

POLICY BRIEF No. 98.3

POVERTY AND TECHNOLOGY:**Labour Intensive Irrigation Technologies**

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Research

During 1996/7 a study was undertaken in the Usangu plains (Mbeya) to investigate and analyse the role of small-scale labour-intensive technologies in poverty alleviation among small-scale farmers in South-west Tanzania. As rural households account for 92% of the poor in Tanzania, poverty is predominantly a rural phenomenon. These poor depend largely on agriculture, a sector that is still performing unsatisfactorily in the country, one of the reasons being dependence on (unreliable) rains.

Therefore, this study investigated and analysed whether an irrigation scheme could change this dependence, by providing adequate, timely and reliable supply of water for agricultural production to the majority of participating farmers. Also the study dealt with the question whether such an improvement has in turn contributed to poverty alleviation through increased agricultural output and increased employment opportunities and incomes. Issues of human development indicators e.g. housing characteristics, accessibility to social services and acquisition of wealth (assets) have also been analysed.

This study has been published as REPOA Research Report No. 98.3: **The Use of Labour-Intensive Irrigation Technologies in Alleviating Poverty in Majengo, Mbeya Rural District**; by *J.L. Shitundu and N.E. Luvanga*.

Research Methodology

In the study the poor are defined as households and individuals that cannot earn enough to meet their basic needs. Absolute economic well being of the poor is to be seen in relation to a general poverty line for (rural) Tanzania (estimated at Tsh 73,177 per person per year by the World Bank in 1995). The Usangu plains was chosen as the study area because of its rich drainage pattern and soils, which makes it a high potential area for irrigation. The Majengo irrigation scheme was randomly chosen from other (about nine) small-scale irrigation schemes in the Usangu plains.

The Majengo irrigation scheme includes six villages, which in 1994 had a total of about 3,903 households with a population of about 18,259 people. Also the villages had a total of 3,500 ha out of which about 2,230 ha are cultivated while only 530 ha (or 15%) are being irrigated and only about 470 households (or 12%) participate in the Majengo irrigation scheme. The main agricultural crops are rice, maize, beans, onions, banana, tomato, potatoes and sugar cane.

Three hundred households (or 8% of the total households) were randomly selected for the sample. Out of these 200 (or 2/3) of the sampled households were participating in the irrigation while the rest (1/3) were non-participants. The actual survey involved about 270 households; out of these 66.9% were participants in the irrigation while 33.1% were non-participants.

Both primary and secondary information was collected. The secondary information was obtained from various publications while the primary information was obtained from the field research using a survey questionnaire and the Poverty Participatory Approach (PPA) revealing perceptions on poverty. Also data on household characteristics, landholding, irrigation information, assets, incomes and expenditure were collected.

Research Findings

In general, irrigation significantly enhanced productivity in most crops. However, the study found that the Majengo irrigation scheme was facing institutional, technical, managerial and policy-related problems. Major constraints were in the area of land rights (difficult to get title deeds), poor distribution of farm land, no support to the scheme by political leaders, no participation of farmers in management, little maintenance of canals, loss of water, no access to credit, marketing and transport constraints. As a result few households (and farmers) were involved in the irrigation scheme and only a small area was being irrigated. Additional incomes were low, and therefore also savings and investment.

Thus, overall the resulting improvement of crop output and incomes in Majengo area was small, access to social services had not improved, housing conditions were still poor and wealth (assets) had not increased substantially. For

these reasons the Majengo irrigation scheme has not succeeded in substantially reducing poverty in its area of command.

Policy Lessons

- Irrigation schemes have a potentially positive effect on poverty alleviation, but only if technical, managerial and policy issues are dealt with properly.
- Farmers should participate in the running of such schemes, also financially, and additional services (credit, marketing, transport) should also be included to achieve their potential impact.
- Local leaders should be committed to the success of such schemes.
- The Ministry of Agriculture, Livestock Development and Cooperatives should, through its irrigation policy, assist small-scale irrigation schemes to solve their technical, managerial and policy related problems, so that they can play their role in rural poverty alleviation.

Further Research

Future research work in this area could focus, among other things, on the irrigation policy issues, particularly those related to solving the noted problems, so that such irrigation schemes can contribute effectively to poverty alleviation. It would be worthwhile to study other schemes, to find out if there are some that have been more successful in solving its problems, and identify the reasons for a better contribution to poverty alleviation.

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