started it is more difficult than might be thought to reverse it.

Specific emphasis in the research has been put on analysing the role of experts, who were hypothesized as being central actors in the negotiation process. In the epistemic communities approach it is argued that if there is a scientific consensus on an issue there is fertile ground for the creation of a regime. It was hypothesized that cooperation on water might be the result if agreement exists on certain water-related issues of shared importance for the parties in the basin. While there is, to a great extent, agreement among scientists from all the parties on the necessity to manage the transboundary waters in the Jordan River Basin jointly, it is concluded that this by itself does not constitute solid ground for the institutionalization of a water regime in the region. However, scientific advice to negotiators and politicians is helpful since it enables them to reduce uncertainty. At the same time it is found that politicians and negotiators only take the advice of scientists as long as it fits their political agenda. Thus, scientific advice needs to be politically feasible in order to be incorporated into policy. Arguing along the lines of Lidskog and Sundqvist, who question the epistemic communities approach, I conclude that science and policy are co-produced.¹ Consequently the influence of scientific expertise in bringing about international cooperation on water in the Jordan River Basin is limited.

¹ Lidskog, Rolf and Sundqvist, Göran, 'The role of science in environmental regimes: the case of the LRTAP', *European Journal of International Relations*, 8/1 (forthcoming).

The *second* set of questions dealt with the post-agreement phase and the quality of the cooperation after the agreements – the 1994 Peace Treaty between Israel and Jordan, and the 1995 Interim Agreement between Israel and the Palestinians – were signed. Drawing on regime analysis, an assessment of the implementation process concentrating particularly on the institutions created for coordination and cooperation – the respective Joint Water Committees and their subcommittees – has been carried out. It was hypothesized that hydrological interdependence, that is, the transnational nature of international river basins, provides a rationale for cooperation. Using the actor–structure framework as a ‘mindset’ with which to approach the issue, regime theory has been used to analyse the implementation process in the respective Joint Water Committees. I conclude that it is imperative to analyse the actions of actors in the committees within the structural context in which they are bound to act. Even though on a professional level the cooperation in both the Israeli–Palestinian JWC and the Israeli–Jordanian JWC is functioning fairly well, there are obstacles to the implementation of what has been agreed upon. These can be attributed to three things. First, the surrounding political circumstances (predominantly with regard to Israel and the Palestinians) affect and delay implementation. For example, while Israeli objections to the drilling of Palestinian wells can be based on hydrological reasons, Israeli officials at the same time acknowledge unofficially that there are, on occasion, political reasons for these objections. In this regard expert advice can be a tool for legitimizing political decisions. Second, there exist ambiguities in the agreements that were helpful in the efforts to reach an agreement, since each party could have its own interpretation of certain paragraph, but which create problems and delays in the implementation phase. Third, the power asymmetry between the parties, with Israel having an upper hand over both Jordan and the Palestinians, implies that Israel has a larger influence in the implementation phase as well as during the negotiations. It is concluded that Israel is using this position to block projects to which it is, mostly for political reasons, opposed.

In the face of the problems in implementation it is nevertheless concluded that there exists something that can be called a water regime in the Jordan River Basin. This is evident in that a development and evolution of principles, norms, rules and decision-making procedures in the basin, which resemble a water regime, has taken place. Furthermore, the water regime has proved to be rather robust and resilient, as is exemplified by the facts (a) that cooperation and coordination are

continuing (if only on a basic level) between Israel and the Palestinians in spite of the Intifada that started in autumn 2000 and (b) that Jordan and Israel have managed to solve problems that have surfaced, for example, when there was a dispute over allocations during the drought in 1999, through communication and dialogue. Thus the water regime that exists in the basin can be seen as a conflict-mitigating factor that promotes interstate water cooperation and thereby increases water security. Furthermore, and as exemplified by the joint Israeli–Palestinian project on how to manage their shared aquifers, a common understanding among experts exists on how to manage the resource.

An overall and important conclusion, both on a theoretical level and for the research questions addressed, is that structures prove to have a more important role than actors. The concept of the *situated actor*² is illustrative. Hay argues that the actions an actor is able to pursue are simultaneously determined by his/her strategy and intention and the structural context within which he/she is situated. In this research it is concluded that the effect of the strategy and intention of the actor on the process and outcome is rather limited while the surrounding structural context is more significant. It is the structured features, such as the sanctioned discourse, which in the end determine what actions are feasible.

To summarize, I conclude that both the water negotiations and the subsequent implementation of what was agreed upon is largely guided and decided by what is politically feasible.

7.2 Main contributions

The thesis contributes to the body of research on water in the Jordan River Basin in three ways.

First, it provides an empirical overview of the process of implementing the water elements of the Peace Treaty between Israel and Jordan and of Article 40 (which deals with water) of the Interim Agreement between Israel and the Palestinians. Connected with and in addition to that empirical overview is the analysis of the work that has taken place within the two Joint Water Committees and their respective subcommittees.

The research is of a qualitative nature and has used interviews extensively. This approach is particularly useful in analysing complex

² See Hay, Colin, 'Structure and agency', in David Marsch and Gerry Stoker (eds), *Theory and Methods in Political Science* (London: Macmillan, 1995), p. 190.

procedures such as the implementation of the respective water agreements, which takes place mostly in the non-public sphere. Since there is practically no written information on the water negotiation process or on the implementation process the interviews have brought new knowledge regarding these processes out into the open. Related to the empirical overview is the analysis of why the agreements turned out the way they did. Many analyses of the water situation in the Jordan River Basin focus on the content of the agreements but few thorough analyses have been made which attempt to identify the factors that have influenced and determined why the agreements turned out they way they did. This research attempts to capture the process as well as highlight the important role politics plays in the outcome of water negotiations and in the implementation phase. Furthermore, the conclusion reached in this thesis – that water is linked, and even subordinate, to other issues in the negotiations and that trade-offs are made between water and other issues in the negotiations – is seldom made in the water literature.³ Consequently, the analysis in this thesis of the linkages between water and other issues should contribute to the extensive work on water in the Jordan River Basin that has been done previously.

Second, the thesis has analysed the role scientific experts play in the water negotiations using regime theory and theories for the relationship between science and politics studies. Expert advice has been used in the negotiations and can be said to be important in that it reduces uncertainty for decision makers as well as providing tools with which to legitimize political decisions. Nevertheless, it is concluded that the advice provided by the experts is not adopted automatically. Acceptance is dependent on whether recommendations are politically feasible or not. For example, while some experts have proposed that the Palestinians should emphasize the principle of equitable utilization rather than focus strongly on gaining water rights, this has not been possible since that advice does not fit the sanctioned discourse. Thus, the contribution to the understanding of the role of experts in the water affairs in the Jordan River Basin is that their advice must be viewed within the surrounding political context.

Third, the thesis contributes to the understanding of why the parties in the Jordan River Basin have chosen cooperative strategies rather than resorting to conflictual behaviour to handle their shared waters.

³ A notable exception is Tony Allan. See e.g. Allan, Tony [J. A.], *The Middle East Water Question: Hydropolitics and the Global Economy* (London and New York: I. B. Tauris, 2001).

While some of the recent literature on water in the Jordan River Basin has concluded that water has led to cooperation rather than conflict, the discussion of why this has been the case is somewhat limited. By analysing the water relations in the Jordan River Basin through the lens of regime theory this thesis contributes to the understanding of why cooperative behaviour has occurred. It is important to keep in mind that further development of the regime theory that relates to water and its application to the water relations in the Jordan River Basin would be beneficial.

In addition, the interdisciplinary approach used in the study, in which international relations theory and political science perspectives have been used side by side with sociology and theories of the relationship between science and politics, is another contribution of the thesis, since such an approach is rarely taken in the literature on water in the Jordan River Basin. While the knowledge presented in this thesis is context-specific in that it deals with the Jordan River Basin it should nevertheless be noted that the insights gained on, for example, the important role of politics in the water discourse and how water is linked to other political issues are relevant for the analysis of situations in other international river basins.

7.3 Policy relevance

In particular, two areas of importance from a policy perspective are identified through the research.

First, the research shows that water (and water cooperation) is intimately linked to politics. For those who come from a political science background this is perhaps to state the obvious, but from a water practitioner's perspective it is seldom well understood. While donor agencies and international organizations sometimes see water as separated from other fields, this research suggests that such an approach will lead to misunderstandings and disappointments, for example, with regard to why support activities do not accomplish the expected results in the estimated time. Furthermore, and as has been pointed out by Waterbury in the context of the Nile Basin,⁴ the development of water policy with regard to the shared waters of the respective states is a very com-

⁴ Waterbury, John, *The Nile Basin: National Determinants of Collective Action* (New Haven, Conn. and London: Yale University Press, 2002), pp. 26–7.

plex process and is determined by considerations stemming from both the domestic and the international political arena.

Second, observations have been made with regard to the evolution of cooperation on transboundary waters. My conclusion is that by long-term support to processes of establishing cooperation on a shared water resource donor agencies and international organizations can play an important role. In the Israeli–Jordanian case it is evident that the role of the UN Truce Supervision Organization (UNTSO), which worked as an ‘umbrella’ for discussions on water coordination in spite of the absence of a peace agreement, was important. The activities, involving many meetings between Israelis and Jordanians, started as early as the 1950s and continued up until the Peace Treaty in 1994. As in this case, the process of developing a water regime is often a long one and it meets setbacks on occasions. It must be remembered that the institutionalization of cooperation requires time (and not just a signed agreement). The financial support international donor institutions could provide to bring about water cooperation is seldom rewarding in the beginning and can be seen as a high-risk investment. However, if cooperation is achieved and institutionalized the rewards are great since cooperation and coordination over a shared body of water are prerequisites for many other water development projects as well as rural development projects. The involvement of donor institutions should not be too far from the national interests of their clients (the riparians) but should stimulate collective action, albeit stopping short of trying to impose it. Thus for a donor or organization to engage in building cooperative structures in a shared river basin demands courage and a vision that will have to go beyond the lifetime of a single project.

7.4 Areas for future research

Analysis of the negotiation process with regard to water in the Jordan River Basin and the subsequent implementation process raises a number of new and potentially interesting avenues for further research. Three main areas are identified.

First, as outlined in section 1.4, the study does not include Syria and Lebanon, even though it would have been logical from a hydrological point of view to include them, since they can be seen as part of the Jordan River Basin. However, the negotiations between Israel and Syria and Israel and Lebanon have not progressed as much as those between Israel and the Palestinians and Israel and Jordan, and limitations of space

made it impossible to include them. An approach similar to that used in this thesis, in which theories of the relationship between science and politics as well as sociological perspectives including risk theory are used, could offer interesting insights on whether there is agreement among Lebanese and Syrian scientific experts as well regarding the need for joint management of the Jordan River Basin. Furthermore, it is concluded in this thesis that the power asymmetry effectively gives Israel an upper hand with regard to the waters it shares with Jordan and the Palestinians. Could this also be argued to be the case with regard to the shared waters between Syria and Jordan? Is Syria using its position as an upstream riparian as well as the fact that it is militarily stronger than Jordan for its own benefit over water relations? And what are the linkages between water and other political issues in this case?

Second, in the global development debate the concept of global/regional public goods has received increased attention. Questions have been raised as to whether it is relevant to look at interstate water management issues from a global/regional public goods perspective, predominantly from a development financing perspective. A study commissioned by the Swedish Ministry of Foreign Affairs acknowledges that political feasibility is key to the development of institutional arrangements to handle transboundary water management.⁵ While this thesis is not concerned with development financing per se, it acknowledges the importance of functioning institutional arrangements. A key issue that necessitates further research is whether it is possible to promote politically feasible environments and if so, how this should be done. Is donor funding in the form of process financing (which implies a long-term stable financing of support structures) a key, or is it better to try to build on the scientific consensus – that transboundary waters ought to be managed jointly? This thesis suggests that the latter alternative is not enough.

Finally, and as discussed in section 6.4, local cross-border cooperation over water occurs between the Israeli city of Emeq Hefer and the nearby Palestinian city of Tulkarem which are separated by the 'green line'. An interesting question for further research is whether such low-level cooperation can percolate up to the state level and further promote interstate cooperation. In addition, can islands of local cooperation be seen as part of a water regime that can have spillover effects to other political areas between the neighbours?

⁵ See Nicol, A., van Steenbergen, F. et al., *Transboundary Water Management as an International Public Good*, Development Financing 2000 Study 2001:1 (Stockholm: for the Swedish Ministry for Foreign Affairs, 2001).

APPENDIX 1

List of people interviewed

Israelis

Arlosoroff, Shaul, Water Advisor, Tel Aviv, 1 May 2001

Ben-Meir, Meir, Water Commissioner in Israel 1977–81 and 1996–2001, Israeli Head of the Joint Water Committees with the Palestinians and Jordan, Kfar Masorik, Israel, 29 April 2001

Bitan, Dan, former Deputy Director of the Harry Truman Institute for the Advancement of Peace, Hebrew University of Jerusalem, Jerusalem, 1 May 2001

Cantour, Shmuel, Technical Advisor, Technical Subcommittee between Israel and the Palestinians, Tel Aviv, Israel, 30 April 2001

Feitelson, Eran, Professor, Hebrew University of Jerusalem, Jerusalem, 24 April 2001

Golani, Zeev, Advisor to the Water Commissioner, Tel Aviv, Israel, 23 April 2001

Herman, Oded, Israeli Defence Forces Regional Co-ordinator for the West Bank and Gaza, member of the Joint Water Committee, Antalya, Turkey, 2 November 2002

Kliot, Nurit, Professor, Haifa University, Jerusalem, 2 May 2001

Itzkovitz, Nachum, Mayor of Emek Hefer Antalya, Turkey, 2 November 2002

Shamir, Uri, Professor, Technion, Haifa University and Israeli water negotiator, Haifa, Israel, 30 April 2001

Soffer, Arnon, Professor, Haifa University, Haifa, Israel, 30 April 2001

Zaslavsky, Dan, Professor, Technion, Haifa, Israeli Water Commissioner 1992, Haifa, Israel, 30 April 2001

Palestinians

Abed Rabbo, Alfred, Professor, Betlehem University, Antalya, Turkey, 1 November 2002

Aliewi, Amjad, member of the Palestinian Water Committee for Final Status Negotiations, Amman, Jordan, 9 March 2002

Assaf, Karen, Water Advisor, Palestinian Water Authority, Amman, Jordan, 9 March 2002

Attili, Shaddad, Policy Adviser, Water and Environment, Negotiations Affairs Department, Palestinian Liberation Organization, Amman, Jordan, 9 March 2002

El-Sharif, Nabil, Head, Palestinian Water Authority, Water Negotiator and Palestinian Head of the Joint Water Committee, Gaza City, 26 November 2002

Ihab Barghouti, Palestinian Water Authority, member of the Joint Water Committee, Ramallah, 27 November 2002

Jarrar, Ayman, Director, General Director for Regulatory Affairs, Palestinian Water Authority, Delft, The Netherlands, 22 November 2002

Jeusi, Anan, Professor, An-Najah University, Amman, Jordan, 9 March 2002

Shehadeh, Rami, Legal Advisor, Water Resources, Negotiations Affairs Department, Palestinian Liberation Organization, London, 11 December 2002

Tammimi, Abdul Rahman, Professor, Palestinian Hydrology Group, Ramallah, 25 November 2002

Jordanians

Abu-Sharar, Taleb, Professor, Hashemite University, Zarqa, Zarqa, Jordan, 7 March 2002

Alem, Zafer, Director General, Jordan Valley Authority, member of the Water Negotiation team and member of Joint Water Committee, Amman, Jordan, 10 March 2002

Al-Khasawneh, Awn, Legal expert and negotiator, The Hague, Netherlands, 27 November 2001

Battikhi, Anwar, President, Hashemite University, Zarqa, Zarqa, Jordan, 7 March 2002

El-Nazer, Hazim, Minister of Water and Irrigation, member of the Water Negotiation team, Amman, Jordan, 11 March 2002

Ghezawi, Suleyman, Ministry of Water and Irrigation and Chairman of the Farming Association, Amman, Jordan, 10 March 2002

Haddadin, Munther, former Minister of Water and Irrigation, Water Negotiator and former Head of the Jordan Valley Authority, Delft, The Netherlands, 20 November 2002

Hussein, Iyad, Hashemite University, Zarqa, Zarqa, Jordan, 7 March 2002

Appendix 1

Mahadin, Kamal, former Minister of Water and Irrigation, Amman, Jordan, 9 March 2002

Mahasneh, Dureid, Water and Environment negotiator, member of the Joint Water Committee, Amman, Jordan, 9 March 2002

Salameh, Elias, Professor, University of Jordan, Amman, Jordan, 6 March 2002

Seder, Nayef, Director of Water Resources, Jordan Valley Authority, Amman, Jordan, 6 March 2002

Tarawneh, Tarek, Water resources consultant, Zarqa, Jordan, 8 March 2002

International

Allan, Tony, Professor, University of London, School of Oriental and African Studies, London, UK, 23 October 2001 and Linköping, Sweden 6 March 2003

McCaffrey, Stephen, Professor of International Water Law and Advisor to the Palestinians through Negotiation Support Unit, Adam Smith Institute, London, UK, 12 December 2002

Merret, Stephen, Water economist, London, UK, 9 April 2002

Phillips, David, Water and Environment Advisor to the Palestinians through Negotiation Support Unit, Adam Smith Institute, London, UK, 12 December 2002

APPENDIX 2

Treaty of peace between the state of Israel and the Hashemite Kingdom of Jordan, October 26, 1994

ARTICLE 6

WATER

With the view to achieving a comprehensive and lasting settlement of all the water problems between them:

1. The Parties agree mutually to recognise the rightful allocations of both of them in Jordan River and Yarmouk River waters and Araba/Arava ground water in accordance with the agreed acceptable principles, quantities and quality as set out in [Annex II](#), which shall be fully respected and complied with.
2. The Parties, recognising the necessity to find a practical, just and agreed solution to their water problems and with the view that the subject of water can form the basis for the advancement of co- operation between them, jointly undertake to ensure that the management and development of their water resources do not, in any way, harm the water resources of the other Party.
3. The Parties recognise that their water resources are not sufficient to meet their needs. More water should be supplied for their use through various methods, including projects of regional and international co-operation.
4. In light of paragraph 3 of this Article, with the understanding that co- operation in water-related subjects would be to the benefit of both Parties, and will help alleviate their water shortages, and that water issues along their entire boundary must be dealt with in their totality, including the possibility of trans-boundary water transfers, the Parties agree to search for ways to alleviate water shortage and to co- operate in the following fields:
 - a. development of existing and new water resources, increasing the water availability including co- operation on a regional basis as appropriate, and minimising wastage of water resources through the chain of their uses;
 - b. prevention of contamination of water resources;
 - c. mutual assistance in the alleviation of water shortages;

- d. transfer of information and joint research and development in water-related subjects, and review of the potentials for enhancement of water resources development and use.
5. The implementation of both Parties' undertakings under this Article is detailed in Annex II.

ISRAEL-JORDAN PEACE TREATY
ANNEX II
Water and Related Matters

Pursuant to Article 6 of the Treaty, Israel and Jordan agreed on the following Articles on water related matters:

Article I: Allocation

1. Water from the Yarmouk River
 - a. Summer period - 15th May to 15th October of each year. Israel pumps (12) MCM and Jordan gets the rest of the flow.
 - b. Winter period - 16th October to 14th May of each year. Israel pumps (13) MCM and Jordan is entitled to the rest of the flow subject to provisions outlined hereinbelow: Jordan concedes to Israel pumping an additional (20) MCM from the Yarmouk in winter in return for Israel conceding to transferring to Jordan during the summer period the quantity specified in paragraphs (2.a) below from the Jordan River.
 - c. In order that waste of water will be minimized, Israel and Jordan may use, downstream of point 121/Adassiya Diversion, excess flood water that is not usable and will evidently go to waste unused.
2. Water from the Jordan River
 - a. Summer period - 15th May to 15th October of each year. In return for the additional water that Jordan concedes to Israel in winter in accordance with paragraph (1.b) above, Israel concedes to transfer to Jordan in the summer period (20) MCM from the Jordan River directly upstream from Deganya gates on the river. Jordan shall pay the operation and maintenance cost of such transfer through existing systems (not including capital cost) and shall bear the total cost of any new transmission system. A separate protocol shall regulate this transfer.
 - b. Winter period - 16th October to 14th May of each year. Jordan is entitled to store for its use a minimum average of (20) MCM of the floods in the Jordan River south of its confluence with the Yarmouk (as outlined in Article II below). Excess floods that are not usable and that will otherwise be wasted can be utilised for the benefit of the two Parties including pumped storage off the course of the river.

- c. In addition to the above, Israel is entitled to maintain its current uses of the Jordan River waters between its confluence with the Yarmouk and its confluence with Tirat Zvi/Wadi Yabis. Jordan is entitled to an annual quantity equivalent to that of Israel, provided however, that Jordan's use will not harm the quantity or quality of the above Israeli uses. The Joint Water Committee (outlined in Article VII below) will survey existing uses for documentation and prevention of appreciable harm.
- d. Jordan is entitled to an annual quantity of (10) MCM of desalinated water from the desalination of about (20) MCM of saline springs now diverted to the Jordan River. Israel will explore the possibility of financing the operation and maintenance cost of the supply to Jordan of this desalinated water (not including capital cost). Until the desalination facilities are operational, and upon the entry into force of the Treaty, Israel will supply Jordan (10) MCM of Jordan River water from the same location as in (2.a) above, outside the summer period and during dates Jordan selects, subject to the maximum capacity of transmission.

3. Additional Water

Israel and Jordan shall cooperate in finding sources for the supply to Jordan of an additional quantity of (50) MCM/year of water of drinkable standards. To this end, the Joint Water Committee will develop, within one year from the entry into force of the Treaty, a plan for the supply to Jordan of the abovementioned additional water. This plan will be forwarded to the respective governments for discussion and decision.

4. Operation and Maintenance

- a. Operation and maintenance of the systems on Israeli territory that supply Jordan with water, and their electricity supply, shall be Israel's responsibility. The operation and maintenance of the new systems that serve only Jordan will be contracted at Jordan's expense to authorities or companies selected by Jordan.
- b. Israel will guarantee easy unhindered access of personnel and equipment to such new systems for operation and maintenance. This subject will be further detailed in the agreements to be signed between Israel and the authorities or companies selected by Jordan.

Article II: Storage

- 1. Israel and Jordan shall cooperate to build a diversion/storage dam on the Yarmouk River directly downstream of the point 121/Adassiya Diversion. The purpose is to improve the diversion efficiency into the King Abdullah Canal of the water allocation of the Hashemite Kingdom of Jordan, and possibly for the diversion of Israel's allocation of the river water. Other purposes can be mutually agreed.

2. Israel and Jordan shall cooperate to build a system of water storage on the Jordan River, along their common boundary, between its confluence with the Yarmouk River and its confluence with Tirat Zvi/ Wadi Yabis, in order to implement the provision of paragraph (2.b) of Article I above. The storage system can also be made to accommodate more floods; Israel may use up to (3) MCM/year of added storage capacity.
3. Other storage reservoirs can be discussed and agreed upon mutually.

Article III: Water Quality and Protection

1. Israel and Jordan each undertake to protect, within their own jurisdiction, the shared waters of the Jordan and Yarmouk Rivers, and Arava/Araba groundwater, against any pollution, contamination, harm or unauthorized withdrawals of each other's allocations.
2. For this purpose, Israel and Jordan will jointly monitor the quality of water along their boundary, by use of jointly established monitoring stations to be operated under the guidance of the Joint Water Committee.
3. Israel and Jordan will each prohibit the disposal of municipal and industrial wastewater into the course of the Yarmouk or the Jordan Rivers before they are treated to standards allowing their unrestricted agricultural use. Implementation of this prohibition shall be completed within three years from the entry into force of the Treaty.
4. The quality of water supplied from one country to the other at any given location shall be equivalent to the quality of the water used from the same location by the supplying country.
5. Saline springs currently diverted to the Jordan River are earmarked for desalination within four years. Both countries shall cooperate to ensure that the resulting brine will not be disposed of in the Jordan River or in any of its tributaries.
6. Israel and Jordan will each protect water systems in its own territory, supplying water to the other, against any pollution, contamination, harm or unauthorized withdrawal of each other's allocations.

Article IV: Groundwater in Emek Ha'arava/Wadi Araba

1. In accordance with the provisions of this Treaty, some wells drilled and used by Israel along with their associated systems fall on the Jordanian side of the borders. These wells and systems are under Jordan's sovereignty. Israel shall retain the use of these wells and systems in the quantity and quality detailed in an Appendix to this Annex, that shall be jointly prepared by 31st December, 1994. Neither country shall take, nor cause to be taken, any measure that may appreciably reduce the yields or quality of these wells and systems.
2. Throughout the period of Israel's use of these wells and systems, replacement of any well that may fail among them shall be licensed by Jordan in accordance with the laws and regulations then in effect. For this purpose,

the failed well shall be treated as though it was drilled under license from the competent Jordanian authority at the time of its drilling. Israel shall supply Jordan with the log of each of the wells and the technical information about it to be kept on record. The replacement well shall be connected to the Israeli electricity and water systems.

3. Israel may increase the abstraction rate from wells and systems in Jordan by up to (10) MCM/year above the yields referred to in paragraph 1 above, subject to a determination by the Joint Water Committee that this undertaking is hydrogeologically feasible and does not harm existing Jordanian uses. Such increase is to be carried out within five years from the entry into force of the Treaty.
4. Operation and Maintenance
 - a. Operation and maintenance of the wells and systems on Jordanian territory that supply Israel with water, and their electricity supply shall be Jordan's responsibility. The operation and maintenance of these wells and systems will be contracted at Israel's expense to authorities or companies selected by Israel.
 - b. Jordan will guarantee easy unhindered access of personnel and equipment to such wells and systems for operation and maintenance. This subject will be further detailed in the agreements to be signed between Jordan and the authorities or companies selected by Israel.

Article V: Notification and Agreement

1. Artificial changes in or of the course of the Jordan and Yarmouk Rivers can only be made by mutual agreement.
2. Each country undertakes to notify the other, six months ahead of time, of any intended projects which are likely to change the flow of either of the above rivers along their common boundary, or the quality of such flow. The subject will be discussed in the Joint Water Committee with the aim of preventing harm and mitigating adverse impacts such projects may cause.

Article VI: Co-operation

1. Israel and Jordan undertake to exchange relevant data on water resources through the Joint Water Committee.
2. Israel and Jordan shall co-operate in developing plans for purposes of increasing water supplies and improving water use efficiency, within the context of bilateral, regional or international cooperation.

Article VII: Joint Water Committee

1. For the purpose of the implementation of this Annex, the Parties will establish a Joint Water Committee comprised of three members from each country.
2. The Joint Water Committee will, with the approval of the respective governments, specify its work procedures, the frequency of its meetings, and the

Appendix 2

details of its scope of work. The Committee may invite experts and/or advisors as may be required.

3. The Committee may form, as it deems necessary, a number of specialized sub-committees and assign them technical tasks. In this context, it is agreed that these sub-committees will include a northern sub-committee and a southern sub-committee, for the management on the ground of the mutual water resources in these sectors.

Available at: <http://www.mfa.gov.il/mfa/go.asp?MFAH00pa0>

APPENDIX 3

Israeli-Palestinian Interim Agreement on the West Bank and the Gaza Strip Washington, D.C., September 28, 1995

ARTICLE 40

Water and Sewage

On the basis of good-will both sides have reached the following agreement in the sphere of Water and Sewage:

Principles

1. Israel recognizes the Palestinian water rights in the West Bank. These will be negotiated in the permanent status negotiations and settled in the Permanent Status Agreement relating to the various water resources.
2. Both sides recognize the necessity to develop additional water for various uses.
3. While respecting each side's powers and responsibilities in the sphere of water and sewage in their respective areas, both sides agree to coordinate the management of water and sewage resources and systems in the West Bank during the interim period, in accordance with the following principles:
 - a. Maintaining existing quantities of utilization from the resources, taking into consideration the quantities of additional water for the Palestinians from the Eastern Aquifer and other agreed sources in the West Bank as detailed in this Article.
 - b. Preventing the deterioration of water quality in water resources.
 - c. Using the water resources in a manner which will ensure sustainable use in the future, in quantity and quality.
 - d. Adjusting the utilization of the resources according to variable climatological and hydrological conditions.
 - e. Taking all necessary measures to prevent any harm to water resources, including those utilized by the other side.
 - f. Treating, reusing or properly disposing of all domestic, urban, industrial, and agricultural sewage.
 - g. Existing water and sewage systems shall be operated, maintained and developed in a coordinated manner, as set out in this Article.
 - h. Each side shall take all necessary measures to prevent any harm to the water and sewage systems in their respective areas.
 - i. Each side shall ensure that the provisions of this Article are applied to all resources and systems, including those privately owned or operated, in their respective areas.

Transfer of Authority

4. The Israeli side shall transfer to the Palestinian side, and the Palestinian side shall assume, powers and responsibilities in the sphere of water and sewage in the West Bank related solely to Palestinians, that are currently held by the military government and its Civil Administration, except for the issues that will be negotiated in the permanent status negotiations, in accordance with the provisions of this Article.

5. The issue of ownership of water and sewage related infrastructure in the West Bank will be addressed in the permanent status negotiations.

Additional Water

6. Both sides have agreed that the future needs of the Palestinians in the West Bank are estimated to be between 70 - 80 mcm/year.

7. In this framework, and in order to meet the immediate needs of the Palestinians in fresh water for domestic use, both sides recognize the necessity to make available to the Palestinians during the interim period a total quantity of 28.6 mcm/year, as detailed below:

a. Israeli Commitment:

(1) Additional supply to Hebron and the Bethlehem area, including the construction of the required pipeline - 1 mcm/year.

(2) Additional supply to Ramallah area - 0.5 mcm/year.

(3) Additional supply to an agreed take-off point in the Salfit area - 0.6 mcm/year.

(4) Additional supply to the Nablus area - 1 mcm/year.

(5) The drilling of an additional well in the Jenin area - 1.4 mcm/year.

(6) Additional supply to the Gaza Strip - 5 mcm/year.

(7) The capital cost of items (1) and (5) above shall be borne by Israel.

b. Palestinian Responsibility:

(1) An additional well in the Nablus area - 2.1 mcm/year.

(2) Additional supply to the Hebron, Bethlehem and Ramallah areas from the Eastern Aquifer or other agreed sources in the West Bank - 17 mcm/year.

(3) A new pipeline to convey the 5 mcm/year from the existing Israeli water system to the Gaza Strip. In the future, this quantity will come from desalination in Israel.

(4) The connecting pipeline from the Salfit take-off point to Salfit.

(5) The connection of the additional well in the Jenin area to the consumers.

(6) The remainder of the estimated quantity of the Palestinian needs mentioned in paragraph 6 above, over the quantities mentioned in this paragraph (41.4 - 51.4 mcm/year), shall be developed by the Palestinians from the Eastern Aquifer and other agreed sources in the West Bank. The Palestinians will have the right to utilize this amount for their needs (domestic and agricultural).

8. The provisions of paragraphs 6-7 above shall not prejudice the provisions of paragraph 1 to this Article.

9. Israel shall assist the Council in the implementation of the provisions of paragraph 7 above, including the following:

a. Making available all relevant data.

b. Determining the appropriate locations for drilling of wells.

10. In order to enable the implementation of paragraph 7 above, both sides shall negotiate and finalize as soon as possible a Protocol concerning the above projects, in accordance with paragraphs 18 - 19 below.

The Joint Water Committee

11. In order to implement their undertakings under this Article, the two sides will establish, upon the signing of this Agreement, a permanent Joint Water Committee (JWC) for the interim period, under the auspices of the CAC.

12. The function of the JWC shall be to deal with all water and sewage related issues in the West Bank including, inter alia:

- a. Coordinated management of water resources.
- b. Coordinated management of water and sewage systems.
- c. Protection of water resources and water and sewage systems.
- d. Exchange of information relating to water and sewage laws and regulations.
- e. Overseeing the operation of the joint supervision and enforcement mechanism.
- f. Resolution of water and sewage related disputes.
- g. Cooperation in the field of water and sewage, as detailed in this Article.
- h. Arrangements for water supply from one side to the other.
- i. Monitoring systems. The existing regulations concerning measurement and monitoring shall remain in force until the JWC decides otherwise.
- j. Other issues of mutual interest in the sphere of water and sewage.

13. The JWC shall be comprised of an equal number of representatives from each side.

14. All decisions of the JWC shall be reached by consensus, including the agenda, its procedures and other matters.

15. Detailed responsibilities and obligations of the JWC for the implementation of its functions are set out in [Schedule 8](#).

Supervision and Enforcement Mechanism

16. Both sides recognize the necessity to establish a joint mechanism for supervision over and enforcement of their agreements in the field of water and sewage, in the West Bank.

17. For this purpose, both sides shall establish, upon the signing of this Agreement, Joint Supervision and Enforcement Teams (JSET), whose structure, role, and mode of operation is detailed in [Schedule 9](#). Water Purchases

18. Both sides have agreed that in the case of purchase of water by one side from the other, the purchaser shall pay the full real cost incurred by the supplier, including the cost of production at the source and the conveyance all the way to the point of delivery. Relevant provisions will be included in the Protocol referred to in paragraph 19 below.

19. The JWC will develop a Protocol relating to all aspects of the supply of water from one side to the other, including, inter alia, reliability of supply, quality of supplied water, schedule of delivery and off-set of debts.

Mutual Cooperation

20. Both sides will cooperate in the field of water and sewage, including, inter alia:

- a. Cooperation in the framework of the Israeli-Palestinian Continuing Committee for Economic Cooperation, in accordance with the provisions of Article XI and Annex III of the Declaration of Principles.

Appendix 3

- b. Cooperation concerning regional development programs, in accordance with the provisions of [Article XI](#) and [Annex IV](#) of the Declaration of Principles.
- c. Cooperation, within the framework of the joint Israeli-Palestinian-American Committee, on water production and development related projects agreed upon by the JWC.
- d. Cooperation in the promotion and development of other agreed water related and sewage-related joint projects, in existing or future multi-lateral forums.
- e. Cooperation in water-related technology transfer, research and development, training, and setting of standards.
- f. Cooperation in the development of mechanisms for dealing with water-related and sewage related natural and man-made emergencies and extreme conditions.
- g. Cooperation in the exchange of available relevant water and sewage data, including:
 - (1) Measurements and maps related to water resources and uses.
 - (2) Reports, plans, studies, researches and project documents related to water and sewage.
 - (3) Data concerning the existing extractions, utilization and estimated potential of the Eastern, North-Eastern and Western Aquifers (attached as Schedule 10).

Protection of Water Resources and Water and Sewage Systems

- 21. Each side shall take all necessary measures to prevent any harm, pollution, or deterioration of water quality of the water resources.
- 22. Each side shall take all necessary measures for the physical protection of the water and sewage systems in their respective areas.
- 23. Each side shall take all necessary measures to prevent any pollution or contamination of the water and sewage systems, including those of the other side.
- 24. Each side shall reimburse the other for any unauthorized use of or sabotage to water and sewage systems situated in the areas under its responsibility which serve the other side.

The Gaza Strip

- 25. The existing agreements and arrangements between the sides concerning water resources and water and sewage systems in the Gaza Strip shall remain unchanged, as detailed in [Schedule 11](#).

Available at: <http://www.mfa.gov.il/mfa/go.asp?MFAH00qd0#app-40> or
<http://www.nad-plo.org/fact/annex3.pdf>

APPENDIX 4

Agreement on the Gaza Strip and the Jericho Area, May 4, 1994

ANNEX II **Protocol Concerning Civil Affairs**

Article 31.

Water and Sewage

- a. All water and sewage (hereinafter referred to as "water") systems and resources in the Gaza Strip and the Jericho Area shall be operated, managed and developed (including drilling) by the Palestinian Authority, in a manner that shall prevent any harm to the water resources.
- b. As an exception to subparagraph a., the existing water systems supplying water to the Settlements and the Military Installation Area, and the water systems and resources inside them continue to be operated and managed by Mekoroth Water Co.
- c. All pumping from water resources in the Settlements and the Military Installation Area, shall be in accordance with existing quantities of drinking water and agricultural water.
Without derogating from the powers and responsibilities of the Palestinian Authority, the Palestinian Authority shall not adversely affect these quantities. Israel shall provide the Palestinian Authority with all data concerning the number of wells in the Settlements and the quantities and quality of the water pumped from each well, on a monthly basis.
- d. Without derogating from the powers and responsibilities of the Palestinian Authority, the Palestinian Authority shall enable the supply of water to the Gush Katif settlement area and the Kfar Darom settlement by Mekoroth, as well as the maintenance by Mekoroth of the water systems supplying these locations and of water lines crossing the Jericho Area.
- e. The Palestinian Authority shall pay Mekoroth for the cost of water supplied from Israel and for the real expenses incurred in supplying water to the Palestinian Authority.
- f. All relations between the Palestinian Authority and Mekoroth shall be dealt with in a commercial agreement.
- g. The Palestinian Authority shall take the necessary measures to ensure the protection of all water systems in the Gaza Strip and the Jericho Area.
- h. Upon the signing of this Agreement, the two Parties shall establish a sub-committee to deal with all issues of mutual interest including the exchange

Chapter 4

of all data relevant to the management and operation of the water resources and systems and mutual prevention of harm to water resources.

- i. The subcommittee shall agree upon its agenda and upon the procedures and manner of its meetings, and may invite experts or advisers as it sees fit.

Available at: <http://www.mfa.gov.il/mfa/go.asp?MFAH00q40>

References

Primary sources

- Agreement on the Gaza Strip and Jericho Area, 4 May, 1994. Available at <http://www.mfa.gov.il/mfa/go.asp?MFAH00q40>
- Declaration of Principles. Available at <http://www.mfa.gov.il/mfa/go.asp?MFAH00q00> or <http://www.nad-plo.org/fact/agree1.html>
- Israeli-Palestinian Interim Agreement on the West Bank and the Gaza Strip, September 28, 1995. Available at: <http://www.mfa.gov.il/mfa/go.asp?MFAH00qd0#app-40> or <http://www.nad-plo.org/fact/annex3.pdf>
- Treaty of Peace between the State of Israel and the Hashemite Kingdom of Jordan, October 26, 1994. Available at: <http://www.mfa.gov.il/mfa/go.asp?MFAH00pa0>

Secondary sources

- Adler, E. and Haas, P., 'Knowledge, power, and international policy coordination', *International Organization*, 46/1 (1992), pp. 367–390
- Aggestam, Karin, *Reframing and Resolving Conflict: Israeli–Palestinian Negotiations 1988–1998* (Lund: Lund University Press, 1999)
- Albihn, Cecilia, 'The global security challenge to negotiation: toward the New Agenda', *American Behavioural Scientist*, 38/6 (1995)
- Allan, Tony [J. A.], 'The political economy of water: reasons for optimism but long term caution', in J. A. Allan (ed.), *Water, Peace and the Middle East: Negotiating Resources in the Jordan Basin* (London and New York: I. B. Tauris, 1996)
- and Karshenas, M., 'Managing environmental capital', in J. A. Allan (ed.), *Water, Peace and the Middle East* (London: Tauris, 1996)
- Allan, Tony [J. A.], *Global Systems Ameliorate Local Droughts: Water, Food and Trade*, SOAS Occasional Paper no. 10 (London: University of London, School of Oriental and African Studies, 1999)
- , *The Middle East Water Question: Hydropolitics and the Global Economy* (London and New York: I. B. Tauris, 2001)
- , *Middle Eastern Hydropolitics: Interpreting Constructed Knowledge. A Review Article*, SOAS Occasional Paper no. 18 (London: University of London, School of Oriental and African Studies, 1999)

References

- , 'Virtual Water': *A Long-Term Solution for Water-Short Middle Eastern Economies?*, SOAS Occasional Paper no. 3 (London: University of London, School of Oriental and African Studies, 1997)
- , 'The Agenda for the Next Thirty Years', in P. Rogers and P. Lydon (eds), *Water in the Arab World: Perspectives and Prognoses* (Cambridge, Mass.: Harvard University Press, 1994)
- Amery, Hussein A., 'A popular theory of water diversion from Lebanon: towards public participation for peace', in Hussein A. Amery and Aaron Wolf (eds), *Water in the Middle East: A Geography of Peace* (Austin, Tex.: University of Texas Press, 2000), pp. 121–49
- Assaf, Karen, al Khatib, Nader, Shuval, Hillel and Kally, Elisha, *A Proposal for the Development of a Regional Water Master Plan* (Jerusalem: Israeli/Palestine Center for Research and Information (IPCRI), 1993)
- Bar-Siman-Tov, Y., *Uncertainty and Risk-Taking in Peacemaking: The Israeli Experience*, Davis Occasional Papers no. 71 (Jerusalem: Hebrew University of Jerusalem, 1999)
- Beck, U., *Ecological Politics in an Age of Risk* (Cambridge: Polity Press, 1995)
- Bhaskar, Roy, *The Possibility of Naturalism: A Philosophical Critique of Contemporary Human Sciences* (Brighton: Harvester, 1979)
- , *Scientific Realism and Human Emancipation* (London: Verso, 1986)
- Biswas, Asit K., Kolars, John, Murakami, Masahiro, Waterbury, John and Wolf, Aaron, *Core and Periphery: A Comprehensive Approach to Middle Eastern Water* (Delhi: Oxford University Press, 1997)
- Blatter, J., Ingram, H. and Doughman, P. M., 'Emerging approaches to comprehend changing global contexts', in J. Blatter and H. Ingram (eds), *Reflections on Water: New Approaches to Transboundary Conflicts and Cooperation* (Cambridge, Mass. and London: MIT Press, 2001)
- Bourdieu, Pierre, *Kultursociologiska texter, i urval av* [Cultural sociology texts, selected by] Donald Broady and Mikael Palme (Lidingö: Salamander, 1986)
- , 'Structures, habitus, practices', in Pierre Bourdieu (ed.), *The Logic of Practice* (Cambridge: Polity Press, 1990)
- Brante, Thomas, *Vetenskapens sociala grunder: En studie av konflikter i forskarvärlden* [The social basis of science: a study of conflicts in the world of research] (Stockholm: Raben & Sjögren, 1984)
- Bulloch, J. and Darwish, A., *Water Wars: Coming Conflicts in the Middle East* (London: Victor Gollancz, 1993)
- Buzan, Barry, 'The levels of analysis problem in international relations reconsidered', *International Relations Theory Today* (Cambridge: Polity Press, 1995)
- , Waever, Ole and de Wilde, Jaap, *Security: A New Framework for Analysis* (Boulder, Colo. and London: Lynne Rienner, 1998)

- Carlsnaes, Walter, 'In lieu of a conclusion: compatibility and the agency-structure issue in foreign policy analysis', in Walter Carlsnaes and Steve Smith (eds), *European Foreign Policy: The EC and Changing Perspectives in Europe* (Sage: London, 1994)
- Cohen, Amiram, 'Sharon to help farmers get more water', *Ha'aretz* (English edn), 11 Apr. 2001
- Copeland, Dale C., 'The constructivist challenge to structural realism: a review essay', *International Security*, 25/2 (fall 2000), pp. 187-212
- Corell, Elisabeth, *The Negotiable Desert: Expert Knowledge in the Negotiations of the Convention to Combat Desertification*, Linköping Studies in Art and Science (Linköping: Linköping University, 1999)
- Cox, R. W. and Jacobson, H. K., *The Anatomy of Influence: Decision Making in International Organizations* (New Haven, N.J.: Yale University Press, 1973)
- Deudney, Daniel, 'The case against linking environmental degradation and national security', *Millenium*, 19/3 (1990)
- Dinar, Shlomi, 'The Israeli-Palestinian water conflict and its resolution: A view through International Relations Theory', Paper presented at the International Studies Association, 40th Annual Convention, Washington, DC, 16-20 Feb. 1999
- , 'Negotiations and international relations: a framework for hydropolitics', *International Negotiation*, 5 (2000)
- Dokken, K. and Graeger, N., 'The concept of environmental security: political slogan or analytical tool?', in *PRIO Report*, 2/95 (1995)
- Dolatyar, Mostafa and Gray, Tim, S., *Water Politics in the Middle East* (London and New York: Macmillan and St Martin's Press, 2000)
- Dombrovsky, Ines, 'The Jordan River Basin: prospects for cooperation within the Middle East peace process?', in Waltina Scheumann and Manuel Schiffler (eds), *Water in the Middle East: Potential for Conflicts and Prospects for Cooperation* (Berlin: Springer, 1998)
- Douglas, M., *Risk and Blame: Essays in Cultural Theory* (London and New York: Routledge, 1992)
- Druckman, Daniel, *Human Factors in International Negotiations: Social-Psychological Aspects of International Conflicts* (Beverly Hills and London: Sage, 1973)
- du Plessis, Anton, 'Charting the course of the water discourse through the fog of international relations theory', in H. Solomon and A. R. Turton (eds), *Water Wars: Enduring Myth or Impending Reality?*, Africa Dialogue Series no. 2 (Umhlanga Rocks: African Centre for the Constructive Resolution of Disputes (ACCORD), Green Cross International and the African Water Issues Research Unit (AWIRU), 2000)

References

- Eaton, Joseph W. and Eaton, David J., 'Negotiation strategies in international disputes', in Kurt R. Spillman and Günther Bächler (eds), *Environmental Crisis: Regional Conflicts and Ways of Cooperation: Report of the International Conference at Monte Verita, Switzerland, 3–7 October 1994*, Occasional Paper no. 14 (Zurich: Environment and Conflict Project (ENCOP), Sept. 1995)
- el-Sadat, Anwar, *In Search of Identity: An Autobiography* (London: Collins, 1978)
- Elhance, Arun P., *Hydropolitics in the 3rd World: Conflict and Cooperation in International River Basins* (Washington, DC: United States Institute of Peace Press, 1999)
- Elliot, Lorraine, *The Global Politics of the Environment* (Basingstoke: Macmillan, 1997), p. 240
- Elmusa, Sharif, *Water Conflict: Economics, Politics, Law and the Palestinian–Israeli Water Resources* (Washington, DC: Institute for Palestine Studies, 1997)
- el-Nazer, Hazim, 'The partition of water resources in the Jordan River Basin: history and current development', Paper presented at the Conference on Water in the Mediterranean Countries: Management Problems of a Scarce Resource, Naples, 4–5 Dec. 1997
- Faggi, Pierpaulo, 'La territorialisation hydraulique du Sorou: le cadre théorique', 2000, Paper available at <<http://www.geogr.unipd.it/PVS/3faggi.pdf>>
- Falkenmark, Malin, 'Fresh water: time for a modified approach', *Ambio*, 15/4 (1986), pp. 194–200
- Faure, Guy Olivier and Rubin, Jeffrey Z., 'Lessons for theory and research', in Guy Olivier Faure and Jeffrey Z. Rubin (eds), *Culture and Negotiation: The Resolution of Water Disputes* (Newbury Park, London and New Delhi: Sage, 1993)
- Feitelson, Eran, 'The ebb and flow of Arab–Israeli water conflicts: are past confrontations likely to resurface?', *Water Policy*, 2 (2000), pp. 343–63
- , 'Implications of shifts in the Israeli water discourse for Israeli–Palestinian water negotiations', *Political Geography*, 21/3 (2002), pp. 293–318
- and Haddad, M. (eds), *Joint Management of Shared Aquifers* (Jerusalem: Harry Truman Research Institute, Hebrew University and the Palestinian Hydrology Group, Jerusalem, Nov. 1994 [1995])
- and Haddad, M. (eds), *Joint Management of Shared Aquifers* (Jerusalem: Harry Truman Research Institute, Hebrew University and the Palestinian Hydrology Group, Jerusalem, Nov. 1995 [1996])
- and Haddad, M. (eds), *Joint Management of Shared Aquifers* (Jerusalem: Harry Truman Research Institute, Hebrew University and the Palestinian Hydrology Group, Jerusalem, May 1996 [1997])

- and Haddad, M. (eds), *Joint Management of Shared Aquifers* (Jerusalem: Harry Truman Research Institute, Hebrew University and the Palestinian Hydrology Group, Istanbul, May 1997 [1998])
- Fishländer, Itay, “Legal and Institutional Adaption to Climate Uncertainty: A Study of International Rivers”, 2003, Under review in the Journal Water Policy
- Flamhaft, Ziva, *Israel on the Road to Peace. Accepting the Unacceptable* (Boulder, Colo. and Oxford: Westview Press, 1996)
- Foucault, Michel, *Power and Knowledge* (New York: Pantheon, 1980)
- Galnoor, Itshak, ‘Water planning: who gets the last drop?’, in R. Bilski et al. (eds), *Can Planning Replace Politics? The Israeli Experience* (The Hague: Martinus Nijhoff, 1980)
- Galtung, Johan, *Fredsforskning* [Peace research] (Halmstad: Bokförlaget Prisma/Förlaget Verdandi, 1970)
- Giddens, Anthony, ‘Agency, institution and time-space analysis’, in K. Knorr and A. V. Gicouvel (eds), *Advances in Social Theory and Methodology: Toward an Integration of Micro- and Macro-sociologies* (Boston, Mass.: Routledge and Kegan Paul, 1981)
- , *Central Problems in Social Theory: Action, Structure and Contradiction in Social Analysis* (London: Macmillan, 1984)
- , *The Constitution of Society: Outline of the Theory of Structuration* (Berkeley, Calif.: University of California Press, 1984)
- , *New Rules of Sociological Method* (London: New York, Basic Books, 1976)
- Gross Stein, Janice, ‘International negotiation: a multidisciplinary perspective’, *Negotiation Journal*, 4 (1988)
- Haas, P., ‘Do regimes matter? Epistemic communities and Mediterranean pollution control’, in Friedrich Kratochwil and Edward D. Mansfield (eds), *International Organization: A Reader* (New York: HarperCollins, 1994)
- , ‘Knowledge, power, and international policy coordination’, *International Organization*, 46/1 (1992), pp. 367–90
- , *Saving the Mediterranean: The Politics of Environmental Cooperation* (New York: Colombia University Press, 1990)
- Hacking, Ian, *The Social Construction of What?* (Cambridge, Mass.: Harvard University Press, 1999)
- Haddad, M., Feitelson, E., Arlosoroff, S. and Nassereddin, T. (1999), *Joint Management of Shared Aquifers: Final Report of Phase II* (Jerusalem: Harry Truman Research Institute, Hebrew University and the Palestinian Hydrology Group, Jerusalem, 1999)

References

- Haddad, Marwan, 'Water resources in the Middle East: conflict and solutions', in J. A. Allan (ed.), *Water, Peace and the Middle East: Negotiating Resources in the Jordan Basin* (London and New York: I. B. Tauris, 1996)
- Haddadin, Munther, *Diplomacy on the Jordan: International Conflict and Negotiated Solution* (Boston, Mass. and London: Kluwer Academic, 2001)
- , 'Water issues in the Hashemite Jordan', *Arab Studies Quarterly*, 22/2 (2000), pp. 63–77
- Haftendorn, H., 'Water and international conflict', *Third World Quarterly*, 21 (2000), pp. 51–68
- Hajer, Maarten, *The Politics of Environmental Discourse: Ecological Modernization and the Policy Process* (Oxford: Clarendon Press, 1995)
- Hasenclever, A., Mayer, P. and Rittberger, V., *Theories of International Regimes* (Cambridge: Cambridge University Press, 1997)
- Hay, Colin, 'Structure and agency', in David Marsch and Gerry Stoker (eds), *Theory and Methods in Political Science* (London: Macmillan, 1995)
- , 'What place for ideas in the structure–agency debate? Globalisation as a "process without a subject"', Paper presented at the Conference on Evaluating Cutting Edge Social Science Research, University of York, 25–26 Mar. 2000
- Heikal, Mohamed, *Secret Channels: The Inside Story of Arab–Israeli Peace Negotiations* (London: HarperCollins, 1996)
- Hewedy, Amin, *Militarization and Security in the Middle East: Its Implications on Development and Democracy* (Tokyo: United Nations University, 1989)
- Hillel, Daniel, *Rivers of Eden: The Struggle for Water and the Quest for Peace in the Middle East* (New York and Oxford: Oxford University Press, 1994)
- Hjorth, Ronnie, 'Introduction', in Ronnie Hjorth (ed.), *Baltic Environmental Cooperation: A Regime in Transition*, Water and Environmental Studies (Linköping: Linköping University, 1996)
- Hollis, Martin and Smith, Steve, *Explaining and Understanding International Relations* (Oxford: Clarendon Press, 1990)
- Holsti, Kalevi, J., *International Politics: A Framework for Analysis* (London and Toronto: Prentice-Hall International, 1988)
- Homer-Dixon, T., 'Environmental scarcities and violent conflict', *International Security*, 19/1 (1994)
- , *The Ingenuity Gap* (London: Jonathan Cape, 2000)
- Hopmann, T. P., *The Negotiation Process and the Resolution of International Conflicts* (Columbia, S.C.: University of South Carolina Press, 1998)
- Hurrell, Andrew, 'International political theory and the global environment', in Ken Booth and Steve Smith (eds), *International Relations Theory Today* (Cambridge: Polity Press, 1995)

- Iklé, F. C., *How Nations Negotiate* (New York: Harper and Row, 1964)
- Isaac, Jad, 'Core issues of the Palestinian–Israeli water dispute', Applied Research Institute, Jerusalem, <<http://www.arij.org/pub/corissues/>>
- , 'Core issues of the Palestinian–Israeli water dispute' in Kurt R. Spillman and Günther Bächler (eds), *Environmental Crisis: Regional Conflicts and Ways of Cooperation: Report of the International Conference at Monte Verita, Switzerland, 3–7 October 1994*, Occasional Paper no. 14 (Zurich: Environment and Conflict Project (ENCOP), Sept. 1995)
- , and Shuval, Hillel, *Water and Peace in the Middle East* (Amsterdam: Elsevier, 1994)
- 'Israel eases back on water cut for Jordan, but alters schedule', *Ha'aretz*, 22 Apr. 1999
- Jasanoff, S., 'Science and norms in global environmental regimes', in F. O. Hampson and J. Reppy (eds), *Earthly Goods: Environmental Change and Social Justice* (Ithaca, N.Y.: Cornell University Press, 1996), pp. 173–97
- Jones, Peter, *Towards a Regional Security Regime in the Middle East: Issues and Options* (Stockholm: Stockholm International Peace Research Institute (SIPRI), 1998)
- Jarrar, Ayman and Yousef Awayes (2002) "Water from Conflict to Cooperation: Palestine and Israel Case". Paper presented at the UNESCO-GCI PCCP-Water for Peace Conference in Delft, 21 November.
- Johansson, Thomas, 'Anthony Giddens och det senmoderna' [Anthony Giddens and Late Modernity], in Per Månson (ed.), *Moderna samhällsteorier: Traditioner, riktningar, teoretiker* [Modern theories of society: traditions, direction, theoreticians] (Smedjebacken: Rabén Prisma, 1995), pp. 398–403
- Jägerskog, Anders, 'Contributions of regime theory in understanding interstate water cooperation: lessons learned in the Jordan River Basin', in A. R. Turton and R. Henwood (eds), *Hydropolitics in the Developing World: A Southern African Perspective* (Pretoria: African Water Issues Research Unit (AWIRU), 2002)
- , *The Jordan River Basin: Explaining Interstate Water Co-operation Through Regime Theory*, SOAS Occasional Paper no. 31 (London: University of London, School of Oriental and African Studies, 2001)
- , 'The power of the sanctioned discourse: a crucial factor in determining water policy', *Water, Science and Technology*, 47/6 (2003)
- , 'Risk and negotiations: water in the Arab–Israeli case', in J. A. Allan (ed.), *Environmental Management in Asia and Africa: Responding to Uncertainty and Risk* (forthcoming)
- , 'Vattnet i Mellanöstern: En källa till konflikt eller samarbete?' [Water in the Middle East: source of conflict or cooperation?], *Världspolitikens Dagsfrågor*, 4 (2000)

References

- Jönsson, Christer, *Communication in International Bargaining* (London: Pinter, 1990)
- Kam, Ephraim, 'The threat perception of the Arab states', in Shai Feldman and Ariel Levite (eds), *Arms Control and the New Middle East Security Environment*, JCSS Study no. 23 (Tel Aviv: Tel Aviv University, Jaffee Center for Strategic Studies, 1994)
- Keohane, R., *After Hegemony* (Princeton, N.J.: Princeton University Press, 1984)
- , 'The analysis of international regimes: towards a European–American research programme', in V. Rittberger (ed.), *Regime Theory and International Relations* (Oxford: Clarendon Press, 1993)
- , 'International institutions: two approaches', in R. O. Keohane (ed.), *International Institutions and State Power: Essays in International Relations Theory* (Boulder, Colo.: Westview Press, 1989)
- , 'International institutions: two approaches', in Friedrich Kratochwil and Edward D. Mansfield (eds), *International Organization: A Reader* (New York: Harper Collins, 1994)
- , and Nye, J., *Power and Interdependence* (New York: HarperCollins, 1989)
- Khatib, Ahmad, 'Israel agrees to provide Jordan with full share of water share', *Jordan Times*, 21 Apr. 1999
- 'Tensions ease in the Jordan-Israel water dispute, officials say', *Jordan Times*, 7 Apr. 1999
- King, Anthony, 'The accidental derogation of the lay actor: a critique of Giddens's concept of structure', *Philosophy of the Social Sciences*, 30/3 (2000)
- King, John, *Handshake in Washington: The Beginning of Middle East Peace?* (Reading: Ithaca Press, 1994)
- Kingdon, J., *Agendas, Alternatives and Public Policies* (New York: HarperCollins, 1984)
- Klieman, Aharon, 'Israel's "Jordanian Option": a post-Oslo reassessment', in Ilan Peleg (ed.), *The Middle East Peace Process: Interdisciplinary Perspectives* (New York: State University New York Press, 1998)
- Kliot, Nurit, *Water Resources and Conflict in the Middle East* (London: Routledge, 1994)
- Kolars, John, 'The spatial attributes of water negotiation: the need for a river ethic and advocacy in the Middle East', in Hussein A. Amery and Aaron Wolf (eds), *Water in the Middle East: A Geography of Peace* (Austin, Tex.: University of Texas Press, 2000)
- Kopagen, Nina, 'The perception of water as part of territory in Israeli and Arab ideologies between 1964 and 1993: toward a further understanding of the Arab–Jewish conflict', MA thesis, University of Haifa, 1995

- Krasner S., 'Structural causes and regime consequences: regimes as intervening variables', in S. Krasner (ed.), *International Regimes* (Ithaca, N.Y.: Cornell University Press, 1983)
- Kremenyuk, V. A. (ed.), *International Negotiation: Analysis, Approaches, Issues* (San Francisco, Calif.: Jossey Bass, 1991)
- Kuhn, Thomas, *The Structure of Scientific Revolutions* (Chicago: Chicago University Press, 1962)
- Kütting, Gabriella, *Environment, Society and International Relations: Towards More Effective International Agreements* (London and New York: Routledge, 2000)
- Kvale, Steinar, *Interviews: An Introduction to Qualitative Research Interviewing* (Thousand Oaks, Calif.: Sage, 1996)
- Lantz, Annika, *Intervjumetodik: Den professionellt genomförda intervjun* [Interview method: the professionally conducted interview] (Lund: Studentlitteratur, 1993)
- Latour, Bruno, *Science in Action* (Cambridge, Mass.: Harvard University Press, 1987)
- Lavy, Viktor, *Water: Consumption, Prices, Technology and Government Policy: A Comparative Study of Jordanian, Palestinian and Israeli Farmers in the Jordan Valley* (Jerusalem: Maurice Falk Institute for Economic Research in Israel, 1997)
- Layder, Derek, *Sociological Practice. Linking Theory and Social Research* (London: Sage, 1998)
- Levy, Marc. A., 'Is the environment a national security issue?', *International Security*, 20/2 (1995)
- , Young, O. R. and Zürn, M., 'The study of international regimes', *European Journal of International Relations*, 1 (1995), pp. 273–4
- Lidskog, Rolf and Sundqvist, Göran, 'The role of science in environmental regimes: the case of the LRTAP', *European Journal of International Relations*, 8/1 (forthcoming)
- Liebszewski, Stephan, *Water Disputes in the Jordan Basin Region and their Role in the Resolution of the Arab-Israeli Conflict*, Occasional Paper no. 13 (Zurich: Environment and Conflict Project (ENCOP), Aug. 1995)
- List, M. and Rittberger, V., 'Regime theory and international environmental management', in A. Hurrell and B. Kingsbury (eds), *The International Politics of the Environment* (Oxford: Clarendon Press, 1992)
- Lonergan, Steve, 'Water resources and conflict: examples from the Middle East', in Nils Petter Gleditsch (ed.), *Conflict and Environment*, NATO ASI Series 2: Environment, Vol. 33 (London: Kluwer Academic, 1997)

References

- Lowi, Miriam, 'Water and conflict in the Middle East and South Asia: are environmental issues and security issues linked?', *Journal of Environment and Development*, 8/4 (1999)
- , *Water and Power: The Politics of a Scarce Resource in the Jordan River Basin* (Cambridge: Cambridge University Press, 1993)
- and Shaw, Brian S., *Environment and Security: Discourses and Practices*, International Political Economy Series (New York: Macmillan Press and St Martin's Press, 2000)
- Lundqvist, Jan et al., *New Dimensions in Water Security: Water, Society and Eco System Services in the 21st Century*, FAO Report (New York: United Nations Food and Agricultural Organization, 2000)
- Lundqvist, Lennart, 'Aktörer och strukturer' [Actors and structures], *Statsvetenskaplig Tidskrift*, 87 (1983), pp. 1–22
- , *Implementation Steering: An Actor–Structure Approach* (Lund: Studentlitteratur, 1987)
- Lupton, D., *Risk* (London and New York: Routledge, 1999)
- McCaffrey, Stephen, 'The contribution of the UN Convention on the law of the non-navigational uses of international watercourses', *International Journal on Global Environmental Issues*, 1/ no 3/4 (2001)
- , 'Water, politics and international law', in Peter Gleick (ed.), *Water in Crisis: A Guide to the World's Fresh Water Resources* (London and New York: Oxford University Press, 1993)
- McCann, Bill, 'Revival for Red–Dead link', *Water 21* (International Water Association), Oct. 2002
- Makovsky, David, *Making Peace with the PLO: The Rabin Government's Road to the Oslo Accord* (Boulder, Colo.: Westview Press, 1996)
- Mansfield, E., 'The role of regimes', in Frierich Kratochwil and Edward D. Mansfield (eds), *International Organization: A Reader* (New York: Harper Collins, 1994)
- Maoz, Zeev, 'Regional security in the Middle East: past trends, present realities and future challenges', in Zeev Maoz (ed.), *Regional Security in the Middle East: Past Trends, Present Realities and Future Challenges*, (London: Frank Cass, 1997)
- Matthews, Richard A., 'Integrating environmental factors into conventional security', in Miriam R. Lowi and Brian S. Shaw (eds), *Environment and Security: Discourses and Practices*, International Political Economy Series (London: Macmillan and St Martin's Press, 2000)
- Mayer, P., Rittberger, V. and Zürn, M., 'Regime theory: state of the art and perspectives', in V. Rittberger (ed.), *Regime Theory and International Relations* (Oxford: Clarendon Press, 1993), pp. 391–430

- Mendzini, Arnon, *The River Jordan: The Struggle for Frontiers and Water, 1920–1967* (London: London University, School of Oriental and African Studies, Water Issues Group, 2000)
- Merrett, Stephen, *Introduction to the Economics of Water Resources: An International Perspective* (London: UCL Press, 1997)
- Merriam, Sharan B., *Case Study in Research Education: A Qualitative Approach* (San Francisco, Calif.: Jossey-Bass, 1988)
- Miller, Benjamin, 'Great powers and regional peacemaking: patterns in the Middle East and beyond', in Zeev Maoz (ed.), *Regional Security in the Middle East: Past Trends, Present Realities and Future Challenges*, (London: Frank Cass, 1997)
- Morris, Benny, *Israel's Border Wars* (Oxford: Clarendon Press, 1993)
- Muscal, Tal and Lahoud, Lamia, 'Eitam suspends approval for PA well drillings', *Jerusalem Post*, 23 Oct. 2002
- Mutaz, Mango, 'Future of the Dead Sea: history will judge us', *Jordan Times*, 18 Dec. 2002
- Naff, T., 'Testimony on the Jordan River before the committee on Foreign Affairs', US House of Representatives, Washington, DC, 26 June 1990
- and Matson, R., *Water in the Middle East: Conflict or Cooperation?* (Boulder, Colo.: Westview Press, 1984)
- Nicol, A., van Steenberg, F. et al., *Transboundary Water Management as an International Public Good, Development Financing 2000 Study 2001:1* (Stockholm: for the Swedish Ministry for Foreign Affairs, 2001)
- Ohlsson, Leif, *Environment, Scarcity and Conflict: A Study of Malthusian Concerns* (Gothenburg: University of Gothenburg, Department of Peace and Development Research, 1999)
- and Turton, Anthony, *The Turning of a Screw: Social Resource Scarcity as a Bottle-neck in Adaption to Water Scarcity*, SOAS Occasional Paper no. 19 (London: University of London, School of Oriental and African Studies, 1999)
- Patomäki, Heikki, *After International Relations: Critical Realism and the (Re)construction of World Politics* (London and New York: Routledge, 2002)
- Peters, Joel, *Pathways To Peace: The Multilateral Arab–Israeli Peace Talks* (London: Royal Institute of International Affairs, 1996)
- Platt, Jennifer, 'What can case studies do?', *Studies in Qualitative Methodology*, 1 (1988), pp. 1–23
- Potter, Jonathan and Wetherell, Margaret, *Discourse and Social Psychology: Beyond Attitudes and Behaviour* (London: Sage, 1994)

References

- Putnam, R., 'Diplomacy and domestic politics: the logic of two-level games', *International Organization*, 42/3 (summer 1998), pp. 427–60
- Rabi, Ayman, 'Water: a means for confidence-building and cooperation in the Jordan River Basin', in *Water for Peace in the Middle East and Southern Africa* (Geneva: Green Cross International, 2000)
- Raiffa, H., *The Art and Science of Negotiation* (Cambridge, Mass: Belknap Press and Harvard University Press, 1982)
- Rinat, Zafir, 'Watered-down advice', *Ha'aretz* (English edn), 24 June 2001
- Roberts Clark, William, 'Agents and structures: two views of preferences, two views of institutions', *International Studies Quarterly*, 42 (1998)
- Rogers, P. and P. Lydon (eds), *Water in the Arab world: perspectives and prognoses*, i (Cambridge, Mass.: Harvard University Press, 1994)
- Rothstein, Bo, 'Aktör-strukturansatsen: ett metodiskt dilemma' [The actor-structure approach: a methodological dilemma], *Statsvetenskaplig Tidskrift*, 97 (1988), pp. 27–40
- Rubin, Barry, 'The geopolitics of Middle East conflict and crisis', *Middle East Review of International Affairs*, 2/3 (Sept. 1998)
- Ryan, Curtis R., 'Jordan in the Middle East peace process', in Ilan Peleg (ed.), *The Middle East Peace Process: Interdisciplinary Perspectives* (New York: State University New York Press, 1998)
- Southern African Development Community, Protocol on Shared Watercourse Systems in the Southern African Development Community (SADC) Region, SADC Council of Ministers, Gaborone, Botswana, 1995
- Safty, Adel, *From Camp David to the Gulf* (Montreal and New York: Black Rose Books, 1992)
- Salameh, Elias and Bannayan, Helen, *Water Resources of Jordan: Present Status and Future Potentials* (Amman: Friedrich Ebert Stiftung and Royal Society for the Conservation of Nature, Amman, 1993)
- Schelling, T. C., *The Strategy of Conflict* (Cambridge, Mass.: Harvard University Press, 1960)
- Schiff, Zeev, 'Unlikely cooperation', *Ha'aretz* (English edn), 13 Feb. 2001
- Schiffler, Manuel, *The Economy of Ground Water in Arid Countries: Theory, International Expertise and a Case Study of Jordan* (London and Portland, Oreg.: Frank Cass, 1996)
- Scruton, R., *A Dictionary of Political Thought* (Basingstoke: Macmillan, 1996)
- Sela, Avraham, *The Decline of the Arab-Israeli Conflict: Middle East Politics and the Quest for Regional Order* (Albany, N.Y.: State University of New York Press, 1998)
- Shapland, Greg, *Rivers of Discord: International Water Disputes in the Middle East* (London: Hurst & Co., 1997)

- Shavit, Ari, 'Israel will annex if PA declares a state', *Ha'aretz* (English edn), 11 Apr. 2001
- Sherman, Martin, *The Politics of Water in the Middle East: An Israeli Perspective on the Hydro-Political Aspects of the Conflict* (London: Macmillan, 1999)
- Shuval, Hillel, 'Proposal for an equitable resolution of the conflicts between Israelis and the Palestinians over the shared water resources of the Mountain Aquifer', *Arab Studies Quarterly*, 22/2 (2000)
- , 'The water issues on the Jordan River Basin between Israel, Syria and Lebanon can be a motivation for peace and regional cooperation', in *Water for Peace in the Middle East and Southern Africa* (Geneva: Green Cross International, 2000)
- Silberman, David, *Interpreting Qualitative Data: Methods for Analysing Talk, Text and Interaction* (London: Sage, 1993)
- Simon, Herbert, *Models of Bounded Rationality* (Cambridge, Mass.: MIT Press, 1997)
- Sjöstedt, G. (ed.), *International Environmental Negotiation* (Newbury Park: Sage, 1993)
- , 'International negotiation and the management of transboundary risk', in J. Linneroth-Bayer, R. E. Löfstedt and G. Sjöstedt (eds), *Transboundary Risk Management* (London: IIASA and Earthscan, 2001)
- Skodvin, Tora, *Structure and Agent in the Scientific Diplomacy of Climate Change* (Oslo: University of Oslo, Department of Political Science, in cooperation with Unipub forlag, Akademika AS, 1999)
- Smith, Steve, 'Foreign policy theory and the new Europe', in Walter Carlsnaes and Steve Smith (eds), *European Foreign Policy: The EC and Changing Perspectives in Europe* (London: Sage, 1994)
- Soffer, Arnon, *The Conflict over Water in the Middle East: Rivers of Fire* (Oxford and New York: Rowman & Littlefield, 1999)
- Spector, B. I., 'Motivating water diplomacy: finding the situational incentives to negotiate', *International Negotiation*, 5 (2000), pp. 222–36
- Spiegel, Steven L. and Pervin, David J., 'Introduction', in Steven L. Spiegel and David J. Pervin, *Practical Peacemaking in the Middle East: The Environment, Water, Refugees, and Economic Cooperation and Development, Vol. II* (New York and London: Garland, 1995)
- Starr, Joyce R., 'Water wars', *Foreign Policy*, 82 (spring 1991), pp. 17–36
- Stern, Eric, K., 'Bringing the environment in: the case for comprehensive security', *Cooperation and Conflict*, 30/3 (1995)
- Strange, Susan, 'Cave! Hic dragones: a critique of regime analysis', in S. Krasner (ed.), *International Regimes* (Ithaca, N.Y.: Cornell University Press, 1983)

References

- Sundqvist, Göran, *Vetenskapen och miljöproblemen: En expertsociologisk studie* [Science and environmental problems: a sociological expert study] (Gothenburg: University of Gothenburg, Department of Sociology, 1991)
- and Lidskog, Rolf, 'The role of science in environmental policy', *ASTA Annual Report 2000: International and National Abatement Strategies for Transboundary Air Pollution* (2000)
- Susser, Asher, *On Both Banks of the Jordan: A Political Biography of Wasfi al-Tall* (Ilford: Essex and Portland, Oreg.: Frank Cass, 1994)
- Sutcliffe, Claud R., 'Change in the Jordan Valley: the impact and implications of the East Ghor Canal Project, 1961–1966', unpublished PhD thesis, Princeton University, 1969
- Swedish Ministry for Foreign Affairs, *Tradition and Renewal: A Study of North Africa and the Middle East*, Ds 1999:63 (Stockholm: Ministry for Foreign Affairs, 1999)
- Sztompka, Piotr, *The Sociology of Change* (Oxford and Cambridge: Blackwell, 1993)
- Tal, Shimon, 'Water Commissioner Shimon Tal briefs foreign press', Israeli Ministry for Foreign Affairs, 2001, <<http://www.mfa.gov.il/mfa/go.asp?MFAH0k8s0>>
- Tell, Tariq and Dodge, Toby, 'Peace and the politics of water in Jordan', in J. A. Allan (ed.), *Water, Peace and the Middle East: Negotiating Resources in the Jordan Basin* (London and New York: I. B. Tauris, 1996)
- Tessler, Mark, *Israel at Peace with the Arab World* (Abu Dhabi: Emirates Center for Strategic Studies and Research, 1995)
- Tibi, Bassam, *Arab Nationalism: Between Islam and the Nation State*, 3rd edn (London and New York: Palgrave Macmillan, 1997)
- , *Conflict and War in the Middle East: From Interstate War to New Security*, 2nd edn (London: Macmillan, 1998)
- Tickner, J. Ann, 'Re-visioning security', in Ken Booth and Steve Smith (eds), *International Relations Theory Today* (Cambridge: Polity Press, 1995)
- Trottier, Julie, *Hydropolitics in the West Bank and Gaza Strip* (Jerusalem: PASSIA, 1999)
- Tuchman Mathews, Jessica, 'Redefining security', *Foreign Affairs*, 68/2 (1989)
- Turton, Anthony., 'The political dynamics of institutional development in the water sector: South Africa and its international river basins', Unpublished draft of a DPhil thesis, Department of Political Sciences, University of Pretoria, 2002
- Turton, Anthony, 'Towards hydrosolidarity: moving from resource capture to cooperation and alliances', *SIWI Proceedings*, Report 13, SIWI Seminar 2001 on Water Security for Cities, Food and Environment: Towards

- Catchment Hydrosolidarity (Stockholm: Stockholm International Water Institute), 2001
- , 'Water wars: enduring myth or impending reality?', in H. Solomon and A. R. Turton (eds), *Water Wars: Enduring Myth or Impending Reality?*, Africa Dialogue Series no. 2 (Umhlanga Rocks: African Centre for the Constructive Resolution of Disputes (ACCORD), Green Cross International and the African Water Issues Research Unit (AWIRU), 2000)
- Ullman, Richard H., 'Redefining security', *International Security*, 8/1 (summer 1983)
- UN General Assembly Resolution 51/229, 21 May 1997
- Ward, R. C. and Robinson, M., *Principles of Hydrology*, 3rd edn (London: McGraw-Hill, 1990)
- Waterbury, John, *The Nile Basin: National Determinants of Collective Action* (New Haven, Conn. and London: Yale University Press, 2002)
- Wegerich, Kai, *Institutional Change: A Theoretical Approach*, SOAS Occasional Paper no. 30 (London: University of London, School of Oriental and African Studies, 2001)
- Wendt, A., 'Anarchy is what states make of it: the social construction of power politics', in F. Kratochwil and E. Mansfield (eds), *International Organization: A Reader* (New York: Harper Collins, 1994)
- , 'Bridging the theory/meta-theory gap in international relations', *Review of International Studies* 17/4 (1991), pp. 383–92
- Winpenny, J., 'Managing water as an economic resource', in J. Winpenny (ed.), *The Water Problem* (London: Routledge, 1994)
- Wolf, Aaron, 'Criteria for equitable allocations: the heart of international water conflict', *Natural Resources Forum*, 23/1 (1999), pp. 3–30
- , *Hydropolitics along the Jordan River: Scarce Water and its Impact on the Arab–Israeli Conflict* (Tokyo: United Nations University Press, 1995)
- , '"Hydrostrategic" territory in the Jordan Basin: water, war, and Arab–Israeli peace negotiations', in Hussein A. Amery and Aaron Wolf (eds), *Water in the Middle East: A Geography of Peace* (Austin, Tex.: University of Texas Press, 2000)
- and Hamner, Jesse H., 'Trends in transboundary water disputes and dispute resolution', *Water for Peace in the Middle East and Southern Africa* (Geneva: Green Cross International, 2000)
- World Summit on Sustainable Development, Johannesburg,
http://www.johannesburgsummit.org/html/whats_new/feature_story33.htm
- Wynne, B., 'Managing and communicating scientific uncertainty in public policy', Paper presented at the Harvard University Conference on Biotechnology and Global Governance: Crisis and Opportunity, Apr. 2001

References

- Yin, Robert K., *Case Study Research: Design and Methods*, 2nd edn (London: Sage, 1994)
- Young, O., *International Cooperation: Building Regimes for Natural Resources and the Environment* (New York: Cornell University Press, 1989)
- , 'The politics of international regime formation: managing natural resources and the environment', in Friedrich Kratochwil and Edward D. Mansfield (eds), *International Organization: A Reader* (New York: HarperCollins, 1994)
- Zartman, William I., 'Common elements in the analysis of the negotiation process', *Negotiation Journal*, Jan. 1988
- (ed.), *International Multilateral Negotiation* (San Francisco, Calif.: Jossey Bass, 1994)
- , *Negotiations as a Mechanism for Resolution in the Arab–Israeli Conflict*, Davis Occasional Papers no. 72 (Jerusalem: Hebrew University of Jerusalem, 1999)
- , *Ripe for Resolution*, 2nd edn (New York: Oxford University Press, 1989)