

Sub-Saharan Africa

Principal Regional Coordinator

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Key statistics	
GDP per capita (US\$)	
Republic of South Africa	5,566
Ethiopia	319
Kenya	788
Tanzania	521
Malawi	278
Mozambique	440
Population (millions)	
Republic of South Africa	49
Ethiopia	79
Kenya	40
Tanzania	43
Malawi	15
Mozambique	20
Funding	
	\$m
2008–09 actual	0.41
2009–10 budget allocation	0.38
2010–11 budget estimate	5.53

Medium-term strategy

ACIAR fosters research partnerships in eastern and southern Africa that emphasise both income-generating livestock and cropping systems for previously disadvantaged farmers in the Republic of South Africa (RSA) and food security in Ethiopia, Kenya, Malawi, Mozambique and Tanzania. In relation to the latter, a new ACIAR program entitled 'Sustainable intensification of maize–legume cropping systems for food security in eastern and southern Africa' was launched during 2009–10.

An underlying theme is sustainable use of natural resources, particularly with regard to croplands and communal grazing lands. Engagement of African farmers with agricultural commodity markets is seen as an important means of increasing their incomes. Research is designed to assist farmers to develop as entrepreneurs and provide leadership to other groups. Partnerships with IARCs will be used to achieve lower research transaction costs.

ACIAR is assisting with delivering key elements of the Australian Government's enhanced engagement with Africa through the Overseas Development Assistance–Food Security through Rural Development initiative.



A South African chicken farmer with her grandchildren

Position

Since 1983 ACIAR has completed over 40 projects in southern Africa. Benefits to date have included the empowerment of individuals 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 ILRI, ICRAF, International Institute of Tropical Agriculture (IITA), ICRISAT and CIMMYT in a number of African countries. Australian technical knowledge and expertise is highly relevant because similar temperate, Mediterranean and subtropical production environments are found in both continents. Water constraints and soil management requirements are also frequently similar. Australia's advanced research, extension and farm management systems experience, together with the capabilities of its formal tertiary agricultural education institutions, is relevant to human and institutional capacity building in a range of Sub-Saharan African countries.

The program is guided by the following principles:

- » Research partnerships must be focused on delivery of benefits to small-scale African farmers.
- » Projects will only be considered in areas where Australian agencies and scientists have a relevant skill base and comparative advantage.

- » Project selection will recognise both the technological and yield gap challenges covering crops, soil, water, livestock and value chains.

The livestock subprogram is designed to develop crop–livestock systems capable of providing opportunities for smallholder farmers to meet market requirements and raise awareness of product quality, human nutrition and sustainability imperatives. Livestock management is identified as an important source of farm-level diversification for smallholder farmers 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 second subprogram deals with food security and maize-based farming systems (see also Box 6). It addresses both dietary energy and food quality challenges, and emphasises the following research thrusts:

- » identify evolving socioeconomic, commercial and climatic drivers in selected major maize–legume farming systems with potential/promising business or NGO linkages; diagnose farmer and value-chain constraints to adoption, and the impact of improved technologies in the context of complex systems and multiple livelihoods; test local innovation and learning platforms for accelerated scaling out of new maize and legume varieties and sustainable management technologies
- » develop and test resilient smallholder maize–legume farming technologies based on the principles of conservation agriculture that increase and stabilise crop, land, labour and capital productivity, farm/household livelihoods and income, and system sustainability
- » release nationally improved maize and legume varieties targeted to selected farming systems, supported by regional evaluation of advanced maize lines

Box 6. Food Security through Rural Development initiative

The program on maize-based farming systems aligns with subregional research priorities and forms the basis for partnership with African governments to improve food security.

Based on a joint needs analysis, broader collaborations are being established in Africa to foster development spillovers of germplasm, seed system innovation and improved crop systems management practices. Through outcomes such as promotion of germplasm and crop management by extension agencies, NGOs and agribusinesses in an environment of improved availability of seed, knowledge, credit and markets, the program aims to improve the production of maize by 30% in the target regions of the partner countries and reduce yield variability by a similar extent. ACIAR will be accountable for the program, which will be 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 and private and public sector mechanisms, will support rapid scaling out of improved maize and legume seed and better crop management approaches. They will be supported by on-farm trials, demonstrations and local innovation systems managed by farmers, extension agencies, NGOs, and local fertiliser and seed input and marketing agents. The program will also build the capacity of African researchers through involvement in short-term 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 projects, and on the results of earlier ACIAR-supported projects on crop modelling and best-bet crop technologies in southern Africa.



Professor John Howieson (Murdoch University) inspecting lespedeza pasture in South Africa

- » analyse constraints to intra-regional and Australia–Africa spillovers, and develop coordination mechanisms for enhanced subregional and regional spillover management of germplasm, practices, knowledge and research approaches
- » contribute to building agricultural research capacity in partner countries and subregional organisations, including monitoring and evaluation, scaling out and incorporation of gender in agricultural research.

Research priorities

(Possible new projects commencing in 2010–11 shown as ‘proposed’.)

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

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 Republic of South Africa

LPS/2005/128 (proposed) Developing supply-chain partnerships for the emerging beef sector in South Africa

LPS/2010/010 (proposed) Improving the market competitiveness of small-scale cattle producers in Botswana

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

(refer Box 6)

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

CSE/2009/024 (multilateral) Sustainable intensification of maize–legume cropping systems for food security in eastern and southern Africa (SIMLESA)

CSE/2010/022 (proposed) Improved food security and livelihoods in rural Zimbabwe through sustainable intensification of crop–livestock systems in high and low potential areas

Key performance indicators (2010–11)

- » Effective characterisation of maize–legume cropping systems provided in five eastern and southern African countries
- » Assessment of best-bet conservation agriculture technologies undertaken in exploratory trials in five eastern and southern African countries
- » Working linkages established between the eastern/southern African food security program (supported by ACIAR) and the West African food security program (supported by AusAID)
- » An analysis provided of the South African beef production and market quality and standards requirements for wider application
- » An applied beef production value-chain project designed and operational in Botswana

Key program managers

Dr John Dixon, Cropping Systems and Economics

Dr Paul Fox, Crop Improvement and Management

Dr Simon Hearn, Agricultural Development Policy

Dr Mirko Stauffacher, Land and Water Resources

Dr Gamini Keerthisinghe, Soil Management and Crop Nutrition

