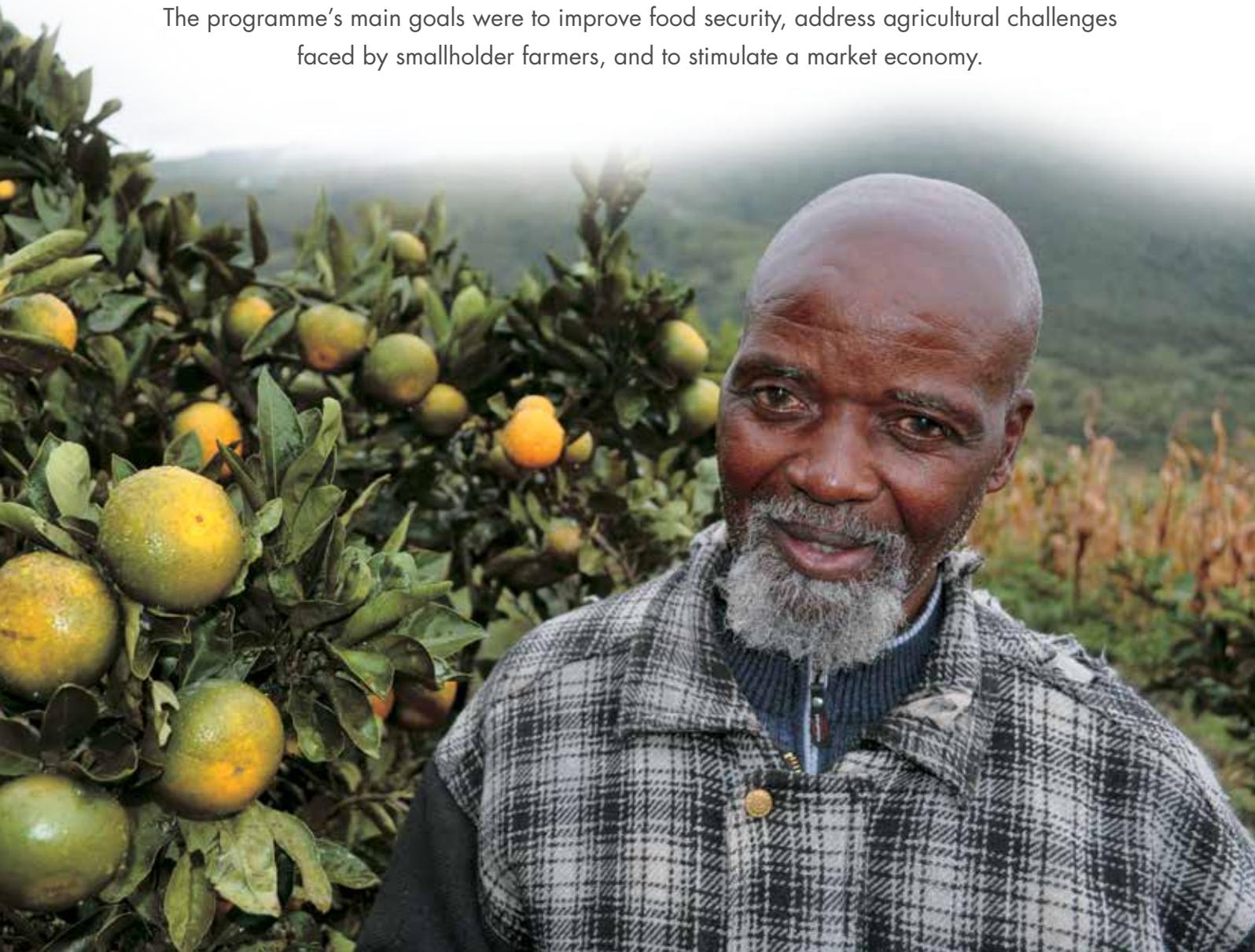


Delivering impact in agricultural research: a high-value crop programme in the Eastern Cape

Institute for Tropical and Subtropical Crops

The High Value Crop (HVC) programme in the Eastern Cape has delivered significant economic and social impact. Over 15 years, fruit and vegetable production has been introduced to more than 50 villages, with the planting of more than a 1 16 000 trees benefitting more than 5 000 households.

The programme's main goals were to improve food security, address agricultural challenges faced by smallholder farmers, and to stimulate a market economy.





Eastern Cape communities such as these farmers in Hluleka have learned new agricultural skills and now produce crops including bananas and citrus

Impact in numbers

3250% or 32-fold return
on investment



Success sustained over
15 years



R19.5m

new annual revenue
from annual ARC
project investment of

R600 000



More than

116 000

trees planted

Benefits to
more than

5 000

households
in

55 villages



More than **800** small agricultural ventures
set to become commercial enterprises

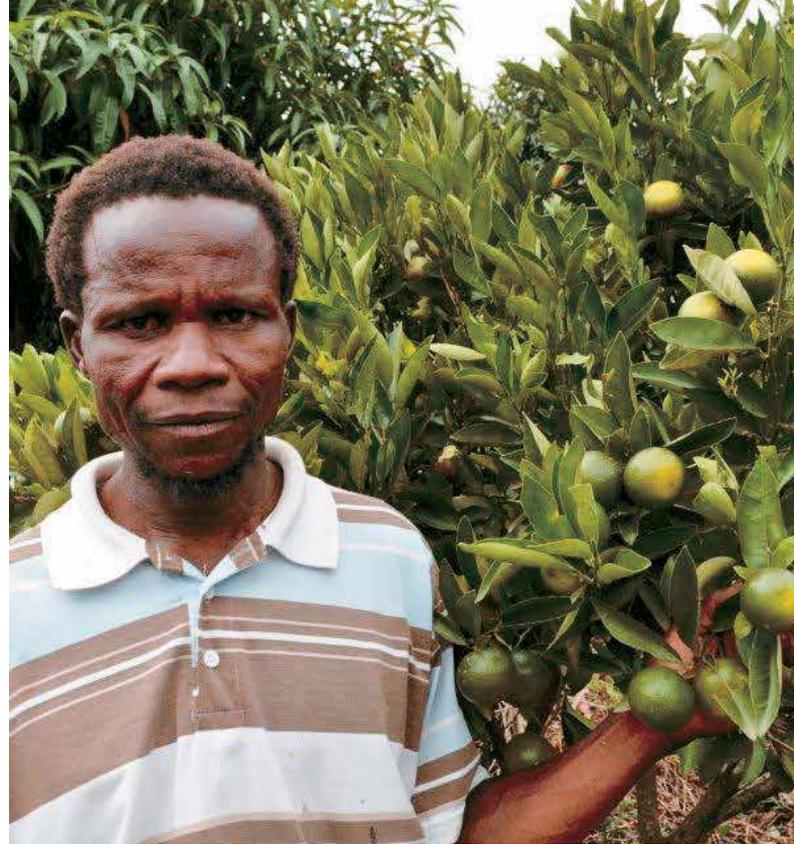
97% of participants satisfied
with ARC services



Key impacts and results

- Significant **boost to economic activity** in Eastern Cape
- **Conservation agriculture** adopted by subsistence farmers
- Multiple **new fruit and vegetable crops introduced** to under-developed rural areas, including bananas, citrus, papaya, guava, macadamia, litchi and pineapples
- Agricultural and commercial **skills developed**
- **Food security** and **household nutrition** improved
- Subsistence farmers introduced to **market economy**
- Demonstration of potential to **develop smallholder agriculture** in SA
- **Financial empowerment** of household farmers mitigates rural poverty
- Model created for smallholder **conservation agriculture**

Rosemary is among the herbs introduced to Eastern Cape smallholder farmers



Eliot Bhelem became a successful small-scale commercial farmer as the result of the ARC high-value crop programme

An emerging commercial farmer

A progressive lead farmer, Eliot Bhelem considers himself a rich man today. His family eats well, and his children go to school and do not lack essentials. He has around 2 000 banana trees which he propagated through careful desuckering, a skill acquired through the ARC programme. He has 42 mango trees as well as a number of citrus, coffee and litchi trees. During the past season, a retailer regularly sent its truck from Port St Johns to Eliot's farm in Noqhekwana village and paid him R4 for each mango they collected. Other lead farmers brought their best mangoes to the farm, enabling him to play the role of cooperative. Mr Bhelem himself earned R3 800 for the 950 mangoes he sold.

Eliot Bhelem's farm in Noqhekwana village now grows a wide variety of new fruit and vegetable crops





Mangos and bananas are among new crops introduced to Eastern Cape farmers

The HVC programme was initiated by the ARC in collaboration with the Is'Baya Development Trust (Is'Baya), a non-profit organization. It has demonstrated the potential for development of the smallholder agricultural sector in South Africa, which in 2011 had 2.9m households engaged in agriculture.

The project focused on the OR Tambo District in the Eastern Cape, where some 20.7% of households are engaged in agriculture in a province which lacks infrastructure and services and has very limited industrial, commercial and agricultural enterprises.

The HVC programme is an agricultural development intervention based on conservation agriculture (CA), with a sustainable low-input approach suitable to the isolated project area's rugged and hilly terrain.

Based on research

The project emerged from a 1999 feasibility study by the ARC's Institutes for Tropical and Sub-Tropical Crops (ITSC) and for Soil Climate and Water (ISCW). The study showed that frost-sensitive crops with a low-cold requirement could be grown in the project area. These include banana, guava, papaya, mango, macadamia, litchi, citrus, avocado and pineapple. It also found that citrus, guava, avocado and other high value crops grow well in higher-altitude inland areas nearby. These crops have all been successfully introduced and grown by farmers in the project area.

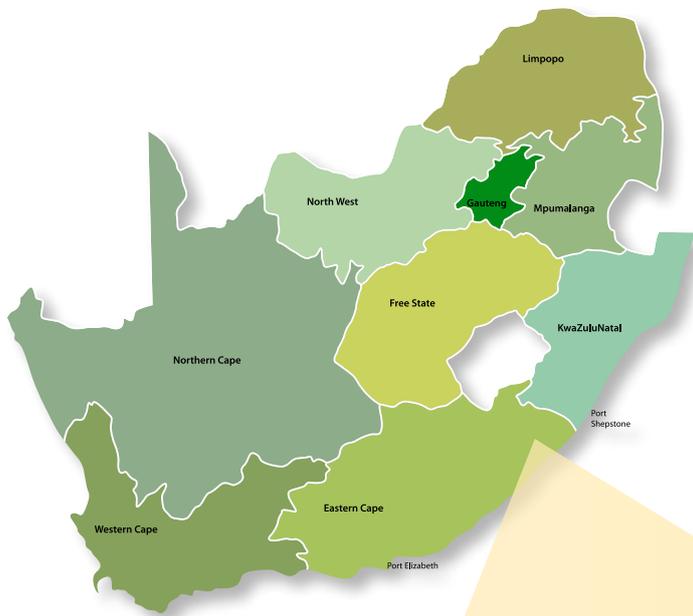
Economic impact and return on investment

The project generated substantial economic impact. Participating farmers are generating an average of R3 900 in new household income, a total of R19,5m per year from an ARC annual project investment of R600 000. This amount of household income is projected to increase significantly as trees mature and farmers become more accustomed to market participation.

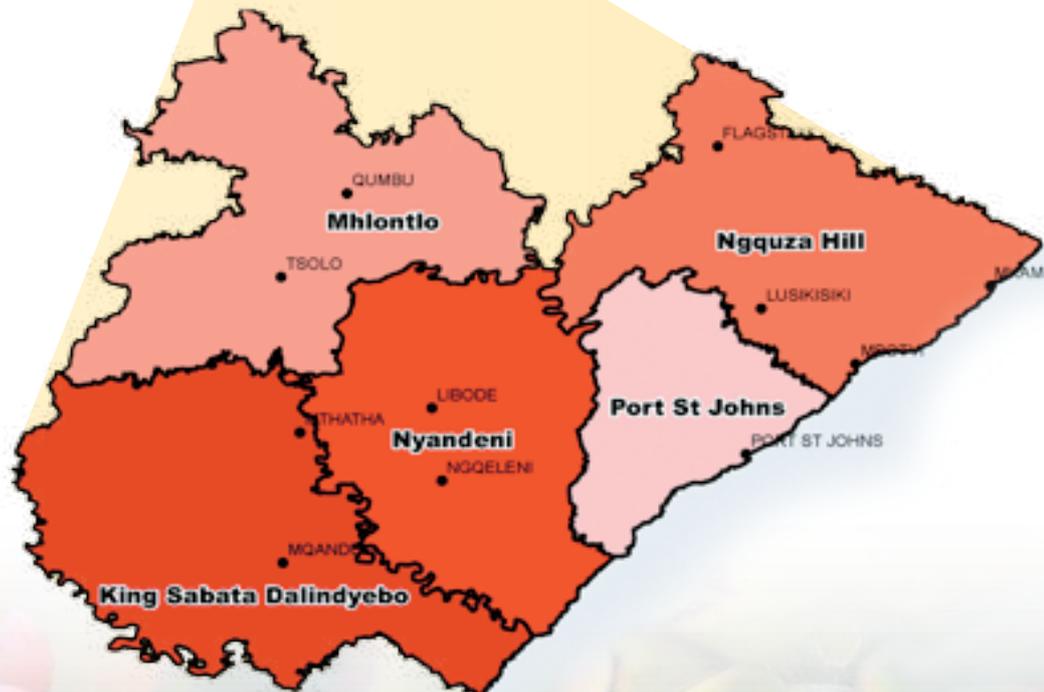
Revenue is invested by farmers in further agricultural production or spent on groceries, clothes, furniture, school fees and uniforms. Preliminary enterprise budgets for crops used in the programme indicate a high potential for income generation that compliments food security and assists with household expenses.

Land of skills and honey

As a result of the ARC programme, Nothumkile Mthambeki now cultivates vegetables, industrial, deciduous and sub-tropical crops through intercropping. She uses compost to improve soil fertility, controls weeds by hoeing and uses the weeds to make compost. Nothumkile also learned about the importance of bees. She attended a bee-keeping course and now has her own hives which are used for pollination in her orchard. In 2011 she earned R30 000 from the sale of honey.



The project area is predominantly rural, with a temperate to sub-tropical climate with relatively high rainfall and a hilly landscape which puts limits on arable land. Agricultural activity is predominantly subsistence farming on communal land. It is one of the poorest rural districts in SA, with high levels of illiteracy and unemployment – and low levels of industrial development. More than 91% of the population is rural and lives in informal dwellings, whilst 75% do not have access to formal standard water supply and sanitation.



Adoption of conservation agriculture (CA)

Conservation agriculture is characterized by minimum mechanical soil disturbance, permanent organic soil cover, diversified crop rotations and the minimal use of agrochemicals. The HVC programme saw great success in the adoption rate of CA technologies, including intercropping, minimal tilling, mulching and composting, natural pest control and efficient use of limited water resources.

Organic farming

Noleen Lottering is a lead farmer in the ARC programme. In 2011 she generated R40 000 from the sale of potatoes which she grows as a rotation crop because it enhances soil fertility. Noleen says environmentally-friendly farming methods maintain the integrity of her produce as organic.

Coffee was successfully introduced as a new crop





Cabbage and spinach growing in an orange orchard. Intercropping is an agricultural technique successfully introduced to Eastern Cape farmers

Institutional impact and skills development

The HVC programme developed technical skills and created village-based management capacity that enables local decision-making by farmers and households. Progress was also made in organisational development, skills transfer, improved food security and setting up systems for commercial production.

A 2012 survey showed that 97% of the participants of the HVC programme were enjoying the advantages of conservation agriculture.

Training of participants focused on land preparation, soil management, planting and maintaining new crops, as well as management and basic administration. Practical skills training included compost making, caring for young trees, making small dams around trees for water harvesting, using mulching and grey water for irrigation, pest control and pruning. Further skills developed by participants include orchard establishment and maintenance, conservation agriculture and intercropping, irrigation, small-scale food processing.

Social impact

The high value crop programme contributes to food security and household nutrition. Participants have been substantially empowered by the programme, with some now employed as development practitioners by Is'Baya and other organisations.

Indirect spin offs

The HVC project generated substantial indirect benefits. Farmers who have developed larger

agricultural enterprises have become buyers of seedlings, fuel and packaging material, thus further stimulating the local and regional economy.

Some of the more successful farmers also hire as many as 10 seasonal workers to support their harvesting.

Small farmers sell processed products such as jam, juice and soap to guest houses and supermarkets in towns such as Port St Johns and Mthatha, which creates additional income.

The programme has also provided a platform for other development agencies to deliver services that complement the work of the ARC and Is'Baya. Through these agencies, farmers obtain access to more information and skills, as well as resources such as shade-net, composting structures, implements and tools.

Project objectives met

- Introduction of subtropical and tropical fruit tree and vegetable cultivation
- Smallholder farming developed
- Sustainable low-input conservation agriculture introduced
- Organisational management structures introduced in participating villages
- Household enterprises selected and developed for future commercial production
- Household food security and nutrition improved