Southern Africa

Financial year	Regional expenditure	Percentage of total bilateral expenditure	Board target as percentage of expenditure
2002–03	$1 219 403	4.6%	5-10% (from 2003–04 <5%)
2001–02	$1 343 916	5.5%	5-10%
2000–01	$1 150 791	4.6%	5-10%

In 2002–03, the Board, in consultation with the Minister, reviewed the expenditure targets for each of the five regions. It was decided to reduce the target range for southern Africa from between five and ten per cent, to less than five per cent with effect from 2003–04. This decision was consistent with the *Statement to Parliament by the Minister on Australia's Development Cooperation Program* in September 2002.

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Active projects in 2002–03	11
Bilateral country expenditure in 2002–03	$1 219 403
Bilateral country expenditure in 2001–02	$1 343 916
Bilateral country expenditure in 2000–01	$1 150 791

Position

ACIAR has been involved in research in Africa since 1983, with around 40 projects completed. IARC projects have in the past carried out activities in a number of central, eastern and western African countries as well as southern Africa. The focus for ACIAR's bilateral program over the last three years has been on southern Africa (Republic of South Africa (RSA), Zimbabwe and Mozambique). New projects are only considered for South Africa, emphasising crop–livestock systems and forestry, with a focus on delivering benefits for previously disadvantaged emerging farmers. ACIAR also requires new International Agricultural Research Centre (IARC) projects to focus on the same countries that are emphasised in the bilateral program.

Achievements

The Newcastle disease project, which developed **heat-stable vaccines against the disease in village chickens,** is being extended by AusAID. The project is now in a major development phase. A study in Zambia and Mozambique, which have been hit by both drought and cattle disease in recent years, found that households with chickens were more able to survive drought and recover the following year than households without chickens. Households with chickens sell or barter poultry and poultry products to pay school or medical expenses, or to buy oil, salt and other essential items not produced on the farm.

In RSA, a comparison of indigenous cattle breeds (including cross-breeds) used by resource-poor farmers, with breeds developed by the commercial sector, found no difference in **performance between the breeds under standardised conditions**. The key finding was that cattle reared by resource-poor farmers meet the specifications of the commercial meat sector. The trial included measurement of growth rates, and carcass and meat quality for 250 steers from Limpopo and North West Provinces. As a result of this trial, the National African Farmers Union has developed a proposal to establish a new feedlot system, based on cattle of resource-poor farmers, which provides ongoing training and regional development to resource-poor communities. Members of the South African Feedlot Association have established buyers in the region to access this previously untapped supply of cattle, creating a valuable income source for poor farmers.

Research is improving nutrient management by smallholder maize growers in Malawi and Zimbabwe. Scientists are now delivering simple

Village poultry keepers are being helped by Newcastle disease vaccines

Eucalyptus grandis – an Australian native tree that is widely used in reforestation in Southern Africa, Asia and Latin America

rules of thumb and decision trees for farmers for use in decisions about where and how to use scare resources in a risky, low rainfall environment. These rules particularly focus on fertiliser, legume, and weeding decisions which interact substantially to determine sound investment strategies. The seasonal climate forecasting project's Zimbabwe component has developed models for pasture growth that can use historical weather records to test grazing strategies (principally herd size) against seasonal climate forecasts. The El Niño Southern Oscillation indicator provides some forecasting capacity ahead of each summer's wet season, with other ocean temperature indices also showing promise for enhancing forecasting capacity.

Increasing nitrogen levels in soils has been the aim of a project improving the sustainability of cropping and livestock systems. The project **introduced legumes in cropping systems**, as both complementary and rotation crops, as an improved protein supplement for dairying and beef production and into pastural grazing to reinforce grazing–crop rotations. Farmers involved in the project have already adopted new practices arising from the knowledge they gained working with project personnel, with wider dissemination of the results now beginning.

Simple test kits to determine **the cyanogenic potential of cassava flour and tubers** have been developed. The kits, usable under primitive field conditions, measure the levels of cyanogens, a form of cyanide found in cassava roots, cassava leaves and cassava flour. Ingestion of any cassava-based foods without prior elimination of cyanogens leads to eventual partial paralysis (called *konzo* in parts of Africa). A further kit has been developed to measure thiocyanate in urine, a direct indicator of the level of cyanide ingestion. These kits have given health authorities in Africa tools for monitoring problem areas before the onset of the irreversible paralysis, allowing remedial measures to be put into place. The project has supplied kits to over 20 African countries, particularly Mozambique, where they are being used in the north of the country.

A rust disease indigenous to Latin America (*Puccinia psidii*) has been found to be very damaging to some eucalypt species grown in South America, raising concerns of the potential consequences should the **disease spread to eucalypts** in southern Africa and Australia. Screening of a wide range of eucalypts and related genera has indicated the species that are most likely to be at risk should the disease spread. A molecular diagnostic test for detecting contamination of plant material with *Puccinia psidii* spores has been developed. *Grevillea robusta* is an Australian tree species widely used throughout Africa for timber, shelter and shade over coffee and other crops. Trials in Africa comparing seed from Australian selected sources of *Grevillea robusta* and the local African seed have shown that the Australian seed produces about 30 per cent more wood volume than the local material. Seed orchards based on the Australia sources are now starting to produce commercial quantities of seed for local distribution.