

Southern Africa

Southern Africa

88

ACIAR Regional Coordinator



Southern Africa:
Dr Simon Hearn
Phone: 02 6217 0547
hearn@aciar.gov.au



Newcastle disease community chicken vaccination day, Malawi

Southern Africa

Key program managers

Dr John Dixon, Cropping Systems Economics

Dr Peter Horne, Livestock Production Systems

Key statistics	
GDP per capita (US\$)	11,110
Population (millions)	48
Funding	
Bilateral actual 2007–08	\$0.41m
Bilateral allocation 2008–09	\$0.45m
Bilateral budget 2009–10	\$0.38m
Bilateral + multilateral budget 2009–10	\$0.38m



Dr Simon Hearn and African farmers inspect cattle raised as part of the Beef Profit Partnerships Project in South Africa

Medium-term strategy

The Australian Centre for International Agricultural Research (ACIAR) has a small program in southern Africa which emphasises income generation in crop and livestock systems for emerging, previously disadvantaged farmers in the Republic of South Africa (RSA). The program is designed to assist farmers to develop as entrepreneurs to capture the benefits of improved technology and then provide leadership to other groups.

An underlying theme is sustainable use of natural resources, particularly with regard to croplands and communal grazing lands. Enhancing the engagement of African farmers with agricultural commodity markets is seen as an important means of increasing their incomes. ACIAR-supported research also aims to build the capacity of provincial agencies and to foster closer relationships between them and national institutions.

ACIAR will also be involved in delivering key elements of the Australian Government's enhanced engagement with Africa, through the Overseas Development Assistance—*Food Security through Rural Development* initiative in Africa. A new ACIAR program entitled 'Enhanced food security in eastern and southern Africa through more productive maize-based farming systems' will commence in 2009–10. Partnerships with International Agricultural Research Centres (IARCs) and National Agricultural Research Systems (NARS) in Africa will be used to achieve lower transaction costs and national level collaboration. A focus on arid and semi-arid farming systems and an emphasis on capacity building and training underpins this program. Funding for this initiative is still being finalised.

Key performance indicators (2009–10)

- new initiative commenced to foster beef market chains through the development of branded beef products based on indigenous cattle
- demonstrated extension of legume crop – livestock technologies and management systems to achieve improved sustainability and profitability for small-scale emerging farms
- commence studies on improved maize varieties and systems developed in targeted southern and eastern African countries suitable for use by small farmer groups in semi-arid zones to achieve enhanced yield, drought and pest/disease resistance
- progress shown in the adoption of improved soil management systems and crop diversification to enhance nutritional security in southern and eastern African countries.

Position

Since 1983, ACIAR has completed over 40 projects in southern Africa. Benefits to date have included the empowerment of individual and farmer groups to market and receive a fair price for their cattle, vaccines for Newcastle disease in chickens in several countries, a tick resistance diagnostic test and a tick fever vaccine, selection of Australian trees for difficult sites, identification of low-input fertiliser strategies for crops in risky environments, and demonstration that cattle breeds preferred by emerging farmers have growth potential that is equal to commercial breeds.

ACIAR has supported IARC projects through the International Livestock Research Institute (ILRI), the World Agroforestry Centre (ICRAF), the International Institute of Tropical Agriculture (IITA), the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) and the International Maize and Wheat Improvement Center (CIMMYT) in a number of African countries.

Currently, RSA is the sole focus of ACIAR's bilateral and multilateral programs. Australian technical knowledge and expertise is highly relevant because similar temperate, Mediterranean and subtropical production environments are found in the two countries. Further, Australia's advanced extension and farming systems capabilities are relevant in building local capacity to assist the development of the South African farming sector.

The program is guided by the following principles:

- Research partnerships must be focused on delivery of benefits to emerging African farmers.
- Projects will only be considered for RSA, and will focus in areas where Australian scientists can add significantly to the skill base by filling 'gaps' in existing South African expertise. In doing so, ACIAR will also look for synergies between its program and those of other South African and international funding agencies, and for potential Australian mutual benefits.

Together with crop production, livestock management is identified as an important source of farm-level diversification for smallholders in RSA and elsewhere in the region. The animal sector can provide a source of protein and diversification as well as manure, fuel and draught animals. With population growth and increasing urban demand for meat, the pressure for intensification adds to the need for improved smallholder livestock–crop systems to achieve sustainability and productivity gains.

The interface between farm-level crop and livestock production systems warrants further examination, to maximise smallholder income opportunities while also achieving sustainable resource management outcomes. Improved marketability of indigenous cattle through farm-level quality performance needs to be supplemented by increased supply-chain engagement for beef, as an important value-adding component in a holistic smallholder farming sector approach. Income growth with commercial opportunities also provides the necessary incentives for adoption of new farming methods, while reducing poverty in rural districts.

This subprogram is designed to develop crop–livestock systems that are able to provide opportunities for smallholders to meet market requirements and raise awareness of product quality, human nutrition and sustainability imperatives.

Box 10. Food Security through Rural Development initiative

The subprogram on 'Enhanced productivity for smallholder maize-based farming systems' aligns with sub-regional research priorities and forms the basis for consultation with African Governments to:

- accelerate the development and dissemination of improved varieties of maize which can provide higher yields under conditions of drought stress
- develop and implement better smallholder maize cropping systems that are sustainable but require limited external inputs. These may include the use of legumes that fix nitrogen and/or act as green manures and soil and water-conserving technologies such as conservation agriculture (sustainable agriculture with low-level inputs)
- work with and contribute to building capacity with the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA) and participating agricultural research and development systems in African partner countries.

Based on a preliminary needs analysis, broader collaborations will be established in Africa to foster spillovers of germplasm, seed system innovations and improved crop systems management practices. Through outcomes such as promotion of germplasm and crop management in an environment of improved availability of seed, knowledge, credit and markets by extension agencies, NGOs and agribusiness, the program aims to improve the production of maize by 30% in the target regions of the partner countries and to reduce yield variability to a similar extent.

ACIAR will be accountable for the program that is implemented by CIMMYT in close collaboration with ASARECA and the partner countries, as well as collaborating CGIAR centres and Australian partners. Partnerships using a range of NGO, private and public sector mechanisms will support rapid dissemination of improved maize and legume seed and improved crop management approaches, supported by on-farm trials, demonstrations and farmer innovation groups managed by farmers, extension agencies, NGOs and local fertiliser and seed input and marketing agents. In collaboration with ASARECA, the program will also build the capacity of African researchers through their involvement in short-term training and postgraduate training in program areas at partner universities, co-supervised by leading international researchers. The program builds on existing programs of ASARECA, African partner countries, CGIAR research and NGO programs and the results of earlier ACIAR-supported projects on crop modelling and best-bet crop technologies in southern Africa.

Research priorities

(Possible new projects commencing in 2009–10 shown as 'proposed')

Priorities for ACIAR–RSA collaboration are developed through visits by senior staff meeting with leading agricultural research and development institutions and government bodies.

Subprogram 1: Increasing the profitability and sustainability of crop–livestock farming systems

- Integration of legumes and other nutrient management strategies into crop and pasture systems
- Assistance for communities to manage their land and enhance livestock production
- Support for linkages between farmers and the private agribusiness sector
- Crop and landscape management to maximise the use of rainfall.

LPS/2002/081	Development of emerging farmer crop–livestock systems in northern South Africa
LPS/2004/022	Pasture development for community wool sheep production in Eastern Cape province of RSA
LPS/2005/128 (proposed)	Developing supply-chain partnerships for the emerging beef sector in South Africa

Subprogram 2: Enhanced productivity for smallholder maize-based farming systems

(Refer Box 10)

- Further development of high-yielding maize varieties that demonstrate drought and pest/disease resistance
- Demonstration of technologies and sharing knowledge at the field level, together with training in maize breeding and crop marketing
- Identifying suitable cropping rotations and management systems to improve soil management, farm crop diversification and human nutrition.

CSE/2009/024 (proposed)	Enhanced food security in eastern and southern Africa through more productive maize-based farming systems
-------------------------	---



ACIAR-supported research is crucial in the ongoing quest to adapt crops to local conditions in developing countries in Africa Photographer : Brad Collis