The Influence of IDRC-Supported Research on Water Demand Management in Syria

Case Study of Policy Influence in the Supplemental Irrigation with Brackish Water Project

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ACRONYMS

ACSAD	Arab Center for the Study of Arid Zones and Dry Lands
AFSED	Arab Fund for Social and Economic Development
ANRR	Administration for Natural Resources Research
CGIAR	Consultative Group on International Agricultural Research
DIWU	Directorate of Irrigation and Water Uses (Syria)
EU	European Union
ICARDA	International Center for Agriculture in the Dry Areas
ICBA	International Center for Biosaline Agriculture
IDRC	International Development Research Centre
IFAD	International Fund for Agricultural Development
GAP	Southeastern Anatolia Project (Turkey)
GCSAR	General Commission for Scientific Agricultural Research (Syria)
GOLD	General Organization for Land Development (Syria)
MAAR	Ministry of Agriculture and Agrarian Reform (Syria)
MoI	Ministry of Irrigation (Syria)
MENA	Middle East and North Africa
MERO	Middle East Regional Office
PCR	Project Completion Report
RSP	Research Support Project
SAR	Syrian Arab Republic
UNDP	United Nations Development Program
WDM	Water Demand Management
WDMF	Water Demand Management Forum
WDMRN	Water Demand Management Research Network

EXECUTIVE SUMMARY

This study looks into the ways in which the *Supplemental Irrigation with Brackish Water in Syria* project influenced policy and policy makers in Syria. Amongst Syrian farmers, the practice of irrigation with brackish water is on the increase as rural wells are becoming increasingly saline. The trend is disturbing, as unchecked use of saline water by farmers for irrigating their fields increases salinity of soils, which in turn reduces agricultural productivity. Given the dependence of the Syrian economy on agriculture, these trends represent threats to national aspirations of economic growth. The focus of the project was to investigate the parameters within which Syrian farmers can safely use saline water to irrigate their crops. The project also had a wider relevance to the region: if safe parameters could be discovered, then the use brackish water to supplement irrigation could come to be seen as a "bridging strategy" - in other words - the use of saline water to meet some of the agricultural demand for water could come to be seen as a viable way of decreasing strain on increasingly scarce freshwater resources.

Main events of the project and the context in which it took place

The project took place in a very challenging context for influencing policy. Within the quasi-socialist state of Syria, the government centrally controls all aspects of the economy and the processes behind the formulation of particular policies are neither public nor transparent. Policies addressing water issues fall between competing interests, and pressures are exerted from different directions. Among these are national aspirations for economic transformation, the recognized need to protect fragile natural resources, and disputes between countries in the region over existing water supplies.

As for the institutional context, the project took place as a collaborative effort between ICARDA, the University of Aleppo, and the Syrian Ministry of Agriculture and Agrarian Reform (MAAR). Due to low levels of research utilization and the highly circumscribed role that research plays within the Ministry, the role of research in shaping the decisions is limited. Interviewees described how research, if it is to be considered at all by policy makers, must fall within the parameters laid out by the overall national strategy. The policy regime of the MAAR is a "routine decision-making regime" in which research addresses technical parameters such as identifying packages of technologies, levels of fertilizers, recommended seed varieties, etc. Policy and decision-makers generally are not receptive to research that suggests changes to policy itself.

Ways in which the project influenced policy

The greatest influences of the project fell into Lindquist's categories of *expanding policy capacities* and in *broadening policy horizons*. It *expanded policy capacities* through supporting young Syrian researchers to look into and elaborate the technical parameters of utilizing saline water to irrigate crops. Several students supported under the project are now working within the Ministries of Agriculture (MAAR) and Irrigation (MOI), and the knowledge and experience that they gained is being put to use in their current positions. Other students are working within the university as teaching assistants and, along with the professors who were supervised the research, the findings from the project are being used as teaching examples in course work.

The project *broadened policy horizons* by broaching a new way of looking at the problem of saline water. In the time that elapsed after the project, the topic has proven to be highly relevant in the region. Evidence of the relevance of this topic can be seen in the

subsequent creation of the International Centre for Biosaline Agriculture (ICBA), a research organization dedicated to investigating issues of farming under saline conditions. Furthermore, ICARDA has continued the work that was begun in this project by creating a continuous research program on the use of low quality water, of which the use of saline water is an important component.

Finally, project participants also reported that findings from research results from project provided the impetus to create regulations around the use of drainage water for irrigation - thus constituting one instance in which the project may have *affected policy regimes*.

Factors Facilitating and Inhibiting Policy Influence

Factors outside of the control of the project

One of the main factors contributing to the influence of this project is that its main thrust (increasing the efficiency of agricultural water use) falls within the broad priorities of the Syrian government. What the project was unable to influence was the primary way in which the government approaches increasing water efficiency, which is through the promotion of more efficient sprinkler and drip irrigation technologies. A factor facilitating the influence of the brackish water project was the involvement of Dr. Noureddin Mona who was appointed to Minister of Agriculture and Agrarian Reform after the closure of the project. Although his promotion that had nothing to do with the brackish water project, it has contributed to the influence in several ways. First, Dr. Mona's involvement in the project provided him exposure to issues surrounding the use of saline water in irrigation and he is well versed in the topic, which may render him more receptive to research. Secondly, Dr. Mona's promotion has brought other changes to the Ministry, which in a more general way, has had a wider influence on the *policy regime* within the ministry. With his promotion, Dr. Mona has been making institutional reforms to elevate the stature of research within the Ministry. He has also brought researchers into key positions in order to increase the ministry's capacity to take research into account in decision-making. An important aspect of this is that, with their new appointments, the incoming researcher-officials bring their experience and knowledge networks with them, with the result that new ideas are in circulation around the MAAR. According to the comments made by Dr. Oweis, and corroborated by interviews with policy makers, the topic of irrigation with saline water is now a problem that highly placed policy makers within the MAAR are familiar and this project was a significant contributing factor to that. As research about how to safely use brackish water is elaborated, there are now intellectually receptive audiences for this new knowledge within the ministry.

Another inhibiting factor, mentioned above, was the institutional context in which this project took place, and the circumscribed role that research plays, and which inhibits its influence.

Factors within the control of the project

Several design features of this project contributed to its influence. Particularly critical was the involvement and stability of ICARDA. With its high research capacity, strong reputation, and closely articulated relationship with the Syrian national research system, ICARDA's involvement was certainly one of the most important aspects of this project. It almost certainly provided a legitimacy to the research that might not otherwise be available. In terms of managing the project, ICARDA provided a stable and reliable

platform in terms of provision of resources, facilities and logistical support. Without ICARDA's presence, it almost certainly would not have been possible to go ahead with the project at all. Secondly, the stability of the staff and the research programs at ICARDA provided storage capacity for the research results to be retained after the project closed, and a place from which those results could be carried forward into subsequent work.

Another strong feature of the project was the way in which it bridged research and policy worlds through its participants. The project deliberately brought individuals that were both researchers and decision-makers into its orbit. One example of this was the inclusion of Borhan Kasmo, whose PhD research was supported by the project, but is also an official within the Ministry of Irrigation. Also, the advisory committee included senior researchers and officials from the university and from government research stations.

What most hindered the projects' ability to realize greater influence were poor management and coordination. The project coordinator was unable to synthesize and present the findings of the project as a coherent whole, which has, in turn, severely limited the utility and communicability of the results. Another aspect of this relates to the opportunities that were missed in building research capacity at the University of Aleppo. ICARDA is a research institution with advanced research facilities and attracts experienced, international researchers. In comparison, the institutional capacity at the University of Aleppo is very low. It has very little in the way of research facilities and has a poorly paid staff that is frequently turning over. While there are challenges and risks presented by working with institutions of low capacity such as the University of Aleppo, the involvement of ICARDA could have presented an opportunity to increase those capacities by providing the opportunity for staff and students to do some highly relevant, ground-breaking research with the support of ICARDA's world class resources. Had the project made appropriate provisions for closer coordination and more effective management, the interaction could and should have been an extremely positive one. Despite such potential, there remains amongst the participants some lingering disappointment and frustration about the inability to capitalize on the formative work that it produced. This is an unfortunate ending for a project that appears to have had so much potential in an exciting new area.

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1. INTRODUCTION

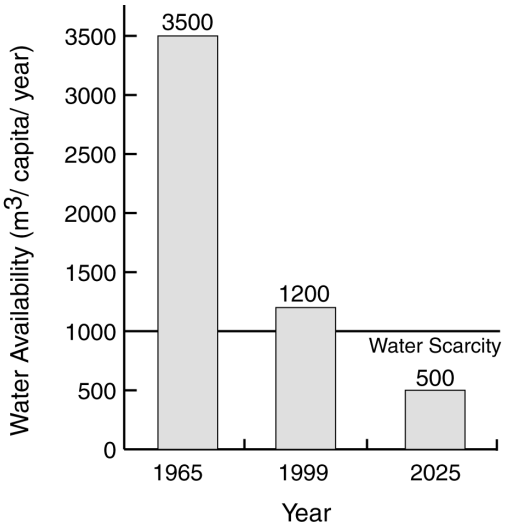
This study examines the linkages between research and policy in IDRC project 060001, entitled *Supplemental Irrigation with Brackish Water in Syria.* This study is one of 25 cases prepared for IDRC's Evaluation Unit as part of a large strategic evaluation[1] into the influence that IDRC-supported research has had on policy. The purpose of the case studies is to systematically document IDRC experiences in supporting research that influences policy. Through cross-case analyses and engaging IDRC staff in examining the cases, the overall study intends to help staff and partners learn about what works, and improve the overall effectiveness of IDRC-supported work that includes policy influence amongst its goals. The overall study is guided by three key questions:

1. What constitutes public policy influence in the IDRC experience?
2. To what degrees, and in what ways, has IDRC supported research/projects influenced public policy?
3. What factors and conditions have facilitated or inhibited the public policy influence potential of the IDRC supported research?

Shortage of water is a particularly serous problem in the MENA region, which is one of the driest areas of the world. One thousand cubic meters per capita per year (cu m/capita/year) is a benchmark used by the World Bank as an indicator of serious water scarcity. The World Bank estimates that in 1999, the average availability of water in the MENA region was 1,200 cu m/capita/year. This is close to the WB 1,000 cu m/capita/year benchmark, and to make matters worse, this is part of a sharply decreasing trend, projected to reach 500 cu m/capita/year by 2025 (see Box 1). The situation in Syria is more urgent than regional averages. Currently, water availability is estimated to be 432 cu m/ capita/year, far below the WB benchmark, and is projected to reach 160 cu m/capita/ year by 2025 (Oxford Business Group, 2002).

This project is one of four selected cases of IDRC-supported research in the area of Water Demand Management (WDM) in the Middle East and North Africa (MENA) region. It was selected as a case study because of its policy intentions and

Box 1. Water Availability in MENA:
1965 – 2025



Figures from World Bank, 2002

because of its topical focus on WDM management. Historically, IDRC's support for research on water has been of a different character than most of the large international development donors. While the mainstream donors have tended to support large projects increasing water supply, such as building of dams, locating and exploiting new groundwater resources, and building water desalinization plants to convert seawater into potable water, IDRC's support has always tended to focus more on the local level. IDRC's early work on water was similar to other donors in that it focused on increasing water supply, but rather than focusing attention on large centralized water supply systems, IDRC's technical support has been on smaller-scale, decentralized systems at the local level, such as roof collection systems and other simple, low-cost technologies. Over the years, IDRC-supported has gradually shifted away from technical aspects of supply management towards investigations into socio-economic and behavioural aspects water use (Brooks 2002).

Recent IDRC experience in the MENA region indicates that many governments in the region as well as large bi- and multi-lateral donors are beginning to pay increasing attention to WDM. The inclusion of several Water Demand Management projects allows the study to understand some of the ways that IDRC may have contributed to this shift in thinking.

2. BACKGROUND

2.1 The Research Problem: Irrigation with Brackish Water

The problem that the brackish water project undertook concerned the growing practice of using "brackish", or saline, water to irrigate crops. In Syria, this has come as a result of the increasing levels of salinity in groundwater, which, in turn, is a problem that is very much connected to changing agricultural practices.

The main mechanism through which groundwater becomes salty is through the interaction of water and the soil. In arid regions of the world, accumulation of salts in the upper horizon of the soil occurs as salts and minerals within soils are picked up and dissolved in the water. As water is drawn upwards through the soil and evaporates, crystallized salts are left at the surface at the interface between the land and air. This is a normal process in the arid climactic conditions of Syria's deserts and steppes, and under traditional Syrian crop rotations, in which the land is left to fallow for extended periods, the levels of salt in the topsoil stay at relatively low levels. More recently, with increasing agricultural irrigation and more frequent crop rotations, increasing volumes of water are moving through the soil, and increasing salinity of soils. Compounding the problem is the widespread practice of flood irrigation. This is an irrigation technique in which large volumes of water are pumped onto fields to the point that there are standing pools of water, and then the water percolates down into the soil. In addition to being an extremely inefficient use of water, the water picks up accumulated salt at the soil surface and draws them down into the ground to mix with freshwater below. The result is a net increase in the groundwater salinity, which finds its way into underground reservoirs and wells (Rached interview, November 21, 2002).

It is estimated that 70-79% of Syrian farmers use flood irrigation, and that many continue to do so even when the water from their wells has become saline (Michel Wakil, January 14, 2003; Hanon, 2001). Hanon (2001), in a Master's thesis supported by the brackish water project, describes that irrigation with brackish water has been an ongoing practice for the last 10 years of farmers in the Khabur basin, located in the arid northeastern Governorate of Hassakeh. Hanon explains that along with the increasing salinity of groundwater, the expansion of cultivated land along with unchecked digging of wells for irrigation has significantly contributed to increasing salinity of the soil.

The overall rationale behind the brackish water project was twofold. First, given the large volumes of brackish groundwater, and its widespread use, the project would investigate the parameters within which saline water can be safely used – both in terms of protecting the environment as well as maintaining levels of productivity high enough to support farmers' livelihoods. The problem also has a much wider relevance to the region. If safe parameters could be discovered, the use of brackish water to supplement irrigation could come to be seen as a

"bridging strategy" (Brooks interview, September 25, 2002) – in other words, in areas of the world where freshwater is scarce, the use of saline water to meet some of the agricultural demand could come to be seen as a viable way of decreasing strain on increasingly scarce freshwater resources.

2.2 Macro Context: a brief background of Syria

Syria is located in the Middle East, on the eastern coast of the Mediterranean Sea. Turkey borders it to the north, Israel and Lebanon to the southwest, Jordan to the south, and Iraq to the east (see Map of Syria in Annex 1). Like many of its Middle Eastern neighbours, Syria is a young, quickly growing, and primarily urban society. Syria's rate of population growth has averaged 2.7% per year over the past five years. Nearly 77% of the population is under the age of 35, and more than 40% are under the age of 15 and seventy-five percent of the population lives in the country's six largest cities, Damascus, Aleppo, Homs, Hama, Latakia and Tartous (Economist, 2002, 2003).

2.2.1 Power Structures

Political power in Syria is heavily concentrated at the top, with the president. Although the Constitution was drawn up in 1930 and it gained independence from France in 1946, Syria's current system of government came into being when Air Force lieutenant-General Hafez Al Asad ascended to the Presidency in the 1970 "corrective movement". President Hafez Al Asad died in July 2000, whereupon Bashar Al Asad succeeded his father as president.

The regime of modern Syria has been described as a "presidential monarchy" (Hinnebusch, 1999; 2001) and has grown out of a history of colonialism, military repression and decades of political instability. In the early days of Asad's 1970 takeover, many expected the new administration to be as unstable as those that came previously, but Asad managed to remain firmly in control of the country for thirty years. He did this by amending the Constitution to centralize state powers, consolidating control by balancing the interests of power brokers, and creating overlapping intelligence services and army units (Economist, 2003; see also Seale 1988). The president lies at the centre, the arbiter between power brokers, with no one seat of power provided the basis to independently mobilize against him.

The regime is also known for its firm control of political expression. The president and his political party maintain political stability through a mixture of populism and control. Political activities and popular organizations are closely monitored and only the activities officially sanctioned political parties are tolerated. Most newspapers are government-owned, and all are

subject to censorship. Policy decisions are made at the top, and are not offered for public scrutiny.

Although the final word on policy decisions rests at the top, there are three streams through which new ideas for policy directions are offered up for debate: the government through it's appointed ministers; the Ba'th party and its executive; and the Legislature. These streams all converge in the person of the president, who presides as the chief executive over all three.

The executive body of the government is the Council of Ministers (cabinet), consisting of the Ministers of government departments, the Prime Minister, as well as Three Vice Presidents. The president appoints all of these officials.

The 250-member legislature consists of elected representatives from the six officially recognized parties. Commentators have described how the legislative assembly is increasingly becoming more of a legalistic formality than a forum for debate (*inter alia,* George 2003, Economist 2003); what was before a "fiery debating chamber before the Asad era is now a rubber stamp for the decisions of the political elite" (Economist 2003:10). Although Syria is unique among many of its neighbours in permitting members of multiple political parties to sit in the legislature, this is done mainly to serve populist aims. (ibid). The State of Emergency (which has been in place for 30 years) gives the president the authority on matters of national security and when the legislature is in recess. The Constitution also grants the president the power to dissolve the legislature. Although the Constitution does not stipulate the conditions under which dissolution can occur, it does stipulate that the legislature cannot be dissolved twice for the same reason (Library of Congress, 1988).

The Ba'th party is the real venue for political debate and its members dominate the legislature. If the government and legislature are the structures where policies are approved and implemented, the Ba'th party provides the mortar that cements political ideology throughout Syria's institutions – and its influence reaches right down to the local level. The party grew out of a leftist social movement of the 1940's that consisted mostly of students and teachers. It was a potent political vehicle for civil mobilization against the French colonial government, and inspired popular uprisings across Arab homeland against colonial occupation and repression. In Syria, the party now functions to make sure that society remains in step with the political ideology of the regime. The party apparatus forms a parallel power structure to the administrative departments of the bureaucracy, advising officials at all political levels on implementation of policy.

The party's influence reaches into most of the country's important institutional structures (Hinnebusch, 1988; 2001). The party's organization reaches right down to the village level. Due to its influence on access to universities, jobs and promotions, the party manages to extend a powerful influence into broader society, shaping the political orientations of middle classes and social elites. The party has a long reach, and is especially influential at the village level, as party

membership opens the way to professional advancement by way of opening doors into jobs in the public sector.

In the three decades of Asad's administration, Syria received significant political, economic, and financial assistance from the former Soviet Union and Eastern Bloc[2], and accordingly, the country's style of governance shares some characteristics with soviet systems. The country runs under what itself describes as a "quasi-socialist" political system, in which the economy is centrally managed according to five-year plans. With the passing of President Hafez, the "quasi-socialist" system remains, but President Bashar, originally trained as a medical doctor in the UK, has continued the cautious transition from the "command economy" towards a more liberalized economy that was set in motion by his father in the mid-1980's. Some reform has indeed taken place, but change remains slower than was originally expected.

2.2.3 The Role of Water and Agriculture in Syria's Economy

Agriculture is intimately interconnected with the national economy, natural environment, and rural society, and is a sector that is challenged with having to find a balance between many competing priorities. Agriculture is Syria's largest economic sector, and the second greatest contributor to the country's GDP next to oil. Agriculture is important not only with respect to what it produces directly, but also in its role in supplying raw materials to Syria's manufacturing sector. Both directly and indirectly (in downstream processing and manufacturing), it is estimated that agriculture employs about 29% of the county's labour force (Economist, 2002).

Increasing agricultural production is central to national aspirations for economic transformation. Syria's climate renders 55% of its landmass as arid steppe. There are relatively low levels of irrigation and only about one-third of Syria's total landmass is cultivated (Someh interview, October 19 2002; Economist, 2002). In order to increase agricultural production, it is necessary to increase the area of cultivated land, which would necessarily entail expanding irrigation.

There is however a great deal of uncertainty over future water supplies. One aspect of this is the significant variability from year to year in levels of precipitation, and in recent years, droughts have greatly reduced agricultural production. Another source of uncertainty stems from difficulties of securing agreements with neighbouring countries over sharing surface water supplies. Most significant for Syria is the need to secure agreements with Turkey and Iraq to share water of the Euphrates River. Rural wells are being pumped at rates faster than they are renewed, leading to declining ground water levels. This appears to have been aggravated by the digging of unauthorized wells. IFAD (2001) reports that in 1999, 47% of all rural wells were reported to be illegal (IFAD 2001).

With moves towards a more market-oriented economy have come gradual changes in the way that agriculture is regulated. Politically, the country is divided into 13 provinces, or "Governorates". In the past, production of all agricultural commodities was managed under a strict quota system, in which each Governorate was expected to meet production targets for all crops and deliver produce to the state-owned marketing monopolies. A more recent development has been the creation of "Agricultural Settlement Zones" (ASZ) to serve the purposes of natural resource management planning. These ASZs are based on levels of precipitation, and regulations are now in place to better match production of crops to appropriate climactic regimes. With these changes has come a very gradual recognition that government control is not a suitable substitute for motivation and profit incentives. While in the past the government intervened in all aspects of agriculture, now it has relaxed comprehensive control – the exception being wheat and other "essential" crops that are used as inputs into the processing industry, such as olives, cotton, tobacco, and sugar beets (IFAD, 2001).

Amongst these essential products, wheat and cotton appear to be the most important. All Syrians interviewed for this case study were able to identify wheat and cotton as Syria's two main "strategic" crops. The production of wheat is supported to maintain Syria's own food security. Cotton, on the other hand, is supported because it is Syria's most important agricultural export, and is also a staple raw material for Syria's manufacturing industry (Oweis, Maya, and Trabulsi, October 21, 2002). It is estimated that 25% of Syria's workforce is involved either directly in production of cotton or in its manufacture for the production of textiles (Economist, 2002).

To maintain continued high production of essential agricultural products, the government intervenes both upstream and downstream of the farmers by 1) selling inputs such as fertilizers and seeds for specific crops to licensed farmers, and 2) buying all produce through state owned marketing boards. Although current regulations are intended to make precipitation levels the major determinant in cropping patterns, IFAD (2001) reports that conflicting pressures to meet production targets set out by the national strategy introduces some inconsistency to the system. Maintaining high levels of production of key crops remains a major contributor to regulation and enforcement.

The rules and incentives around cotton production provide an example of how such inconsistency affects farmers. Cotton is a summer crop that requires large amounts of water and the government has banned its cultivation in drier areas. Due to the presence of government-guaranteed prices, cotton growing is a practice encouraged through positive incentives. Thus, farmers' choices are shaped by a two-part incentive structure: on one hand there is the positive incentive to growing cotton due to guaranteed prices; on the other hand the punitive measures for going against the ban acts as a negative incentive for farmers in dry areas.

These incentives can come into conflict, as illustrated by a story that I was told in Syria. The government's enforcement of this ban is reported to have been inconsistent. According to the

story, when the ban first came into being, informal channels quickly appeared through which farmers in dry areas could sell illegally grown cotton to intermediaries. Through these informal channels, cotton would eventually find its way to state-owned marketing boards. Governorate officials were inclined to turn a blind eye to informal cotton markets because they helped ensure that their production targets were met. Similarly, the resolve of the national government to get tough on the ban was softened due to the importance of cotton in downstream processing and manufacturing sectors. With allowing these informal cotton markets in place, the two-part incentive structure breaks down, and farmers in dry areas live in an uncertain environment of conflicting incentives: on one hand, they feel the economic incentive to grow cotton because they can get away with it; on the other hand, they live under the shadow of the threat of punitive actions should enforcement change.

And change it did. The narrator of the story described that two years earlier, the Syrian government took a sudden firm stance on the ban. Punitive actions were undertaken, and Syrian authorities ordered hundreds of hectares of illegally grown cotton to be plowed underground, with there were serious economic consequences for farmers.[3]

The teller of the story could offer no reasons behind the sudden change. The story was told to me as a way of illustrating to me that it would be difficult to find evidence of research influencing policy in Syria; it was a way of illustrating the nature of Syrian policy application. But the story has interesting implications for the larger policy study in that it offers an example of a kind of change in policy in which policies *themselves* have not changed, but rather that the priority in enforcing conflicting or competing policies has been altered. Such changes do not affect individual policies themselves, but result in rather sudden changes in how farmers that fall under the shadow of the two competing policies experience them[4].

2.3 Intersection of Water Demand Management and Regional Politics

When I asked Dr. Noureddin Mona, Syria's Minister of Agriculture and Agrarian Reform, what IDRC could do to better support research into inform water demand management in Syria, he reacted to the language of "water demand", and highlighted the connection between regional politics and the political importance of language around water management:

> *You see, when we are talking about security of water, I see these as political issues. We see what is happening in Lebanon with the Wazzani Dam, for example. When you talk about water security, you have to be sensitive to these issues. That is why in Syria, we are attempting to optimize the efficiency of water use. (interview, Dr. Noureddin Mona, October 22, 2002)*

Efficiency of water use was a frequently used phrase amongst the Syrians interviewed for this study, and all were able to identify the main conservation measures taken by the Syrian

government, which is to reduce the amount of water wasted in irrigation through the promotion new irrigation technologies through the provision of government-supported loans[5].

On examination, the MAAR's focus on efficiency of water use is both practical and, as Dr. Mona's comments indicate, politically important. By framing water policy measures in terms of "efficiency", one addresses the practical issue of making existing water supplies go further. But the language of efficiency is also politically important in that it does not reduce the urgency of Syrian claims on regionally shared water supplies. Increasing shortages of water throughout the MENA region has meant that there are high stakes attached to negotiations over water. For Syria, internal policies to reduce water demand do not support strong positions for negotiating externally with neighbours. Syria has many competitors for water, and the need to share the water of the Euphrates is a particularly sore spot in Syria's relationship with Turkey and Iraq.[6] It also figures into the volatile relationship between Syria and Israel, particularly in relation to Israel's illegal occupation of the Golan Heights. Water has also been a pivotal issue in Syria's support of Palestine, Jordan and Lebanon in their respective disputes with Israel[7]. In the complicated politics of the MENA region, water issues have managed to seep into and find linkages with an astounding web of territorial grievances.[8]

3. METHODS

3.1 Approach to Data Collection

Data for this case study was collected from three sources: semi-structured interviews with key informants, project documents, and background literature concerning issues surrounding water and politics in the MENA region. The project files for the project are housed in IDRC's Middle East Regional Office (MERO) and were reviewed in Cairo prior to conducting interviews in Syria. Reviewing documents before conducting interviews was useful as it provided a basic overview of the key events of the project, as well as an orientation to the various roles of its participants. Documents of particular relevance (such as technical reports and correspondence around pivotal moments in the project) were marked, photocopied by MERO staff, and sent to IDRC headquarters in Ottawa for closer examination during analysis and writing stages. Literature around water issues in the Syria and Middle East, both white and grey, was reviewed in order to put what was heard in the interviews in a broader economic and political context.

A standard interview guide prepared by IDRC's Evaluation Unit determined the approach interviews, and the generic questions that it provided were refined and adapted in order to make them relevant to the actors in the case. A list of all interviews and meetings is provided in Annex 2. Key information about the project came primarily from those who were directly involved. This included:

- IDRC program officers (2)
- The researchers from McGill (2)
- ICARDA (1)
- Professors and students at the University of Aleppo (5[*] professors and 4 students),
- Current members of government who were involved in the project (2*).

In addition to interviews of people who were directly involved in the project, valuable information came out of less formal interviews and conversations during the study period in Syria. Courtesy visits arranged with researchers and administrators at ICARDA, meetings with the Engineers at the Duma research station, provided valuable insights into the context in which the project took place, and the nature of the relationships between research centres and government departments.

The main method for recording interviews was to take detailed notes. In some cases, this note taking was supplemented with the use of an audio tape recorder during the interview. Tape recordings were not made in almost all the interviews conducted in Syria as it was felt that the presence of the tape recorder would compromise the candor of the interview.[9] In other cases, information was unexpected and came during courtesy visits, or in unplanned conversations in

[*] Both of these include Dr. Noureddin Mona. Although Dr. Mona was the Minister of Agriculture and Agrarian Reform at the time of the interview, during the project he was a professor of socio-economics at the University of Aleppo, and supervised one of the students whose research was supported by this project.

hallways or during car rides. Although not recorded, these conversations were very informative and provided useful background information for interpreting data in the preparation of the case study.[10]

Finally, there were four occasions in which information gathering occurred in meetings with several people. This arrangement is less desirable than one-on-one interviews as it tends to limit the ability to focus on key themes or go deeper into the subjects thoughts, but it does offer the benefit of generating may points of view. In any case, the group arrangement was unavoidable as all appointments were arranged by ICARDA into a tight program according to participants' schedules, and there was no way of altering the arrangement once I arrived.

3.2 Approach to the Analysis of Policy Influence

The design of IDRC's strategic evaluation implies an approach in which the project is taken as the starting point and the investigator works outwards to trace the outcomes and influences that project has helped to bring about. Along the way, many different sorts of influence might be proposed, and it is then the job of the investigator to verify which of the possible ways are most likely. In this study, verification was done primarily through comparison and triangulation of information sources.

Lindquist's three-part framework (2001) provided the three overarching categories of ways research projects can influence policy. These categories form for the organizing the findings of this study. The first of these categories is *expanding policy capacities*, and refers to outcomes such as improving the knowledge/data of certain actors; supporting recipients to develop innovative ideas; improving capabilities to communicate ideas; and developing new talent for research and analysis. The second is *broadening policy horizons*, which includes outcomes such as providing opportunities for networking/learning within the jurisdiction or with colleagues elsewhere; introducing new concepts to frame debates, putting ideas on the agenda, or stimulating public debate; educating researchers and others who take up new positions with broader understanding of issues; and stimulating quiet dialogue among decision-makers. The third category is *affecting policy regimes*, which refers to the modification of existing programs or policies, and/or the fundamental re-design of programs or policies. When discussing the processes by which the project influenced policy, this study draws on both Neilson's (2001) review of the literature on the influence of research on policy, and Lindquist's (2001) analytical framework.

4. OVERVIEW OF THE PROJECT

4.1 Research Products

4.1.1 Intentions of influencing policy within the project

None of the project's stated objectives explicitly expressed that policy outcomes were expected to flow from the project. Policy influence may be implied in activities described in its stated general objective, (i.e., "the formulation of long-term management strategies for the suitable use of brackish water in supplemental irrigation of field crops in the dry areas of Syria"), as well as in objective 'f', which states that the activities were planned to disseminate findings to

Box 2. Project Goals and Objectives

Project Goal:
The introduction of management technologies for the sustainable utilization of brackish water in supplemental irrigation of field crops in the dry areas of Syria, with special emphasis on wheat.

General Objective:
Initiate research activities and enhance capacity building for the formulation of long term management strategies. These new strategies will be directed to the practice of supplemental irrigation with brackish water as stated in the project goal above.

Specific Objectives:

a. To enhance research capacity on the sustainable management of irrigation with brackish water in the arid and semi-arid regions of Syria.

b. To initiate experimental research field trials and modeling schemes to delineate strategies for the use of brackish water for supplemental irrigation.

c. To understand socio-economic and technical constraints as they relate to irrigation practices and alternative management techniques.

d. To calibrate and validate an existing salt and water movement model for the Syrian conditions.

e. To formulate a long-term research strategy and action plan for the management of brackish water supplemental irrigation.

f. To disseminate project findings to researchers, extensionists, and decision-makers.

(From Project Proposal, December 1996)

researchers, extensionists and decision-makers.

Although the project's stated objectives are vague in relation to how the project intended to influence policy, the interest on IDRC's part to influence policy was well understood by the project's four central actors, Drs. Oweis (ICARDA), Wakil and Bonnell (McGill University) and Rached (IDRC). The main mechanisms of doing so involved the creation of the steering committee including representation from both the MAAR and MoI, and holding a dissemination workshop at the end of the project, to which representatives from the Ministries, local media, researchers and extensionists were invited.

4.1.2 Description of Research Outputs

The primary outputs of the project are six Masters theses, one PhD dissertation (which as of October 2002 was still in progress and not yet complete), and a Final Technical Report. When the project closed, the students' theses - the main outputs of the study - had not yet been completed, although preliminary findings of their studies had been published in the University of Aleppo newsletter. One article appeared under the authorship of Hagi-Bishow and Bonnell (2000), both of whom are Canadian researchers from McGill, had been published in a peer-reviewed journal. Hagi-Bishow was a PhD student under the supervision of Dr. Bonnell, whose research involved the use of a computer-based model to predict salt-soil interactions. The article reported predictions made by the model using data gathered in the brackish water project. All of these early materials were presented at the project's final dissemination workshop, including a demonstration of the modeling software by the Canadian PhD student. A copy of the modeling program was left with the researchers in Syria, but it was not possible to discover what subsequent use, if any, was made of it.

The research was heavily skewed towards the technical aspects of irrigating with brackish water - even though the proposal indicated that the project would look at both the socio-economic as well as technical issues surrounding the irrigation with saline water. Except for one of the Master's thesis, all of the student research supported by the study was directed at quantifying and examining the interactions between the biophysical variables. Thesis titles were:

- Socio-economic study of Supplemental Irrigation using Brackish Water in Aleppo and Al-khabour basin Al-Hassakeh, in Syria for the seasons, 1997/98, 1998/99 (by Ieman Abdel Rszak Hanon);
- The effect of salinity and Rotations on Durum Wheat Yield (by Aziza Al-Atia);
- The effect of Different Levels of Saline irrigation on Durum and Bread Wheat Production (by Hamida Zibdieh);
- The effect of Seed Rate and Irrigation with Water of different Salinity on yield of hard wheat (by Amira Al Saleh);
- Effect of Interactions of underground saline water, wheat species and plant density on productivity (by Ibrahim Al-Awad)

Although explicitly requested by IDRC, and included in the final research proposal, no component of the project dealt with the costs and benefits of supplemental irrigation, and none considered the existing or potential policy environment surrounding the use of saline water.

4.1.3 Consideration of Gender in the research

Three of the students whose Master's theses were supported under this project were female, and several interviewees indicated that this represented a consideration of gendered perspectives in the project. In reviewing the project's outputs, it is clear that gender is almost

non-existent as an analytic category. Gender does appear in the socio-economic study, which investigated the predominant and preferred farming and irrigation practices in two regions (Aleppo and Al Hassakeh). The thesis contains a section describing women's preferences with regard to farming practices. Although the thesis is noteworthy in that it is the only piece of the project that addressed gender at all, a significant shortcoming is that the findings about women's preferences are presented on their own, in isolation from the rest of its findings. The thesis does not illustrate how or why women's preferences are different from men's preferences, how women's preferences are reflected in the farming practices that are predominantly employed, or any other sort of analysis of how women's preferences fit into and shape the surrounding context.[11]

4.2 The Story of the Project

4.2.1 Project Development

IDRC's project database indicates that the project began on July 1, 1997, however the project files stretch back to almost two years prior to this. Former IDRC Program Officer David Brooks recalls meeting Michel Wakil, who would later become the project coordinator and central figure in the project, at a conference early in 1995. At the time, Dr. Wakil was a visiting professor at McGill University on leave from the University of Aleppo. Brooks recalls that it was at this first meeting that they began to discuss the potential of using saline water for irrigation. By September of 1995, Brooks received a proposal from both Michel Wakil and Dr. Robert Bonnell, both professors at McGill University (Brooks interview, Sept. 25, 2002).

The project involved the collaborative efforts of three institutions: the University of Aleppo, ICARDA, and McGill University. The research was to be undertaken by the professors and graduate students (5 MSc and 1 PhD) working in the Faculty of Agriculture at the University of Aleppo - although, as noted by Dr. Bonnell, no researchers representing this institution were involved in the proposal process (Bonnell interview, Nov. 7, 2002). ICARDA was to play a support role for the research, supplying the necessary inputs such as seeds, fertilizers, and necessary requirements for the experiments. Dr. Oweiss of ICARDA explained that he made sure that project documents clearly describe ICARDA's role in providing technical advice on designing experimental protocols, and to provide the students with use of ICARDA's research facilities in order to analyze their data (Oweiss interview, Oct 20, 2002). The McGill researchers were to play a coordinative role, and would use their access to digital reference libraries to locate, access and supply relevant background literature to the researchers at the University of Aleppo. Dr. Bonnell and Dr. Wakil also provided technical support in the analysis of research results. Dr. Wakil's was designated as the project coordinator, and the responsibility to synthesize the results and produce the final technical report for IDRC fell to him.

A number of policy-related issues arose throughout the design and development of the project, including the need for stronger policy orientation in the project and concerns about how the researchers would carry the results beyond research into policy. Another predominant concern was that there was an insufficient focus on the social, economic and policy dimensions of irrigation with saline water.

Interviews revealed that some management and administrative concerns were also the source of considerable discussion during project development. These concerns included:

- The requirement for project leaders to secure parallel funding from other donors before IDRC could consider supporting subsequent stages of the project.
- Whether or not the project could be effectively managed from Canada (Oweiss interview October 20, 2002; Rached interview, Nov. 21, 2002); and
- Whether or not the University of Aleppo had the existing capacity to undertake the work (Oweiss interview, October 20, 2002; Rached interview Nov. 21, 2002)

4.2.2 Research Activities

The research experiments took place in farmer fields, in El Hassakeh province. Some additional trials were run at the Directorate of Irrigation and Water Uses (DIWU) at their headquarters in Duma, which is under the supervision of Dr. Georges Someh, Director of DIWU and also a member of the advisory committee.

The involvement of Syrian policy-making agencies occurred principally through the project advisory committee. This body consisted of researchers working within research institutions within the orbit of the Ministry of Agriculture and Agrarian reform, as well as from the Ministry of Irrigation. This group met annually to discuss research results, the progress of the project, and plans for experiments in the upcoming planting seasons.

Logistical difficulties encountered in coordinating visits to the field sites caused delays in carrying out field research throughout the project. Most project participants attributed the difficulties to weak project coordination and the fact that the project budget was coordinated out of country. (Al Ahmed interview, October 20, 2002).

4.2.3 Project Closure

Due at least in part to the fact that parallel funding had not been attracted, a requirement for receiving subsequent IDRC support at the time, IDRC did not support a second phase of the project. It is not entirely known what has happened with the research after the project's official closure. Although the project was officially closed in 2000, the Masters theses were not completed until 2001, and the PhD dissertation is still not yet complete. It appears that there was never a synthesis of all of the study findings.

The project ended with a final dissemination workshop. All of the researchers were present, along with the steering committee, which comprised representatives from the two ministries. Local media (television and newspapers) were invited and attended. At the final workshop, the students presented their preliminary findings, and Dr. Bonnell and Hagi-Bishow demonstrated the use of the computer model.

It is difficult to assess the influence that the workshop may have had. Michel Wakil, the professors at the University of Aleppo, and the students all reported that the workshop was a great success. Robert Bonnell said that all in attendance "appeared impressed" with the findings. IDRC's Eglal Rached could not compare this workshop to others in IDRC experience, as she did not attend it. Dr. Someh and Dr. Mona, both of whom are currently officials within the MAAR, had very little to say about the workshop, indicating perhaps that for them, it was not particularly memorable.

Since the project's closure, more outputs and outcomes are evident: the Masters theses that were supported have been completed and successfully defended. Project data has been used at conferences and the results and experiences of the Brackish Water project were valuable in the starting of a subsequent, larger project at ICARDA that is being funded by the European Union (EU), which focuses on screening new crop varieties for their tolerance to salinity.

Despite the list of outputs, the overall contribution of the project's findings is debated amongst project participants. While some believe that the project met its overall scientific objectives, many researchers believe that with more time (and more data collected over multiple planting seasons), they could have yielded more significant results and gone further in reaching definitive conclusions. The researchers believe that the project did not provide sufficient time to generate statistically significant results. Moreover, while the data produced good preliminary findings, the researchers maintain that if some additional effort were put into synthesizing all of the individual project outputs, the findings could be presented in a much more concise and convincing form than they currently stand.

Canadian partners at McGill view one of the most significant contributions of the project was the way in which it demonstrated to its Syrian counterparts a more participatory, inclusive way of doing agricultural research. The process of experimentation on farmers' fields, as well as the presence of the project steering committee, were important ways of linking research results to both farmers and government extension services.

In the end, because the separate research components and findings were never consolidated into a cohesive whole in the final report, or elsewhere, the extent to which project results can be utilized and built upon was definitely limited. It appears as though each of the students' work progressed along independent pathways, and although the quality of each of the

separate research outputs is reported to be quite high in quality, and the data robust, none of the project participants seem to know what all of findings represent together.

5. INSTITUTIONAL SETTING

This section describes the institutional terrain on which the brackish water project took place, and helps to better understand the opportunity that this project had to influence policy. Interviews of Canadian researchers indicate that Syria, for those unfamiliar with it, can be a very challenging place to work. In addition to language barriers, these researchers described Syria's agricultural research system as being a complicated array of political and research institutions whose overall rationale is difficult to understand. Former IDRC Program Officer David Brooks described the system as "opaque", "difficult to understand" and that while he was in Syria, he was obliged to follow the lead of Dr. Eglal Rached, who has had considerable experience in Syria (Brooks interview, September 25, 2002). Dr. Bonnell, had similar comments about his experiences. Apart from the discussions about the technical aspects of the research, Bonnell reports always having "a difficult time understanding what was going on", and like Brooks, also had to follow the lead of others (Dr. Robert Bonnell, interview: November 7, 2002).

5.1 Research and policy in the MAAR

The main players involved in agricultural water policies are the Ministry of Irrigation (MoI) and the Ministry of Agriculture and Agrarian Reform (MAAR). The policies they are involved in correspond generally to two levels: off-farm water management (MoI) and on-farm water management (MAAR). The brackish water project that was conducted mainly in collaboration with the MAAR, but there were some links to the MoI – via Borhan Kasmo, and some officials were invited to the final dissemination workshop.

As discussed in previous sections, in the past, the Syrian agriculture sector was completely regulated by the government. Congruent with managed reforms to the economy at the national level along came the recognition that government control was not a suitable substitute for motivation and profit incentives. Consequently, the MAAR has moved away from comprehensive control towards an "indicative planning approach", in which research is used to generate the information that is used to provide guidance to farmers. IFAD (2001) describes this role as doing the following:

- Giving the general indicators for the production of major crops i.e. wheat, barley, cotton, sugar beet, tobacco and lentils, based on the national demand the technical suitability of each region or zone;
- Determining, as recommended by agricultural research, the sustainable crop rotations and the product mix given land suitability and water availability;
- Informing farmers of the optional dates of planting and harvesting for each area as per research recommendations;
- Continuing timely provision of agricultural inputs;
- Supporting extension services to disseminate appropriate messages to farmers, and;
- Ensuring effectiveness in the control of epidemic pests and diseases at the national level.

As part of the reforms, Dr. Mona has brought researchers into key roles within the ministry in a deliberate attempt to strengthen the use of research in policy (Mona interview, October 23, 2002). These developments have been seen as positive by researchers interviewed at both ICARDA and the University. It is likely that this perception stems from the expectation that this will bring expanded research opportunities, as the reorganization of the research divisions and promotion of their colleagues has likely brought a number of them into closer orbit with the Ministry.

At the time of my visit, efforts were well underway to better align and coordinate the research institutions within the MAAR. In all, there are reportedly 130 government research stations across the country (Eng. Nidal Al Jouni, meeting October 19, 2002), and these are being brought into a hierarchy under the General Commission for Scientific Agricultural Research (GCSAR). GCSAR's mandate is to organize and consolidate research findings for policy purposes, and part of this is to reorganize research institutions under thematic areas according to different aspects of agricultural production. There are research arms that focus on specific agricultural issues such as irrigation, forage crops, horticulture, cotton production, and animal production.

5.1.1 Role of research in the MAAR

Research and Extension are separate arms of the MAAR. Research is the means through which new farming technologies and techniques are tested, and extension is the means by which those techniques and technologies are disseminated to farmers. Although reforms are attempting to increase the role of research in policy, it appears that research remains regarded within the ministry as performing primarily an instrumental function of testing and choosing among technical options.

Within all the research areas of the Ministry and the University that I visited, the research that I witnessed addressed only the technical side of agriculture, concerning things like seeding rates, crop rotations, irrigation systems, etc. I saw no social research, nor any research that looked into agricultural policies. In the conversations that I had, the way researchers discussed their work evoked Weiss' description of *problem-solving* meaning of use, in which research serves the purpose of providing solutions to technical problems. Similarly, the most prevalent model of research within the Ministry conforms to the model that Weiss has termed *research as data,* where it is assumed that decision makers are technically sophisticated, they agree on values and goals, and decisions consist of choosing between several options that are sharply opposed (Neilson, 2001).

It also appears that the lack of critical, socially relevant research is not supplemented from outside of the Ministry. Researchers find their topics by examining the national strategy.

Ahmed Al Ahmed explained that even at the graduate level, the acceptance or refusal of all proposals for thesis topics of in the Faculty of Agriculture are determined according to the degree to which they adhere to the national strategy (Ahmed, interview October 20, 2002).

The level of utilization of this research amongst policy and decision makers is almost certainly low. Dr. Mona, Dr. Maya (at ICARDA) and Dr. Wakil report that a problem in Syria is that it is frequently the case that the technical reports generated by the Ministry's research arms get shelved and go unread at higher levels. Dr. Mona and Dr. Maya explained part of the problem in the system is the low level of technical capacity amongst many policy-makers. Many current government officials received their training in the former Soviet Union, and particularly in disciplines such as economics and quantitative methods, they are badly equipped to deal with the problems of the new, market-oriented economy that have to grapple with now. Decisions are reportedly often made without substantive knowledge of the problem at hand. (Maya, interview, October 2002).

Eglal Rached, whose experience with doing research in the region as well as in Syria stretches back over several years, describes the linkage between research and policy as being tight, but mostly because the majority of research is conducted within state institutions. She identifies the non-independence of research from politics in the region as a major limitation to research influencing policy.

> *You have a number of research arms of the ministries. This is typical in the region - you have a research institute within the ministry of agriculture doing some experiments and also being involved in the formulation of policy. Policies are centrally dictated; some of them may be very relevant, some are not that relevant, but this is the way policy is formulated* (Rached interview, November 23, 2002).

Dr. Mona and ICARDA's Dr. Maya were happy to say that the reforms occurring within the Ministry are gradually changing this situation. As described earlier, Dr. Mona has been attempting to recalibrate the system so that research will come to figure more prominently in decision-making, and Dr. Mona himself is a kind of official. He received his PhD in Agricultural Economics at an American university, and worked as researcher and professional academic at the University Aleppo and ICARDA. He has also brought researchers into key positions within the Ministry, and created committees of researchers to address key agricultural problems. Within the Ministry, he is collecting all the graduate theses produced in the agricultural schools – gradually building the repository of research within the Ministry. At both ICARDA and the University of Aleppo, the appointment of the new Minister is seen as a very welcome event.

5.1.2 Collaboration in Research

The most influential agricultural research organization in Syria is ICARDA. As one of the Consultative Group on International Agricultural Research (CGAIR) centers, its mandate is to

develop solutions for important agricultural commodities (in this case those suitable for production in arid agriculture) and to collaborate with national research systems for which there are complementary research divisions. ICARDA works closely with the Syrian agricultural research system. A major area of ICARDA's work involves the development and diffusion of improved varieties of wheat, and this work coupled with the partnership between ICARDA and Syria's national research system is seen to have been instrumental to the transition that Syria made from being a net importer of wheat to being a net exporter of wheat[12] (Maya interview, October 20, 2002).

Interviews revealed that there is a fair amount of movement and collaboration between researchers at the Ministry, the University of Aleppo and ICARDA. Dr. Ahmed Al Ahmed explained that joint University-Ministry research projects are developed to the mutual benefit of both the University and the government research institutions. Partnerships with government research bodies provide badly needed research funding to Universities. Such projects are also helpful to the Ministry in that universities provide both 1) additional capacity to address problems identified by the government, as well as 2) a way for government employees to earn advanced degrees. As Dr. Ahmed Al Ahmed explains:

> *[T]here are not enough researchers at the Ministries, and those that are there are mainly engineers, so [the Ministry] relies on Universities for degree training, as well as to do direct research* (Ahmed interview, October, 2002).

Such was the arrangement that brought Borhan Kasmo into the Brackish Water project. Borhan completed his MSc at the University of Aleppo, and currently works for General Organization for Land Development (GOLD) at the Ministry of Irrigation. Once the Brackish Water project was approved, Dr. Ahmed Al Ahmed approached Borhan Kasmo to ask if he would like to continue doctoral studies under the project.

ICARDA is an important link for researchers both within the government and at the University. As an international research centre, ICARDA possesses advanced research facilities, and its researchers conduct world-class, internationally funded research. For Syrian university researchers, finding linkages to ICARDA appears as a way to build a reputation and advance in one's career. Salaries of researchers working for ICARDA are much higher than those of professors, and it appears that working with ICARDA leads to connections and opportunities. For example, prior to his appointment as Minister, Dr. Mona's career was split between the University of Aleppo and ICARDA. Dr. Ahmed, another well-respected researcher, also divides his time between the two organizations. Dr. Wakil, prior to immigrating to Canada, also divided his time between the University of Aleppo and ICARDA.

While there was not sufficient time to understand its dynamics and nature, it is apparent that a good deal of networking occurs amongst researchers located at the different organizations.

It is likely that this part of the reason that Dr. Mona's promotion to Minister is seen as a welcome event at all of the institutions, as his appointment may be expected to open new opportunities for researchers who work in this context.

5.1.3 Entry points for doing policy-relevant research

Although the national strategy provides the topics that research will address, the policy directions that are set out in the national strategy are not open to negotiation or challenge. It is also not possible for any bureaucrats to act on policy recommendations that may be contradictory to the national strategy. Dr. Oweiss explains that the strategy of the researcher who wants to be useful for policy making is to direct research questions at issues that fall within the strategy, but for which there are not currently any answers:

> *There is a lot of emphasis in Syria for policies for agriculture. Influencing the policy comes as you find technologies or recommendations that responds to the needs of the decision-makers at the time when they want to formulate policies. For example – you find that there is pollution because you find that people are using certain types of water. Now decision makers are looking for a solution – they want to make a policy on that. When you come up with that kind of recommendation then you can influence the decision-maker - when they need that recommendation. So actually what you want to do is do work on issues that you feel the decision-makers don't have answers to. You look at that from the general strategy of the country* (Oweis, interview, October 20, 2002).

The researcher who wants to affect policy, however, must carefully choose entry points so that recommendations do not contradict the general strategy of the country, as contradictory proposals cannot be considered.

> *The country has a strategy, for example, of subsidizing wheat production. You don't come with policies that contradict that. You have to come to them in a way that will not contradict the strategy of the country. The country strategy is to keep wheat production high because it is a food security thing. If you remove subsidies of wheat, then wheat production will reduce. If you want to influence the policy, you work within the general strategy of the country.*
>
> *Now for example take water. We want to reduce the water that is pumped so that we don't have over-pumping. But if you come and tell the country we want to put meters on the wells, they will not listen to you because meters cost lots of money and they don't have it. But you come with recommendations where you reduce the water pumping without contradicting the general strategies of the country.*
>
> *There are a lot of issues around policy that need to be taken into consideration when you make any recommendation. These are very difficult things – they are not easy. A lot of people come and say do pricing – but you cannot do it here. Water pricing is not feasible in Syria at this stage. So you have to come with another solution – solutions about increasing water efficiency on the farm without doing water pricing.* (Oweis, interview, October 20, 2002)

While Oweis' comments indicate there are constraints on the sort of policy questions that can be addressed by researchers, interviews with other researchers suggested that research that addresses itself to policy is unlikely to reach the policy makers. Such questions are filtered out as results are passed up through the hierarchy of the Ministry. The agricultural engineers at the irrigation research station described that they are instructed to only address technical issues in their research, and to send their results upwards through the system. The director of the research division receives these results and then formulates his own recommendations to be sent on to higher levels. Interviews consistently supported the idea that there is a clear distinction of roles: researchers provide information and data, and policy implications are an area of deliberation for policy makers. Owing to these constraints, Dr. Oweis sees research as primarily useful for influencing farmers and thinks that IDRC should not expect every project to deliver policy outcomes. He expressed that IDRC's pushing for policy considerations to be included in all projects can in some cases actually limit what can be achieved:

> *[IDRC] wants to make sure that [policy] is considered – that it is there. They want to see some kind of impact in decision-making. However sometimes I think they overdo it a bit. We do [research] not only to impact policy makers, but we do it to influence farmers. Sometimes farmers influence policy makers, but if we improve for example productivity – then the farmers can do it themselves. Not everything requires policy changes, although we know policies are instrumental in making changes. But to direct the research to serve policy-making only sometimes puts limitations on parts of the research. If I direct a research proposal in which 70% were directed at farmers - not to decision-makers - then IDRC will look at it and say it will not fit. Sometimes it needs to be balanced a bit* (Dr. Theib Oweis, interview, October 20, 2002)

5.2 'Gender' in the MAAR

Eglal Rached, in her October 2002 submission to IDRC's Board of Governors, sums up the state of gender-sensitive research in the MENA region by stating that, "the shift from women to gender has not made significant progress in the Middle East" (p18). Based on observations made for this case study, this statement accurately describes the state of gender-sensitivity in Syria's Ministry of Agriculture and Agrarian Reform.

Although there were roughly equal numbers of men and women engineers at the research station that I visited, and although the Brackish Water project supported equal numbers of men and women MSc students, I met no women occupying senior positions in either the University of Aleppo or Syrian government institutions. I also detected very little consideration of gender as an analytical category in any of the research that I saw, although to some extent, this might be expected, because for the most part I was interacting with researchers working on technical aspects of crop production. When I asked about the gendered aspects of the research that the MAAR conducts, Dr. Mona was able to quote statistics that underlined the significance and value of work done by rural women in agriculture. He also indicated that there is an institutional recognition of the importance of women's roles in agriculture, citing the work of the

gender unit located in the extension arm of the Ministry as a concrete example of this, saying that this unit "plays a very good role in implementing income generating projects".

In its country program evaluation, IFAD (2001) provides some history of the development of the Gender unit within the MAAR. It reports that gender attained a heightened profile with the creation of the Gender and Development (GAD) Unit in 2000. Until recently, activities dealing with gender dealt primarily with subjects relating to women's development, such as literacy, cooking, sewing, and some nutrition, but apart from vegetable gardening, agricultural production activities were not included. In January 2000, the unit moved out of the Extension arm of the Ministry and was reconstituted as a Gender and Development Unit, (GAD). The new unit is responsible for mainstreaming gender in all projects and programs conducted by the MAAR, and its main objectives are:

1. Gender sensitization and advocacy among decision makers and senior staff;
2. Support for rural women to gain better access to resources, benefits, and decision making processes; and
3. The improvement of women's productive and entrepreneurial skills.

Dr. Mona's comments addressed the third objective, but my observations suggest that the work of the unit may not have attained the level of mainstreaming, as described by the first. It appears as though capacity to mainstream is still needed and only a few opportunities within the ministry exist for researchers to consider gender dimensions in their research. Indeed, when the word "gender" came up in interview questions, project participants chose their words carefully. Elizabeth Bailey at ICARDA reports that gender-sensitization is a difficult task for ICARDA as well, as it is well-known amongst partners that "donors like gender", and it is possible to alienate partners by pushing too hard.

> *We have been gradually trying to introduce these ideas and concepts into the national system, but it is difficult and we must be careful in this. Even explaining the terminology in Arabic is troublesome; there is a danger of being perceived as "women's lib" (Bailey, interview October 20, 2002).*

Other interviews indicated that part of what may be hindering greater uptake of gender sensitive approaches to research in Syria and the Middle East might be a lack of understanding amongst donors and development practitioners about the unique character of "gender" in the region (Bailey, interview October 2002; Oweis, interview October 2002; and Rached, 2002). This view emphasizes that there are strong cultural norms that are poorly understood by the wider development community. Oweis (interview, October 2002) suggests that part of the problem may be that much of what has been learned about gender in the development literature has come from sub-Saharan Africa, and does not apply to the very different social context of the Middle East. He feels that the lack of understanding centers mainly on the failure to fully appreciate that

Middle Eastern women's roles in agriculture must be understood within the larger context of the agricultural family. Both Oweis and Bailey emphasized that researchers must look beyond women's roles in isolation.

> *It is important to disaggregate by age and origin, not just gender. Farms operate at the household level and you must look at the whole household framework. Context is crucially important, and there is a danger that if you don't look at the context, you can misperceive the situation. (Bailey interview, October 20 2002)*

Eglal Rached (2002) announced in her October 2002 submission to IDRC's Board of Governors that the Middle Eastern Regional Office (MERO) in Cairo is planning to conduct a study into gender in the MENA region within the next two years. Based on my observations on the state of gender-sensitivity of research in Syria and supplemented by feelings expressed by some interviewees that donor agencies tend to misperceive gender roles in Middle Eastern contexts, such a study appears to be timely and highly relevant. Such a study would help IDRC programs learn how to address these concerns. It could also identify researchers and institutions where capacity in gender sensitive research can be build and expanded upon. The recognition of the importance of women in agriculture by such diverse actors as the Minister of Agriculture and members of Syria's research community (particularly at ICARDA), all suggest that there may be several locations within Syria from which culturally and regionally appropriate approaches to incorporating considerations of gender into research can be cultivated.

6. FINDINGS

Earlier sections have described the context in which the brackish water project took place. Section 2 described how water policies are inextricably linked to national interests, both domestic and regional, and how adopted positions are selected with care. Section 5 described the research environment in which the brackish water project took place. Within this environment, the most obvious limitation on research to influence policy stems from the circumscribed role of research in policy and decision-making. Research fills the instrumental role of identifying technical parameters for *implementing* policies. It is not critical of existing policies nor does it inform the creation of new policy. In Lindquist's (2001) terminology, the MAAR can be regarded as a primarily "routine" decision-making regime: research fills the role of identifying packages of technologies, levels of fertilizers, recommended seed varieties, etc., and policy and decision-makers generally are not receptive to research that suggests changes to policy itself.

This section describes how the strongest influences of this project in *expanding policy capacities* and *broadening policy horizons*. It also describes one example of how the project *affected policy regimes*, concerning the creation of a ban.

6.1 Broadening Policy Horizons

The project contributed to *broadening policy horizons* in two ways. First, the project broke new ground by coming at the problem of saline groundwater from a new direction, and this theme has since been taken up and expanded upon by other researchers and research institutions. Second, the project was successful in reframing the issues around irrigation with saline water for policy makers, promoting the view that saline groundwater is a resource that can be put to good use in agriculture, and is not just a threat to agricultural productivity.

The project broke new ground by being a catalyst. It initiated a body of work and helped ICARDA to get its feet wet in this new area of study. Although the subject of saline water in irrigation is currently one component of a larger thematic area on the use of low quality water at ICARDA, at the time the project began, research on water was a brand new area at ICARDA. Dr. Theib Oweis had only been recently hired in his post as Senior Water Specialist at ICARDA, and very little work had yet been done on the use of saline water, at ICARDA or anywhere else. The relevance of the topic across the region has also become clear, as indicated by the recent creation of the International Center for Biosaline Agriculture (ICBA) in Dubai, whose work is dedicated to this area.

In addition to helping put the topic on the research map, the project reframed issues around irrigation with saline water for policy makers. Interviewees felt certain that government officials are now aware about the potential use of brackish water. Although he was not aware of any policies that have been made regarding brackish water specifically, Dr. Oweis stated that he

is convinced Syrian policy makers now see brackish water as a valuable resource. That both of the Ministry officials interviewed in this study were well aware of the problems and challenges associated with irrigation with saline water, one of them being the highest agriculture official in the country, there is a fairly good indication that decision-makers are receptive to receive and consider research about the use of saline water for irrigation.

6.2 Expanding Policy Capacities

Building capacities of new researchers was the strongest result area of this project. The project allowed six students at the Faculty of Agriculture at the University of Aleppo to earn Masters' degrees, and one is continuing the work that was started in this project to complete a PhD – into a important area of research.

Dr Mona described that this contribution is relevant to policy in that Syria lacks well-trained researchers and extension professionals. Projects such as this, that are designed to train new professionals and build research capacity, are very valuable to the Ministry. That the project provided an opportunity to explore a new research area was also a significant aspect of the contribution of the project. Borhan Kasmo, whose PhD research was supported under this project, is also the Head of the Department of Soil and Soil Pollution, a senior position within a research division of the Syrian Ministry of Irrigation. From this position, he has some influence on directions that research within the Ministry takes. The experience and knowledge gained in the area of saline water and its effect on soils is helpful to him in his professional role.

Hamida Zibdieh, one of the Masters students supported by the project, is in a similar situation. She is now working within the MAAR as an agricultural engineer, and the experience that she gained within the project is being brought to bear on problems related to salinity of water and soils in agriculture in her work at the Ministry. The professors and other students, some of whom are now working at the University of Aleppo, are using the results of their research as examples in teaching, thus transferring knowledge to new agricultural professionals.

6.3 Affecting Policy Regimes

There was one instance of policy change reported, and this concerned the issuing of a decree forbidding irrigation drainage water on lands with heavy soils. The creation of a decree has some formality, and the issue would have had to have been discussed within the legislature, been passed by its members, and agreed to by the President.

The research that contributed to this decree was that done by Borhan Kasmo and was supported by the project. Kasmo's research examined rates of salt accumulation in soils in relation to a number of variables (heaviness of soil, concentration of salt in irrigation water,

leeching fractions etc). As mentioned earlier, Kasmo is also Head of the Department of Soil at the General Organization for Land Development (GOLD) - within the Ministry of irrigation. One of his most significant findings was that salt accumulation is most severe in heavier clay soils, and that accumulation of salts are worse when irrigating with water that has salt concentrations higher than 5 mMol. Kasmo reported that, as a result of presenting his findings at a conference with representatives from the Ministry of Irrigation, a decree was issued in the northeastern Al Hassakeh Governorate. This ban forbid farmers from irrigating high clay content fields with drainage water, as the salt concentration in water draining off such fields can be quite high.

This story of policy influence came up at a meeting with the students and professors at the University of Aleppo. Dr. Ahmed Al Ahmed, who was also at the meeting, reported that compliance to such bans can be aggressively enforced. The police may be called to deal with offenders; water pumps can be taken away, fines can be levied, or other punitive measures can be taken. Unfortunately, no other interviewees could offer any insight the process or issues that contributed to the decision to create the ban, how it has been implemented and who is responsible for seeing that it is enforced.

6.4 Other Proposed Influences on Policy

The way in which the experiments were conducted in farmers' fields and the subsequent adoption of techniques by farmers, were reported by the researchers at Aleppo University and at McGill University as important ways of disseminating the findings. It was also proposed that these processes also influenced the way in which research is carried out at the University and the MAAR. There is some consensus amongst interviewees that farmers adopted techniques and technologies as a result of being involved in experiments, but there is rather weak evidence that this outcome of the project had much influence on the way that research is conducted within the University or the MAAR.

Drs. Wakil and Bonnell expressed that introducing the Syrian researchers and Ministry officials to research approaches that actually included farmers was an important component of the research project. There were two ways in which they proposed that this influenced policy. The first had to do with the legitimization of more inclusive approaches to experimentation as an alternative to the more familiar approach of running highly controlled experiments at government research stations. The second was that through increasing the demand for technologies and techniques amongst farmers, there is greater receptivity in government extension services to undertake actions that facilitate their dissemination.

Information collected from interviews tended to support the first part of the McGill researchers' proposition, namely, that by conducting research on farmers' fields, knowledge about farm practices that ameliorate the effects of irrigating with brackish water was transferred to

the farmers. One example was provided by former student Hamida Zibdieh and Dr. Haleb Hodeb at University of Aleppo. These researchers reported that as a result of Zibdieh's masters research into the relative salt tolerance of different varieties of wheat, farmers in the region came to know that the *sham 6* variety of wheat was most salt tolerant. The student and professor reported that as a result, sham 6 is now much higher in demand on the black market in the particular region in which the experiments took place. Another instance in which research has been implemented is in the case of Amira Al Saleh, who was also a Masters student in this area but is now working within the MAAR. The results of her work on the effect of seeding rates on yields have been adopted by Extension services for dissemination amongst farmers.

No support was found for the second part of the McGilll researchers' proposition: that government extension services provision of technologies and techniques has changed in response to changing demands from farmers. Recall that there were two parts to this proposed influence: 1) the project legitimized more participatory research techniques, and 2) that increased farmer demands for technologies have influenced changes at the policy level to facilitate farmers' access to them. In relation to the first, observations and interviews indicate that research on research stations is still very much the norm in Syria. In relation to the second, it was not possible to confirm that new demands from changing farming practices are being met by government. The example of the sham 6 variety of wheat shows that farmers must obtain useful seed varieties through the black market, suggesting that policies are allowing informal access to technologies that are in demand. On the other hand, it is possible that not enough time has passed for policies and regulations to adapt to the new situation. If demand in the black market persists over a long timeframe, it is plausible that signals will be received at the policy level, perhaps through the extension arm of the MAAR or the police, and salt tolerant seeds will be made more readily available.

6.5 Factors Facilitating and Inhibiting influence on policy

This section considers some of the things that facilitated and inhibited the brackish water project in influencing policy. It distinguishes these as factors that are internal and external to the project, and those that were within the control of the project, and those that were outside the control of the project.

6.5.1 External Factors Affecting the Influence of the Project

Within Syria and throughout the Middle East, there is wide recognition of the seriousness of water shortages. The overall concern of this project, to manage demand of water through the use of lower quality water, falls within the broad priorities of the Syrian government. What the project was unable to influence was the way in which the government approaches increasing water efficiency, through more efficient irrigation technologies. Another inhibiting factor was the

institutional context in which this project took place, and the circumscribed role that research plays. In line with how Lindquist describes such "routine" decision-making regimes, Syrian decision-makers appear to be less receptive to research that recommends changes to existing policy. It will be interesting to see if receptivity will increase as time moves forward and crises around water shortage deepen.

It appears to be coincidental that Dr. Mona was appointed to minister after the completion of the project – in the sense that his appointment cannot be attributed to his work within the project. His promotion was however an event which has contributed to the influence of this project in several ways. First, his familiarity and involvement with issues surrounding the use of saline water in irrigation may have rendered him more receptive to research on the topic, and perhaps has allowed it to obtain more influence with him. Dr. Mona's promotion has brought other changes in personnel as well, and in a general way, this has had a wider influence on the *policy regime* within the ministry. With his promotion, Dr. Mona has been implementing institutional reforms to elevate the stature of research within the Ministry. He has also brought researchers into key positions in order to increase the ministry's capacity to properly take research into account in decision-making. Another aspect of this is that with their new appointments, these new researcher-officials bring their knowledge and networks with them, with the result that new ideas are in circulation around the MAAR. According to the comments made by Dr. Oweis, and corroborated by interviews with policy makers, because of the project, the topic of irrigation with saline water is now a problem with which very highly placed policy makers are familiar. As research about how to safely use brackish water is elaborated, there are now intellectually receptive audiences for that research highly placed within the ministry.

6.5.2 Internal Factors Affecting the Influence of the Project

The involvement of ICARDA, with its high research capacity and strong reputation, was certainly one of the most important aspects of this project. Firstly, ICARDA provided a stable platform for the project in terms of resources and logistical support. Without its presence, it would have been unlikely to go ahead with the project. Secondly, the stability of the staff and research programs at ICARDA provided storage capacity for the research results to be retained after the project closed, and a place from which those results could be carried forward into subsequent projects.

The way in which the project was designed to bridge research and policy worlds through its participants was a strong element that increased its potential to influence policy. The project deliberately brought individuals that were both researchers and decision-makers into its orbit. One example was the inclusion of Borhan Kasmo, whose PhD research was supported by the project, but who also works within the Ministry of Irrigation. Another was the creation of the advisory committee, which included senior researchers from the university and officials and researchers from the government research stations. Another aspect to this is that there appears

to be collaborative, informal networking between the researchers at government research institutions, the university, and at ICARDA. With IDRC providing funds to elaborate this research topic amongst researchers across those institutions, the project has likely allowed issues surrounding saline water to gain some currency amongst that group. With Dr. Mona's promotion to Minister of Agriculture and Agrarian Reform, some of these researchers have come into prominent positions within the Ministry. Others outside the ministry have been brought into closer orbit, which has likely done much to bring the subject into the view of policy and decision-makers.

By far, the factor that most hindered the projects' ability to realize greater influence (and also within its control) was its poor management and coordination. The most obvious effect of this was that the project coordinator was unable to synthesize and present the findings of the project as a coherent whole. This has severely limited the communicability of the results, and Dr. Oweis, Dr. Ahmed, and Dr. Brooks (in his PCR) all have all recommended that it would be worth devoting some additional resources to synthesise the project's findings.

The mismatched capacities of the University of Aleppo and ICARDA appears to have been a significant factor that contributed to the disappointing performance of the project. ICARDA is a research institution with modern research facilities and attracts experienced, international researchers. In comparison, the institutional capacity at the University of Aleppo needs building It has very little in the way of research facilities, and in comparison to ICARDA, has a poorly paid staff that is frequently turning over. While there are risks presented to working with institutions of low capacity such as the University of Aleppo, the involvement of ICARDA presented an opportunity to increase those capacities. It is within the mandate of ICARDA to build capacity in national systems, which includes the University of Aleppo (Oweis interview, October 20, 2002) and the project should have provided an excellent opportunity for the University-based professors and students to access those facilities, work with international caliber researchers, and gain some exposure to applied agricultural research. Had appropriate provisions been made for close coordination and management, and had the research components designed so that they were within the ability of the professors and students to carry them out, the interaction could and should have been extremely positive.

7. FURTHER DISCUSSION

In her review of the literature for theories of how research influences policy, Neilson (2001:44) points out that it has been theorists working exclusively in Western-democratic policy contexts have generated the literature on the influence of research on policy. She states that the IDRC policy study offers an opportunity to flesh out some of these concepts with developing country perspectives, and poses a few provocative questions:

> So what kind of policy processes do these models represent for developing countries? What about those countries where non-state actors are not involved in the policy process because the state does not allow for them to? What about one-party states or authoritarian states, or those states controlled by dictators?

The final section of this case study addresses two concepts discussed in the literature review: the concept of "policy communities" and the importance of "completeness of research". It is hoped that by discussing how these concepts appear in this case study. It is also hoped that by addressing some of these more abstract concepts, the discussion will aid in finding similarities and differences across cases, further enabling IDRC's policy study to generate understand about how useful these concepts are for examining developing country policy contexts.

7.1 The concept of "Policy Communities"

Lindquist suggests the policy community concept is useful for IDRC's policy study, because of its flexibility in helping "to understand where power lies and the inter-relationships between government and non-government actors" (Lindquist, 2001:7). Diane Stone defines policy communities as "stable networks of policy actors from both inside and outside government which are highly integrated with the policy making process" (Stone quoted in Neilson, 2001:24). Stone has also described how non-state actors such as journalists, think tank experts, and university researchers can achieve "insider status" to the community by adopting the normative characteristics of that community, chiefly "similar values, causal assumptions, and problem perceptions" (Stone 2002:3-4).

The concept provides a useful perspective to describe the Syrian context, but due to limited information, it is extraordinarily difficult to map the actors on a map as Lindquist's paper suggests. Affiliation with a particular government organization does not necessarily place and actor or group closer to the decision-making centre. Actor's connections through the party and other official institutions are also important.

All major policy decisions emanate from the President. The main institution linking government with non-government actors is the Ba'th Party. Policy is not usually subject to open debate by an "attentive public". Linkages between the government and non-government – such

as the party and workers associations - are not used to facilitate collaboration and exchange of information; influence generally flows outwards from the centre, not inwards (George 2003).

There is little critical inquiry into policy. The huge bureaucracy of government departments is one way that the influence of research is blunted. Bureaucracy insulates official decisions made at the top from the bite of research from below. New ideas and knowledge filter through the layers of different governmental departments and associated research arms. The results of research carried out within government research stations are reported to the official in charge, who may or may not feed recommendations upwards through the system.

Another way that critical inquiry is reduced is due to the profound influence that the government exerts on research and the role of universities. The direction for research is pointed out by the national strategy. Its leverage is increased due to the lack of resources for research at universities. Since all research funding is subject to the approval of government, the national strategy functions as the lens that directs all research capacity onto national priorities. Another side of this is how higher education plays a political role in Syrian society. Teaching tends to rely heavily on rote learning as opposed to critical thinking and problem solving (George 2003; Holmwood 1988). Education is seen as way of passing on accepted truths rather than promoting critical inquiry.

In sum, in the centralized Syrian system, there is really only one central policy community, and it insulates itself from competing views through various means. The overall effect is to create a system that amasses and stores knowledge but does not put it to use. The danger of this is that it reduces the diversity of ideas in circulation - and because of increasing water shortages this may have serious consequences in the not-too-far-off future. As Lindquist (2001:6) states, such a situation reduces the ability of the research system to supply “creative ideas for new policy approaches because they do not have a stake in the status quo”.

7.2 “Completeness” of Research

The fact that a ban on the use of runoff water was created suggests that new ideas can filter upwards and influence policy at a high level in Syria. It was, however, not possible within this study to see the entire process by which this occurred. From the vantage point of the researcher inside the system, the links between researchers and the decision-makers stretch out of view. Mapping the convoluted connections between the actors that linked Kasmo’s research to the specific policy change was not feasible in this case study. This change occurred outside of the sphere of the project, was brought about within the Legislature, and influence occurred through actors working in the Ministry of Irrigation. I was unable to identify any of the primary actors involved, much less gain access them.

It is important to point out that although IDRC-supported research was involved in the creation of a new regulation, this should not necessarily be regarded by IDRC as an accomplishment. The case study described another example of policy change regarding water and farming practices in Syria, and this concerned the sudden enforcement of the ban on growing cotton in dry areas. Both bans illustrate policy actions on the part of the Syrian government that place restrictions on farmers. In both cases, there is no indication that these changes were accompanied by in-depth analyses of costs and benefits, or an accounting of who the winners and losers of such policies might be.

These aspects evoke Neilson's (2001:40-41) concerns about the "completeness" and quality of research that is brought to bear on policy questions. Quoting Seck and Phillips, Neilson explains that completeness,

> …relates to exploring all possible options and making available all relevant facts and figures that research can uncover on the search for intrinsically good policy options. Its distinct characteristic is that it completes the information provided by the various groups of policy stakeholders in the attempt to make all relevant factors and considerations have a bearing on the outcome of the policy decision-making process (Seck and Phillips quoted in Neilson 2001: 40).

Completeness and quality are relevant in this case because the research appears to have provided the parameters for regulations to a policy that could be used in ways to limit farmers. It must be said that IDRC was not unaware of the lack of completeness - the project file contains many memos and emails that requested the researchers to include a wider range of disciplines in the overall research design as well as adjust the design of the experimental trials. Despite this urging, more social research was not included and experiments on the technical aspects remained wide-ranging and unfocused. Due to these shortcomings, it appears that there were low expectations amongst project designers that policy influence *could* influence policy and decision-makers. The project came to be understood more as building research capacity at the University of Aleppo than as influencing policy and policy makers (Rached interview, November 23, 2002).

Although the intent to influence policy was reduced over time, nothing to was done to re-design project activities to fit with this new intent. The connections between the project and government officials remained intact, and plans to invite officials and the media to the final workshop remained unchanged. For the researchers part, it appears that there was never any expectation that their work could or should influence new policies. Their concerns revolved around scientific aspects and their ability to complete their work. Once the findings were written up and presented, they saw their role as completed.

For IDRC, this issue of quality and completeness raises important questions about IDRC's responsibility in the context of policy influence. IDRC is founded on the notion that

knowledge creation is not an innocuous activity but carries with it an enormous potential for change – and this becomes very apparent in the context of policy influence. What extent should IDRC make sure that all the relevant information is provided to policy makers? Furthermore, when it is known that the supported work is exploratory, to what extent should IDRC go to make sure this is adequately communicated to policy makers who are receiving it?

7.4 Final thoughts

Given all the constraints and limitations, it does come as some surprise that the this project had some positive influences as well as stimulated one change in policy. It is particularly noteworthy that it was not the overall performance of the project, its design, or the activities structured into the project that provided the impetus for the positive outcomes. Despite consistent setbacks, the dogged energy of the individual researchers working towards their own goals in their own contexts provided the energy to keep things rolling. It appears that this was no small feat, and the researchers should be congratulated for achieving what they did in what must have been a tremendously frustrating environment. Perhaps further work to integrate and synthesize the completed components might reveal that more was achieved in project that is currently known.

For the IDRC's policy study, what these findings suggest is that high quality research and well-performing projects are not necessary requirements for influencing policy or for contributing to policy change. They also suggest that success at influencing policy does not necessarily require successful, centrally engineered policy dialogue processes. It was reported that the research results that informed new regulations were communicated through a conference at the Ministry of Irrigation – well outside of the sphere of the project. It remains uncertain how the research actually contributed to that change. For example, it may be the research actually inspired the creation of the new regulation. It might also be the case that the research was consistent with changes that were already in motion, and were used as evidence supporting those changes. Due to the restrictive and closed policy communities it seems unlikely that convincing research on its own would be sufficient to bring about changes on its own.

What remains clear is that outsiders are often unable to understand the roles and responsibilities of the different organizations operating in Syria. For Syrians, knowledge attained through personal networks appears to be important. It takes time and immersion to become knowledgeable about how to operate within the system. Information about the how's and why's underlying policy decisions are not clear, and the system does not make it easy for researchers who are keen on influencing policy. Navigating the complicated web of constraints and opportunities requires in-depth insider knowledge, and outsiders such as IDRC staff are not

equipped to understand how to operate in this system, much less engineer strategies for policy influence.

Due to these realities, and the way in which positive changes did came about, a few suggestions are offered about how IDRC might approach policy influence in challenging contexts such as the one Syria presents. First, policy influence may not be an appropriate goal in all projects – at least not without clearly articulating the types of influence that are being sought. As Dr. Oweiss warned, citing policy as a target for research can limit what a project might otherwise achieve. Second, the case study illustrates that imposing the goal of policy from the outside is not effective, which indicates that the operationalization of "policy influence" should be entirely the initiative of partners. IDRC's contribution would be to providing partners with the tools they require to carry out the work they wish. The case study also indicates that "policy influence" should not be operationalized in projects through a checklist approach – such as requiring partners to include "dissemination workshops" or "policy dialogues" to satisfy IDRC requirements to close the loop with policy makers. Particularly in different policy contexts like Syria, IDRC's partners are best equipped to navigate the system. It is partners that need to direct and be the main agents of, and ultimately own the approach to influencing their research-to-policy systems.

ENDNOTES

[1] The term *Strategic Evaluation* denotes a category of study within IDRC's evaluation system. Strategic evaluations are studies carried out under the initiative of the Evaluation Unit, and address issues that cut across IDRC programming units. Strategic evaluations have a wider audience than *Project*, *Program* or *Corporate* evaluations, which tend to focus on topics that are relevant to narrower constituencies of users.

[2] Of Syria's total external debt of USD 22 billion, IFAD (2001) reports that Russia claims about USD 10 billion, and East Germany about USD 1.0 billion. Syria claims that these debts are no longer valid, as they were held by the Soviet Union and East Germany, both of which no longer exist.

[3] It is important to note the strength of the evidence supporting the facts of this story. The ban on growing cotton in arid areas is a policy measure undertaken to conserve water that was well known to all interviewees. The story about the sudden change in enforcement was related to me by one researcher during a casual and very informative conversation. . That such a change had occurred was verified by Dr. Mona, when I asked him r to clarify how the ban on growing cotton had come into being and how it was enforced. Dr. Mona did not address the change itself, but instead mentioned that extension services had improved at using the media to inform farmers about policies and the reasons behind them. Although Dr. Mona's comments did not expand on the reasons behind the change, his comments about extension services acknowledged that a change in the way the government has approached the policy had occurred - a strategy to provide better information to farmers in order to ameliorate the repercussions of punitive actions on their own.

[4] An implication of this is that such areas of policy inconsistency may indicate windows of opportunity where IDRC might support research to have some influence, either by supporting research addressing policies themselves, or by examining the sorts of adaptive strategies that are available to those whose livelihoods are affected.

[5] Most interviewees were able to identify the MAAR's attempts to diffuse drip and sprinkler irrigation technologies as a very important initiative the Syrian government. Laser-guided land-leveling is another technology whose development has received outside donor support and also is receiving serious consideration for wider implementation. The technology is promising because flood irrigation remains the most common technique used among farmers and land leveling can increase the efficiency of water use in flood irrigation by many times by reducing the amount of water lost by runoff. The technology is very expensive however, and appears to be a secondary priority to the ministry.

[6] Syria's water security is intimately tied to agreements with Turkey over sharing the water of the Euphrates River. The Euphrates originates in Turkey, flows south into Syria and continues southeast through Syria eventually crossing the eastern border and enters Iraq.

Jouejati (1996) has argued that Syria's policy to invest in more efficient irrigation technologies are closely linked to its need to decrease its dependence on the Euphrates River. For Syria, the Euphrates is a critical resource and represents approximately 85% of the country's available fresh water. For Turkey, the Euphrates is seen as a source of great, untapped potential. The Southeastern Anatolia Project (or "GAP" in the Turkish acronym) is a massive undertaking by Turkey to dam the Euphrates and Tigris rivers to further develop that potential. The dams are central to Turkish plans to create extensive irrigation canals to increase the

productivity of the southern part of the country, and to generate electricity to feed economic growth. The absence of effective international rules to intervene and ensure adequate provision of water to all three countries has led heightened anxieties in Iraq and Syria about the future of their water supplies.

[7] For a detailed treatment of the role of water in the Israeli-Palestinian conflict, and the way it shapes the web of relations between Israel and its other neighbours, see Brooks and Lonergan (1994).

[8] The absence of effective international rules and the ways in which water issues seep into existing territorial disputes significantly impedes the ability of nations to come to negotiated agreements for water sharing. Jouejati has described the environment as one in which countries are motivated by distrust of their neighbours, and take narrow self-interested positions resorting to pressure tactics that do not improve mutual goodwill:

> *[G]iven the condition of anarchy in the international system, states are motivated by fear and mistrust, and their principle concern is with their security and survival. In terms of interstate water disputes, central decision-makers choose less than optimal solutions in order to secure their own supplies* (Jouejati, 1996:134).

See Williams (2001) for other examples of how linkage between water and territorial issues has complicates peace negotiations.

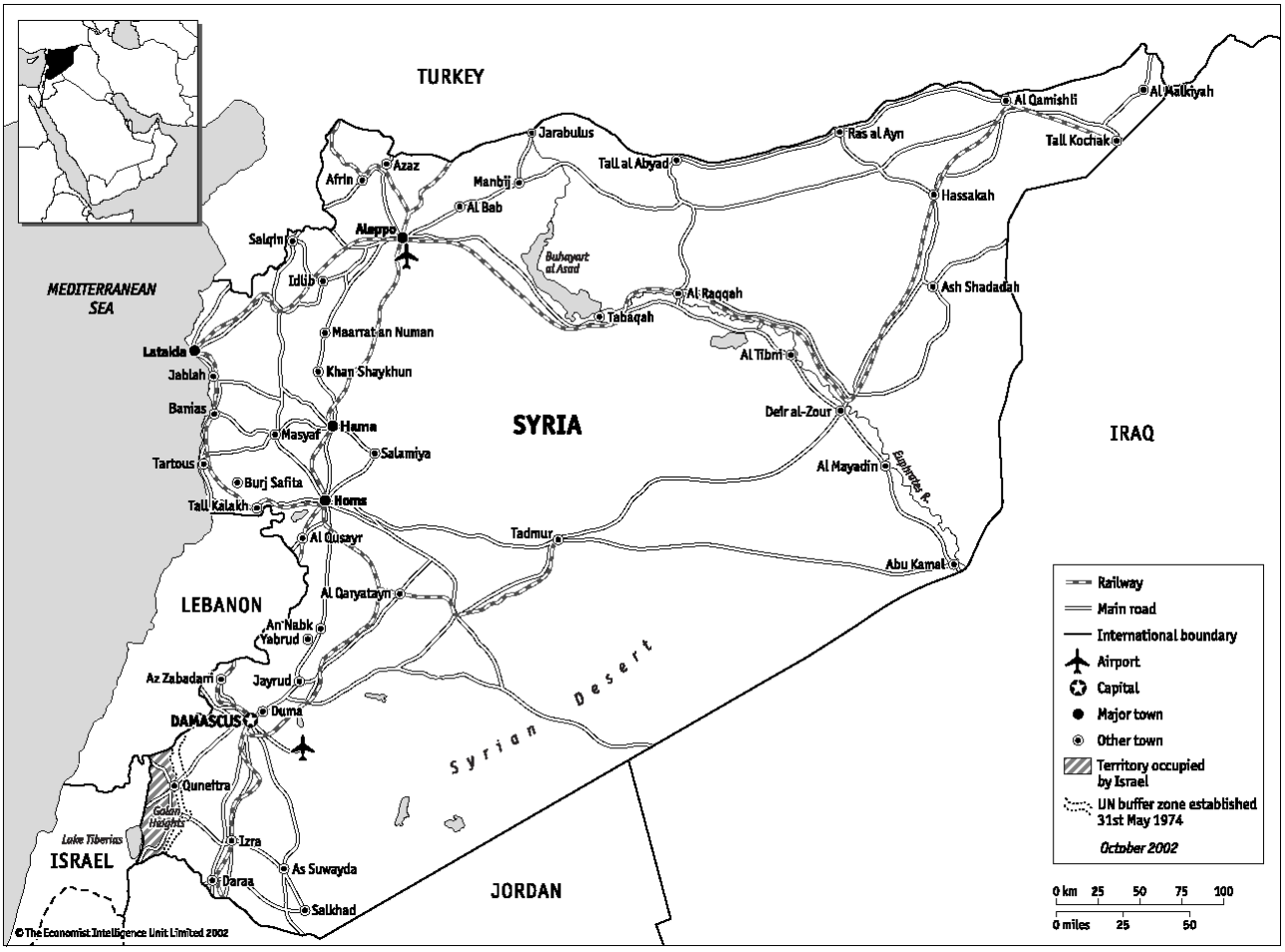
[9] With interviews that were not taped, notes were taken. In order to make sure the notes contained all the relevant information, immediately after each interview, I would go back over them while memory of the interview was still fresh to make sure that remembered details were included. I stuck to the practice of revising notes immediately after the interview even with interviews that were recorded. Initially, I did this as a way of reviewing what I had learned so far in preparation for the next interview. I later discovered that this provided a means to assess the reliability of note taking on its own. I discovered when I later reviewed notes in conjunction with audiotapes of an interview, I found that all of the informational content of the conversation was captured in notes - including all the important key words and phrases used the interviewee. What was lost was the exact wording that respondents used.

[10] Although information that was gathered informally was a critical part of this study, it must be noted that no one has been quoted in this report that did not provide explicit consent to do so.

[11] This statement should not be taken as a definitive assessment on the treatment of gender in this thesis. The thesis is written in Arabic, but does include both an English and Arabic abstract. The above discussion of gender is based on what is presented in the English abstract; it is possible that more detailed and nuanced information is offered in the main text.

[12] Dr. Maya provided several statistics to describe the contributions of ICARDA to Syrian agricultural production. In 1977, Syrian wheat production amounted to 1.3 M tons per year and now it is 5M tons/year. He also described that in 1977, rain fed wheat yields averaged 0.6 tons/hectare, and is now 2.8 tons/hectare. In irrigated agriculture, the improvement is even more pronounced: yields have increased from 2.2 tonnes/hectare to 5.7 tonnes/hectare

ANNEX 1. MAP OF SYRIA



From Economist 2002

ANNEX 2. SCHEDULE OF INTERVIEWS AND MEETINGS

1. INTERVIEWS

Interviews	Perspectives provided	Location of interview
Dr. David Brooks IDRC Senior Water Specialist Ottawa, Canada (Sept. 25, 2002)	IDRC	IDRC Ottawa, Canada
Dr. Georges Some Director, Department of Irrigation and Water Uses (DIWU), Duma, Syria (Oct. 19, 2002)	Member of project Steering Committee, Context	Department of Irrigation and Water Uses (DIWU) Duma, Syria
Dr. Faisal Maya Director, Government Liaison Office ICARDA Tel Hadya, Syria (Oct. 20, 2002)	Primarily Context	ICARDA Tel Hadya, Syria
Dr. Elizabeth Bailey Project Coordinator ICARDA Tel Hadya, Syria (Oct. 20, 2002)	Primarily Context	ICARDA Tel Hadya, Syria
Dr. Theib Oweis Senior Water Specialist, ICARDA Tel Hadya, Syria (Project Participant) (Oct. 20, 2002)	Project Participant, Context	ICARDA Tel Hadya, Syria
Dr. Ahmed El-Ahmed Professor at University of Aleppo, Consultant to ICARDA Tel Hadya, Syria (Oct. 20, 2002)	Project Participant, Context	ICARDA Tel Hadya, Syria
Dr. Nabil Trabulsi Government Liaison ICARDA Tel Hadya, Syria (Oct. 20, 2002)	Context	ICARDA Tel Hadya, Syria
Dr. Adriana Bruggeman Agricultural Hydrology Specialist ICARDA Tel Hadya, Syria (Oct. 20, 2002)	Context	ICARDA Tel Hadya, Syria

Interviews	Perspectives provided	Location of interview
Dr. Majid Jamal Director General, General Commission for Scientific Agricultural Research (GCSAR) Damascus, Syria (Oct. 23, 2002)	Context	Ministry of Agriculture and Agrarian Reform Damascus, Syria
Dr. Noureddin Mona Former Professor of Socio-Economics at University of Aleppo Currently Minister of Agriculture and Agrarian Reform Damascus, Syria (Oct. 23, 2002)	Project Participant, Context	Ministry of Agriculture and Agrarian Reform Damascus, Syria
Dr. Robert Bonnell Professor of Agricultural Engineering, McGill University Montreal, Canada (Nov. 7, 2002)	Project Participant	McGill University, St. Anne de Bellevue Campus, Montreal, Canada
Dr. Eglal Rached IDRC Regional Director, MERO Cairo, Egypt (Nov. 21, 2002)	IDRC Program Officer responsible for the project,	IDRC Ottawa, Canada
Dr. Michel Wakil Independent Consultant (Jan. 15 and 16, 2002)	Project Coordinator	Telephone (Ottawa-Montreal)

2. MEETINGS WITH GROUPS

Group Met	Meeting Participants	Location
Agricultural Engineers (Oct. 21, 2002)	Eng. Nidal Al Jouni (translator) Eng. Mazem Doughouz Eng. Mohamed Hakoun Eng. Hisham Barakat Eng. Hashem Akeed Eng. Abeer Khatib Eng. Rabea Hayek Eng. Mizar Saad	DIWU Research Station Duma, Syria
Students and Professors at the University of Aleppo (Oct. 19, 2002)	Dr. Ahmed Al Ahmed (translator) Dr. Adib Rahme (Current Dean) Dr. Abdul Naser Aldirir Dr. Haleb Koteb Borhan Kasmo, PhD candidate Hamida Zibdieh, MSc Aziza Al Attia, MSc Amira Al Saleh, MSc	University of Aleppo, Aleppo, Syria

ANNEX 3. INTERVIEW GUIDE

Interview Guidelines

Introduction

- Thank you for agreeing to meet
- Introduce myself
- Here to talk about project: ----------
- Purpose of the study on the influence of IDRC-supported research on public policy :
    - Help IDRC better understand what is meant by public policy influence and the factors that help/hinder it occurring from the perspective of an org. that supports research
- Evaluation is made up of a number of sub-components:
    - Reviews of existing documents (e.g. literature, evaluations, PCRs)
    - Approx. 30 project case-studies worldwide in the 3 programming areas in which IDRC supports research: ICT4D, ENRM, & SEE
    - WDM in the middle east is one of the case-studies where we are trying to tell the story of the influence of the research
- Intended use of the study:
    - improve project design and implementation in order to increase policy influence where it is a stated objective
- Give copy of briefing note
- Any Qs about the study or why I`m here to interview you?

Interview Process

- Ideally tape the interview & write notes so we can go back over following the interview
- Do you agree with us taping the interview?
- Are you willing to be quoted in the report or would you prefer to be kept anonymous?
- We will provide you with a copy of a draft report to review & comment on to make sure we accurately portray your opinions.
- Interview steps:
    - 1st – ask you some questions about the broader context of water demand management in the middle east
    - 2nd -- ask you about what has happened since the project was completed
    - 3rd – ask you about what led to this project being developed
    - 4th – ask you about what happened during the project
- Please stop me at any time if you have questions, want clarification or don`t want to answer a question
- Amount of time: It will take about 1 ½-2 hours per project. Is that ok?

[IF NOT ENOUGH TIME, RESCHEDULE INTERVIEW]
[IF OK, START TAPE RECORDER]

Context

These questions are to help us better understand your perspective on the topic of water demand management and the link between research and policy in [country]. They`re not specifically about the project. Although it is a complex topic on which books have been written, we`d like to spend a few minutes getting at the most salient issues as you perceive them.

1) In your opinion, what are the major issues surrounding water in [country]? How are they being addressed at a policy level?

2) In your opinion, who are the major players involved in making public policy for water management in [country]?

3) How would you characterize the relationship between research and public policy processes in [country]?

[CHECK IN – OK?]

What happened after the project?

It`s sometimes easier to think about the present so we`re going to start with questions related to the outcomes of the project since it was completed in 19--. In particular I`m going to ask you about the people who were involved with the project and what has been done with the research results…

a) Since the project was completed, what has happened with those who were involved?

(***Probe*** *– Where are the researchers/policy makers who were involved? What are they doing?)*

(b) What happened with the research findings?

(c) Have any dissemination activities continued? What? How?

(d) Who would you say has used the research? How have they used the research? Are they doing something differently than before?

(**Probe:** How did the project contribute to these changes? What else contributed to these changes?)

(Gender probe – did men and women use the research differently? How? How would you describe this difference? If no, should it have been? Why? Why not?)

(e) How did the project contribute to these changes? What else contributed to these changes?

(f) Generally, how would you say this project contributed to public policy in [country] specifically or in the middle east more broadly?

(**Probe** -- Did it contribute to better water management in [country] or the middle east more broadly? What kind?)

[CHECK IN – OK?]

II. What led to the project?

Thinking back to when you first got involved with this project….

(a) How did you get involved?

(b) What was your role?

(c) In your view, who were the key players at this early stage of the project? Why do you think they were key? What was their role?

***(*Gender probe** – how did they participate? How was each specifically involved in this early stage of the project?

(d) What issue or problem were you trying to address through this project?

(**Gender probe** – was gender considered? In what way? What were the major issues relating to men and women and their roles and relationships in society, that the project wanted to address?
IF NOT-- Looking back now, is there something that should have been done to better integrate gender considerations at this early stage?)

(e) Did those involved with the project discuss policy influence from the outset? Was it incorporated into the project design? How?

[CHECK IN – OK?]

III. What happened during the project?

I`d now ask you to think about the period in which the project was actually being implemented…

(a) When it started, what did the project intend to achieve? Did this change over the course of the project`s implementation?

(Probes from project documentation)

(b) What actually happened?

(**Probe:** What would you say this project achieved? What were its failings? Were there any unexpected outcomes? (positive or negative))

(c) All in all, do you feel the project`s objectives in terms of public policy were met? Why or why not?

(d) How would you describe the approach to influencing public policy in this project?

(e) What dissemination strategies were used? How effective were they?

(**Gender probe** – were different dissemination strategies used for reaching different groups? What kinds? For whom? Why/ why not? Were they appropriate?)

(f) How would you describe the environment in which this project took place?

(**Probe:** Were there any major changes that affected the project? What were they? What was their influence on the project and the results it was trying to achieve?)

(g) What constraints or barriers were faced? How were they dealt with? What was their effect on the project?

(**Probe:** political, legislative, economic, technical, social)

(h) Who was influenced by the research process or research findings? How? In what ways?

(**Probe** about those inside the policy process (e.g. either decision makers in charge of policy decisions or those in the front line of policy recommendations or development). Who specifically? In what way? What was their role?))

(**Probe** about the influence on those outside the policy process (e.g. those who directly or indirectly try to influence policy makers or the policy process --- advocacy groups or lobbyists) – was there any influence on them? What kind

(i) What was it particularly about the research process or research findings that allowed this influence?

(j) Did anything else help bring about this influence on [-----]?

[CHECK IN – OK?]

Conclusion

We`ve been speaking about this project in particular, but could you please comment on the role you think IDRC has played more broadly in influencing water demand management policy in [country].

IDRC is looking to improve from the information gathered in this evaluation, in this vein, do you have any suggestions on ways it could improve the way it supports research?

Finally,

Is there anyone you would suggest we interview in order to get a better understanding of how this project influenced public policy?

Are there any documents you would suggest we should look at?

Any last comments you would like to make?

Thank you very much for your time and attention during this interview.

Confirm on direct quoting

Would you like to review a draft report when it is completed at the end of November?

Would you like to receive a copy of the final report when it is completed?

[IF YES, CONFIRM ADDRESS]

Types of Policy Influence -

1. Expanding policy capacities

- *Improving the knowledge / data of certain actors*
- *Supporting recipients to develop innovative ideas*
- *Improving capabilities to communicate ideas*
- *Developing new talent for research and analysis*

2. Broadening policy horizons

- *Providing opportunities for networking / learning within the jurisdiction or with colleagues elsewhere*
- *Introducing new concepts to frame debates, putting ideas on the agenda, or stimulating public debate*
- *Educating researchers and others who take up new positions with broader understanding of issues*
- *Stimulating quiet dialogue among decision makers and among or with researchers*

3. Affecting policy regimes

- *Modification of existing programs or policies*
- *Fundamental re-design of programs and policies*

Gender

Gender dimensions run throughout the questions. Key prompts need to be added so that the interviewer can provide an assessment on each of the points below as to the degree of incorporation of gender sensitive analysis.

Was analysis gender sensitive or gender neutral in the policy influence process in the following domains (indicate evidence):

- Problem definition
- Definition of goals and beneficiaries
- Definition of research agenda
- Definition of research-policy interface and linkages
- Formulation of policy options
- Choice of preferred options
- (Where applicable, implementation, M&E, policy revision processes)

ANNEX 4. LITERATURE CONSULTED

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