

# BUILDING BRIDGES OF CONFIDENCE

## Through Technical Dialogue

FINAL REPORT



Middle East and North Africa  
**REGIONAL INITIATIVE FOR  
DRYLAND MANAGEMENT**

International Center for Agricultural  
Research in the Dry Areas  
(ICARDA)

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## FOREWORD

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The “Initiative for Collaboration to Control Natural Resource Degradation (Desertification) of Arid Lands in the Middle East”, later renamed the “Regional Initiative for Dryland Management”, is a little publicized initiative designed to facilitate Arab-Israeli technical cooperation in support of the peace process of the 1990s. Conceived in the years of enthusiastic support for what appeared to be an opportunity to end a long-standing regional conflict, this 10-year program, implemented between 1996 and 2006, tells the story of political, institutional, and technical realities on the ground, constraining what enthusiastic participants, donors, and other stakeholders set out to achieve. It is the story of bold objectives, sobering experiences, continuous adaptations, and – against all odds – remarkable achievements during times of continued conflict. The story will not do justice to all the great personal efforts that made this program happen. It can only provide an indication of some of the joys and pains endured during the 10-year implementation period.

The “Regional Initiative for Dryland Management” was designed to bring together technical experts from Israel and Arab countries in an attempt to build bridges of confidence among conflicting parties, bridges that would eventually facilitate rapprochement and ultimately peace. As such, the Initiative was – by design – a “mission impossible”. It was not a research program, given that the research was motivated by and aimed at Arab-Israeli dialogue. If a choice had to be made between the continuation of meetings and dialogue and the strict enforcement of technical quality objectives, Arab-Israeli dialogue was always favored. On the other hand, technical dialogue cannot – by definition – achieve peace, given that peace negotiations are conducted by political representatives, diplomatic experts, and social groups. How then does one measure the result of this program? – The Initiative’s objective was simple: bringing technical experts together to discuss technical issues of mutual interest, in this case dryland management and desertification. And the Initiative did bring together Arab and Israeli technical experts throughout the entire lifetime of the program: a remarkable achievement in light of the ups and downs of the peace process.

This final report has been initiated and produced by the International Center for Agricultural Research in the Dry Areas (ICARDA) as the implementing agency of the Initiative, with support from the World Bank as the representative of the donors and Chair of the Steering Committee. The report has been written by leading participants in the program, one Arab and one Israeli, with contributions from technical teams in participating countries. The report is testimony to the dedicated efforts of both Arab and Israeli experts to start building bridges of confidence.

### **Inger Andersen**

Director, Sustainable Development Department  
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## LIST OF ACRONYMS

ACSDA	Arab Center for the Studies of Arid Zones and Dry Lands
ARC	Agricultural Research Center
BIDR	Blaustein Institutes for Desert Research, Ben Gurion University of the Negev
BOD	Biological Oxygen Demand
CIDA	Canadian International Development Agency
CITET	Centre International des Technologies de l'Environnement de Tunis (Tunisia International Center for Environmental Technologies)
COD	Chemical Oxygen Demand
CRDA	Commissariat Régionaux au Développement Agricole (Regional Commission for Agricultural Development)
DFG	Deutsche Forschungsgemeinschaft (German Research Foundation)
DRC	Desert Research Center
EC	Electrical Conductivity
EPA	Environmental Protection Agency
ERM	External Review Mission
EWG	Environment Working Group
FAO	Food and Agricultural Organization of the United Nations
FU	Facilitation Unit
GIS	Geographic Information System
GTZ	<i>Gesellschaft für Technische Zusammenarbeit</i> (Agency for Technical Cooperation)
ICARDA	International Center for Agricultural Research in the Dry Areas
IRA	General Institut des Régions Arides (Institute of Arid Regions)
ISNAR	International Service for National Agriculture Research
MEDRC	Middle East Desalination Research Center
MENA	Middle East and North Africa Region
MERC	Middle East Regional Cooperation program, USAID
MOA	Ministry of Agriculture
MRMP	Matrouh Resource Management Project
NCRATT	National Center for Agricultural Research and Technology Transfer
NGO	Non-Governmental Organization
ONAS	Office National de L'Assainissement (National Agency for Sanitation)
PMAT	Publications and Mail Administration Tool
PNA	Palestinian National Authority
QRDP	Quasr Rural Development Project
RIDM	Regional Initiative for Dryland Management
RSCN	Royal Society for the Conservation of Nature
RSP	Regional Support Program
SAR	Sodium Absorption Ratio
SRMP	Sustainable Range Management Project
SSC	Statistical Service Center
TFC	Total Fecal Coliform
TSS	Total Soluble Salts
UNEP	United Nations Environment Programme
USAID	United States Agency for International Development
WANA	West Asia and North Africa



# EXECUTIVE SUMMARY

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## BACKGROUND

The Regional Initiative for Dryland Management was established in 1996 to promote technical cooperation between Egypt, Israel, Jordan, the Palestinian National Authority, and Tunisia. The Initiative was conceived by the Multilateral Working Group on the Environment (WGE) as an instrument to serve the Middle East peace process through scientific collaboration on relatively uncontroversial, apolitical issues that mutually affected the five parties concerned. The Multilateral Working Group itself had been established during the Madrid Peace Conference in October 1991. In a meeting of the Working Group held in Tokyo in May 1993, land degradation or desertification was identified as just such a common issue, one which would be best served through regional cooperation, including direct interaction between technical experts from Arab countries and Israel. Three months later the Oslo Accords were finalized, and catalyzed planning for the Initiative, originally named the "Initiative for Collaboration to Control Natural Resource Degradation (Desertification) of Arid Lands in the Middle East," but more widely referred to simply as the "Desertification Initiative." Later, as controversy arose over the definitions of "desertification" and drought in dryland ecosystems, its name was changed to "Regional Initiative for Dryland Management (RIDM) (for simplicity reasons, this report will use the term "Dryland Initiative"). Its program was adopted by the Working Group in 1994, and in 1995 the World Bank raised funds from donor countries facilitating the Initiative's creation the following year.

The Dryland Initiative was thus born out of an expectation that regional technical cooperation could be an instrument for peace and stability in the Middle East and North Africa (MENA), and between Israel and her Arab neighbors in particular. The notion that technical cooperation could be an instrument for

peace rested on an assumption of both shared concerns and open communication. Of course technical cooperation was by no means expected to lead the Middle East peace process or to assume a central role in political dialogue, but it could potentially establish channels of technical dialogue and exchange, supporting a process of rapprochement and eventually political agreements and peace.

Regional cooperation, as envisaged in the original program of the Initiative, would rely on direct exchanges of knowledge and experience between national teams, enabling project implementation in one partner country to benefit from access to the experience of projects in other partner countries. More specifically, "regional" cooperation was explicitly related to Arab-Israeli cooperation. This report will use the term "regional" with this meaning.

The concept carried an implicit principle of relative comparative advantage, such that national institutions in one country might build capacity and cultivate expertise through interaction with counterparts in other countries. Such exchanges would not only serve to build capacity, but would build a collegial culture of mutual reliance, confidence, and respect. National teams would come to rely on one another and trust one another. Regional cooperation therefore had to be based on common regional issues and priorities such as management of dryland soil and water resources, endemic biological diversity etc. This internal sense of regional community was also to be served by mutual interaction with outside entities, joint planning to be approved by external sources, and joint reporting on the products delivered and progress achieved.

## PHASE I : AUGUST 1996 – JUNE 2000

The original program laid out a series of four thematic areas around which the weight of Initiative

activities would be organized: *Economic Forestry and Orchards, Rangeland Management and Livestock, Germplasm for Arid Lands, and Marginal Water and Saline Soils*. These thematic areas would be coordinated at the regional level by four *Regional Support Programs* (RSPs), and at the national level by corresponding *National Support Activities* (NSAs). The Regional Support Programs were assigned to the participating countries based on informed estimations of their relative comparative advantages and national priorities. Egypt assumed responsibility for *Germplasm for Arid Lands*, based on the country's long experience using dryland-adapted plants irrigated with Nile river water. *Economic Forestry and Orchards* would be hosted by Israel, based on the country's extensive experience with dryland afforestation and horticulture. The *Rangeland Management and Livestock* RSP was assigned to Jordan, given the prevalence of livestock-dependent agro-pastoral livelihoods in the country, and the presence of research organizations with considerable capacity in rangeland research. Tunisia, which had pioneered the reuse of treated wastewater for agricultural production in MENA, would host the *Marginal Water and Saline Soils* program. The two year old Palestinian National Authority would not host a thematic Regional Support Program, but rather focus on building institutional capacity while benefiting from all four technical RSPs.

The original four-program thematic structure covered the initial four year period of the Initiative, generically referred to as "Phase I," which began at the Initiative's inception in August 1996 and which ended in June 2000.

## PHASE II : JULY 2000 – JUNE 2003

Based on the recommendations of an external program review that evaluated the Initiative's performance during this period, the Initiative was continued into a second three year "Phase II" with a simplified programmatic structure. The simplified

thematic structure saw the *Forestry, Germplasm, and Rangeland* RSPs subsumed under a broader *Watershed Management* program. The *Marginal Waters* RSP was incorporated into a similarly broader *Treated Wastewater and Biosolids Reuse* program. The "Regional Support Program" designation was dropped, based on the understanding that all activities including national field activities were actually part of the regional thematic programs. Also based on recommendations of the external review, the revised Initiative program for Phase II introduced a third thematic *Socio-Economy and Policy* program to analyze sociological and economic dimensions of dryland management, and based on its findings, to develop policy recommendations and incentive strategies to raise rural incomes and encourage sustainable resource management.

## EXTENSION PHASE : JULY 2003 – APRIL 2006

Phase II itself would be extended by two years beginning in 2003, in another programmatic adaptation known as the "Extension Phase," when the *Socio-Economy and Policy* program would be mainstreamed into its sister *Watershed Management* and *Treated Wastewater* programs, bringing the Initiative's lifespan to ten years.

The Extension Phase program also laid out a transparent system of quarterly disbursement based on the delivery of agreed upon results, and on the satisfaction of clearly defined performance indicators. These developments made the final two years of the Initiative its most successful, although the lack of communication between workshops and meetings suggest the limitations that persisted throughout the Initiative's life.

## Regional dialogue in difficult context

Within – and forming an integral part of – the regional thematic programs, participating countries conducted technical field work at the national level.

These activities were carried out at project sites and research stations where the great bulk of the technical work under the Initiative took place. The national teams responsible for the conduct of the research and demonstration were to be supported by the corresponding regional program, which was charged with providing consultation and technology transfer services during regional meetings, seminars, training courses, and demonstration site visits. But the support and coordination elements of the regional programs would remain very limited owing largely to the resurgence of Israeli-Palestinian conflict that characterized the political setting in which the Initiative was implemented.

In fact, circumstance would undermine regional cooperation—the motivating principle behind the Dryland Initiative itself—from the Initiative's very inception. While the Initiative was officially launched in 1995, it was not until August of 1996 that all national activities were fully formulated and all funding was in place. By then the peace process was unraveling. The period in which the Initiative was implemented was therefore starkly less hopeful than the period in which it was planned. The division of the Initiative's lifespan into three successive phases was the result of external reviews conducted in three-year intervals which provided important inputs for technical and institutional adjustments but which also served to adapt the program to the compromised environment for regional cooperation.

Political circumstance impinged decisively on the life of the Initiative. The transition from the 1996-2000 *Initiative for Collaboration to Control Natural Resource Degradation (Desertification) of Arid Lands in the Middle East* (Phase I) to the abridged *Regional Initiative for Dryland Management* (Phase II and Extension Phase) did away with the innovative but non-functioning structure based on a separation of regional and national support programs and activities. Based on external review recommendations, Phase

II maintained regional cooperation, defined as collaboration between Israel and Arab partners, as the project purpose, but it built its technical work entirely on national development projects within which the Dryland Initiative would provide incremental and integral knowledge services based on the Initiative's applied research results. Hence the move from Phase I to Phase II was marked by refocusing the Initiative from its technical objectives (control of natural resource degradation and restoration of arid land productivity) to a dual objective structure in which regional cooperation and natural resource management appeared in parallel. This modification appeared subtle at the time but turned out to add to the difficulties in the prioritization of program activities. The Initiative, however, purposely reduced the "regionality" of its program and explicitly allowed national field activities to continue during times in which regional cooperation would be constrained by the resurgence of Israeli-Palestinian conflict. The original program of exchange visits and systematic knowledge sharing had to be relegated to periodic "regional" meetings, all of which had to take place outside the region by virtue of political tensions. Although Arab-Israeli cooperation was re-emphasized, especially during the final two years of the Initiative, cooperation would take the form of consultation and information sharing at these meetings, with little regular communication between meetings. Ironically, the success of the Initiative as an instrument for regional cooperation was constrained by the lack of this very regional cooperation in the absence of political rapprochement in the Region and was therefore contingent on factors external to the purview of the Initiative itself. The vagaries of the peace process and periodic outbreaks of violent conflict would indeed impinge heavily on the ultimate success of the Initiative in helping to create an environment of confidence.

However, throughout the 10-year lifetime of the Initiative and in parallel to the ups and downs of

the Middle East Peace Process, the Initiative demonstrated a remarkable resilience to these external political factors and always – without exception – maintained a minimum level of regional dialogue and exchange. Hence it fully achieved its objective of bringing together Arab and Israeli experts to discuss common technical issues, sometimes at the cost of technical quality and program visibility. Focusing on individuals willing to sustain these partnerships was a key success factor while at the same time a key constraint to achieve even broader outreach to the scientific community and political decision-makers. Especially during the Extension Phase, the Initiative's *Regional Thematic Workshops* and *Regional Capacity Building Workshops* succeeded in bringing together Arab and Israeli counterparts in a diminished but tangible version of regional exchange. Face-to-face interactions were substantive and did afford the counterparts an opportunity to brief and be briefed by each other on the substance of recent work. For many of the participants of the capacity building workshops, this would be the first time they had encountered Arab or Israeli counterparts in person, and the proceedings of both types of workshop saw the exchange of informal advice, constructive criticism, and compared experiences.

## EXTERNAL REVIEWS

The two external reviews that recommended continuation of the undertaking in 1999 and 2003 both coincided with lulls in the Israeli-Palestinian conflict, and were thus rather fortuitous in their timing. The first review was conducted in 1999, and coincided with the resumption of direct Israeli-Palestinian negotiations in September – a setting that reassured the external reviewers enough to recommend continuing the Initiative for another three years. Indeed, the development of the new program was carried out in a genuinely cooperative atmosphere, with interactive workshops, consultations, and field tours in all five countries, including Israel. The

second external review, recommending the two-year Extension Phase in 2003, took place during a similar interim period of relative calm that preceded the Middle East Summit in Aqaba, during which Israel and the Palestinian National Authority both accepted the *Road Map to a Permanent Two-State Solution to the Israeli-Palestinian Conflict*. While all three review missions (including the final, post-operative review mission) observed the adverse effects of exogenous political events on regional exchange within the Initiative, all three concluded that the operation was manifestly worthwhile regardless of whether the peace process it was intended to serve was advancing or deteriorating. Indeed, the availability of such channels of communication is very arguably more valuable and urgent during difficult times, and is worth having readily in place for when relations improve.

## AREAS OF STUDY

While the Initiative's greater objective related to regional cooperation, the actual content and subject matter of work undertaken under its auspices was of course technical and scientific. During its decade-long work, the Initiative partners explored, tested, implemented, and demonstrated practices and innovations at projects sites in rural areas of their respective countries. Most of their work related to improving and applying existing knowledge, with limited efforts to generate new or novel technical innovations. Much of the work was expository, consisting of field surveys and plant species inventories. But the work was highly pertinent to the environment-development nexus in the five countries, and in the Middle East and North Africa generally. As such, it did expand the existing knowledge base of dryland natural resource management and agricultural and rural development.

Water harvesting and soil water storage techniques, and systems for promoting sub-surface water

storage, were prominent areas of study. Methods for promoting crop and livestock production to capitalize on the improved soil water storage were objects of intensive experimentation. The treatment and use of wastewater and biosolids to irrigate and fertilize crops, fodders, and trees was the focus of extensive experiments, applying various levels of differently treated wastewater and combinations of wastewater, drainage water, and fresh water to a wide range of plant varieties. Methods of soil conservation and stabilization using treated biosolids, afforestation, and improved rangeland management were explored at great length.

Research on farming system diversification and alternative non-farm rural livelihood sources would target methods to increase income levels among local communities and reduce pressure on local land resources. Biological diversity surveys and inventories on protected conservation sites and elsewhere saw the collection of plant materials for genetic resource facilities, including genebanks, greenhouses, and botanic gardens. These activities too were largely geared toward sustainable rural livelihoods, with thousands of seedlings of promising cash crops and fodders cultivated for distribution to local farmers and land users. A variety of social surveys were conducted in all five countries, profiling the needs of target communities in which Initiative-demonstrated practices would be demonstrated and hopefully adopted. Economic analyses evaluated the profitability, relative costs and benefits, and social acceptability of the practices and technologies that Initiative projects would seek to disseminate.

## WORKING WITH LOCAL COMMUNITIES

All five country teams engaged local communities in their projects, and all five invested substantial effort in making the knowledge generated by the projects available to the participating communities, and in disseminating the knowledge beyond the boundaries of project sites. Evidence of the impacts

of participatory activities in and around project sites would suggest that local awareness of demonstrated innovations in nearby communities was sometimes quite considerable. The teams sought permission from land owners to implement projects on their lands. When permission was granted, farmers became project participants and were often hired as project employees as well. Some community projects were identified as being complementary to Initiative projects and objectives, and therefore came to be co-financed with Initiative funding. Altogether—through demonstration sites, training courses, field days, extension services, capacity building efforts, and public awareness campaigns—the Initiative's outreach within the five participating countries was notable. The Palestinian programs in particular stressed public awareness, including the matter of public perceptions of the social acceptability of using treated wastewater and biosolids – an essential issue to the adoptability of applied technologies tested and demonstrated at project sites.

Much of the capacity building that took place under the Initiative was internal, designed to improve the skills and qualifications of national team members, or to qualify them to participate in some activity in which they had limited or no personal background. This was the purpose of the *Regional Capacity Building Workshops* mentioned above, in addition to a number of in-country training programs. A number of national staff were also enrolled in graduate degree programs in universities local or abroad, others were sent to short training programs conducted by schools and research institutions.

## LINKING WITH NATIONAL PROGRAMS

Each national team collaborated in some way with other, ongoing programs at work on projects and activities addressing related issues and topics. These outside programs were carried out by local non-governmental organizations, government agencies, and bilateral and international organizations, and

the collaboration ranged from infrequent contacts and mutual awareness to intensive engagement and coordination. Ongoing initiatives like the Egyptian Matruh Resource Management Project or the Jordanian Sustainable Range Management Project derived mutual benefits from collaboration with Initiative programs. With the exception of the Israeli Watershed Management team based at Ben Gurion University of the Negev, every country team was government-based and staffed with government employees. This made for thorough coordination with relevant government agencies and natural compatibility between government and Initiative priorities. Given the limits of regional cooperation under the Initiative, few linkages were formed with other regional programs and processes like the Middle East Desalination Research Center or the United Nations Convention to Combat Desertification. Nor did the Arab partners link to thematically relevant regional projects outside of the peace process.

## NATIONAL RESEARCH

The Initiative also increased the volume of national research within each of the five party countries. The additional funding and other resources it made available to national research and development would enable the national institutions it involved to intensify their field work. Most of the wastewater treatment plants, demonstration plots, nurseries, botanic gardens, and other facilities used by national Initiative teams would have been utilized without the Initiative, but with fewer projects and activities and at a slower pace than Initiative resources and incentives made possible. Initiative resources were also used to good effect in building professional capacity among participating national experts and scientists, a result that clearly transcends the life of the ten year undertaking.

## LESSONS FOR THE FUTURE

In hindsight the original program of the Dryland Initiative was exceedingly ambitious, a product of

the zeal and enthusiasm of the decidedly hopeful time during which the Multilateral Peace Talks on the Environment took place. Its mandate was extraordinarily broad in purpose, and assigned its implementers with three *simultaneous* objectives: to generate high-impact technical innovations, applied knowledge products, and policy advice; to actually improve natural resource management in dryland areas; and to strategically contribute to the Arab-Israeli peace process. The Initiative's operating premise was that these three objectives were not only compatible, but mutually synergistic. This final report summarizes the extent to which and how these objectives were achieved.

The experience of the Dryland Initiative suggests a number of practical lessons for the design of future programs that focus on technical cooperation in a context of political conflict. Firstly, program design should establish a clear hierarchy of objectives and employ highly appropriate institutional structures that effectively focus and coordinate the content and flow of work. In particular the program's priorities should be clearly articulated and assigned either to the quality of research and knowledge generated, or to communication and consensus building.

Secondly, the matter of issue selection is crucial. The issues around which technical cooperation is organized should make cross-boundary collaboration not only desirable, but required. In the case of the Middle East, a number of cross-boundary issues suggest themselves as providing more genuinely shared common ground between Israel and her Arab neighbors than land degradation and rural poverty – neither of which is a particularly prominent or pressing concern in Israel. Concerns over pollution management and the protection of marine environments in the Mediterranean are clearly shared between Lebanon, Israel, the Gaza Strip, Egypt, and the countries of the Maghreb. In the Gulf of Aqaba, marine coastal zone issues are already an

area of Israeli-Jordanian cooperation. The spread of pests and zoonotic diseases likewise clearly transcends national boundaries, and coordinating measures between countries is a critical and often necessary component of addressing and containing them effectively.

Identifying the most appropriate and qualified institutions to participate and collaborate in a program of technical cooperation is a crucial aspect of program design. Program planners are encouraged to undertake a broad survey of institutions and organizations that have experience and professional expertise in the technical issues that the program will address, including both governmental and non-governmental organizations and research institutes. Those organizations selected as prospective participants should be evaluated not only on the basis of their technical capacity, but their capacity to interact with counterparts within a larger framework of collaboration and exchange. With the commitment of participating institutions in place, "ownership" of the program comes to be shared by those institutions – as opposed to discrete individuals and groups of individuals who work within them. In this way the technical cooperation undertaken itself becomes institutionalized.

Should the program of technical cooperation planned include field work, suitable mechanisms to

assure quality should be put into place, including a functioning peer review process, and appointment of an implementing agency that is well placed and fully qualified to provide technical support. The implementing agency appointed should necessarily be able to communicate freely and effectively with all participants. Future programs may also enjoy a wider range of options in establishing an appropriate framework of incentives, such as competitive research grants, which were not available to the Drylands Initiative. Finally, program design should provide for a broad framework of communication and information exchange, one that effectively employs state of the art information and communications technology systems.

In conclusion, it is recommended that the objective of any new confidence building program should be to place value on technical cooperation among the parties in areas that require this technical cooperation and to view such a goal as an end in itself. Genuine cooperation can be built and bridges of confidence constructed if non-cooperation on the subject matter is likely to create negative effects for both sides. And maybe, this cooperation will also generate personal contacts that will facilitate, in a very modest way, an enhancement of relations between the parties, thus creating one more bridge of confidence towards peace.

