

## EXECUTIVE SUMMARY

South Africa has invested substantially in smallholder irrigation, particularly in the former homeland areas. In Limpopo Province alone, there are 171 irrigation schemes with assets valued at R4 billion. However, most of these irrigation schemes are not performing optimally. As a result, the original objective of generating employment and reducing rural poverty through the establishment of these schemes has not been achieved in many instances.

This study was undertaken with the objective of contributing to rural poverty alleviation by improving productivity, profitability, gender equity and environmental sustainability of smallholder irrigation. The specific objectives of the study were to (a) to assess productivity and profitability of smallholder irrigation and the potential for achievement of food security; (b) identify cropping and irrigation management practices; (c) determine the effects of irrigation practices on soil salinity; and (d) examine the institutional and organizational arrangements affecting smallholder irrigation.

The study was undertaken in six irrigation schemes in the Olifants River Basin of Limpopo Province. The schemes included Adriansdraai, Elandskraal, Sepitsi, Strydkraal, Veeplaats, and Wonderboom. A variety of crops are cultivated at the irrigation schemes, including maize, wheat, cotton, and vegetables. Plot sizes range from less than 0.1 hectare to five hectares.

Because of the nature smallholder irrigation issues, a multidisciplinary approach was adopted to achieve the objectives of the study. Consequently, participatory approaches and questionnaire surveys were used to collect data on socio-economic aspects while agronomic experiments and other tools of measurement were used to collect data of a technical nature.

The main findings of the study were as follows:

- Agricultural productivity in the irrigation schemes is generally low. This is particularly so in maize production.
- Although farmers practice crop rotation, leguminous crops are generally not included in the rotation.
- The most profitable enterprises included high value crops such vegetables and wheat. Most farmers producing maize were incurring losses. Farmers aspire to intensify the production of high value crops such as sunflower, sugarbean and groundnuts.
- There is a positive relationship between food security and land size. Farmers with smaller plots tend to experience food insecurity while those with larger ones do not experience food security problems.
- While farming plays a dominant role in poverty alleviation and food security, it does not generate sufficient household income regardless of farm (plot) size.
- Government withdrawal from support service provision in the irrigation schemes has created major problems for farmers. Some of the schemes have almost collapsed and access to support services has been severely reduced resulting in low productivity and food insecurity.

- The extension agent remains the main source of production and marketing information for the majority of farmers. However, extension officers themselves are not equipped to provide the required information due to inadequate training.
- Smallholder irrigation farmers aspire to remain in farming provided access to support services and irrigation water is improved.
- Farmers apply excessive amounts of water when it is their turn to irrigate their plots resulting in low water productivity.
- Salinity levels in all the irrigation schemes are within acceptable levels. Therefore, what is needed at this stage are measures to monitor salinity levels to ensure that the situation does not deteriorate.
- The current organizational arrangements in the irrigation schemes are characterized by major shortcomings in terms of meeting gender equity objectives and ensuring adequate participation of disadvantaged groups. Organizations such as irrigation committees and water user associations are dominated by men with little participation of women. Despite these shortcomings, the committees are highly rated and enjoy the support of farmers.
- The irrigation management transfer process in Limpopo Province is proceeding before the necessary success factors are in place and this may result in failures. The emphasis seems to be on rehabilitation of the irrigation schemes with little attention paid to other factors which are necessary for raising productivity and making farming profitable.
- The scope of water user associations is limited to irrigation related issues and does not go beyond provision of support services.

The following recommendations are made to address some of the problems identified:

- Practical training in water management and irrigation scheduling should be provided to both farmers and extension agents.
- Farmers should be encouraged or assisted to place more emphasis on the production of high value crops and vegetables.
- Farmers should be encouraged to include leguminous crops in their crop rotation systems.
- Measures should be taken to ensure that women are adequately represented on all organizations that are responsible for irrigation water management.
- The formation of water user associations should be closely monitored to ensure active participation of previously disadvantaged groups.
- Farmers should be provided with information about available farmer support services and where to obtain them. This should include training of extension agents and organizing workshops for smallholder farmers to be exposed to sources of support.
- Access to support services should be improved through partnerships among public and private sectors and community based organizations. Farmer organizations also need to be strengthened or established where they do not exist.
- The irrigation management transfer process should involve farmers to ensure that their restructuring needs are met.
- The capacity of water user associations should be strengthened so that they can play a meaningful role in the provision of support services.

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