

## **9. Study on Agricultural Water Development and Poverty Reduction in Eastern and Southern Africa (IFAD and IWMI)<sup>13</sup>**

### **BACKGROUND AND JUSTIFICATION**

Notwithstanding the perceptions of poor viability and sustainability referred to above, the experience of development to date has not been universally poor: the World Bank's 1995 review of its irrigation portfolio world-wide found that more than two thirds of Bank-financed irrigation projects had reached satisfactory outcomes (Jones 1995). It also found that "the benefits of most irrigation investment have reached the poor"<sup>14</sup>. An earlier FAO Investment Centre study on irrigation in SSA found that "five out of six major Bank projects studied in detail had, by the end of disbursement, achieved or come close to many of their targets" (FAO 1986). IFAD's 2000 review of its lending for agricultural water development in East and Southern Africa (IFAD 2000) found that its portfolio had generally responded well to objectives (although the review drew attention to the relatively complex technical nature of agricultural water interventions and consequent implementation problems).

However, it is clear that there are issues to be addressed and constraints to be overcome if investments in agricultural water development are to achieve viability and sustainable poverty reduction. Many of the constraints could be institutional (taking institutions in the broad sense of policies, legal frameworks and organizations). For example, viability clearly depends on relative costs and benefits; but farm level costs can be influenced by subsidies and taxes (policy issues); and benefits could be largely determined by market access (partly influenced by policies, legal frameworks and organizations). There are technology constraints as well: while much of the future development of agricultural water is expected to be for food production (the basis of CAADP), it is increasingly difficult to justify the costs of conventional irrigation for such low value crops. Lower cost alternatives to conventional irrigation must be identified.

Nevertheless, recent experience suggests that a number of innovative approaches have been successful in overcoming some of the institutional constraints. For example, smallholders in Swaziland have, on their own initiative, taken advantage of market linkages and spontaneously developed irrigation for sugar cane production. In Kenya, farmers have been able to use land title as collateral for borrowing commercial finance to successfully develop irrigation for horticultural export crops. Recent institutional change at the Office du Niger in Mali – an old established large-scale public rice irrigation scheme that has endured many cycles of rehabilitation-neglect-poor performance-rehabilitation in the past – has led to dramatic success. There have been technological successes as well: low cost water harvesting and soil moisture conservation techniques, as alternatives to conventional irrigation for food crop production, have enabled the poor to improve their access to water. Manual pumps have also enabled them to engage in micro-scale irrigation for higher value crops.

Yet the key ingredients for success and replicability are not widely understood. And little quantitative information is available regarding their poverty reduction impacts. However, if subsectoral investment for poverty reduction is to be revived, it will be necessary for us to improve our understanding of these factors and, from this, to learn lessons for the design of

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<sup>13</sup> This chapter is based on the agreed TOR.

<sup>14</sup> Although it must be noted that only 12% of total Bank lending for irrigation had been for Africa, and this is mostly in North Africa, the Sahel and Madagascar.

new projects that will better achieve their objectives than those of the past. The proposed study will attempt to derive these lessons in the context of East and Southern Africa.

## **OBJECTIVES AND SCOPE**

The overall objective of the proposed study is to catalyse increased investment in agricultural water development for poverty reduction in SSA. The immediate objectives are, however, to:

- better understand the poverty reduction impacts of various types of agricultural water development in East and Southern Africa and to identify the most effective institutional approaches as well as technologies;
- derive lessons for the design of future agricultural water development investments that better alleviate poverty than those of the past; and
- on the basis of the knowledge gained, clearly articulate the case for increased investment in agricultural water development.

## **METHODOLOGY AND ACTIVITIES**

The work will be carried out by means of a **desk study** together with a series of **country visits** and **case studies** on current or recently completed research and investment projects in which innovative institutional approaches and/or technologies have been successfully applied to reduce poverty. The desk study will consist of:

- a review of IFAD's East and Southern Africa Division portfolio of agricultural water development projects/components (including appraisal, supervision and evaluation reports) focusing on targeting approaches and intended/actual poverty reduction impacts;
- a review of other relevant materials, such as the recent FAO-AGLW report on irrigation and poverty (Lipton et al. 2002) and documentation to be provided by ADB/World Bank on agricultural water development activities; and
- a literature search and review on pro-poor technologies such as water harvesting/soil moisture conservation, as well as manual pumps, with a view to understanding the 'state of the art' – including costs, benefits and opportunities for application by farming system or agro-ecological zone.

The country visits and case studies will be used to augment the desk studies, by obtaining first hand information from the implementing agencies, their staff and farmers. The studies will ask the following broad questions:

- i. What are the various types of interventions in agricultural water management that have been used to reduce poverty? (Physical interventions may have included conventional irrigation for the production of high value crops, or alternatives such as water harvesting. Other interventions may have included support to improving access to markets, or the development of market linkages. Yet others may have relied on NGO and private sector support services).
- ii. In what ways, quantitatively and qualitatively, do the rural poor benefit from such interventions? (They may benefit directly through reduced vulnerability to drought, or as irrigators or wage labourers. They may, however, also benefit indirectly, e.g., as traders or other participants in an expanded local economy<sup>15</sup>).

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<sup>15</sup> An assessment of indirect benefits may be more qualitative than quantitative.

- iii. Who has benefited from such interventions (i.e., are they the poor relatively within local populations, or the absolute poor in terms of a global norm – implying a need to first assess how project designs have defined poverty and the target group, including their gender dimensions)?
- iv. How cost effective have the interventions been, in terms of cost/ha, cost/beneficiary, cost/benefit ratio, reduced vulnerability to drought and/or increased incomes, compared with each other?
- v. Which institutional and technological approaches/models have the greatest sustainable impacts on poverty and what are their common features?
- vi. How effective have the institutions (including implementation arrangements) been in optimising the impact of investments? What have been the constraints and how have they been overcome? How could the successes be replicated?

The proposed case studies/country visits and the reasons for selecting these are as follows:

- **Madagascar Upper Mandrare Basin Development Project (PHBM)**. An irrigation rehabilitation project, mainly for rice production, which has been recognised as having been exceptionally well implemented. Of interest is an institutional framework that (a) makes effective use of contracted services from NGOs and private consulting groups for implementation activities as well as (b) ensuring that investment for the production of a relatively low value cash crop can be justified by the poverty reduction impacts.
- **Kenya Rural Enterprise Agri-Business Promotion Project (REAP)**. This is assisted by CARE and includes the **Masaku Ndogo Irrigation Scheme**. REAP is based on the development of market linkages for horticultural crop production and has high potential for poverty reduction through agricultural wage employment.
- **Tanzania Mara Region Farmers' Initiative Project and Participatory Irrigation Development Program (MRFIP and PIDP)**. Both projects focus on innovative water harvesting technologies (mainly for rice production) and participatory development approaches.
- **Zimbabwe Smallholder Dry Areas Resource Management Project and South Eastern Dry Areas Project (SDARMP and SEDAP)**. Both projects feature innovative approaches to rainwater harvesting in dry areas, as well as the sustainable use of wetlands.

The above projects have all been IFAD-assisted (although IFAD's assistance in the case of REAP has been limited to the provision of a small grant of 'seed money' for Masaku Ndogo) and have been selected not only because of their innovative features, but also for ease of access to project staff and documentation. The key aspects to be considered in each case will be impact and replicability.

During the country visits opportunities will also be taken to visit other relevant agricultural water development projects, for which mini case studies will be prepared highlighting their poverty reduction impacts and potential. These projects will include:

- that concerned with treadle pump manufacture and distribution supported by Approtec in Kenya and Tanzania;
- water harvesting research sites in northern Tanzania being operated by the Soil and Water Management Research Group of Sokoine University of Agriculture, Morogoro;

- an NGO-assisted market linkage project in Zimbabwe; and
- work towards soil moisture retention strategies by ICRISAT in Bulawayo.

Each of the country visits will be concluded by a one-day workshop at which the study team's preliminary conclusions will be presented for consideration by, and feedback from, implementers and farmers.

Upon completion of desk and case studies the results will be synthesised into a *Draft Report on Agricultural Water Development for Poverty Reduction in East and Southern Africa* for presentation at two fora. The first forum will be a proposed workshop for the staff of IFAD-assisted projects in the East and Southern Africa region now, scheduled for March 2004 as a part of IFAD's own ongoing agricultural water development knowledge management efforts. It is envisaged that this forum will provide an opportunity to obtain feedback on the preliminary findings and recommendations of the study team, thus adding value to not only the thematic study but to the overall collaborative effort as well. The second forum will be a wider regional stakeholder consultation to be held under the auspices of the overall Collaborative Program.

The *Draft Report* will present the results of the desk and case studies/country visits, and will provide a regional perspective on water development for poverty reduction, from which it will clearly articulate the case for increased investment in the subsector, with fully developed recommendations on:

- targeting approaches;
- the best kinds of pro-poor assistance/interventions in agricultural water development, in terms of sustainable impact on poverty, including low-cost alternatives to conventional irrigation (related to farming systems and agro-ecological zones);
- the best institutional approaches to agricultural water development (including implementation arrangements) to maximise poverty reduction impacts; and
- what further study or research (if any) is necessary to refine or confirm these findings and recommendations.

It is proposed that the desk and case studies will be carried out over a period five months (up to and including preparation of the *Draft Report*) by a core team of three IFAD consultants – each of whom will have had wide experience in their respective fields in the design, implementation and evaluation of agricultural water investment projects in the East and Southern Africa Region, as follows:

- Team Leader/Senior Water Management Specialist;
- Water Management Specialist; and
- Agronomist.

The team will split into two sub-teams for carrying out the case studies/country visits, when they will be joined by project staff and national consultants as required. A Senior Researcher from IWMI, Pretoria will complement the team by joining selected country visits to assess targeting and poverty reduction impacts<sup>16</sup>. Additionally, the team will be further supported by a senior consultant economist/institutions specialist who will guide the team in preparing its methodology for field work and internally review study outputs.

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<sup>16</sup> This input has been funded by IFAD as a part of its contribution to the Collaborative Program. IWMI will also be tapping the results of an ongoing project on *irrigation and rural poverty in Asia*.

As mentioned, it is envisaged that this study will be augmented by further work to be funded by ADB/IWMI or the World Bank. These contributions involve additional case studies (including West African cases) and econometric studies to assess indirect poverty reduction impacts of investment in agricultural water development (see chapter 6). The work will be timed to follow that of the 'IFAD team' and the results will be available for incorporation into a *Final Report on Agricultural Water Development for Poverty Reduction in Sub-Saharan Africa*.

## **SYNERGIES WITH OTHER COMPONENTS**

Poverty is a cross-cutting issue throughout the project. Hence, the conceptual framework developed and refined in this component feeds into all components and the synthesis, and insights developed in other components, in particular the private sector component support the analysis here. The specific contribution of this poverty component is to analyze selected case studies explicitly and in-depth with regard to their efficacy and efficiency in alleviating human deprivation in rural areas, and simultaneously develop a rigorous generic conceptual and methodological basis for rapid poverty impact assessments. Please refer to Chapter 6 for further discussion.

## **OUTPUTS**

The output from the proposed study will be a report that (a) analyses the poverty reduction impacts of agricultural water development projects/programs in SSA to date (including alternatives to conventional irrigation approaches for the production of low value food crops) and (b) provides recommendations on the best institutional approaches (including those related to implementation arrangements) and technologies for consideration in the design of future projects/programs.

The report will be part of the overall synthetic report for the Collaborative Program that will analyse the experience to date in terms of economic, financial, environmental, technical and institutional performance in the achievement of poverty reduction, food security and economic growth.