



Busting Hunger Through Research

A new approach to smallholder farmer training, developed with support from the Water Research Commission (WRC), has helped thousands of rural people to break the hunger cycle. Lani van Vuuren reports.

Statistics show that 2,3 million households in South Africa are not able to meet their daily food requirements. In addition, about half of the country's population lives on R20 or less a day. "We do not realise the extent to which people in South Africa are going hungry," says Marna de Lange, who was part of the WRC project team.

She was speaking at a recent workshop to introduce the new approach to other countries within the Southern African Developing Community. The workshop was organised jointly by WRC, the Department of Agriculture and Southern African Regional Irrigation Association.

De Lange went on to explain that chronic hunger and malnutrition has far reaching effects. "When a child is malnourished, especially during the pre-school phase, it is not only his height and weight that are affected. It does irreversible damage to his intellectual development. Add to this increased potential for infection and you end up with an adult that

will have lower earnings during his lifetime than someone who is not malnourished. Chances are then that these people's children will also be malnourished, and so the cycle is perpetuated."

"Unfortunately, so much of the knowledge generated by scientific research ends up sitting on a dusty shelf, never reaching those who so desperately need it."

Many farmer training programmes have been developed over the years to address this situation. Yet little progress has been shown to date. This is because available training has almost exclusively been scaled-down versions of high-cost, high-risk commercial production practices, which are especially inappropriate to food insecure households. In the far-flung areas in Limpopo where the training was piloted, the majority of the farmers were found to have only basic

levels of education (Grade One to Three). Many of them were illiterate, and elderly, making the current methods of training unsuitable.

In addition, much of the training required trainees to be away from their homes for extended periods of time. This is impossible for many, especially the women responsible for food insecure households.

Tshinakao Havhi, a pensioner living in Beaconsfield, in Limpopo, knows what it feels like to be constantly hungry. To feed her family she tends a one-hectare plot of maize. Despite her hard work she used to get only five to seven bags of maize per bed, scarcely enough to feed her family or earn an income.

However, after received training under the new 'development through needs-based approach' she improved her yield to ten to fifteen bags per bed. She is now feeding her family regularly while the sale of additional maize provides her with valuable income. In fact, she has

been able to pay the tuition fees of her two sons, one of whom attended the University of Venda. They are now both employed.

Havhi is but one of thousands of poverty stricken dry-land and irrigation farmers that can testify to the success of the new approach to farmer training. The concept was pioneered by late independent consultant Johann Adendorff, who applied it to train about 7 000 farmers in Phokoane in the Nebo district of Limpopo, as part of a government initiative to revitalise smallholder irrigation schemes in the area.

This was followed up by WRC's action research project, which was aimed at transferring skills to especially resource poor farmers, youth and women's groups. The training includes enhancing skills in agricultural production, water use and management, business and entrepreneurship. Several trainers received tuition in the new approach, and the methods applied have now been captured in a formal set of training materials.

The training is undertaken at the farmers' fields where they are comfortable, and in their own language. Prior to the start of training, the trainer gets to know the farmers and their circumstances, their challenges and their expectations so as to better assist them. Local stories and folklore, rather than textbooks are used to convey the message, and practical demonstrations abound. Humour is added to the message. "If a story is funny people are bound to remember it," explained De Lange.

The training also makes use of local 'tools' at hand. For example, as the farmers do not have rulers to measure the distance between maize plants, or how deep they are planting the seeds, other forms of measurement are used, such as fingers and arms. The top of a cooldrink

bottle has become a favourite measurement for the application of fertilizer.

Commenting on WRC's reasoning behind funding this initiative, research manager Dr Andrew Sanewe explains that the organisation has placed greater emphasis on the transfer of knowledge in the last few years. "Unfortunately, so much of the knowledge generated by scientific research ends up sitting on a dusty shelf, never reaching those who so desperately need it. With this project we have created that vital link between scientific knowledge and the end-user, the farmer."

Training material in the new approach has now been created for facilitators. A roll-out process has started to take the approach beyond the Limpopo province, where it all started, to other regions across the country.

The new approach is not only aimed at transferring technical agricultural knowledge, but equally so on human development. "It must be recognised that many of these people have been left alone to struggle for many years. They feel that they have failed, and are therefore despondent, and have feelings of low self worth," reports project team member Marius Botha. "Many of these people have been farming for

MOSADI MEALIE PORRIDGE

How do illiterate people understand and memorise a concept when they cannot take notes during class or read a handbook? One way of conveying an important message is to create a visual in someone's mind. This mental picture becomes even stronger if that person can connect an emotion to it.

To help smallholder farmers understand the needs of a maize plant, they are introduced to Mosadi (Mrs) Mealie Porridge. Just like a human lady needs groceries and water to feed her family, the mealie mosadi needs fertilizer and water to feed her family (the cobs).

The tassel is the kitchen where all the groceries and water are brought to by the roots. It is here where the mosadi prepares the meals for her family. The cobs, in turn, will feed the farmer and her family. Just as in case with humans, the maize plant requires the right amount of food and water – too much causes problems, as does too little.

The leaves are the lungs of the lady, which allow her to breathe. Her land is her house. She does not live in the bush and just like human ladies, she does not like living in a dirty house where diseases can breed. This brings the message across that farmers have to regularly hoe their fields. Also, Mosadi Mealie Porridge needs to keep the tsotsis (weeds and livestock) out that make trouble and steal her food and water.

The mosadi cannot live on meat alone; her family needs other types of food. This teaches farmers to look for the main ingredients in fertilizer, namely phosphate, nitrogen and potassium. To help them remember these ingredients P is equated with porridge, N with nama (meat), and K with kool (cabbage).




In the past many training programmes have been scaled-down versions of high-cost, high-risk commercial production practices, which have proved unsuitable for smallholder farmers with limited access to education and resources.



self worth undergo the training and emerge as leaders who willingly share their newly-gained knowledge with others for the upliftment of the entire community," notes Botha. "People now have more respect in their families, and have improved their livelihoods."

The WRC has launched a follow-up project to develop similar training material for the farming of other crops, including fruit and vegetables.

To order the training material (WRC Report No TT 254/1/05), contact Publications at Tel: (012) 330-0340 or E-mail: orders@wrc.org.za 

years, but might have lost faith in their own abilities. Through this approach, we not only teach them new skills, but also to be proud and self confident."

The project team has witnessed some far reaching changes during follow-up visits to areas where training has been offered. For example, young boys, who never showed an interest in farming, taking up the hoe following the success of their mothers and grandmothers. "We have seen farmers with little

AIKONA TO ICONS

Marius Botha explains why extra care has to be taken when preparing training material for smallholder farmers:



"When we first developed our training manual we included icons, such as a light bulb, to illustrate an important piece of information. The farmers did not understand this iconography, thinking that this meant that the training was only for 'rich' people who could afford electricity. They, therefore, rejected the training. This taught us a valuable lesson not to over-estimate the knowledge of symbols or concepts, and to rather keep things simple."

SOUTHERN AFRICAN REGIONAL IRRIGATION ASSOCIATION WORKSHOP

Representatives from 11 southern African countries and several agricultural colleges in South Africa spent a day learning about irrigation management, based on research and on-farm trials with the wetting front detector.

The main aim of the wetting front detector project is to make the concepts behind irrigation scheduling accessible to a wider audience than is currently the case. This starts by building a picture of irrigation that make intuitive sense to farmers, i.e. the depth water penetrates to following rain or irrigation. The device is also simple to understand – convergence of infiltrating soil water in a funnel to activate a mechanical float.

The links are built between soil water deficit, and the way wetting fronts move through the soil. This is first demonstrated by 'irrigating' three sponges, representing the top soil, sub soil and the soil below the root zone. Irrigation can be improved by knowing when the wetting front has passed each of the depths.

The benefits and limitations of



Dr Richard Stirzaker of CSIRO (middle) demonstrates the wetting front detector technique

the wetting approach are then discussed, as well as how to bridge the gap between scientific information and the actual practice of irrigation by farmers.

Delegates conducted experiments to test the depth of wetting front penetration as a function of initial water content using sand-filled perspex tubes placed on top of the detector. The water was coloured so that the existing soil water could be distinguished from 'new' irrigation water.

- Submitted by Dr Richard Stirzaker of CSIRO.