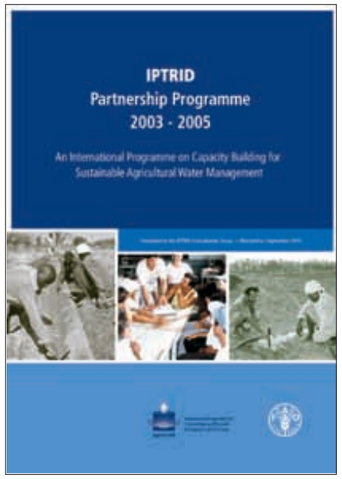

This publication containing full explanation of the Programme, can be requested from IPTRID

The programme objective is to support Capacity Development for sustainable agricultural water management in developing countries and countries in transition, in order to reduce poverty, enhance food security and improve livelihoods, while conserving the environment. The programme aims at stimulating increased investment, by Governments and external funding institutions. It provides advisory services and technical assistance in the form of pre-investment activities, and by actions that make the investment more effective.

The programme is organized according to three main production lines:

- support for strategies: assessment of priority needs and formulation of sustainable agricultural water management strategies and programmes,
- support for projects: project identification, formulation, and assistance for implementation,
- communication and advocacy and awareness: providing information and building awareness on agricultural water management and capacity development issues.

IPTRID is thus focusing on a more limited range of activities than it did previously. These define its specific "niche". IPTRID is working as an "architect", formulating integrated capacity development strategies and programmes, seeking to bridge the gap between research and actual take-up, and ensuring that valuable technologies and research results are made available to developing countries. The enhancement of research capacity, which was one of the main objectives, is now incorporated into IPTRID's concept of "capacity development". This is seen as an integrated concept that embraces applied research training, demons-tration, technology transfer, participation, empowerment, legislation and institutional development.

IPTRID is broadening its scope from irrigation and drainage to all aspects of agricultural water management - such as drainage of non-irrigated land, flood control, watershed management, and water resources management. Modernization of existing irrigation schemes and development of smallholder/small-scale irrigation remain priority issues.

Beneficiaries

IPTRID's beneficiaries are developing countries at regional, national and local levels. It will also support development institutions in assessing priority capacity development needs and developing appropriate investment strategies in the agricultural water management sector. At grass-roots level, the ultimate beneficiaries are farmers, farmers 'associations, service providers and rural communities that are currently experiencing serious economic and environmental difficulties

Production lines	Building blocks
1. Support for strategies Countries assisted in formulating sustainable agricultural water management strategies at regional, national and /or sub-national levels: • Identification of capacity development needs for improving the use and management of water in agriculture. • Formulation of up--to-date and sustainable agricultural water management strategies (within the scope of integrated water resources management and poverty reduction strategies).	• Needs assessment studies and action research • Workshops • Strategies and programme documents
2. Support for projects Countries assisted in the preparation of:- • Effective capacity building programmes and projects, and • Arranging funding (by bilateral and multilateral development aid).	• Project identification reports • Project formulation reports • Funding facilitation
3.Communication and advocacy • Information provision, and • Awareness creation, on agricultural water management issues.	• Integrated Information system • Periodical publications • Promotional documents

had established monitoring procedures that would allow scheme improvements to be reliably documented.

In terms of the financial sustainability of irrigation systems, the modernization process was generally found to be highly subsidized, - given that the high costs of investment and the low payment capacity of farmers. Such subsidies were justified by respective governments generally in terms of the rural development objectives associated with irrigation projects. However, no modernization projects had provision for maintenance by either governments or users, despite the large investment made. This considerably threatens the sustainability of the achievements made.

Finally, most of the modernization processes studied were part of national water policy reforms. Such reforms were sectoral in nature even when their driving force was high water scarcity. There seemed to be a lack of coherence between the different issues that have to be addressed - food security, water scarcity and increased urban, domestic, industrial use of water. Most of the modernization processes focused much more on ensuring water supply than on managing demand. More comprehensive approaches may be necessary, as water conservation and demand management are essential for the sustainability of water resources and the environment, as well as economic efficiency and social development. This is particularly true for governments of countries in multi-national catchment systems where there is potential for conflicting water needs – e.g. for the Jordan, Euphrates and Nile rivers.

Further details

The paper can presently be examined through the USCID (see www2.privatei.com/~uscid/uscid_pb.html for details). A joint IPTRID/FAO publication, with a complete analysis of the case studies, will be produced in 2004.

Cb-inventory – IPTRID's inventory of capacity building programmes for irrigation modernization

Maher Salman[1]

Irrigation modernization is increasingly seen as an important part of improving the effectiveness and efficiency of water resources management in the agriculture sector. There is a strong need to include training and capacity building in irrigation management initiatives so that the ability of irrigation professionals to introduce and deliver the needed modernization measures is enhanced. This conclusion has been reached in a number of studies, including those by FAO, The World Bank, UNDP, ICID and IPTRID.

IPTRID has been carrying out a worldwide survey of Capacity Building Programmes on Irrigation Modernization, and since 2002 has collected information from more than 75 institutes/organizations all over the world. The results of this questionnaire survey have been compiled in a database with web-based format. Thus IPTRID is able to provide online information about irrigation modernization opportunities.

Cb-inventory

The inventory provides information on more than 200 activities on capacity building for irrigation modernization, e.g. classroom/field-based courses, distance learning, workshops/seminars, virtual networking, exchange programmes, etc. The objectives are:

- to help find programmes on building capacity for irrigation modernization worldwide
- to provide relevant information about the programme - content, duration, target groups, etc.
- to enable host organizations to inform interested applicants and a wide audience about their programmes.

The CBinventory can be consulted at the web address: http://www.fao.org/iptrid/cbinventory.html
Additional information about the Inventory may be requested from the IPTRID Secretariat at: iptrid@fao.org.

Capacity Building:

"Capacity building is the sum of efforts to nurture, enhance, and utilize the skills and capabilities of people at all levels –local, national, regional, and international - so that they can better progress towards sustainable development.

At the basic conceptual level, building capacity involves empowering people and organizations to solve their problems rather than attempting to fix those problems directly.

When capacity building is successful, the result is more effective people and institutions better able to provide products and services on a sustainable basis."

UNDP, 1998.

IPTRID news

WCA infoNET - current situation

Maher Salman

IPTRID's WCA infoNET information system is an Internet-based integrated information platform which merges high quality information resources and expertise on water conservation in agriculture. It allows direct access to publications, documents, data, computer programs and discussion groups.

The system is fully functioning, and has 20 honorary editors, 2 researchers, regular inputs from major IPTRID partners and the services of a programmer working on maintenance and quality enhancement. It was recently upgraded with enhanced features and more stability. A new look design for the web-site that matches other IPTRID/FAO outputs will be released soon, as will a "library" version of WCA infoNET on CDROM. The amount of information stored on the system has increased by nearly 25% over the last three months. Most of the KOs (Knowledge Objects) are owned by the system, i.e. they are held on its server instead of being reached by a link to an external server.

WCA infoNET can be accessed as usual by its URL http://www.wca-infonet.org.

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IPTRID survey on selected cases of irrigation modernization and its outcomes

Sara Fernandez[1]

Many irrigation schemes world-wide suffer from poor management, both in technical dimension and social dimension. This often leads to unsustainable practices, decaying infrastructure and reluctance by users to contribute to maintenance of their schemes. Many irrigation schemes are caught in downward cycles of poor maintenance, poor water delivery performance, diminishing agricultural productivity and dwindling profits.

The gap between expected and actual performances has led different countries to undertake various types of interventions:

- technical and managerial improvements at different levels (farm, scheme, and watershed)
- institutional reform through the restructuring of irrigation agencies (such as the transfer of irrigation management to farmers' associations and/or private enterprises).

Experience shows that if these different interventions are not carried out in coordination with each other, they will not produce the expected results (Plusquellec, 2002[2]).

A critical aspect that hinders the transfer of management responsibility to farmers from Government, is their unwillingness to accept schemes that have deteriorated technically until it has been upgraded. Similarly, the introduction of new schemes, or the upgrading of existing technologies, often results in failures unless there is:

- provision for adequate training,
- adequate maintenance carried out,
- adequate longer term cost-benefit analyses,
- adequate legal and policy environments.

The concept of modernization of irrigation schemes gives rise to many interpretations, which demonstrate various levels of sophistication dependent on the different perspectives and professional orientations of water users and other stakeholders involved. For its work, IPTRID took the following definition of modernization as its reference.

Modernization

"Process of technical and managerial upgrading of irrigation schemes combined with institutional reforms, if required, with the objective to improve resource utilization (labor, water, economic, environmental) and water delivery service to farms" (FAO, 1997).

Old Alyarmook Project, Alyarmook Basin, Southern Syria Conveyance system after modernization (pressurized pipe system).

Survey on selected cases of irrigation modernization

In close collaboration with FAO, IPTRID is surveying current modernization processes taking place on irrigation schemes around the world (ranging from 400 to 50 000 hectares). Twenty case studies have so far been undertaken.

The main objective of the survey is to obtain a worldwide overview of the modernization process and its components. Terms of reference (prepared in English, French and Spanish) have been disseminated widely to national and local institutions in order to encourage them to undertake case studies. The aspects addressed comprise:

- description of the irrigation system before and after modernization
- reasons for modernization
- interventions in modernization
- impacts of modernization
- conclusions, comments, suggestions and recommendations.

The survey is helping to identify the different meanings and purposes associated with "modernization", the different levels of priority given to technical and managerial interventions, and the different national strategies and constraints associated with irrigation development. The case studies are available on FAO/AGLW web page: http://www.fao.org/ag/agl/aglw/watermanagement/

Irrigation modernization in North and West Africa – selected cases

Based on survey information from North and West Africa (Egypt, Jordan, Mali, Senegal and Syria), IPTRID provided a scientific paper[3] at the Second USCID International Conference on Irrigation and Drainage (Water for a Sustainable World — Limited Supplies and Expanding Demand), Phoenix, Arizona, May 2003.

Causes and interventions for the modernization process have been analyzed, as well as impacts on water service performance. The study showed that water resource shortage is an important cause leading to system modernization, but not the only one. Even when the potential water supply is not limited, institutional shortcomings and low crop economic productivity are also problems for which the modernization process is seen as a solution.

The modernization interventions investigated by IPTRID comprised technical improvements at on-farm, system and watershed level, coupled in some cases, with institutional reforms such as user reorganization. Capacity building actions accompanied these changes but were mostly at too low a level. The study found that if technical improvement and management transfer were implemented without adequate capacity building across the different management levels involved, the sustainability of the return on the investment (both financial and human) was limited. Capacity building is needed in order to provide technical staff and managers with the new skills and tools modernization requires.

Evidence shows that in all cases modernization brought improvements in water delivery efficiencies and water supply reliability. In most cases, these technical changes led to beneficial changes in water management service (flexibility, reliability, equity).

However, none of the systems investigated due to scarcity of water resources and poor agricultural water management practices. Increased prosperity for farmers and rural communities benefits overall national economies. Women in rural areas also benefit considerably given their active role in agriculture and water management.

[1] Associate Professional Officer (APO) – IPTRID
[2] Plusquellec, H. 2002. Is the daunting challenge of irrigation achievable? Irrigation and Drainage, 51 (3), 185-198.
[3] Fernandez S., Garces-Restrepo C. & Vidal A. 2003. Improving the water service in irrigation: a series of case studies on irrigation modernization. USCID Conference Proceedings Water for a Sustainable World — Limited Supplies and Expanding Demand, 12-15 May.

Programme implementation

The programme is implemented by the IPTRID secretariat, hosted in FAO and drawing on an international network of leading knowledge institutions and resource centres that can mobilise the expertise of a wide range of high-level experts in the field of irrigation, drainage and water resources management The network, led by FAO, counts among its members a growing number of centres of excellence such as IWMI, HR-Wallingford (UK), Alterra-ILRI (The Netherlands), Cemagref (France), DGDR-MAPA (Spain), IAM-Bari (Italy), USBR (USA), ICID, INRGREF (Tunisia), NWRC (Egypt), ICWC (Aral Sea Basin), EIER-ETSHER (West Africa). The IPTRID Secretariat works in close collaboration with FAO's Water Resources, Development and Management Service.

The programme is building a strong partnership with the donor community and governments. During the last ten years, IPTRID has been supported by more than 20 international organizations and government agencies, and has cooperated with more than 60 Country Partners in about 40 developing or transitional countries.

IPTRID Consultative Group

One of the largest meetings of the Consultative Group took place in Montpellier in September 2003 during the ICID 54th International Executive Council meeting. Over 25 donors and technical partners attended, showing that the recent review of IPTRID's direction is seen to be of significant interest. With Peter Lee as Chairman, the meeting generally accepted the new Partnership Programme for IPTRID, as presented by Olivier Cogels. It also heard an update of the last year's progress from Jean Verdier, and considered various suggestions by the partners.

Capacity development for smallholders, Senegal

In the Niayes region of Senegal, drip irrigation is becoming increasingly important because of its good water-use efficiency and high yields that are achievable. This is Senegal's most important horticultural area and provides 80% of the country's total requirement, but in recent years, it has started to suffer from water resource management constraints – (i) imbalance between water inputs (low rainfall) and outputs (high water extraction rates), and (ii) deterioration of water quality (due to intrusion of sea water into the water table and pollution from pesticides and domestic effluents).

Development of solutions to these various sectoral constraints, will involve strengthening capacities for improved agricultural water management. An IPTRID Mission, manned by cooperating partners FAO, IPTRID and MAPA (Spain) visited Senegal to assist the Ministry of Agriculture in identifying capacity-development needs in the smallholder irrigation sector, and to help identify a project that would strengthen capacities of the local smallholders. The mission centred on a workshop to develop an action plan for the development of micro irrigation in the Niayes area. The report prepared by the mission identifies the potential role of using local demonstration sites in the Niayes region to help develop drip irrigation techniques for different crops and for different climatic and soil conditions.

The irrigation challenge IPTRID Issue Paper No. 4

This paper written by Hervé Plusquellec, recently published by IPTRID, discusses the significance of increased contribution of irrigated agriculture to food and fibre production, despite the lower level of investment available for construction and modernisation of schemes. It argues that the food production shortages projected for the 1990s have been averted because of the explosion in groundwater use and the large improvements in water application efficiency over the last 30 years.

However, overexploitation of groundwater and degradation of water quality have been occurring in many parts of the world, particularly in semi-arid regions. This paper suggests that no further complacency is acceptable in addressing the long-standing issue of poor management practices in large irrigation systems. It argues that business-as-usual is no longer an option, and management practices as well as system design, must change to better serve the communities that depend on irrigated agriculture.

The irrigation challenge – increasing irrigation contribution to food security through higher water productivity from canal irrigation systems. (ISSN 1020-7376) Available on request from the IPTRID