



Stepping up smallholder agricultural production – What role does water play?

It is generally accepted that in order for smallholder farmers to play a more meaningful role in the economy they must participate in commercial agricultural value chains. But what is the role of water in these value chains and how does this affect the farmers' success? A study, funded by the Water Research Commission (WRC) and led by the Department of Agricultural Economics at the University of the Free State (UFS), investigated. Article by Lani van Vuuren.

The role of agriculture in especially the rural economy is well recognised. According to WRC Executive Manager, Water Utilisation in Agriculture, Dr Gerhard Backeberg, agriculture contributes to economic development and rural livelihoods by providing food products, but also represents a range of opportunities for earning income in production,

processing, distribution and retailing phases of the agriculture value chain. This sector thus provides far more than merely food to rural communities.

Since 1994, the South African government has committed itself to working towards decreasing rural poverty through the implementation of policies that include initiatives to link smallholder farmers to commercial agricultural value chains. The agricultural value chain refers to the chain of activities that farmers and other stakeholders perform to deliver their goods to the end-consumer. Millions of Rands have also been invested on revitalising smallholder irrigation schemes – with mixed success.

According to UFS Senior Lecturer: Agricultural Economics and principal researchers on the WRC project, Dr Henry Jordaan, by participating in agricultural value chains farmers can sell larger volumes of crops at a time, so they can use their available land and other resources more efficiently to produce the maximum amount of crops. Smallholder farmers can also gain access to more effective support services. “Commercial agricultural value chains also include roleplayers who have the necessary skills, expertise and experience that can, through embedded services, help smallholder farmers to produce products that meet the stringent requirements of consumers.”

WATER USE ALONG THE VALUE CHAIN

Agricultural water plays a necessary role in increasing productivity. The WRC project analysed selected value chains in commercial and emerging agriculture with specific attention to, among others, mapping of water use at critical points in the value chain; optimisation of water use in the whole value chain; mainstreaming of marginalised participants in the economy;

and improving competitiveness in the value chain.

Dr Jordaan explains the importance of this particular study in the South African context: “South Africa is considered to be a water scarce country with a significant amount of competition for water resources. While irrigated agriculture is a major user of freshwater it is also a significant contributor towards meeting food requirements of the local population and provides an environment through which smallholder agriculture

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can contribute towards poverty alleviation.”

The results from the analyses of the distribution of water use along the value chains show that the bulk of water is used at farm level to produce food. Since food security is non-negotiable, it is important to produce the required food by using water efficiently. Only the volume of water that is really needed to deliver the required food to consumers for food security should be used – nothing more, notes Dr Jordaan. “Since water is used at different stages of value adding along the value chain, it is important to consider water use along the whole value chain to ensure that water is used efficiently.”

Given the role of irrigated agriculture in rural poverty alleviation, smallholder farmers must earn

the highest possible return from the freshwater they use. By linking water use along the value chain and the distribution of value along the value chain, it is possible to identify marketing channels that will allow the smallholder farmer to maximise the financial returns he gets from using irrigation water.

CASE STUDIES

The WRC project focused on three case studies: namely the case of raisin producers at Eksteen-skui, Northern Cape; the case of vegetable producers at Zanyokwe Irrigation Scheme, Eastern Cape, and the case of maize and vegetable producers at Thabina Irrigation Scheme, Limpopo. By involving Masters students who spoke the native language at the respective schemes, the project team could overcome language barriers when interviewing the farmers.

Importantly, the case studies showed that the mere availability of water does not guarantee financial success by smallholder farmers. All the farmers from the three case studies had access to water. The biggest challenge was in the way in which this water was managed. Improper operation and maintenance of water distribution infrastructure was commonplace at the schemes investigated.

“Farmers have to use water in combination with other resources effectively and efficiently to allow them to earn the maximum financial returns from having access to irrigation water in the first place,” notes Dr Jordaan. Compliance with best management practices in production is crucially important to achieve this. This includes regular maintenance of water distribution infrastructure. Poor maintenance increases farmers’ risk that they will not have water at their farms when required, making it more difficult for them to meet best practices.

The study further showed that there are some smallholder farmers



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who eagerly want to be part of the commercial agricultural value chain – and that there are indeed some farmers who do in fact participate fully. Of the three case studies, the Eksteenskuil farmers seemed most successful as they export their raisins as part of an international fair trade initiative – proving that being resource poor should not necessarily exclude one from participating in lucrative export markets. The vegetable farmers at Zanyokwe sell their produce through various channels, including directly to the community, to wholesalers and to retailers. In turn, the farmers at Thabina sell their produce mostly through informal sellers.

The project team was surprised by levels of innovative and

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entrepreneurial thinking demonstrated by some of the farmers. “Rather than accepting their fate of being exposed to the challenges that often gets blamed for causing the exclusion of smallholder farmers from participating in commercial agricultural food chains, some of the farmers who participated in the research found ways to get around these challenges.”

So the Eksteenskuil raisin producers organised themselves into a farmers’ cooperative to participate in the fair trade market. The cooperative then created additional institutions (rules and regulations) to help members benefit optimally from communal tractors and implements. At Zanyokwe, a paprika growing project created opportunities even

for farmers who chose not to participate – one farmer told the project team how the paprika farmers used their wages to buy vegetables from his farm.

Unfortunately, it seems smallholder farmers also become easily dependent on outside organisations which get involved in projects aimed at improving the livelihoods of farmers from smallholder irrigation schemes. For example, at Zanyokwe the project team witnessed potato seed going bad while lying in a shed as the farmers waited for training on how to produce the potatoes by the potatoes association.

The dependence on government services was also evident. “During discussions regarding the challenges they face the farmers had long lists of things they wanted government to do for them to help them become more successful, such as give them tractors, give input for production, and find a market for their produce,” reports Dr Jordaan. “At the Zanyokwe and Thabina irrigation schemes where there had already been large government intervention, farmers proved willing to wait for government to provide these actions, with only some farmers willing to take the initiative for themselves.”

The problem with waiting for government is that when promised services are not provided in time, farmers cannot meet recommended dates for certain actions, such as planting or applying fertilizer, thus failing to comply with best practices and threatening production.

To improve the situation, Dr Jordaan recommends that government should focus on ensuring the effective delivery of services to create and maintain an enabling environment for smallholder farmers and private sector firms within agricultural value chains. In addition, policies should be developed that create a vested interest for private sector firms in the performance of smallholder farmers.

“Then private sector firms, who are key roleplayers in commercial

agricultural value chains, and who have ample experience and expertise in the functioning of the particular value chain under consideration, will effectively support smallholder farmers to perform at acceptable levels,” maintains Dr Jordaan.

There is a definite space for private companies to become involved in uplifting smallholder agriculture. According to Dr Jordaan, the correct alignment of incentives to attract business development is crucially important for the sustained participation by smallholder farmers in commercial agricultural value chains. “Correctly aligned incentives will get smallholder farmers and private sector firms to use a network approach to get the farmers participating in commercial agricultural value chains. This means farmers using collective action and vertical coordination strategies in an effective manner to improve their business – not just accessing government grants.

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The results from the study show that smallholder farmers have great prospects to increase their production levels. It is believed that the key success factors identified through the study could contribute towards the successful participation of these farmers in agricultural value chains.

Ultimately, however, smallholder farmers’ success will depend on their ability to exploit the opportunities provided to them.

More project outcomes and recommendations can be found in the final report, *An economic analysis of the contribution of water use to value chains in agriculture* (Report No. 1779/1/12). To obtain a copy of the report contact Publications at

Tel: (012) 330-0340; Fax: (012) 331-2565, Email: orders@wrc.org.za or Visit: www.wrc.org.za to download a free copy. □

How can smallholder farmers improve their participation in agricultural value chains?

- Don't stare blindly at the challenges that prevent participation – pay attention to finding innovative ways to overcome these challenges and identify all possible support structures that can help implement these actions. This will help farmers exploit profitable opportunities.
- Compliance with best management practices contributes towards the ability of farmers to produce the maximum yield possible at the level of inputs applied and within their existing technology sets.
- Seek ways to improve strategic decision-making skills to improve the effectiveness of day-to-day decision-making. Smallholder farmers' cooperatives should regularly identify the training needs of their members.

