IIMI'S EXPERIENCE IN BURKINA FASO IN STRENGTHENING NATIONAL CAPACITY

INTRODUCTION

The opening of its regional representation in Burkina Faso, in June 1988, marked the beginning of IIMI's presence in West Africa. The primary mission of the regional representation was to develop collaborative programs of work with national institutions in several neighboring countries. The individual country programs, while tailored to address specific national concerns related to a particular type of irrigation system, were also intended to contribute to building a coherent IIMI West Africa program within the context of a regional network. A suitable balance was maintained, in each program, among the three components of (a) field research, (b) training and professional development, and (c) information exchange.

In April 1991, in Burkina Faso, the first of IIMI's country programs in West Africa featuring a resident full-time internationally recruited staff member got underway to implement a 4 year project funded by the African Development Bank (AfDB). Since then IIMI has also posted international staff in Niger and Nigeria. This paper examines IIMI Burkina Faso's likely contributions to strengthening national capacities in the country during its nearly 18 months existence.

CONTEXT

GENERAL: Burkina Faso is a landlocked country of 274,000 km2, situated between latitudes 10xN and 15xN. Its population of about 9 million is currently growing at an annual rate of nearly 3%. It is characterized by three climatic zones: (a) a southern zone with more than 1000 mm mean annual rainfall, (b) a central zone where annual rainfall is between the 650 and 1000 mm with a wet season rarely exceeding 6 months, and (c) a northern sahelian zone (below 650 mm mean annual rainfall) with a short rainy season, considerable variability in rainfall distribution and high daily and annual temperatures.

IRRIGATION: The irrigated agriculture sector is estimated to cover about 16,000 ha, a modest proportion compared to the 2.6 million ha of rainfed farming. The country's irrigation potential is however estimated to be about 160,000 ha (CILSS, 1991). Irrigation schemes range from relatively large- scale agency-managed systems to traditional valley-bottom systems with basic infrastructure and little or no means of water control. Village irrigation schemes, located around small dams, featuring improved infrastructure and managed by a farmer organization with technical assistance and support services provided by parastatal agencies constitute an intermediate type. The degree of technical back-stopping provided varies according to the degree of maturity and the financial standing of the farmer organization.

The IIMI Burkina Faso country program focusses on this intermediate type of small-scale reservoir-based village irrigation schemes located in the central belt with annual rainfall of the order of 800 mm. The development of irrigated agriculture around small dams is relatively recent (since the 1960's). But the dams themselves have usually been in existence for much longer, though initial emphasis was on the use of the stored water resource for human and pastoral purposes. It is estimated that there are over 700 such small dams in the country; the 250 existing reservoirs of more than 100,000 m3 capacity represent

an irrigated agricultural potential of about 20,000 ha (CIEH, 1986). The Government of Burkina Faso embarked upon the development of the irrigation sector with the twin objectives of (a) increasing agricultural production, and (b) providing a focal point for resettling and developing rural communities and uplifting their living standards. However, with public sector intervention in production processes increasingly becoming a feature of development policy in Burkina Faso, there is progressive transfer of management responsibilities in irrigation schemes to the beneficiaries.

INSTITUTIONAL BACKGROUND (see also Annex I). There is no formal irrigation bureaucracy in Burkina Faso. Two ministries, the Ministry of Water, and the Ministry of Agriculture and Animal Resources play key roles in the irrigated agriculture sector.

The Ministry of Water is in charge of implementing national policy related to water resources development. It coordinates the planning, design, construction, supervision and commissioning of irrigation schemes. Technical expertise is provided by the Direction des Etudes et de la Planification (DEP) within the Ministry itself, and the Office National des Barrages et des Amnagements Hydro-agricoles (ONBAH). The ONBAH is a para-statal organization with special responsibility for small and medium irrigation development. For large scale projects, special integrated authorities are established to oversee construction and/or management (e.g., Maitrise d'ouvrage de Kompienga, Maitrise d'ouvrage de Bagr, Autorit de Mise en Valeur du Sourou, etc.)

The Ministry of Agriculture and Animal Resources implements Burkina Faso's agricultural policy through a number of secretariats and specialized technical services. Field level implementation is ensured by 12 regional agro-pastoral production centers (CRPA), whose responsibilities include the provision of technical and extension services to farmer organizations concerning the management of irrigation schemes. However, the activities of the CRPA are primarily focussed on crop-related issues (e.g., providing inputs such as seed and fertilizers, credit and marketing etc.), little attention being paid to actual irrigation system management. In addition, a specialized directorate attached to the latter ministry, the Directorate for the Promotion of Cooperatives (DPC) has particular responsibility for mobilizing farmer organizations and implementing literacy and training programs to upgrade farmers' skills related to sustaining cooperative activities. (N.B. these responsibilities were formerly carried out by a separate Ministry of Farmers' Cooperative Action until it ceased to exist following a Cabinet reshuffle in August 1991).

We thus see that a number of institutional changes have accompanied the recent evolution in the socio-political climate in the country in recent years. Responsibilities of older institutions have often been reallocated to other institutions, or indeed, sometimes, new institutions have been created. For example, the Ministry of Water came into being in 1984 and the ex-Ministry of Farmers' Cooperative Action in 1988.

As stated earlier, the management of the irrigation schemes around small reservoirs is in the hands of farmer organizations with technical assistance and support services provided by government agencies. However, these agencies are, in some cases, themselves developing capabilities in irrigation system management. An important challenge seems to be how to reconcile intensive irrigated farming practices with the rainfed, subsistence farming strategies traditionally practiced

by farmers.

IRRIGATION MANAGEMENT AND IRRIGATION RESEARCH: There are no national irrigation management organizations. The national agriculture research institution, the Institut d'Etudes et de Recherches Agricoles (INERA), has recently added the study of irrigation-related problems to its soil-water- plant-fertilizer research program. The emphasis is however largely at the farm level. (N.B. the INERA functions under the Ministry of Higher Education and Scientific Research). There is also some interest in the economics of irrigated agriculture within the Geography Department of the University of Ouagadougou. The little research which is conducted is usually single discipline oriented; irrigation management research, encompassing the physical, organizational, institutional and policy dimensions, is practically non-existant.

However, the presence of a number of regional and international institutions in the country (see Annex I) appears to have had a favorable influence on the degree of knowledge and awareness on some components of irrigation management among the national irrigation community.

IIMI-BURKINA FASO PROGRAM

IIMI is the executing agency of a 4 year project grant from the African Development Bank (AfDB) to the Burkina Faso Government to provide institutional support to the Ministry of Water in irrigation management research and development. The project officially commenced in April 1991. IIMI manages the project, providing technical, operational and administrative leadership, on behalf of a 9 member national project coordinating committee made up of representatives of all ministries and agencies involved in irrigated agriculture, the IIMI Regional Representative for West Africa and the IIMI Project Leader.

Apart from the agreement entered into with the Burkina Faso Ministry of Water for the execution of the above project, IIMI has also entered into formal MOU with other international or regional organizations either for general interaction and collaboration or for implementing specific joint research, training or information exchange activities. MOU have been entered into with:

1. Ecole Inter-Etats des Ingenieurs de l'Equipement Rural (EIER)
2. Ecole Inter-Etats des Techniciens Superieurs de l'Hydraulique et de l'Equipement Rural (ETSHER)
3. West African Rice Development Association (WARDA)
4. The World Conservation Union (IUCN)
5. Regional agro-pastoral Center (CRPA)

The overall objective of the project is to contribute to improving the performance of small-scale reservoir-based village irrigation schemes through collaborative research, training, and information dissemination.

Project activities are made up of three principal components:

* a Research-Development component, focusing on the multidisciplinary field research to analyze the performance of a representative sample of irrigation schemes and to formulate practical operational and maintenance strategies to improve and sustain irrigation system performance. Field research is being carried out on five schemes

presenting a variety of technical, agronomic and socio-economic features typical of small-scale reservoir-based irrigation systems in Burkina Faso. A holistic approach, encompassing the mobilization and storage of the water resource, the conveyance and distribution network, on-farm water use, and the physical and organizational environments is being adopted in the research.

* a Training/Professional Development component to design and implement a variety of professional development activities including both direct (on the job training, fellowships) and indirect (workshops, seminars, field visits) training aimed at agency staff, researchers, policy makers as well as farmers;

* an Information-Communication component to promote information exchange in the field of irrigation management by contributing to the edition and publication of a regional bilingual (French-English) newsletter. This component has subsequently been strengthened by the production of a national language newsletter focusing on environmental issues where the points of view of the farmers in IIMI's research sites are prominently featured.

The 6-member strong senior national professional staff of the project are not directly recruited but, instead, are seconded to the project by 3 national partner agencies: ONBAH, INERA and DPC. The staff strength is enhanced by one doctoral fellow from INERA and a number of short-term interns and fellows (both at undergraduate and post-graduate level) from EIER and the University.

In the realm of training and professional development the project regularly provides internships and fellowships to undergraduate and post-graduate students of the Ecole Inter-Etats des Ingénieurs de l'Equipment Rural (EIER). The project has also allocated a long-term doctoral fellowship to an agronomist from INERA who is carrying out his thesis research as a member of the project team.

The project has organized, in association with the Ecole Inter-Etats des Techniciens Supérieurs de l'Hydraulique et de l'Equipment Rural (ETSHER), a training course in irrigation management for agency technical staff. The training session contributed to strengthening rapport with the national partner agencies in general and with field staff from all our present and future research sites in particular. It also provided a rare opportunity for the exchange of information and experiences among the participants themselves.

Twenty one senior staff from the national agricultural research centers of 12 West African countries were provided with theoretical and practical training in irrigation management as part of a 4 week training program entitled "Rice Cultivation and Irrigation Management" jointly organized by IIMI, WARDA and EIER from 02-26 March 1992 in Burkina Faso.

IIMI national staff working on the project made significant contributions in organizing and conducting these two training courses.

Every year, since 1991, the project finances the participation of two staff members from national agencies at the 10 week training course entitled "Maitrise de l'Eau en Agriculture et Réalités Africaines" (Water Resource Management and

Agriculture in the African Context) jointly conducted by ETSHER, Ouagadougou and the Centre National d'Etudes Agronomiques des Régions Chaudes (CNEARC), Montpellier.

Farmers and farmer organizations have not been forgotten. IIMI, together with the local IUCN Representation, has launched a newsletter in the most widely-spoken local language, Mooré, targeted at the farming community and focussing on irrigation and the environment. The cooperation of national NGOs and other local language publications is being actively sought to widen the scope and audience of this initiative.

The West African Irrigation Network Newsletter, produced jointly with IIMI-Niger, is aimed at providing a forum for the dissemination of results and information exchange among the irrigation management community in the region. In addition it promotes exchanges between West Africa and the more mature irrigation communities in Asia. The fact that the Newsletter is bilingual (French and English) facilitates such exchanges in no small measure.

RESULTS

Although in existence for a relatively short period of time so far, the IIMI-Burkina Faso program maybe considered to have made some contributions to strengthening national capacity to manage irrigation systems. As a result of its special administrative and staffing arrangements, awareness and sensitivity to multiple facets of irrigation management, at least among its immediate collaborators (particularly amongst its seconded national staff), have been clearly enhanced.

In the field, some remedial measures in response to weaknesses highlighted in existing operational and maintenance strategies have been adopted on two research sites. It is still too early to judge if these were mere 'reflex actions' or if it marks the starting point of a sustained, internalized change of approach.

Highlighting the inaccuracy, or in some case, the total absence of basic system information (updated lists of farmers, extent of irrigated area, magnitude of unauthorized irrigation, reservoir storage capacities, etc.) has led to some action on the part of the farmer organizations and the support agency in regard to basic data collection and monitoring of operations. The prospects for these activities being sustained after IIMI's withdrawal are unfortunately unclear.

Recent meetings at two field research schemes with the farmer organizations and the agencies associated with the management of these schemes, in the presence of the local administrative authorities, were very useful from two points of view. They not only provided an opportunity to present IIMI's research findings to its partners but also brought to light the generally fuzzy situation in regard to the existence of numerous legislative texts, their dissemination and their application. A couple of vivid examples were that (a) the administrative authorities were unaware that the farmer cooperative they were supposed to supervise lacked official recognition and (b) the authorities themselves were not fully informed of their own responsibilities vis-a-vis the management and control of the irrigation schemes.

The different training programs carried out helped participants (irrigated agriculture staff at all levels) overcome their disciplinary bias (agronomy or civil

engineering, for the most part) in addressing issues related to irrigation management.

Given the virtual absence of national capacity in irrigation management research, one obvious contribution in this sense is the strengthening of the skills of individual collaborators. At the institutional level, the INERA experts involvement in IIMI's activities contribute to placing their traditional experimental station based agricultural research into the real- life perspective of irrigation system management.

CONCLUSIONS

As IIMI activities go beyond the halfway stage of its present 4 year program, it is desirable that it move from site-specific micro-level interventions to begin addressing policy level issues. Micro-level activities have indeed been a good entry point, helping to enhance IIMI's understanding of the irrigation scene in the country and also to establish its credibility and promote interactions with the different actors in the irrigated agriculture sector. Nevertheless, thanks to the IIMI program's multi- disciplinary approach and its multi-site scope, results with potential for national level impact are emerging. Actual impacts will obviously depend on what decisions are finally made and what follow-up actions are taken at different levels of the irrigation sector hierarchy in response to IIMI's research results and recommendations. The costs of implementing change will be a key determinant of success.

It is highly unlikely that a national irrigation management research organization will come into being in the present socio-economic context. Therefore, at this point of time, we tend to favor the establishment of a national-level committee to address weaknesses being identified in the course of IIMI's work in the technical, administrative, institutional and legislative frameworks which constrain irrigation performance and system turnover. Among issues to be examined are those concerning land tenure, sharing of responsibilities and interfaces between the state and farmer organizations, systems of organization and control of farmer cooperatives. An IMPSA type of follow-on activity to the present project seems to be indicated.

Strengthening of national research capability will necessarily have to be achieved through staff secondment and via the set of individual training and professional development activities such as fellowships, seminars, discussion, and exchange visits which form part of IIMI's present program. IIMI takes advantage of the presence of a certain number of regional centers of excellence (CIEH, EIER, ETSHER) in Burkina Faso in pursuing these activities.

In conclusion, among the questions which IIMI should itself be addressing in relation to its work in Burkina Faso are those that relate to its medium to long-term strategy for the region in general, and the country in particular (which would determine the duration of its presence), its staff strength and composition (to determine the scope and nature of its activities), and its funding mechanisms.

ANNEX I

INSTITUTIONS INVOLVED IN THE IRRIGATION SECTOR IN BURKINA FASO

MINISTRIES

1. Ministére de l'Eau (Ministry of Water):

   Is in charge of implementing national policy related to irrigation development. Its responsibilities include planning, design, construction, supervision and coordinating the commissioning of irrigation schemes. Technical expertise is provided by the Direction des Etudes et de la Planification (DEP) within the Ministry itself, and the Office National des Barrages et des Aménagements Hydro-agricoles (ONBAH). The ONBAH is a para-statal organization with special responsibility for small and medium irrigation development. For large scale projects, special authorities are established to oversee construction and/or management (e.g., Maitrise d'ouvrage de Kompienga, Maîtrise d'ouvrage de Bagré, Operation Riz Comoé, Autorité de Mise en Valeur du Sourou (AMVS), etc.

2. Ministére de l'Agriculture et de l'Elevage (Ministry of Agriculture and Livestock Breading)

   Responsible for management of irrigation schemes and associated support activities such as technical (i.e., agronomic) training of farmers, providing inputs such as seed and fertilizers, marketing of produce etc. Field level implementation is ensured by a number of regional centers, known as Centres Régionaux de Production Agro-pastorale (CRPA). The activities of the CRPA are primarily focussed on crop-related issues, little attention being paid to actual irrigation system management.

3. Ministere de l'Action Coopérative Paysanne (Ministry of Farmer Cooperatives)[*]

   Takes particular responsibility for farmer organization, literacy programs, sensitization and training related to encouraging cooperative activities. The Dutch-funded project Sensibilisation des Paysans autour des Barrages (abbreviated to "Project Sens") functioning under this Ministry has played a leading role in this sphere over the past 10 years.

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[*]The most recent cabinet reshuffle saw this Ministry being transformed into a specialized secretariat under the Ministry of Agriculture. It is too early to say if this implies a tendency towards integrating all irrigation-related institutions under a single umbrella. In the context of the prevalent fluid socio-political climate there is perhaps more institutional change and reorganization still to come

COMMERCIAL SECTOR (SEMI-GOVERNMENT)

1. SOSUCO (Société sucriére de la Comoé)

   Sprinkler irrigated sugar cane cultivation (about 3500 ha) in the south-west.

2. FLEXFASO

   Fruit production (about 100 ha) under irrigated (sprinkler, gravity, drip), and export.

RESEARCH AND TRAINING

1. Regional and International

   - Ecole Inter-Etats des Ingénieurs de l'Equipment Rural (EIER)
   - Ecole Inter-Etats des Techniciens Supérieurs de l'Hydraulique et de l'Equipment Rural (ETSHER)
   - Comité Interafricain d'Etudes Hydrauliques (CIEH)
   - Comité Permanent Inter-Etats de Lutte contre la Secheresse dans le Sahel (CILSS)
   - Semi-Arid Food Grains Research and Development Project (SAFGRAD)
   - Institut de Recherche Agronomique Tropicale (IRAT)
   - Institut International du Management de l'Irrigation (IIMI)

2. National

   - Institut d'Etudes et de Recherches Agricoles (INERA) Concentrates on agriculture research; irrigation considered under the soil-water-plant-fertilizer research program.

   - Université de Ouagadougou
     Some interest in the irrigation sector in the Geography Department.

   - Conseil Révolutionnaire Economique et Social (CRES). Mainly conducts policy and sector studies in a "think-tank" mode.