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The Political Economy of Water Demand Management in Yemen and Jordan: A Synthesis of Findings

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Enabling poor rural people to overcome poverty

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About This Report

This report is written by Mark Zeitoun, consultant affiliated to the School of International Development, University of East Anglia. The report synthesises and builds on two political economy studies commissioned in Jordan and Yemen by the Water Demand Management Initiative in MENA-WaDImena project (www.idrc.ca/wadimena) funded by IDRC-Canada, CIDA-Canada and IFAD). The views and opinions expressed in the report should in no way be seen as a reflection of the position of WaDImena's funding organizations. As a synthesis report, it may contain errors of omission. The author and the WaDImena project team welcome comments and feedback at the following addresses m.zeitoun@uea.ac.uk and hlaamrani@idrc.org.eg.

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ACRONYMS GENERAL

EMPOWERS EU	Programme of local governance in Egypt, Jordan and Palestine
GTZ	Gesellschaft fuer Technische Zusammenarbeit
JICA	Japan International Cooperation Agency
IWRM	Integrated Water Resource Management
MENA	Middle East and North Africa
NGO	Non-Governmental Organization
WaDI*mena*	IDRC programme to promote water demand management
USAID	United States Agency for International Development
Yemen	
MAI	Ministry of Agriculture and Irrigation
MDG	Millennium Development Goal
MLA	Ministry of Local Administration
MoF	Ministry of Finance
MWE	Ministry of Water and Environment
NWRA	National Water Resources Authority
NWSA	National Water And Sanitation Authority
NWSSIP I	National Water Sector Strategy and Investment Program 2005
NWSSIP	Update2008 update of NWSSIP
PSIA	Poverty and Social Impact Analysis
WSSP	Water Sector Support Program
Jordan	
GDU	Governorate Development Units
IRWA	Improvement of Irrigation Water Management in Lebanon and Jordan
JRV	Jordan River Valley
JUST	Jordanian University of Science and Technology
JVA	Jordan Valley Authority
IDARA	Programme on Water Demand Management in Jordan (USAID)
MOE	Ministry of the Environment
MOF	Ministry of Finance
MOPIC	Ministry of Planning and International Cooperation
MOWI	Ministry of Water and Irrigation
WAJ	Water Authority of Jordan

EXECUTIVE SUMMARY

This report addresses the power-related obstacles to implementation of water demand management (WDM) measures in Yemen and in Jordan. It is based primarily on two in-depth IDRC reports on the political economy of WDM in both countries (Ward and al Aulaqi (2008) and Abed Rabboh and Jabarin (2008)) supplemented with expert opinion and a limited review of public and grey literature. The report also follows earlier WaDImena studies on the political economy of WDM which focused on i) gender (Arafa, et al. 2007); ii), institutional assessment for effective WDM (Brooks and Wolfe 2007); and iii) poverty and equity (Tyler 2007).

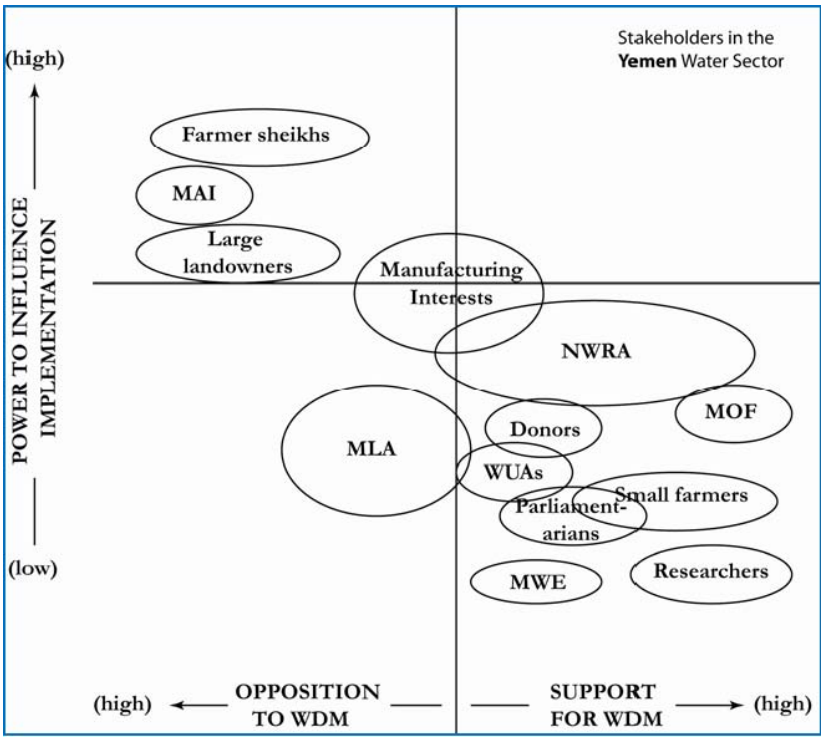
Implementing policy change that threatens deeply-rooted practice and interests in hierarchical contexts such as exist in Yemen and Jordan requires a good understanding of the power relations that sustain them. The various forms of power active between stakeholders in the water sector of both countries are found to fall into either 'hard' or 'soft' forms, but primarily the latter. 'Soft' forms of power include bargaining power, and the power to frame issues in such a way that they may not be contested. An analytical framework designed to address the issue of power and power asymmetry is proposed. It is suggested that obstacles related to powerful stakeholders and power asymmetry be addressed through a combination of two strategies: a) influence or b) challenge. The strategy of influence may be undertaken through two approaches: i) creation of positive-sum outcomes, and ii) encouragement of transformation of the powerful. The strategy of challenging power asymmetry may also be undertaken through two broad approaches: i) leveling the players, and ii) leveling the playing field.

A power analysis is applied to identify and assess the relative influence of each stakeholder in terms of their support for-- or opposition to-- the implementation of WDM measures. The findings reveal that opportunities for improvement are not as bleak as is often thought. There is evidence that efforts at reform of water policy have already been effective, especially following dramatic 'change moments' such as the 1995 Ta'iz crisis in Yemen. The challenge facing supporters of WDM policy is judged to be less one of how to turn the boat around from recklessness to responsibility than it is one of how to build upon the (minor) steps forward already taken.

As shown in the figure below, the analysis in the Yemen case reveals a marked pattern of the powerful stakeholders being opposed to, and the relatively weaker stakeholders supporting WDM. The 'crossover groups' which are neither solely opposed nor supportive of WDM, in particular National Water Resources Authority (NWRA) are noted for their particularly important potential contribution to consensus-building dialogue platforms. Other identified measures of addressing the power asymmetry include, but are not limited to the following:

Create positive-sum outcomes: rural-urban water transfers; encouragement of reflexive governance; and appropriate regulations and incentives. Encourage transformation: reform of incentives for wealthy farmers; and improving intergovernmental relations.

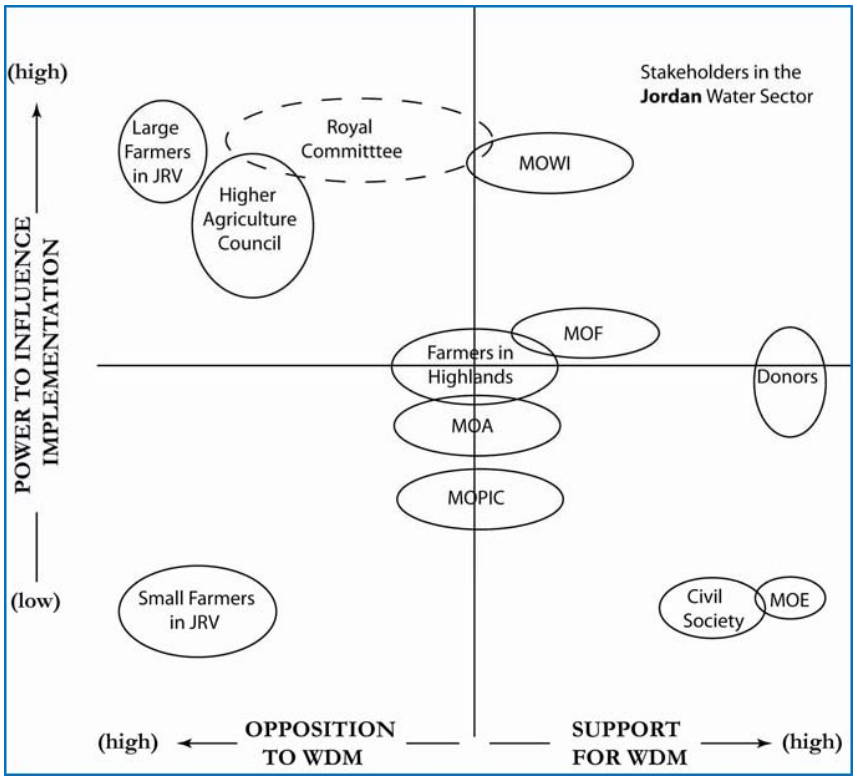
Level the players: building networks; empowering Water Users' Associations; maintaining local knowledge; and renewed pro-poor programmes. Level the playing field: improving equity impact;



effective and wider-spread use of technology; and increased transparency.

The stakeholder analysis of the Jordan water sector reveals a greater variety of positions, as shown in the second figure. As with Yemen, the 'crossover groups' are considered potentially useful for consensus-building dialogue platforms and the very influential role of the Royal Committee is noted in this regard. Other identified measures of addressing the power asymmetry include, but are not limited to the following.

Create positive-sum outcomes: appropriate use of technology (where both land and water are limiting factors); and the creation rural-urban water transfers. Encourage transformation: from the Royal Court downwards; and through more effective communication among stakeholders. Level the players: improving governance of institutions; use of effective WDM mechanisms; and improving education levels. Level the playing field: implementing decision-support systems; and improved lawmaking and enforcement.



The plots are then assessed for elements common to each, and thirteen general considerations and actionable recommendations are offered to benefit the analysis and design of WDM policy and implementation. Selections of these include:

Share lessons learned. Essentially all of the solutions identified in either the Jordan or Yemen contexts are applicable in both. This suggests that there is merit in cross-fertilisation (refined through careful consideration of the political economy in each case, particularly its power-related features).

Establish dialogue platforms. Powerful groups opposed to WDM implementation may be influenced to discuss such issues if called upon by groups seen to be relatively neutral on the subject. Dialogue platforms convened and facilitated by the 'crossover groups' will contribute to efforts on other fronts, and may best be based on traditional conflict-resolution practice.

Build up negotiations capacity. Building up the negotiations skills of WUAs, farmers' groups and water authorities is perhaps the most effective and under-attempted way of confronting power asymmetry. For example, negotiation support to the government of Jordan may assist in ongoing discussions with its neighbours over the Yarmouk River and Disi Aquifer.

Capitalise on 'change moments'. Reforming policy during or immediately in the wake of critical events is much easier than during 'normal' times, when views and policies are entrenched. Political timing is also considered a key to successful change, and an awareness of the resistance to change in the period before elections could save effort. Policy reform plans and projects made ahead of such moments may be rolled out at the appropriate moments.

Be aware of the internal political context. Regular analytical techniques such as actor-network and institutional analysis do not reveal the whole story in contexts where most major decisions are made in an informal world apart from government. Once recognised, organs of the shadow state (influential individuals, the nexus of the current political leadership with complex and long-established traditional tribal politics, and a dominant and entrenched commercial elite, etc) can be engaged as would prominent individuals within the water or agricultural ministries. Powerful sheikhs, for example, may gain legitimacy once the merits of WDM are proven in his sphere of influence.

Think long-term. There are at least two very good reasons for sustained donor commitment: a) change occurs slowly, and a long-term perspective on progress would allow for the accomplishments that have built up over the years (see Sections 4.3.4 and 5.3.4); and b) short or even medium-term commitment compromises donor intentions from the outset. It would be useful to regard the relatively lengthy period during which WDM measures are implemented through a targeted engagement strategy as a transition period. Progress during the transition period could be expected to be made only incrementally, through an improved understanding of how to accelerate the adoption of politically feasible reform. Long-term commitment to WDM and other progressive water management policy will take projects and programs away from the stresses of normal funding cycles and – most importantly – demonstrate to the beneficiaries that they also may plan for the long term.

Devise a 'Targeted Engagement Strategy'. A well thought-through strategy employing a strategic mix of approaches designed to both influence and challenge power asymmetry could be expected to have considerable benefits in the long-term. The program would consider the most relevant forms of power to apply at each stage in the water policy process.

FORWARD

The International Development Research Centre (IDRC) and its partners have been working to address water scarcity issues in the Middle East and North Africa (MENA) region for more than a decade. The entry point to this undertaking has been Water Demand Management (WDM). The approach of WDM challenges conventional thinking about water resource management, by influencing changes in behaviour, policies and practices of water-users for promoting more efficient, equitable and sustainable use of existing water resources from a perspective of multiple disciplines and multi-stakeholder involvement.

There is evidence of greater movement towards WDM in MENA, but without the breadth or strength required to address the physical and social drivers of water scarcity. There remains a need to address fundamental gaps in knowledge and capacity to encourage broader uptake of WDM into policy. Since 2005, the WaDImena project has engaged in this collective effort to promote WDM, support research-based evidence and effective water governance and further influence water policies to achieve the pillars of WDM: Economic Efficiency, Social Equity, and Environmental Sustainability.

The WaDImena Research Report Series is focused on exploring the political economy of the context within which WDM efforts are being promoted, and would have to occur. The series seeks to set the stage for the next phase of WDM research. Previous papers in this series have focused on the links between WDM and i) gender (Arafa, et al. 2007); ii) capacity-building and institutions (Brooks and Wolfe 2007); and iii) poverty and equity (Tyler 2007). Collectively, the findings are an enabling assembly of the very political elements required for successful WDM.

Further towards that goal, WaDImena commissioned two papers exploring the political economy of two different water demand management issues and contexts. The first, by Chris Ward and Nasser al-Aulaqi, explores decentralisation, water markets and the role of water users' associations in Yemen (Ward and al Aulaqi 2008). The second, by Walid Abed Rabboh and Amer Jabarin, explores the power relations between formal and informal policy-makers in the water sector in Jordan (Abed Rabboh and Jabarin 2008). The studies serve to a) explore the role of political economy circumstances determining the uptake of water demand management policy; and b) provide a more systematic understanding of the context-specific power relations that enable or disable policy improvements, and to pave the way for more targeted water policy dialogue in the future.

This paper synthesizes the Yemen and Jordan papers, in an effort to refine the stakeholder power map and to identify potential policy and research directions. The analysis is supplemented by reference to a non-comprehensive set of existing water sector policy, plans and reviews, as well as by interviews with the original authors.[1] As such, this paper is not a comprehensive analysis of the political economy or power relations in the water sector in Yemen and Jordan. Any noted

[1]Another source for the Yemen case has been drawn upon extensively: Yemen's Water Sector Reform Program – A Poverty and Social Impact Analysis by Chris Ward, Sabine Beddies, Khaled Hariri, Souad Othman Yaffiei, Anwer Sahooly and Barbara Gerhager (Ward, et al. 2007).

shortcomings or lack of depth should be considered within this paper's limited scope, which is believed to be sufficiently broad enough to help formulate policy and research directions. The particular structure of this report also implies that it is more readily understood by readers familiar with the Yemen and Jordan contexts.

The full series can be accessed at: www.idrc.ca/Wadimena

1 INTRODUCTION

Water flows uphill towards money [power]
Mark Reisner, Cadillac Desert (1986: 12).

Both Yemen and Jordan face fundamental water resource management challenges: large and rapidly expanding urban populations living in arid to semi-arid environments at elevations high above the water table. Since these countries have little surface water to speak of, the engineering task of moving water uphill alone is difficult enough. Advances in pumping technology have made the task much easier, but have in turn led to numerous social and environmental issues that are highly problematic. The relevant authorities in Jordan struggle to regulate water use even while acknowledging domestic supply to the capital is insufficient. The authorities in Yemen have an even greater challenge, following the 'race to the bottom' that went so far down and beyond sustainable limits of the resource that everybody is ending up losing it.

Not all water users are suffering equally in the wake of the race, however, as the WaDImena research into the political economy of WDM has revealed. Traditional gender inequalities have ensured that current water management practices advantage men or male-dominated structures (Arafa, et al. 2007). They also tend to favour the wealthy (Tyler 2007), as 'the poor stay poor and the rich get rich'. The modern institutions lack much of the ability and legitimacy required to implement change—any change-- that local communities and donors would like to see, for they are challenged by the interests of formidable informal, formal and traditional structures with competing interests (Brooks and Wolfe 2007).

The role that power plays is common to each of the issues (gender, poverty, weak institutions) that the WaDImena research report series has explored. Power relations and power asymmetry in fact cut across every aspect of any political economy, generating an apparently irrational context that usually obstructs attempts to change policy. The political economy of water management in Yemen and Jordan is no different. This report's exploration of the power relations serves to complement the previous studies, in the hopes of generating a better understanding of the political economy within which WDM attempts are made and in turn, find ways and entry points to support and actively push forward WDM.

The starting point of this analysis is that asymmetry in power relations has enabled the creation and maintenance of water use that is both highly asymmetric to various water users and wholly unsustainable. The pillars of WDM — social equity, economic efficiency, environmental sustainability — are effectively undermined as a result. We will see that the extent of the asymmetry is maintained by both overt expressions of hard power but also subtle expressions of soft power. Both the Yemen and Jordan cases are excellent examples of Reisner's (1986) assertion that 'water flows uphill to money [power]'. In both countries there are numerous large-scale farms making considerable profit through the poor use of irrigation water while subsistence farmers continue to rely on unpredictable and insufficient rain and water authorities work hard to reform practices. The case against the uptake of water demand management in Yemen and in Jordan looks intractable indeed.

But the power lens applied to these cases reveals cracks in the armour, and that the opportunities for improvement are not as bleak as we may think. There is considerable evidence of lessons being learned the hard way – usually after the resource itself is severely threatened. The 1995 'drought' in Ta'iz, for example, can be considered nature's 'pushback' on human recklessness. There is also evidence of lessons being learned the soft way – through the persistent efforts of local reformers who deal with reality. Examples include The EMPOWERS and IDARA projects in Jordan, for example, or the updated NWSSIP, in Yemen. The challenge facing supporters of WDM policy is judged to be less one of how to turn the boat around from recklessness to responsibility than it is one of how to build upon the (minor) steps forward already taken. These steps, this report suggests, may be achieved in part through measures designed to both influence and challenge existing power asymmetries.

The report first briefly reviews the two papers on the political economy of Yemen and Jordan, along with information from other sources applied to the framework. Basic power theory is then presented in order to develop an analytical framework within which the data is interpreted. An in-depth stakeholder analysis is then conducted and discussed in the final sections, offering recommendations useful to both WaDImena and other supporters of WDM.

2 THE POLITICAL ECONOMY AND WATER DEMAND MANAGEMENT POLICY

This section provides a very brief summary of the three papers in WaDImena's WDM Research Report series. It is argued here that the political economy (in its broad sense) determines the uptake or rejection of water demand management measures. Insofar as it relates to WDM, the political economy may be considered from several angles. Tyler (2007), for instance, highlights the links with WDM in addressing poverty and inequity through opportunity, security and empowerment. He emphasises "the importance of creating opportunities for the poor to take initiatives themselves, providing greater security to reduce risks, and improving governance and resource management to strengthen the rights of the poor to access resources" (p.6). 'Empowerment' of the poor occurs, in his view, when the water-delivery and policy setting actors are both responsible and accountable to their needs. He makes several recommendations for WDM's contributions to poverty reduction, including: increased role for women; technical support by water-supply agencies; poor-sensitive water pricing; extension of water services to unserved areas; enabling policies of senior governments; securing the access rights of the poor; participatory analysis and intervention; shared learning from innovations, etc. (p.22).

Arafa et. al. (2007) explored the owner-driven gender issues, noting that the exclusion of women from water policy-setting at every level serves to reinforce social inequity. In their examination of the role of institutions, Brooks and Wolfe (2007) look 'outside of the box', at the ever-important solutions beyond the watershed. They emphasise the role of "exogenous elements like "race", AIDS, desperate poverty and ongoing inequality" (p.12). Key recommendations they make for shaping or encouraging the uptake of WDM policy include: making the WDM agenda explicit; providing explicit

responsibility for WDM to a central agency; institutionalization of WDM by non-water agencies (such as MoF, MOA); while noting differences between WDM capability and capacity.
'Power' recurs quite clearly as a theme in each report, meriting further investigation into its role in the political economy of the water sectors. But 'power' means different things to different people, and an appropriate conceptualisation is required.

A Note on solutions outside of the water sector and other broad approaches

Solutions in the political economy outside of the watershed do not fit into the frame of this report, and have thus been excluded. These include for example the major benefits that would derive from action in the economic sector. For example, Allan (2004), states that the, diversification of the Yemeni economy is the best way to overcome physical water scarcity. The ability to afford a balanced reliance on the import of water-intensive products (such as wheat) is a potentially effective way to achieve both food and water security. Supply-side options are also not examined in this report.

A Note on methodology and the use of anonymous sources

This report relies on three main sources of data. The first is the previously-mentioned 2008 WaDImena's case studies on the political economy of water demand management in Yemen and in Jordan. The second is the opinion of seven esteemed academics and policy-makers well-known to and well versed in the political economy of the water sectors in both countries. The third source of data is the published and unpublished literature on the subject, which includes the books and reports of ministries and donors as listed in the bibliography.

The goal of this report is to identify the political economy obstacles to water demand management, and to propose ways to bypass or overcome these obstacles. The very nature of the main focus of this report – power, and power asymmetry – tends to produce reactions that are counter-productive to this goal. Issues that may evoke alienation of different groups and individuals are thus avoided to the extent that this is feasible. For the same reason, the data and opinions provided by the experts has been kept anonymous. It is hoped that the readers of the report appreciate the balance that has been struck, and remain focused on the issues and recommendations identified.

3 Power and Water Demand Management Policy

Power is not merely shouting aloud. Power is to act positively with all the components of power.
Gamal Abdel Nasser (1918 - 1970)

'Power' means so many different things to so many people that it is said to be "essentially contested" (Evans and Newnham 1998: 448). Many think of power merely as strength: in the sense that a boxer, say, is more powerful than the average accountant. But the concept is contested by quick consideration of the influence that the boxer's baby has over its father, or that of the boxer's accountant in securing the latter's financial security (or ruin). Power in fact has many components.

We have, in these few sentences, considered several: strength, love, responsibility, money, ideology, and symbols. The previous section already highlighted several more components of power – legitimacy, authority, rights, inequality, capacity, capability, accountability, security, and others.

Michel Foucault famously recognized that 'knowledge is power', a point which is still poignant to the millions of people without access to the internet. Others would contest that knowledge without the ability to apply is also disempowering. Some argue that the issue is less about what power is than about what power does in a relationship (Guzzini 2005). This may be precisely why those with power (or who are in power) dislike talking about power. After all, once recognized, a privileged position must constantly be justified – usually at some economic or political cost (Zeitoun and Allan 2008: fn 3). The complexity of the issue and debates surrounding it are interesting, if endless.[2]

The water sector is replete with manifestations of power – in a wide variety of forms. The destructive effects of power are visible when industrial-scale farmers export crops produced from subsidised irrigation water in Yemen, for example, while food security remains a challenge for subsistence farmers and the urban poor. The results of power asymmetry are also immediately evident when considering the water resources available in theory to Jordan, most of which cross international borders and are of benefit mostly to the stronger neighbour. Little is left for the Kingdom after the neighbouring states have taken the lion's share. A much more subtle form of power is at work when cynics declare that improvements in the water sector of developing countries are not possible – despite evidence to the contrary.

3.1 Definition and Conceptualization of 'Power'

In order to make sense of the power-related obstacles to the uptake of WDM in Yemen and Jordan, a working definition of power is proposed. In this paper, power is A's capacity to make B do what B would not otherwise do (Dahl 1965). The term influence is thus used almost interchangeably here for this definition of power. It is also suggested for the purposes of this paper, that power be conceived of in at least two broad dimensions – 'hard' and 'soft' power.[3]

Hard power is 'force' or 'power as might', the puissance [French] of a state measured in terms of expressed or embodied coercive capabilities (i.e. economic power, military power, and the ability to wield these). At the river-basin level, this form of power may be manifested in riparian position or in large-scale control infrastructure. On the Nile River, for example, this pits Ethiopia's upstream and topographic advantages against Egypt's Aswan dam. Force is used very rarely in water conflicts at the international level. Armed conflict over water resources is not uncommon at the domestic level, however, particularly in Yemen (Lichtenthaler 2002, Ward 2005).

[2]A dozen alternative viewpoints, for example, are offered in the 2005 Special Issue on Power of Millennium: Journal of International Studies Volume 33, No. 3.

[3]The conceptualisation is very much inspired by, though not the same as, the three dimensions of power identified by Steven Lukes (2005 [1974]) in his seminal work *Power: A Radical View*.

Bargaining power may be considered a form of 'soft' power, to borrow Nye's (2004) term. This bargaining type of power derives primarily from the legitimacy an actor has from being in a relationship, which allows the actor to bargain and deliberate issues common to other actors it interacts with. It is analogous to the pouvoir [French] that comes from authority (Turton 2000), and may take the form of the contractual protection an employee has from her/his employer, or the recourse to international law that a state has within the international system. Bargaining power may be improved by positioning, alliances or through issue-linkage (at the negotiations table).[4] People who realise that 'money is power' have understood this softer side of power. In Yemen, especially, power is very closely related to wealth.

A second form of 'soft' power– and perhaps the most subversive of the three forms active in hydro politics – is **ideational power**, or power over ideas. Like bargaining power, ideational power takes place mainly through discourse, but goes one crucial step further to move from the conscious world of bargaining to the subconscious world of pre-determined outcomes. It is this form of power that determines what is acceptable and what is not. Allan (2001) refers to this as the 'sanctioned discourse'. The persistence of tradition, for example, rests on unquestioned acquiescence to the status quo. Use of such ideational power is more common than perhaps most people are aware. Public awareness-raising efforts (such as advocacy campaigns for WDM) operate in this realm of ideas, and intend to challenge prevailing views.

Hundreds of components of power can be conceived under these two broad dimensions. As Nasser noted (in the quote above), the way that these forms and components interact may be the most determining feature of power. The leverage that one actor can harness from its bargaining power, is greatly enhanced if it has an edge on hard power. Consider for example the relative influence of Egypt and Rwanda at negotiations meetings of the Nile Basin Initiative.

It is directly relevant to the purpose of this study to note that *hard power is more effective in contexts of poor regulation*. Similarly, *discursive power is more effective where rule of law prevails*. The Yemeni and Jordanian contexts that are under consideration are a mix of both: generally poor regulation, with the existence of traditional rule of law or state legislation.

Perhaps unwittingly, donor projects aimed at the promotion of WDM are employing both types of soft power. The willingness and ability to fund water policy or infrastructure projects gives some donors considerable bargaining power – especially when the recipient country lacks funds. The same could be said for the technical expertise donors' offer. Donors also have a certain extent of ideational power, particularly for water policy projects. The promotion of WDM is, after all, an attempt to shift the ideas and behaviour through discussions and ideas.

[4]Daoudy (forthcoming), for example, has identified the negotiating tactic of 'issue-linkage' as a form of bargaining power employed in the discursive interaction between Syria and Turkey on the Euphrates. India's double bilateral treaties with Nepal and Bangladesh (what Barrett (1994: 6) refers to as "incomplete agreements") are another expression of well-executed and effective state bargaining power.

3.2 An Analytical Framework for Confronting Power Asymmetry

This section presents the analytical framework which is later applied to the evidence reviewed in Sections 4 and 5. The framework is designed to encourage exploration of the softer forms of power, and acknowledges that power asymmetry is a fact of life. But negative consequences resulting from this fact need not be left unchallenged[6]. It is suggested that powerful stakeholders and power asymmetry can be addressed through a strategy of either influence or challenge, through a variety of approaches (Zeitoun and Jägerskog, 2009). The idea is to level the players, or to level the playing field. Insofar as it relates to influence in the water sector, the reform approach suggests that power asymmetry be **influenced**, through either of two approaches:

Create positive-sum outcomes: This approach relies on the logic that efforts contradicting the interests of powerful stakeholders are likely to be resisted, while efforts meeting their interests will be supported. The key to this approach is in identifying projects beneficial to the weaker side but that are also beneficial to the stronger side, hence 'win-win'. Examples include the sharing of benefits related to water (such as food, or hydropower) (see e.g. Phillips, et al. 2006) or basin-wide sustainable agricultural policy that works for all over a much longer term.

Encourage transformation: This approach is based on the idea that the powerful may be persuaded to broaden existing arrangements to meet the interests of the weaker, primarily through appeals to their leadership. Examples include policies that are 'championed' by a particularly powerful person (i.e. if an influential tribal, community or state leader goes 'green') or the creation of economic conditions encouraging change that can then be co-opted by authorities. The other approach to encouraging transformation is through 'naming and shaming', an approach that is not considered relevant to the sub-national contexts of Yemen and Jordan.

Power asymmetry may also be **challenged**, through either of two ways:

Level the players: Building up the capacity of the weaker side increases their legitimacy (and therefore bargaining power). Policy reform is facilitated when the agency promoting it has the credibility from the people and other institutions to shore up its formal (if weak) authority. Examples relevant to water authorities or Water Users Associations include building their managerial, technical, negotiations capacity; or ensuring long-term financial support. The EMPOWERS project has

[6] Situations of extreme power asymmetry in the water sector can lead to 'hydro-hegemony' (Zeitoun and Warner 2006). Methods identified to counter the asymmetry include harnessing the 'weapons of the weak' (Scott 1985) and the disruption of the hegemonic status quo by the generation of alternatives (Cascao 2008), or 'leveling of the playing field' through effective legislation and regulation. While seriously challenged by the reality in the Yemeni and Jordanian water sectors, such theory may hold keys to effective reform towards WDM policy.

taken this approach with a certain degree of success in Jordan, Palestine and Egypt.[7]

Level the playing field: The 'playing field' between those opposing and those promoting WDM is not level, in large part because of the various forms of power employed to ensure that the 'law of the jungle' reigns. In theory, the playing field may be levelled through strengthening of the legislative and regulatory context, and would lead to more sustainable arrangements. Examples include the establishment and enforcement of water legislation, equal enforcement of regulation to all water users, and development of regulation for water polluters.

All of the activities proposed under the two strategies are already well-known to water authorities and donors in the water sector. Rather than favouring one approach over an another in the effort to push for WDM, it is most likely that a strategic mix of the two approaches over the long term that will have the most chance of success to change the overall water management approach to one based on demand management .

4 Power and Water Demand Management in Yemen

In addition to the data sources mentioned in Section 2, this section relies extensively on Ward et. al. (2007): *Yemen's Water Sector Reform Program – A Poverty and Social Impact Analysis* and Ward and al-Aulaqi (2008): *Yemen - Issues in Decentralized Water Management*. A summary of the latter is provided in Appendix A.]

The formidable water challenges facing Yemen are well-known, most notably the huge increase in irrigated areas (from 35,000 ha in 1970s to 400,000 in 2006) enabled by more readily-available deep well drilling and pumping technology. The challenges to water demand management are significant throughout the country, especially in Taiz where 1 million people reside. With domestic water reliant on a pipeline of hundreds of kilometres, the inhabitants of this city lived the effects of over-pumping in the Upper Wadi Raysan, when the most infamous 42 days without piped services in 1995 occurred (Handley 2001). As the authors of the WaDImena report state:

The case of Ta'iz is perhaps the most notorious: undrinkable water delivered at erratic intervals, usually several weeks apart, and scant water sources appropriated amidst much social tensions – and often strife – from the poor agricultural hinterland. (Ward and al Aulaqi 2008: 3).

The Ta'iz crisis prompted the establishment of Supervisory Committees for two basins to be examined (please refer to Appendix A for more details). Sana'a and other cities in the overpopulated highlands are on similar tracks as Taiz in ten to twenty years. While Yemen's oil reserves and revenues may be significant, they are diminishing and there are steadily less opportunities on offer for diversification of its economic base. While urban demand drives part of the scarcity, the majority of water is used in the agricultural sector.

Ward and al-Aulaqi (2008: 6) also discuss how water scarcity in Yemen is both physically and socially

[7] See the EMPOWERS website for well-documented project findings: www.project.empowers.info

driven, determined by a growing population and a combination of:

- technology (facilitating well development)
- economics (subsidies, increasing demand)
- social and psychological drivers (individual gain presiding over traditions of cooperation)
- knowledge (insufficient awareness of groundwater capacity); and
- institutions (lack of regulation has not prevented the 'race to the bottom')

4.1 WDM, Power, and Interests in Yemen

This section reviews the relative power of the main stakeholders in the water sector in Yemen, and classifies them according to the power analytical framework developed in Section 3. The importance of the role of power is highlighted by considering just one of dozens of issue areas, as Ward et. al. (2007: 9) do in discussing the ways that assets, financial and political faces of power are combined and lead to "resource capture" by the more influential stakeholders. Referring to the pumping technology-enabled scramble for groundwater, the authors also highlight resistance to any reform of the status quo, and the asymmetry it has led to:

Vested interests on the part of those who benefited from the earlier fast development of water emerged as potential losers from the changes [for reform of the sector suggested by NWRA and donors] ...The politically powerful, the tribal leaders and a large number of farmers with access to capital gained from [the earlier unregulated groundwater development]. They have further consolidated those gains with profits incurred through the low diesel price and protected markets. By contrast, poorer farmers and the rural landless did not benefit. (Ward et. al. 2007: 9).

4.1.1 Stakeholders in the water sector in Yemen

Tensions in the Yemen water sector are derived in essence from the contest between a number of well-established traditional authorities on the one hand and the rules and organisations of the relatively young Yemen state on the other. In a number of ways, the decision-making process in Yemen resembles a 'shadow state', and policy is in some cases set or heavily influenced from forces outside the formal branches of government. For example, the five families that control the bulk of commerce have undue influence over the legislative and executive branches (Anon a 2009). These broad divisions do not last for long, though, as government agencies and tribal influences and interests shift and change (Lichtenthaler 2002). Ward et. al. (2007: 9) note how these types of changes occurred during all the phases of water resource development in the country. They also describe the relative power of the main stakeholders in the irrigated water supply and rural water supply sector. These are summarised in the following section, and plotted on the stakeholder analysis plot of Figure 4.1.

Farming Sheikhs and Large Landowners: The manner in which influential sheikhs have monopolized water rights (or their rights to water) is well established in Handley (2001) and Lichtenthaeler (2002). Their opposition to reform is manifested in "discreet ways – in noncompliance, or in cornering large shares of publicly subsidized programs" (bargaining power). But their overt hard power is well noted.

Power is particularly entrenched by sheikhs at the local level, in conjunction with security officials and parliamentarians (Anon f 2009). There has been violent resistance to previous water management initiatives, including blowing up wells and pumps. At Jebel Sabr, 16 people were killed over a water well. Such traditional influence is strongest where illiteracy rates are highest, as in the north of the country. It is worth noting that the influence of the sheikhs is malleable. Opportunities for water policy reform may thus arise a) by influencing people to influence the sheikh ; b) influencing the sheikh himself to gain legitimacy, for example, by promoting the merits of WUAs; or c) developing bargaining power through constant build-up of legitimacy, in the long-term. The waning power of traditional resolution mechanism is a further constraint (Anon b 2009).

Parliamentarians: "Despite conservative, populist and potentially rent seeking tendencies, parliamentarians have been by and large a positive force" for irrigation water supply reform (Ward, et al. 2007: 33). Parliamentarians and law-makers may have shifted their attitude about irrigation water in the last years. Their power is based on legitimacy granted by the people (bargaining power). For rural water supply reform, "Parliamentarians, ministers, governors and tribal leaders have all reaped the reward of patronage in the past by influencing the allocation of financing in rural water towards particular constituencies", demonstrating to what extent the "strong [have] vested interests in the status quo" (Ward, et al. 2007: 57). As rural water in particular has been effective in reducing poverty, some politicians open to reform though the Ministry of Water and the Environment must be "able to persuade top decision makers that the reform program is the right one."

Ministry of Water and Environment: The MWE has low implementation capacity (and therefore relatively low bargaining power). When it comes to rural water supply reform, the MWE faces constraints brought about by several factors: its only very recent establishment (leading to less legitimacy and bargaining power); the difficulties of challenging the status quo (hegemony); little demonstration of success to this point; and competition with other sectors for budget and donor resources.

National Water Resources Authority: Facing many of the same issues as the MWE, the NWRA is significantly donor-dependent and also "dogged by a top-heavy and rather inert headquarters and lack of management vision or capability" (Ward, et al. 2007: 34).

Ministry of Agriculture and Irrigation: From an institutional perspective, the MAI may look upon MWE "as a menace to its power". The MAI may employ discursive power in inter-institutional dialogue, as noted by a senior MAI official's comments towards the NWSSIP, which, according to him is "all about reducing agricultural water use, but what about farmers' livelihoods?" Similar statements abound, such as "agriculture has 93% of the water - but only 8% of the NWSSIP budget" (Ward, et al. 2007: 37). The influence and bargaining power of MAI should not be under-emphasised, and the will of the MAI to engage in dialogue should be noted.

Donors: Donors in the water sector in Yemen compete amongst themselves, even as they promote cooperation. As a group, they are thus susceptible to being 'divided and conquered' by local leaders

or authorities.

4.1.2 Yemen stakeholder analysis plot

Figure 4.1 plots the relative influence of each actor against their expected stance on the uptake of WDM water policy.

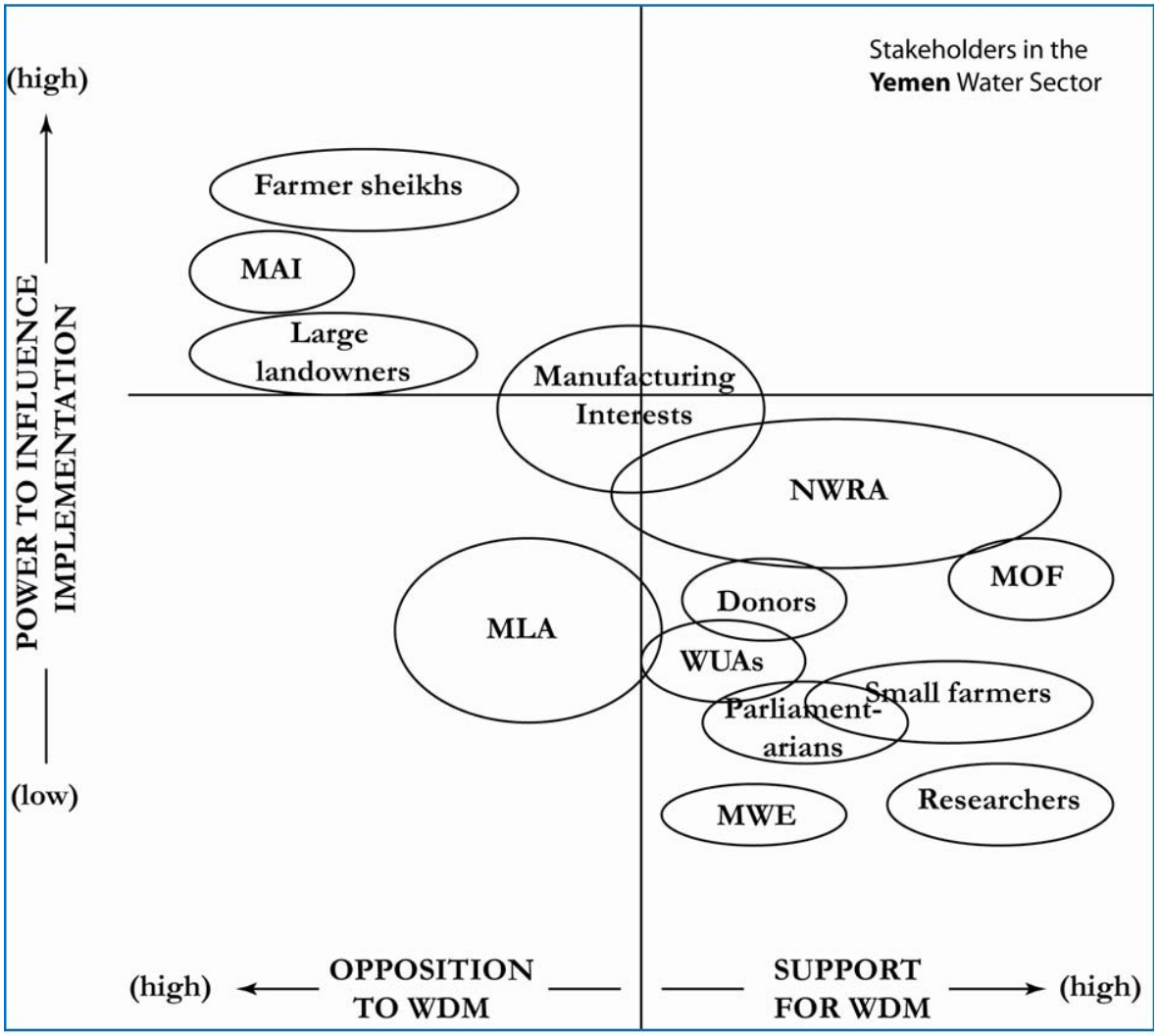


Figure 4.1. Stakeholder analysis plot of WDM implementation (irrigation water sector) in Yemen. The figure is indicative only, and based on qualitative data deriving from the reports being synthesised and subsequent interviews.

Modeled after the method provided in Annex 3 of Ward et. al. (2007). The urban water provider (GARWSP) is not shown, as the focus of the figure is on the agricultural water sector. MLA and local NWRA shown to both oppose and support WDM, depending on the location of the institution in question. i.e. some local branches of NWRA or MLA may oppose WDM, while others support it.

As noted, Figure 4.1 is indicative, and based on limited qualitative data. Comments from readers on the placement of the spheres of influence are most welcome.

There are many points to note from Figure 4.1. First and foremost, there is a clear distinction in power between those opposed to and those supportive of WDM implementation, with the latter generally having much less influence. In other words, stakeholders, supportive of WDM, face a much more influential set of actors who oppose it. The burden of change is thus carried by the weaker side.

Table 4.1. The relationship between water and wealth in Yemen (Ward, et al. 2007 : Table 2).

	Well-off	Poor	Very Poor
Water source for agriculture	Tubewell; Spring; Terraces; Spate head end	Shared tubewell; Spring; Terraces; Spate tail end; Water purchase	No access
Use of diesel	Yes	Limited	No
Average [per capita] daily consumption	> 40 litres per day	10 – 40 litres per day	Limited
Time spent fetching water	Nil	--	Several hours each day, for women and girls
Cost of water per m3 (if purchased	-- [operating cost of source]	[Low for network supply; High for vendor supply]	Very high, if purchased

The MAI, farmer sheikhs and large landowners/farmers are at once the most influential and the most clearly opposed to WDM. Of further interest are those stakeholders whose spheres of influence straddle both opposition to and support for WDM. 'Manufacturing interests', for example, may be opposed to WDM if they fear it will reduce their productive capacity. On the other hand, if they have been convinced that WDM leads to prolonged or more sustainable production, they may be supportive of WDM measures. The overlap of support for and opposition to WDM by the MLA and (to a much lesser extent some of the local NWRA offices) is explained by geography. As will be discussed*, it is in these 'crossover groups' where hope for WDM reform may lie*, as will be discussed. [8]

4.2 Forms of Power Employed

The several forms of power touched upon in Ward et. al. (2007) and Ward and al-Aulaqi (2008) are discussed below.

4.2.1 Hard Power

The use of firearms as both explosive and deterrent power may be nowhere in the world more prevalent in the water sector than in Yemen. Numerous examples are provided in Lichtenthaeler (2002), Handley (2001), Ward (2005) and Ward et. al. (2007). Sometimes the threat of force alone may be sufficient to get X to do what it wants against its will. As Handley (2001: 152) notes, the major sheikhs in 1993 "were invited up to Sana' to hear the president declare 'you will cooperate with the drilling… either by custom (that is, gentleman's agreement), or by violence". Ward and al-Aulaqi (2008: 13) note how the use of such hard power may also be influenced by softer means like money, through the payment to police for enforcement of NWRA policy, even if some "influential ministers, sheikhs and army and security officials" continue to drill/operate illegal wells.

4.2.2 Soft Power: Money

The consequences of 'water flowing uphill to money' are in full evidence in Yemen. "Ownership of a water source is correlated with higher income, and the poor typically either share an agricultural water source, or buy water, or have no access other than to rainwater" (Ward, et al. 2007: 4). The

[8]Minor modifications noted in [square brackets].

wealthy have the influence through money a) to drill and outfit wells, and b) to bribe officials in bypassing the law (Anon f 2009). The point that money equals power in the water sector is emphasised in Table 4.1.

Table 4.1 shows that the poor pay the most for water, as in so many other areas of the world. The case of the village of Al Qala is but one example of the asymmetry. Villagers are paying about $4 per m3, or twenty times what people "in the affluent suburbs of Sana'a or Ta'iz" pay[9] (Ward, et al. 2007: Box 23). What Table 4.1 further highlights is that many options and coping mechanisms normally available for the poor are not available. For example the ability to purchase diesel to run pumps is often an unavailable option, a situation that is much less the case in Jordan or in other MENA countries. The extent of enduring poverty may be inadvertently maintained by some government programs aimed at having the opposite effect. These include policies to increase fuel prices or and the poor's limited ability to tap into the GSCP project (Ward, et al. 2007: Box 10).

The influential role of money in the water sector may be turned to an advantage for those seeking to redress inequities and implement WDM. Along with technical know-how, funds are the donors' most influential assets. The willingness to fund NWRA, WUAs and other program, projects and institutions often provides a counter-balance for the poor (provided that these are well designed and executed). Further, attempts at water resource management reform have often also included financial tools and incentives. While the 'more dollars per drop' policy of efficient irrigation has led to increased pumping for the reasons stated, Ward (2007: vii) suggests that refinement of the incentive structure is "the most powerful influence on use of water in agriculture".

4.2.3 Soft Power: Bargaining Power

Another form of soft power that is basic to both locking-in and unlocking the inequitable and unsustainable management of water resources is the bargaining power that derives from legitimacy. The capacity of bargaining power available to traditional authorities and newly-formed state authorities is very different. That so many decisions made in the 'shadow state' only serves to widen the power gap.

The tradition of resolving community issues over qat chewing sessions in the afternoon works, for example, because of the legitimacy and well-established hierarchy of those involved (Anon b 2009). Appeals for change by earnest outsiders to the concepts of human rights and equity cannot be expected to be warmly embraced and taken up, precisely because they lack legitimacy. Newly-formed state institutions such as the NWRA (and, especially, WUAs) have a similar 'legitimacy problem'. Their bargaining power and legitimacy will remain low until they 'prove' themselves as technically and organisationally competent, thus building up their legitimacy in the eyes of those the NWRA and WUAs are attempting to regulate.

Yet WUAs can be empowered through community-interest or self-interested ways. WUAs can inform

[9]Refer also to Handley (2001: 126) for a comparison of household incomes spent on water.

the NWRA of illegal drilling, for example, but the NWRA cannot enforce. And here the Water Law is not helpful: NWRA staff must "interpret or misrepresent the law in order to stop drilling" (Ward, et al. 2007: 19). This is complicated further by the fact that local councils who are elected every four years have difficulty maintaining vision and knowledge, and are linked into local politics and power structures. The challenges faced are a battle of bargaining power:

> "Implementation of licensing and regulation is proceeding very unevenly, but NWRA branches are clearly achieving a creditable outcome in some areas… Other areas, however, report continuing major problems: in Abyan, for example, even the Governor admitted that he could not enforce the law – when someone is arrested "they are released by the Attorney General's Office". The pretext, he said, is that "the Water Law is inadequate" or "the by-laws have not been issued", but there are commons suspicions of corruption in both the security forces and the judicial structures." (Ward, et al. 2007: 18).

Thus the short-term power of authority invested by democracy cannot really match longer-term power derived from the legitimacy of families – which in turn have the luxury of ignoring state law if it goes against their interest.

The texture of the relatively large influence of the sheikhs and large farmers is worth exploring further. Machiavelli has pointed out that "even a ruthless ruler needs to ensure that the ruled believe his rule is justified" (Wester and Warner 2002: 66). It has been suggested, for example, that while the influential sheikhs are untouchable at the higher level, they may actually be quite susceptible to pressures at the community or local level (Anon c 2009). Yet evidence of sheikhs who are not really in charge of their local tribe can be found in many places. The power and influence of the sheikhs, after all, relies on their legitimacy in the eyes of tribe members, and this legitimacy to a large extent must be earned.

4.2.4 Soft Power: Changing behaviour through discussion and ideas

In the face of so much use of hard power (guns) and of coercive forms of soft power (especially money), the power of words and ideas appears very small indeed. To understand the real influence of discursive and ideational power, however, one must look at the process of change over the long term. And it is here that 'change moments' combine with the resource itself to provide potential windows of opportunity to promote the implementation of WDM efforts.

A growing number of professionals argue that reform and progress towards WDM actually is occurring. This may be attributed to 'reality kicking in'. That is, as the unsustainable limits of the groundwater are reached, the water table drops even beyond the reach of most deep wells. This occurred with the emblematic 1995 Ta'iz crisis and to an increased number of agricultural wells drying up. Faced with the option to continue unsustainable pumping activities, even the more powerful irrigators and authorities may become more vocal to the water conservation plans promoted by the NWRA. However, there are periods where reform is more difficult than usual – for instance during elections period when parliamentarians are more susceptible to the influence of the influential sheikhs.

Reaching the bottom in the 'race to the bottom' may also be considered a key moment in the reform

process. Farmers had grown accustomed to the seasonal variation in rainfall before the advent of deep tubewell. When those fluctuations are replaced by over-pumping, there is no further technological fix. And as the evidence builds up over time and space, answers are sought and behaviour and habits eventually change slowly. Changes occurring in other governance aspects assist the process – for instance governments 'mature', and realise that central control is not always possible (Anon c 2009). Furthermore, high illiteracy rates reinforce the influence of local sheikhs. In this sense, education equals power.

Ideational power also works through awareness. The 1995 Ta'iz crisis was picked up by all other parts of Yemen, raising the national level of awareness of the social and physical aspects of water scarcity in a very short period. The limited success of certain WUAs is attributed in part to a greater awareness of scarcity amongst the general public. When considered alongside the increasing legitimacy of NWRA following years of building up its capacity (and therefore bargaining power), there is a basis for mild optimism. In some places today, people understand that new wells undermine their own or others', and they trust NWRA when they report illegal well drilling to them or to the police. Such a dynamic was inconceivable fifteen years ago(Anon c 2009).

Of course, the step-wise approach to change cannot be based solely on words and ideas. Successful implementation of a WDM-related pilot project is essential to shore up the influence of the ideas. The al Sinah Association of Local Projects in Ta'iz or the Al Wahda WUA (Ward and al Aulaqi 2008) is a case in point. Provided they endure as successful examples, they should be promoted to maximize impact on behavioural change.

There is also evidence of leadership leading the charge for change. The chairman of NWRA in Ta'iz has encouraged local people to support rural-urban water transfers, for which they receive greater financial rewards than for irrigation. This was accompanied by a system of tradable water rights. The chairman enjoyed success through enforcing the registration of wells. At first well owners were reluctant, though may have kept in mind the possibility of eventually losing their wells (after a period of, say, five years, once well-owners realise the government action is serious and sustained). And farmers are receiving greater pay from their water than they could through the agricultural produce market. The initiation of such regulation of rural-urban transfers gave a push in the right direction.

The head of NWRA-Ta'iz is also credited for being assertive and understanding of the local politics and power relations. He has built up a network with politicians (governor) and traditional leaders (sheikhs). He has also started a public awareness campaign (stickers, radio, TV) about water scarcity.

4.3 Identified Ways Forward to WDM in Yemen

The discussion so far has touched on the options and paths that government and donors have pursued. This section classifies these options according to the analytical framework of Section 3.

It is argued that power asymmetry must be recognized as a fact of life, in Yemen but everywhere as well. The asymmetry has been graphically compared according to quality of water source, time spent fetching water, gender of water collectors and in household income spent (Handley 2001: Figs 3.5 – 3.9). Those interested in promoting change from within a situation of extreme asymmetry have little choice but to a) influence the asymmetry by working from within it, or b) challenge the asymmetry by attempts to strengthen or weaken one or the other side.

The following recommendations are tentative and seek to identify and over-coming power-related

obstacles. Broader recommendations including those not identified strictly during the research process of this paper are discussed in Section 6.

4.3.1 Influencing power asymmetry in the water sector in Yemen

Create positive-sum outcomes

Examples of positive-sum or 'win-win' activities reviewed include:

- Rural-urban water transfers / Water markets. These accommodate the power asymmetry between rich farmers and urban dwellers. Water transfers are the 'path of least resistance', particularly if the farmer selling his water benefits from the deal. Urban dwellers also benefit from a more reliable and cheaper supply. Governments may also find the regulation of water markets much simpler than attempts to gain or maintain centralised control (Anon c 2009)(see also Riaz 2002).
- Reflexive governance. Formal adaptation to (or tolerance of) spheres of influence that have developed organically may prove beneficial to all involved. The Social Fund for Development, for example, is already (now) acting as a complementary service provider to the urban water provider (the GARWSP). "Where water harvesting is the best solution, the Social Fund will invest. Where pumped schemes are the better solution, GARWSP will invest". Such coordination may be formalised or 'incentivised' in a number of ways (Ward, et al. 2007: Box 18).
- Appropriate regulation and incentives. "Negative and positive incentives – regulation and price rises compensated by measures to enable well owners to reduce abstraction whilst maintaining their incomes. The key to success will be constant and equitable application of both regulation and incentives. More broadly, ownership of NWSSIP could be strengthened so that not only the highest leaders are convinced and are prepared to champion reform implementation, but stakeholders at all levels from decision makers down to poor rural people are persuaded that water sector reform is beneficial and fair" (Ward, et al. 2007: x). There are limits, however, to the persuasion of figures and facts in the face of hard power or financial profit.

Encourage transformation

Different measures have targeted different influential actors. From Figure 4.1, it is clear that the powerful actors whose interests must be considered include the MAI, farmer sheikhs and the large landowners, as well as those less powerful who remain opposed to such measures (i.e. the MLA and some manufacturing interests). Activities identified that may encourage transformation include:

- Reform the incentive structure for wealthy farmers. "The behaviour of irrigating farmers is the key to the success of reforms in water resources and irrigated agriculture. …reforming the incentive structure--- is the single most effective way to improve water resources management" (Ward, et al. 2007: vii).
- Inducements of the national government. Donor interventions on behalf of the government in other sectors, for example for access to the World Trade Organisation (Ward, et al. 2007: 21).
- Improve inter-governmental relations. Communicating with the MAI is critical for its relations

with NWRA and MWE. For instance MAI would benefit from demonstrating how rural-urban markets are not about transferring water from poor farmers to rich towns, but about increasing rural incomes whilst improving the sustainability of irrigated agriculture (Ward, et al. 2007: 38).

- Capitalise on 'change moments' and windows of opportunity. Reforming policy during or immediately in the wake of unfortunate events or crises is much simpler than during 'normal' times, when views and policies are entrenched. Policy reform plans and projects made ahead of such moments may be rolled out at these moments. The 1995 Ta'iz incident and other water shortages "accelerated the policy curve, in that case acting as a driver of the urban water reform program" (Ward, et al. 2007: 9). It is worth considering if more leverage may still be garnered on the back of such a shock, or through highlighting shared-risk concerns like climate change. As noted earlier, the elections schedule should also be considered for the possibility of even greater (or reduced) traction, as noted earlier.

  Build consensus. Change is often best promoted through parties that perceived as least interested. In this sense, the more powerful groups may be more willing to discuss and debate in sessions arranged by the 'crossover' groups of Figures 4.1 than by the ones that collectively oppose their viewpoint. There is scope therefore to consider the establishment of 'dialogue platforms' to be led by a combination of the MLA, NWRA and the manufacturers. These may take inspiration from traditional Yemeni conflict-resolution and dialogue forms.

4.3.2 Challenging power asymmetry in the water sector in Yemen

Level the Players

Apart from their intended and well-known goals, capacity-building programs can also serve to counter power asymmetry by increasing the legitimacy (and therefore bargaining power) of weak government institutions. Policy reform is facilitated when the agency promoting it has the credibility from the people and other institutions to shore up its formal (if weak) authority. Activities identified throughout this review that fall into this category include:

- Build networks. "A strategy like NWSSIP can only be effective if there is broad understanding and ownership of its objectives and means. It is recommended that a NWSSIP "stakeholder involvement plan" be developed, with a particular focus on taking targeted messages to the top (the most senior decision makers, parliamentary committees, the Shura council, senior clerics), to key stakeholders at governorate and district level and below, and to the entire population" (Ward, et al. 2007: xi).
- Empower WUAs. WUAs can temper the influence of sheikhs to a degree, particularly when they are staffed by well-educated members (as the al Hayat WUA for women (Anon f 2009). The bargaining power of poor farmers is increased through uniting. Experience shows that "WUAs can help farmers, particularly smaller farmers, in several ways: 1. as a means of accessing public programs…; 2. as a solidarity mechanism…; 3. as embryonic 'water management agencies" [10] (Ward, et al. 2007: 16). The JICA – funded Water Resources

[10]Further suggestions to support WUAs are given on pp. 16 and 17 of Ward et. al. (2007).

Management Action Plan of September 2007 has several technical goals, as well as the goal to "empower WUAs" to become self-regulating (Ward and al Aulaqi 2008).

- Renew pro-poor programmes. The lessons taught through failures or partial failures of pro-poor programs must continue to be assimilated. The Social Fund and the Public Works Programme (PWP), for example (Ward, et al. 2007: 9).
- Long-term donor commitment. Long-term donor commitment (at least technical, if not always financial) is essential. Though their 'performance' has been average? , the Supervisory Committees, for instance, have recorded achievements deemed worthy enough for renewed support by donors (Ward and al Aulaqi 2008). Long-term support is perhaps more important in the water sector than in other programs, as "the pace of change at the local level is extremely slow, and more resources and a long term commitment are essential" (Ward, et al. 2007: ix).
- Strengthen the NWRA. Suggestions to build the capacity of the NWRA are aimed at the management culture, technical qualifications of staff, reform of staff incentive structure and salaries (Ward, et al. 2007: 36).
- Maintain local knowledge. The water pumping boom and bust in Yemen has occurred within a single generation. Rather uniquely, the know-how of traditional (and sustainable) irrigation methods still exists and a return to tradition could be gradually promoted (or will be forced by the limited availability of the resource) ((Handley 2001: 132, Anon a 2009).

Level the Playing Field

The strong top left – bottom right trend on Figure 4.1 shows that the challenge to NWRA and donors is quite like playing football on the lower end of an uneven pitch. The playing field is not level because of the various forms of power (hard, and several forms of soft) employed to ensure that the 'law of the jungle' applies. The playing field may – in theory – be levelled through strengthening of the legislative and regulatory context. Identified measures in this vein include:

- Improve equity impact in the NWSSIP. The differential impact of NWSSIP discussed above may be addressed through the following recommendations: "more focus on pro-poor selection criteria; lower cost technologies and possibly higher levels of subsidy for the poorest; reporting regularly on how the pro-poor bias of the program has been implemented; more involvement of NGOs and improved coordination and joint programming between [water providers, funding programmes] and NGOs at the governorate level" (Ward, et al. 2007: 70)
- Technology. The promotion of the use of technology to improve enforcement must consider the difficulties inherent with lack of legitimacy of the authorities using the technology. Rig-tracking devices have been suggested, for instance, but have failed in part since not all the rigs are registered (Ward, et al. 2007: 18), and the ease with which bribes may be paid to remove the devices.
- Transparency. Accountability of the more powerful actors to the people or authorities may be served through wide dissemination of policy and data, and open door policies in key processes such as project selection. There is a risk that any new sector strategy (such as the NWSSIP Update) "might be driven by patronage rather than by pro-poor demand, as

powerful interests could lose benefits. There could be still some persistence of parallel tracks of influence. This constraint is best addressed by transparency about criteria and process, by honest application of the announced processes – and ultimately by success in bringing safe water to poor communities" (Ward, et al. 2007: 70).

5 Power and Water Demand Management in Jordan

[This sub-section summarises Abed Rabboh and Jabarin (2008) – *Political Economy for Water Demand Management in Jordan*, supplemented through follow-up interviews with both authors, and a non-comprehensive review of literature. Further background information is provided in Appendix B.]

With scant surface water and little rainfall to replenish the groundwater aquifers, the Hashemite Kingdom of Jordan has amongst the lowest per capita freshwater availability in the world. The bulk of water resources are developed to their sustainable capacity, and many of these are transboundary with neighbouring states Syria, Saudi Arabia and Israel. Withdrawal rates are currently up to 20% above the estimated sustainable capacity. The availability of water varies tremendously throughout the country, and even residents of Amman receive piped water only once a week (Abed Rabboh and Jabarin 2008).

Jordan's water scarcity is the result of both physical and social drivers. The population growth rate is amongst the highest in the world, and is heightened by periodic surges of immigration caused by regional conflicts. Fluctuating energy and food prices seem to lock-in many poorer farmers into marginal livelihoods, while an increased standard of living for many people is driving urban water demand. The deficit between water demand and supply is growing from an estimated 638 MCM/y in 2010 to an estimated 752 MCM/y by 2030 (Abed Rabboh and Jabarin 2008).

The agricultural sector in the Valley and the Highlands

Total urban water consumption in 2006 stood at 290 MCM/y, which competes with the agricultural sector that consumes roughly double the amount of water (560 MCM/y in 2006). The agricultural sector underwent what al Musa calls a "super green revolution" in the 1970s, leading to a tenfold increase in agricultural revenues (Venot, et al. 2007).

Whereas water was the limiting factor to agriculture in Yemen, both land and water limit production in the Jordan River Valley (JRV). The multitude of 3.5 ha unit farms in the JRV get the bulk of their water from the King Abdullah Canal (KAC), which originates from the Yarmouk River. Tariffs recommended by the Jordan Valley Authority must be first approved by the Cabinet, and have been stagnant at a very highly subsidised price of 0.015 JD per m3. Many of the farm units have been purchased by larger farmers who now rely on immigrants to run the farms. It is generally agreed that farmers in the Jordan River Valley have not traditionally been concerned about efficient (much less reduced) water use. So limited is water delivery through the King Abdullah Canal currently, that a form of 'land market' has been established. Powerful farmers are beginning to purchase the land allocated to smaller farmers – primarily for the water rights that come with it.

Farms in the highlands are typically much bigger than in the Valley (typically around 20 ha), and draw groundwater from private wells. The bulk of these are metered and regulated closely by the Ministry of Water and Irrigation (MOWI), staying below their quota of 15,000 MCM/y set by the World Bank-supported Agricultural Sector Adjustment Program. There are an estimated 400 (at least) unlicensed wells beyond the reach of the Ministry. No tariff applies to the farmers in the highlands, but the costs of production are estimated at 0.5 – 0.85 JD per m3, which is estimated to reflect the shadow price (Anon e 2009). Most crops produced are high-value cash crops such as tomatoes.

Policy setting

Government efforts to address water challenges have traditionally been through a water supply-side approach. New water supplies are sought, with the most notable being reserved for mega-projects to reach high and dry Amman. Examples include the Disi-Amman Conveyance project to take water from hundreds of kilometres away in the Disi aquifer (shared with Saudi Arabia). The government is also actively involved in the feasibility study of the Red Sea – Dead Sea Conveyance (RSDSC) project, which is hoped to lead to a project that will eventually deliver up to 500 MCM/y of treated seawater to the capital.

National water policy is actively engaged to address the water challenge. The 2000 - 2010 National Strategy for Agricultural Development ('the Agricultural Strategy') was established through the King, who set the agenda for Economic Advisory Committee to prepare an Agricultural Committee (Abed Rabboh and Jabarin 2008: 12). The Agricultural Committee established five sub-committees to complete its task: rainfed agriculture; irrigated agriculture in the JRV; irrigated agriculture in the highlands; animal production and rangeland; and marketing of agricultural products.

The Agricultural Strategy is being implemented, in part, through USAID's Water Demand Management in Jordan (IDARA) project. The project comprises several components: 1) proposed agricultural water demand management policy; 2) financial mechanisms for water conservation; 3) enforcement mechanisms; 4) management and administration; 5) legislation and institutional arrangements; 6) research and development; 7) use of reclaimed water "treated wastewater, brackish water, etc."; 8) irrigation water allocation and use policy); 9) incentives for water conservation; 10) implementing a monitoring program on water use efficiency; and 11) water pricing" (Abed Rabboh and Jabarin 2008: 13). The IDARA project is considered to be a qualified success, in part because of its broad representation. Each committee (agricultural water and wastewater re-use), for example, includes high-level former ministers, water scientists and other key experts. The policy (WDM institution) has been deposited at and is currently under review by the MOWI (Anon e 2009).

There is evidence of a shift towards more intensive and efficient agriculture in the Valley. This may be due to a harsh 'reality kicking in', as was the case with drought periods in Yemen. The last three years have been particularly dry, and have severely affected the Yarmouk flow. Rainfall in 2008/2009 has been the lowest in dozens of years. The al Wahda dam at the tail end of the Yarmouk has been filled only to a fraction of its capacity ever since its construction in 2006 and farmers are typically receiving about half of the flows they have been accustomed to. This has resulted in some farmers cultivating

only half of their allocated units – or switching to more efficient use so that they can exploit their entire unit. Plasticulture farming (plastic hothouses) is now expanding rapidly, especially the more efficient high tunnels or multi-span plastic houses.

Transboundary Waters

Jordan's water scarcity has specific political drivers as well. The agreement signed with Israel in 1994 over the flows of the Jordan River allocated roughly 600 MCM/y to Israel, and 25 – 45 MCM/y through a special storage-return formula to Jordan. (Courcier, et al. 2005, Fischhendler 2008). The bi-lateral agreement did not include important tributaries to the Jordan such as the Yarmouk River, nor did it consider Palestinian rights or Syrian abstractions in the basin.

Jordan is seeking also an agreement with Syria over use of the Yarmouk River, the bulk of which is controlled or used by Syria. Upstream abstractions have combined with drought periods to ensure that the al Wahda dam is at a fraction of its potential capacity. The Syrian-Jordanian Joint Committee is currently undertaking a study of the flows in the hopes that it may lead to an equitable agreement over use.

The Jordan government is furthermore seeking an agreement with Saudi Arabia on abstractions from the Disi Aquifer. Qualified as a "silent pumping race" (Ferragina and Greco 2008: 459) for the lack of public debate about it, the race has been going on for years, with the Saudi side withdrawing significantly more than Jordan considers to be its fair share.

5.1 WDM, Power and Interests in Jordan

This section reviews the relative power of the main stakeholders, and classifies them according to the power analytical framework developed in Section 3. As we shall see, there is significant difference in water use, price and access for each stakeholder. Abed Rabboh and Jabarin (2008) describe the roles and responsibilities of each of the main actors, ranking their relative influence in five aspects of policy-formulation. As Denny et. al. (2008) state, however, "the question of who wields influence in terms of water policy [in Jordan] is much more complex than simply analysing government structures". To that end, the extent of influence of the stakeholders and their support for or against WDM are plotted on Figure 5.1.

5.1.1 Stakeholders in the water sector in Jordan

As is the case in Yemen, important decisions are taken in Jordan about water by the 'shadow state', where policy is in some cases influenced by forces from outside the formal branches of government. Policy-setting can be a one or two-man show, with the Minister of Water and Irrigation influenced by the Prime Minister and these being indirectly influenced by their constituents (Anon d 2009). The arguments of the Minister of Water and Irrigation may be opposed and ignored if they are judged as not responding to international and national political imperatives.

The influence of individuals in the 'shadow state' should not be exaggerated. The power invested in these decision-makers derives primarily from the Prime Minister himself. This power can shift with

the appointment of a new PM. Ministers often seek to have advisors who are close to the PM in order to gain his favour.

The Royal Committee is amongst the most powerful bodies in water policy-setting in Jordan. Established by a Royal decree, it is a standalone body headed by HRH Prince Faisal. The Minister of Agriculture has little direct influence on the Committee. The current composition of the Committee is made up of technocrats that draw upon research results and strategies of the MOWI and donors. The Committee does not include marginalised groups such as Bedouins, women's groups, farmer's groups, NGOs or environmentalists. Established to deal with crises, it does not have a major role in planning though it may be premature to judge the merits of the policies it sets (Anon e 2009).
Poignantly, the influence of the royal family "works both ways. While the King has a privileged position of power over the tribes, the King is also dependent on the tribes for continued legitimacy and support" (Denny, et al. 2008: 5). The King must therefore preserve popular support for the monarchy – which is somewhat challenging in the water sector, under the circumstances of severe water shortages.

Higher Agriculture Council: Chaired by the Prime Minister, the Board of the Higher Agricultural Council includes the Minister of Water and the Minister of Agriculture, The Council deals with all policy issues related to agriculture, including water. The Council is thus a strong Parliamentary body that wields considerable weight (successfully imposing a tax recently on livestock, for example). The previously-discussed Agricultural Strategy developed in 2000 established eleven sub-committees. The Strategy itself is judged as solid, inclusive and comprehensive (Anon e 2009). It can be argued that the Higher Agricultural Council may have greater influence than the Royal Committee, particularly as the latter is not expected to endure for a lengthy period.

Ministry of Water and Irrigation: Outside of the 'shadow state' structure, the Ministry of Water and Irrigation is the most influential institution in the water sector. Formed in 1983, MOWI is composed the Water Authority of Jordan and the Jordan Valley Authority. The Water Authority of Jordan (WAJ) was established as "an autonomous corporate body, with financial and independence governed by a Board chaired by the Prime Minister" (Abed Rabboh and Jabarin 2008: 15). WAJ is responsible for public water supply, wastewater services, and overall water resources planning. The Jordan Valley Authority (JVA) was established in 1973, and is responsible for development and use of water in the Jordan Valley for farming, industrial, municipal and tourist purposes. The legitimacy of the JVA is established, and "cannot be ignored' by farmers within its jurisdiction, though it may be lacking in administrative and implementation capacity (Anon d 2009).
WDM measures fall under the responsibility of MOWI, which established a WDM Unit in 2002. Activities undertaken by the WDM Unit include "Providing support and information to entities interested in reducing water consumption, monitoring misuse of water and recommending enforcement and regulatory measures, promoting information and events that lead the general public to a better understanding and appreciation for demand management, and tracking how much water is being conserved in the Kingdom as a result of the Ministry's efforts" (Abed Rabboh and Jabarin 2008: 16).

Ministry of Agriculture: The importance of the agricultural sector in Jordan outweighs its relatively minor contributions to national GDP. Because of its role in integrated rural development and in the provision of fresh horticultural products and raw materials for agro-industries, the MOA plays an important role in implementing the Government's policy of discouraging rural to urban migration. Furthermore, the agricultural sector consumes up to 60% of all water used in Jordan.

The MOA is the second most important ministry in the water sector, and has the authority to drill wells for livestock production and to build dams for animal feed production (according to Agricultural Law No. 20 (1973)). The Department of Irrigation is responsible for measures related to WDM within the MOA (Abed Rabboh and Jabarin 2008: 18).

Ministry of Planning and International Cooperation: MOPIC plays an important role in donor coordination, as well as in liaison with local and national institutions. MOPIC plays a key role in water policy by reviewing all plans submitted by MOWI, and in seeking donor assistance with their implementation (Abed Rabboh and Jabarin 2008: 17).

Finance and of Environment Ministries: The role of the Ministry of Finance in the water sector is important for "determining the actual cost of devices and equipment used in rationing the demand for water by different users" (Abed Rabboh and Jabarin 2008: 17). The Ministry of Environment plays a minor role in water policy development, limited to participation in committees or meetings chaired by the MOWI.

Civil Society and Non Governmental Organisations: Civil society generally lacks influence in the water sector. The research sector for example examines WDM issues, and attention to water policy and management is continuously increasing at the universities (notably, the University of Jordan and Jordan University for Science and Technology). But academic lobbying and advocacy efforts have little effect. Water Users Associations, NGOs and farmers' groups are also considered to have little influence, though they have been credited for having more influence than the MOWI tends to give them credit for. The NGOs, after all, come up with innovative plans, have a pro-poor focus, listen to the people and perform advocacy at the national and international levels (Denny, et al. 2008: 5).

Large Farmers in JRV: The bulk of large farms in the Jordan River Valley are held by members of two tribes, with a few large farms run by Jordanian farmers not associated with any tribe. An informal 'lobby' group has been established to protect domestic banana production against MOWI policy (and World Trade Organisation trading rules). Challenges from government inspectors are countered with deterrence from higher-placed government officials, or with veiled or open threats (sometimes at gunpoint) from the farmers. Large farmers may follow their interests in other, more subtle ways, as well. Through personal or tribal relationships with ministry officials, some farmers may have more influence than even the minister. Farmers may bypass JVA policy through a number of circuitous methods. The heavily subsidised cost of water and market conditions remain so favourable to banana production that some farms are reportedly using reverse osmosis to treat brackish groundwater for

irrigation (Anon e 2009).

Small Farmers in JRV: Smaller farmers in the JRV also have ability to bypass JVA policy because of established special relationships though less so than the large farmers. There appears to be some conception that water is actually not physically scarce, but is being siphoned by the government - for delivery to and use by Israel. Were they to unite, farmers could have considerable influence over JVA policy, but they are divided and manipulated by politics. Thus, in general, farmers remain without a strong policy-setting voice.

Farmers in Highlands: Like the farmers of the JRV, some of the highland farmers have personal or tribal relationships with government officials that allow bypassing of JVA policy and in some cases pumping beyond established quotas. In general, though, these farmers they are not as wealthy or influential as the large JRV farmers.

Donors: Donors exert significant influence in the water sector which is a result of the funds and expertise they provide. Though final policy decision is made by government (or 'shadow government', as it were), policy regularly draws upon donor reports and projects. The donors suffer from a typical lack of coordination and duplication. USAID is the main donor involved in WDM (through the IDARA project), while GTZ's work on WUAs and the Japanese Government's work on sector review and master plans all contribute indirectly. The influence of USAID, JICA and GTZ is heightened by their willingness to voice unpopular opinions – such as stating the importance of raising tariffs on agricultural water in the JRV (Denny, et al. 2008).

5.1.2 Jordan stakeholder analysis plot

Figure 5.1 plots the relative influence of each actor against their expected stance on the uptake of WDM water policy.

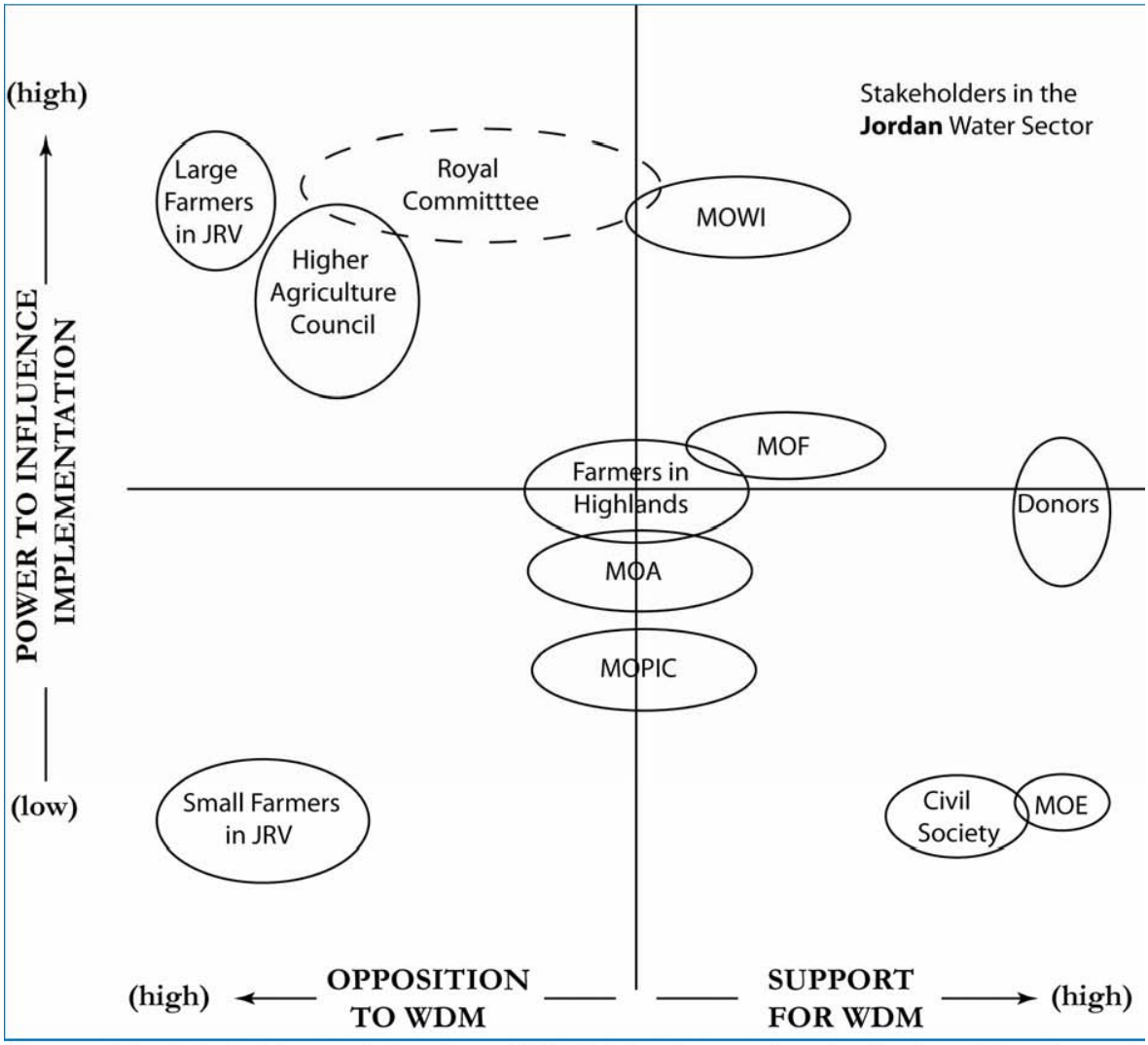


Figure 5.1. Stakeholder analysis plot of WDM implemnetation in Jordan. The figure is **indicative only**, and based on qualitative data deriving from the reports being synthesised and subsequent interviews.

Modeled after the method provided in Annex 3 of Ward et. al. (2007). Plot based on narrative of Abed Rabboh and Jabarin (2008). Modelled after the method provided in Annex 3 of Ward et. al. (2007). MOWI, MOA and MOPIC all shown as both opposing and supporting WDM, reflecting the different views of various departments and individuals. There is also considerable divergence in views within the Royal Committee and amongst farmers in the highlands.

As noted, Figure 5.1 is indicative, and based on limited qualitative data. Comments on the placement of the spheres of influence are most welcome. The plot is compared with the Yemen plot, in Section 6.2. Figure 5.1 reveals several features of note. The first point to note is the wide variety of positions around the quadrant – in striking contrast to the distinctive top-left bottom-right grouping of the Yemen plot (Figure 4.1). The general trend here is consistent with the Yemen experience, however: those most strongly promoting WDM are the least influential, and those opposing WDM are the most influential. Differences of views are held within individuals (or departments) of MOWI, MOPIC, the MOF and the Royal Committee. Support for WDM within MOWI is consistently increasing, though, in light of the IDARA project and other similar efforts and projects. There is also divergence within the (artificially grouped) Highland farmers, with some opposed to change while others more willing to

consider the merits of WDM on the basis of evidence of the groundwater depletion. *It is in these 'crossover' spheres that influence may be most readily cultivated or employed*. The JRV farmers are the most opposed to WDM measures, though smaller farmers may be more open to its merits, on the basis that their situation could improve in the long run or that they've got 'nothing to lose' anyway. The extent of influence of the Royal Committee is shown in a dashed line to indicate that is as yet too early to judge accurately.

6 ANALYSIS AND RECOMMENDATIONS

Dealing with the "political economy of reform" requires time, dialogue, opportunism, incentives, leadership.

(Ward, et al. 2007).

This paper synthesised the political economy studies of Yemen and Jordan, and compared their findings against an analytical framework of power asymmetries. We have a) examined how various forms of soft and hard power are regularly active in the sector; b) analysed the effects of power asymmetry between the main stakeholders; and c) captured the identified policy recommendations within two broad approaches – that is through either influencing or challenging power asymmetry.

The purpose of this section is to consolidate the information and expand on the last point. It discusses the two approaches and draws it more into the domain of political economy. The section ends with some broad recommendations to the WaDI*mena* project and others in their effort to promote reform of the water sector in Yemen and in Jordan.

6.1 Confronting Power Asymmetry: Summary of Yemen and Jordan Cases

The synthesis in Section 4 and 5 yielded a number of recommendations and suggested actions for both Yemen and Jordan. Table 6.1 summarises these, highlighting those recommendations common to both contexts, as well as an evaluation of the applicability in each.

Table 6.1. Summary of identified recommendations for confronting power asymmetry in the water sectors of Yemen and Jordan. Based primarily on Abed Rabboh and Jabarin (2008), Ward and al-

Influencing Power Asymmetry		*Identified in both Yemen and Jordan cases*	*Applicable to both Yemen and Jordan cases*
Create positive-sum outcomes	• Rural-urban water transfers • Reflexive governance • Appropriate regulation and incentives • Technology	Y	Y Y Y Y
Encourage transformation	• Inducements for the national government • Improving inter-governmental relations • Reforming the incentive structure • More effective communications • Capitalising on change moments • Shadow law enforcement	Y Y	Y Y Y Y Y Y
Challenging Power Asymmetry			
Level the players	• Empowering WUAs • Long-term donor commitment • Renewed pro-poor programs • Maintaining local knowledge • Building networks • Improved governance • Effective tools and mechanisms • Consensus-building • Increasing Education levels • Increasing Negotiations capacity	Y Y Y Y	Y Y Y Y Y Y Y Y Y Y
Level the playing field	• Technology • Transparency • Lawmaking and Enforcement • Improving equity impact • Decision-support systems	Y Y Y	Y Y Y Y Y

Aulaqi (2008) and Ward et. al. (2007).

The list does not include recommendations not mentioned in the reports, some of which are offered in the final section**.**

The most striking feature of Table 6.1 is that *all* of the recommendations and activities reviewed are applicable to both countries.. This suggests that there is potential for sharing lessons between the two contexts. The mostly successful capacity-building projects of Jordan could be replicated to challenge the more entrenched power relations/asymmetry in Yemen, for example. We are not suggesting exact replication of course. Rather, cross-fertilisation and learning by taking into account context-specific issues. From the two stakeholder analysis plots in our case (Figures 4.1 and 5.1), two markedly different sets of power asymmetries and relations appear.

A note on strategy for effective donor programmes

None of the proposed recommendations to address the negative consequences of power asymmetry are new. The novelty and strength of this 'power relations approach' is that it allows a view of how projects and programmes affect the power-related elements of the political economy. The visual mapping, at the very least, allows for a quick evaluation of any project. The process could quickly judge, for example, whether a proposed project is ultimately serving to reinforce destructive

inequities (such as pro-poor projects being controlled by the powerful) or is targeting those who may already be convinced ('preaching to the converted', as in WDM for some local branches of the NWRA in Yemen).

The approach of examining power relations is even more useful for enabling the development of strategic programmes. The evidence reviewed indicates a difference in the way power affects the policy *setting* process as opposed to the policy *implementation* process. Ideational (soft) power, for example, is more active on (and probably more applicable to) the policy setting process. The soft power of financing is similarly more likely to be used on the policy implementation process (especially if this involves behavioural change).

Donors seeking to establish strategic programmes would be assisted by clarifying upon which stage in the policy process is intended – and then applying the forms of power available to them in relation to the suggested stage. In other words, it would be useful for a WDM project or programme to realise that the primarily discursive process of WDM will have some sway in government ministries, but that 'on the ground', some hard evidence of success – or financial inducements – will be much more effective.

A long-term view is also crucial for the success of any strategic programme. Entrenched power asymmetries may be either influenced or challenged by a judicial and tactical *choice* and *timing* of specific projects. Further effort into this line of thought is required, though an example could include combining regular capacity-building work with sustained negotiations support to the government of Jordan. A similar example in Yemen would be sustained support to WUAs, supplemented by inducements to the Yemeni government for joining the World Trade Organisation.

6.2 Comparing the Stakeholder Analysis Plots

Examining influence and support for WDM in the Yemen case (Figure 4.1) has helped classify these into groupings of 'strong but opposed' *vs.* 'supportive but weak', as demonstrated by the top-left to bottom-right orientation. The implication is that the 'target players' for WDM efforts are now clear. That is, projects aimed to influence power asymmetry must focus on any of the groups in the 'strong but opposed' camp. This includes, in particular, rich farmers, farmer sheikhs, and the MAI. Less intuitively, it also includes some local branches of the NWRA, and individuals or departments within the MLA. The 'manufacturing interests' positioned at the crossing of the plot also represent a potential group that should be targeted for 'win-win' and influencing approaches to WDM.

Likewise, projects aimed at challenging power asymmetry in Yemen should be focussed on those clearly in the 'supportive but weak' camp. The obvious candidates whose power requires shoring-up are the small farmers, WUAs, and the MWE. Less intuitive targets for capacity-building programmes are the MOF and Parliamentarians.

The Jordan stakeholder analysis plot (Figure 5.1) is somewhat more complex. Some from the 'opposed to WDM' camp are relatively weak (i.e. the small farmers in the JRV). Some of the

'supportive of WDM' camp are considerably influential, such as the MOF and some of the highland farmers. Targets for an approach to influence power clearly include the Royal Committee and the MOWI. Targets for strengthening the power of include civil society, small farmers and the MOE. Targets for a *combined* accommodation/challenge approach include the 'crossover' groups of Figure 5.1, i.e. the highland farmers, MOA and MOPIC.

6.3 Recommendations

Asking the Yemen [or Jordan] Government to introduce progressive water policy reforms without giving it the resources to provide compensation for the consequences of water and livelihood re-allocation would be unreasonable. (Allan 2004)

This report's synthesis and analysis of the WaDI*mena* papers has yielded a number of considerations and actionable recommendations relevant to those promoting WDM in Yemen, Jordan and in the Middle East in general.

6.3.1 General Considerations

1. **Consider the effect on power relations of any intended project or programme**. In the 'do no harm' spirit, the design of some projects should be evaluated for otherwise unwittingly re-inforcing power asymmetries.

2. **Be united**. Fractures between local and international communities that advocate for the same reform will entail the regular risks of duplication of efforts, but also the risk of being divided by influential actors opposed to the promotion of any one programme. Closely coordinated donor efforts, especially for non-controversial projects like the promotion of WDM in Jordan and Yemen, will serve to strengthen those within the country who are already on-board.

3. **Remain aware of the internal political context**. Regular analytical techniques such as actor-network and institutional analysis will not reveal the whole story in contexts where most major decisions are made in an informal world apart from government. Once recognised, organs of the shadow state (influential individuals, the nexus of the current political leadership with complex and long-established traditional tribal politics, and a dominant and entrenched commercial elite, etc) can be engaged as would prominent individuals within the water or agricultural ministries. Powerful sheikhs, for example, may gain legitimacy once the merits of WDM are proven under his sphere of influence.

4. **Think outside the watershed** – in the 'problemshed'. Though not discussed in detail in this review, any serious attempt at progressive water management must take into consideration solutions in the 'problemshed' – that is, outside of the watershed in the sectors such as of finance, socio-economic development, trade and education.

5. Be ready to **capitalise on 'change moments'**. Reforming policy during or immediately in the wake of crisis is much simpler than during 'normal' times, when views and policies are

entrenched. Political timing is also considered a key to successful change, and an awareness of the resistance to change in the period before elections could save effort. Policy reform plans and projects made ahead of such moments may be rolled out at the appropriate moments.

6. Most importantly, think **long-term**. There are at least two very good reasons for sustained donor commitment: a) change occurs slowly, and a long-term perspective on progress would allow for accomplishments that have built up over the years (Sections 4.3.4 and 5.3.4); and b) short or even medium-term commitment compromises donor intentions from the outset. It would be useful to regard the relatively lengthy period during which WDM measures are implemented through a targeted engagement strategy as a transition period. Progress during the transition period could be expected to be made only incrementally, through an improved understanding of how to accelerate the adoption of politically feasible reform. Long-term commitment to WDM and other progressive water management policy will take the projects and programmes away from the stresses of normal funding cycles and – most importantly – demonstrate to the beneficiaries that they also may plan for the long term.

6.3.2 Actionable Recommendations

1. **Share lessons learned**. Table 6.1 shows that essentially all of the solutions identified for either Jordan or Yemen are applicable in both. This suggests that there is merit in cross-fertilisation (refined through careful consideration of the political economy in each case, particularly its power-related features).

2. **Undertake a power and poverty study** in Jordan. The PSIA developed for Yemen (Ward, et al. 2007, and its 2009 update) delved deeply into power relations and asymmetries, and may be worth replicating for a better understanding of the 'power map' of Jordan.

3. **Undertake projects designed to strengthen weaker groups** in Yemen (why only in Yemen). Though not without its drawbacks, the CARE-led EMPOWERS networks in Egypt, Palestine and Jordan have had demonstrable success – particularly in addressing gender and inequity issues.

4. **Establish dialogue platforms**. Powerful groups opposed to WDM implementation may be influenced to discuss WDM if called to by groups seen to be relatively neutral on the subject. Dialogue platforms convened and facilitated by the 'crossover groups' of Figures 4.1 and 5.1 could contribute to efforts on other fronts. Traditional Yemeni and Jordanian conflict-resolution techniques should serve as a template.

5. **Build up negotiations capacity**. Building up the negotiations skills of WUAs, farmers' groups and water authorities is perhaps the most effective yet under-explored way of challenging power asymmetry. Negotiations support to the government of Jordan may assist it in its ongoing discussions with its neighbours. The 'Teraguas' approach has demonstrated limited success, with the disadvantaged in peri-urban areas in Brazil (Ducrot and Barban 2008).

6. **Create focused public awareness campaigns**. Though their effectiveness is difficult to assess, public awareness campaigns do contribute to change. More focussed awareness campaigns could also be directed at influential decision-makers from the 'crossover groups' as well as groups opposed to WDM.

7. Most importantly, **devise a 'Targeted Engagement Strategy'**. A well thought-through strategy employing both approaches of a) influencing and b) challenging power asymmetry is expected to be successful in the long-term. The strategy would consider the most relevant forms of power to apply at each stage in the water policy process. The form of the programme would benefit from consideration of the DFID-supported *Targeted Engagement Strategy* and stakeholder analysis of wetlands in Nigeria (see Barr 2007).

APPENDIX A

Partial Summary of Ward and al-Aulaqi - Yemen - Issues in Decentralized Water Management - a Political Economy of Scarcity (Ward and al Aulaqi 2008).

Issues in Decentralized Water Management

The scope of the WaDI*mena* – commissioned report by Ward and al Aulaqi (2008) was based on field studies in the Ta'iz and Sana'a basins, and covered three decentralized water management issues: A) Basin Governance; B) Water Users Associations; and C) Rural-Urban water transfers and water markets.

A) Basin Management

i) Upper Wadi Raysan, Ta'iz Basin: The structure on paper of the Supervisory Committee based on hydrological and economic fundamentals contrasts with reality, for a number of reasons some of which includes a Supervisory Committee with no budget; too much interference in the implementation of projects; and coordination of local authorities was of little success, since integration in the 'local scene' is limited.

It was noted that regulation was of partial success, effectively preventing drilling of wells (for example, in Mawya district), even though the Water Law by-laws were not adopted (poor regulatory context), and insufficient coordination between local governing agencies.

ii) Sana'a Basin: The Sana'a Basin Committee and Plan was much more active than the Ta'iz Steering Committee, in part because the Committee has a broader base (a measure of its legitimacy) amongst local groups, though NGOs and WUAs were excluded, and meetings were adequately financed.

B) Water User Associations

i) al Sinah Association of Local Projects (Ta'iz): This Association is considered a successful example of water management for the benefit of the community benefit for domestic purposes. The reasons for success are because of the association's inclusive democratic structure; its partnership with public agencies; adequate business management approach (full cost-recovery planning); visionary and committed leadership; strategic planning; and political independence from predominant parties.

ii) Al Hayat WUA for Women: Recently established in January 2008. It is considered too early to judge or learn from this association's activities.

iii) Al Wahda WUA: Also recently-established (January 2008), but off to a promising start because of its recognition of water shortages and its consensus and agreement on what steps need to be taken to address the problem; self-regulation and effective implementation and an underlying social cohesion which brings its members together.

iv) Lessons Learned from WUA experience:

- partnerships between WUAs and public agencies *is* possible;
- subsidies can assist with the establishment (and maintenance) of WUAs, at the risk of remaining donor-dependent.
- information and knowledge must be generated, shared and put to use.

C) Rural-Urban Transfers and Water Markets

i) The old problem of attempting to centralize water delivery is giving way to the already-established practice of rural-urban water transfers. The change in attitude of the government is due in part to challenges, such as threat to the Ta'iz Local Water and Sanitation Corporation (especially as this relates to Habir All these examples are meaningless unless they are expounded on). The change in attitude also seems to extend to allowing some 'privatisation', such as the establishment of water markets.

ii) Advantages of Water Markets: flexibility; conservation/incentives; compensation; lower distribution losses.

Yemeni Government Efforts

The build up of national institutional capacity in the water sector began with the establishment of the NWRA in 1996 (Ward and al-Aulaqi 2008). This was followed in 2002 with the enactment of the Water Law, and with the establishment of the Ministry of Water and the Environment, in 2003.

The NWRA prepared the first NWSSIP in 2003 for the period 2005 – 2009. The NWSSIP is recognised as well-intended and pro-poor, but "so far the evidence points otherwise (consolidation of existing wealth and income patterns, unequal access to rents and subsidies, and negative impacts on employment and incomes of the poor)" (Ward, et al. 2007: ix). The proposed NWSSIP reforms are in fact expected to have very differential impacts for the farming communities. The bulk of the positive impacts are expected to be reaped by the farmers in better groundwater recharge areas, while the harshest negative impacts will be felt by the farmers without wells, and the landless labourers (Ward, et al. 2007: Tables 3 and 4). The NWSSIP has also been faulted for not including the MAI – by far the most influential government actor in setting water policy (Anon b 2009).

Previous government efforts at regulation of inequitable and unsustainable water use have not been very successful. Bending to IMF structural adjustment plans, the government in 1997 increased the cost of diesel fuel required to run both the pumps and the vehicles to transport produce to markets. The effect was devastating, especially for the poorer farmers, and the move served to reinforce the income inequity. To compensate, the government created the Social Fund and Public Works Project, 90% of which went into community water harvesting, mainly small dams for surface catchments. Despite the pro-poor intent, the Fund and other small dams' programmes are not addressing the needs of the poor, nor contributing to responsible groundwater management (Anon b 2009).

There is nonetheless evidence that some attempts by other branches of government have had some

success: “government actually began to implement pro-poor programs, such as the Social Fund for Development (SFD) and Public Works Project (PWP).This reduced the scope for patronage of the old and powerful clientele, as the poverty objective transfers resources from the better off to the poor. Water demand management and pro-poor programs were not first choices for the political establishment in Yemen” (Ward, et al. 2007: 9).

In building on the original NWSSIP, the NWSSIP Update (Final Draft -December 2008) has taken place under the aegis of the Inter-Ministerial Steering Committee, notably with the Minister of Agriculture and Irrigation at its head. The Update will reflect the government’s changing attitude toward “market-based rural-urban transfers” (Ward and al Aulaqi 2008: 32). This appears to be an encouraging step to accommodate power asymmetry by “influencing the influential.” The report and its efforts will no doubt face resistance at numerous other levels, including new actors like WUAs who argue against rural-urban transfers on the basis that ‘cities can desalinate’ (Ward and al Aulaqi 2008).

Some Donor Efforts

Much of the effort of the international donor community has been directed at decentralisation or conservation efforts. The establishment of Water Users Associations is one of their primary activities. WUAs are an attempt to build upon the traditional Yemeni cooperative spirit, by replacing the informal tribal mechanism with a formalized institutional one.

Political Economy – related Obstacles to WDM in Yemen

Though power-related issues run through every aspect of a political economy, it is worth considering other aspects of the political economy that are not so closely related to power. As previously discussed, gender issues are discussed in Arafa et al., (2007), institutional issues in Brooks and Wolfe (2007) and poverty and equity issues in Tyler (2007). The role of pricing is discussed in the Interim Progress Report – Options for Economic Incentive Structures for Groundwater Extraction in Yemen, by the Water and Environment Centre and LEI Wageningen, as well as in the academic literature (i.e. Riaz). The role of adaptive capacity is discussed in Mohieldeen (1999). Several other documents are available from donor agencies, primarily GTZ, USAID and JICA, none of which have been reviewed for this synthesis report. A discussion follows of political economy-related obstacles not directly related to power, based primarily on the two main Yemen papers (Ward, et al. 2007;Ward and al-Aulaqi 2008), supplemented by interviews and other reports.

The topography and legacy inherited by the relatively very young institutions should not be ignored. Control of over 100,000 wells is simply not possible. Ward et. al. (2007: vii) state that political economy restraints to reform requires time, dialogue, opportunism, incentives, and leadership”. Ward and al-Aulaqi (2008) note key problems faced by Supervisory Committees: incomplete decentralisation; inefficient management of financial resources; low commitment by donors; and inadequate effort to forge “real” partnerships with people.

Efforts to reduce water consumption through improved irrigation efficiency have led to a substantial *increase* in water consumption, as farmers stretch their water use further to readily-available uncultivated land. According to one source, further efforts to increase irrigation efficiency are just 'delaying Armageddon' (Anon a 2009). Others have suggested that improving irrigation efficiency is preventing the replenishment of groundwater supplies as less water is seeps underground (Anon c 2009).

The classic failures of aid agencies is also prevalent, such as in the case of the village of Al Qala, where water is still not flowing after two attempts by GARWSP to drill a well failed for technical reasons, even after the installation of a distribution network (Ward, et al. 2007: 25).

Profile of the main farming systems (Jordan Valley, northern and middle directorates).*

			Citrus farms		Banana farms		Mixed farms
	Open-field vegetable family farms	Entrepreneurial greenhouse farms	Family farms***	Absentee-owner and family farms	Family farms	Entrepreneurial farms	Poor family farmers
Land tenure	Rent/Ownership	Rent/Ownership	Ownership	Ownership	Ownership	Ownership/Rent	Rent/Share cropping
Farm area range (ha)	3–6	6–10	3–6	1–20	1–5	1–5	1–3
Number of family workers	2–5	1–2	3–5	1	3–5	1–2	4–10
Water quota (m^3/ha/yr)	5,050	5,050	10,100	10,100	15,000	15,000	5,050
Main irrigation system	Micro-irrigation	Micro-irrigation	Micro-irrigation	Gravity irrigation	Gravity and micro-irrigation	Micro-irrigation	Gravity irrigation
Net revenue (US$/ha/yr)**	3,800	7,500	1,250	400	7,000	12,500	1,050
Net revenue (US$/farm/yr)	17,100	60,000	5,625	4,000	21,000	37,500	2,100

Notes: * The data represent mean values obtained during a survey of 50 farmers in the Jordan Valley during 2003

** As in table 1

*** Data for absentee-owners using micro-irrigation systems (less than 10% of all citrus farms) are not shown here

APPENDIX B

Partial Summary of Abed Rabboh and Jabarin - Political Economy for Water Demand Management in Jordan
(Abed Rabboh and Jabarin 2008).

Water Use, Costs and Pricing in the Jordan River Valley

The structure of farming in the Valley is provided in Table B.1.

Table B.1. Profile for the main farming systems in the Jordan River Valley.

(Venot, et al. 2007)

There is debate about the effect of pricing controls on extraction or sustainable use of water. Venot et. al. (2007) state that:
increased charges alone are unlikely to bring about significant water saving and that beyond certain levels, they will reinforce dynamics towards more capital-intensive farming in both the highlands and the Jordan River Valley… hence, farmers should not be made to bear price [increases] unless these are accompanied with positive incentives that reduce capital and risk constraining, offer attractive cropping alternatives, and exit options with appropriate compensation[11].
The effects of pricing on water consumption, however, depend on the resource itself. It is believed that increasing costs of water in the JRV would precipitate a shift to higher value crops, and reduce overall consumption and socio-economic impacts. Many water sector professionals would like to set the cost of water in the JRV at a similar rate to the shadow cost of production in the highlands, in the hopes that it would induce less water use.

Research
Water policy-making in Jordan still contains several 'research gaps'. "Research, information and data on the importance and role of WDM are either not available or not transferred readily to the relevant stakeholders in the proper or palatable manner, so their understanding and appreciation of WDM issues are constrained" (Abed Rabboh and Jabarin 2008: 7). The types of constraints are political, institutional, social or physical and include: facts and figures on water availability and shortages at present and likely in the future; water uses, efficiencies, losses and potentials for water savings and use of lower quality water for certain needs; peoples' attitude towards, and the impact of using, treated water and the willingness to pay for different quality waters; WDM best practices for different sectors and uses; who is gaining, who is losing, who are the potential supporters or opponents (Abed Rabboh and Jabarin 2008: 30). The NCARE project (National Centre for Agricultural Research and Extension) is highlighted as an

[11] For further discussion about pricing, crops and markets, refer to Jabarin (2007).

example of good quality agronomic and water research practices and results.

Political Economy – related Obstacles to WDM in Jordan

As in the case of Yemen, it is worth considering those other aspects of the political economy that are not closely identified with power relations. For example, the history of development of the JRV is well documented (Hays 1948, FO 371/104953 1953, Johnston 1955, Suleiman 2003, Courcier, et al. 2005). Haddadin (2001) provides a candid account of obstacles faced by Jordan in its negotiations with Israel. The subject has also attracted considerable donor and technical literature (Hamdan and Amer 2005, FOEME 2005a, Denny, et al. 2008).

Other problems and constraints facing water institutions include:

- weak collaboration and coordination amongst stakeholders;
- overlap, duplication, fragmentation, and centralization of authorities;
- weak users associations;
- low and limited participation of women and marginalized groups;
- dependency on foreign assistance and finance;
- low motivation and skills of staff;
- inappropriate laws and regulations; and
- dissemination of technology and service delivery is weak [asymmetry] (Abed Rabboh and Jabarin 2008: 8).

Awareness of Importance of WDM

The level of awareness of water-related issues appears to be much higher in Jordan than in Yemen. The public is generally well-aware that the government is implementing efforts aimed at water sustainability. Resistance to wastewater reuse appears to be diminishing, following the issuance of a *fatwa* legitimising the practice. Less than 20% of treated wastewater is currently reused but this portion is on the raise. Farmers generally believe in the 'polluter pays' principle, arguing that they alone should not incur the risks associated with soil contamination.

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