

EMERGING AGRICULTURE

South African Agri-parks: past, present and future

The South African Agri-parks is a Government initiative, aimed at revitalising agriculture, catalysing rural industrialisation and supporting emerging farmers. Betsie le Roux and Attie van Niekerk report on the latest research around this development initiative.



The Water Research Commission (WRC) funded the project titled 'Evaluation of the management and impact of water quantity and quality for Agri-parks in Gauteng Province, South Africa (WRC Project No. K5/2823//4).

An Agri-park is defined as 'a networked innovation system of agro-production, processing, logistics, marketing, training and extension services, located in a District Municipality. As a network it enables a market-driven combination and integration of various agricultural activities and rural transformation services'. The Agri-park model includes the following three units:

- The Agri-hub (AH) that would essentially provide financial

and technical support to all farmers within a 20 km radius;

- Each Agri-hub would encompass several Farmer Production Support Units (FPSU) that will provide support on a local level; and The Rural Urban Marketing Centre (RUMC) will assist farmers with marketing of produce and the relevant administration. (Department of Rural Development and Land Reform, 2016).

By managing several small-scale farms as a single large entity, Agri-parks have the potential to provide capital, technical support and knowledge, which are critical services that are often not available to small-scale farmers. Through the Agri-parks

initiative, it could also be possible to uplift emerging farmers, which is an important goal towards achieving food security and land reform, and limiting the rural-urban migration in South Africa. The way in which the Agri-park model integrates catchment- and local-scale management could enable more sustainable practices in agriculture and water management.

Problems experienced by and potential within Agri-parks

However, existing Gauteng Agri-parks are, in reality, old production units that were initiated by the Gauteng Department of Agriculture and Rural Development (GDARD). The main Agri-parks in Pretoria are Rooiwal, Soshanguve, Mamelodi and the Innovation hub. Agri-parks in Johannesburg include Westonaria, Eikenhof, Tarlton, and Merafong. None of these Agri-parks operate according to the Agri-parks model, for example, they are only a few hectares in size, as opposed to covering an area of 20 km radius around an Agri-hub, and therefore represents only one FPSU of an Agri-park.

In Pretoria, the Agri-park farmers are managed and supported by the City of Tshwane, which may represent some of the functions of the Agri-hub. However, this management does not provide



Chameleon sensor at Rooiwal, abandoned and disconnected.

some important services, such as laboratories, finance and marketing. The farmers are provided with the land and some infrastructure such as irrigation systems, but maintenance is not always done efficiently and important resources such as water are not developed and provided.

During a survey of Agri-parks in Johannesburg (le Roux et al., 2019), it was found that 40% of farmers complained of water-related problems (including water quality, quantity and irrigation infrastructure problems). Water-related problems and access to markets the major concerns expressed by the farmers. In Pretoria, farmers' main complaint was a lack of water.

If the relationship between the farmers is cooperative in nature, as opposed to the current competitiveness, they may all feel that they could benefit from increasing water use efficiency.

How to understand the problems

The managers of the Agri-parks are often frustrated by the farmers' poor adoption of technologies that could improve their resource use efficiency and production outcomes. During the previous WRC project on Agri-parks (le Roux et al., 2021), several of these tools were introduced, but in general they are not used or maintained.

In Soshanguve a number of soil water sensors were wrecked through a misunderstanding with a contractor, in Rooiwal the chameleon sensor that was installed by the team was left disconnected in an old field. Mulching was promoted as a cost-effective way to save water and reduce weeds, both of which were extremely big problems at Rooiwal, but farmers were unable to use it when their fields reached a certain size. All farmers were positive about using sewage effluent for irrigation, and at Rooiwal, this is a potential source.

The question is; 'why are the tools and techniques not working?' The problem can be with the:

- Resources and tools available
- Labour and skill required to use available tools and to farm successfully
- Demand / lack of demand for the products

All of the above are influenced by the social context, culture and the things that motivate the farmer. Motivation can vary from passion for farming, survival, making money etc.

We agree with van Rooyen et al. (2017), the problems that are faced in the small-scale farming context are not only technological in nature, but also socio-economic. For example, we are of the opinion that water use efficiency will not be practiced by the farmers, unless the conflict due to competition for water is resolved. Currently at Rooiwal, the farmers share one groundwater pump. They are pumping in turn according to a schedule, and all the farmers feel that they are mistreated.

For that reason, they will pump water during the entire time that



Farmers at Rooiwal Agri-park showing their harvested Swiss chard.

is allocated to them even if they could use less water, without considering the sustainability of what they do or whether there is enough water left for the next day. If the relationship between the farmers is cooperative in nature, as opposed to the current competitiveness, they may all feel that they could benefit from increasing water use efficiency.

Another fundamental issue that was identified in previous research is the role of the Agri-park managers. In the Pretoria Agri-parks, the current management role of the City of Tshwane is at times more restrictive than supportive. For example, the Rooiwal Agri-park is next to a wastewater treatment works (WWTW). Farmers around the Agri-park use the effluent for irrigation, and benefit from this resource.

However, due to the potential risks, the City does not allow the Agri-park farmers to irrigate with this water, putting them at a competitive disadvantage. If Tshwane officials had a direct business incentive to develop the Agri-park and achieve the goals of the model, they could have had the pressure and drive to develop the effluent into a safe resource. As it stands, paid officials are unlikely to push the boundaries of these Agri-parks, as they have no personal gain in doing so and often lack the necessary capacity. This is a problem that must be solved.

However, during the WRC project, the team has also found some strong points in the system, including highly educated individual farmers that are successfully producing and marketing

their crops, farmers who take responsibility of their farms and exercise agency e.g., purchase equipment in cases where it is not provided. The team also found that alternative resources can still be developed, such as effluent water, chicken manure, organic waste etc.

Going forward, the way in which Agri-parks function must be reconsidered, to unlock existing potential within them. Processes and practices must be co-developed, with Agri-park farmers and managers, that would remove stumbling blocks such as competition, conflict and poor motivation.



A meeting with the Rooiwal farmers (February 2020) to discuss their problems and possible solutions.