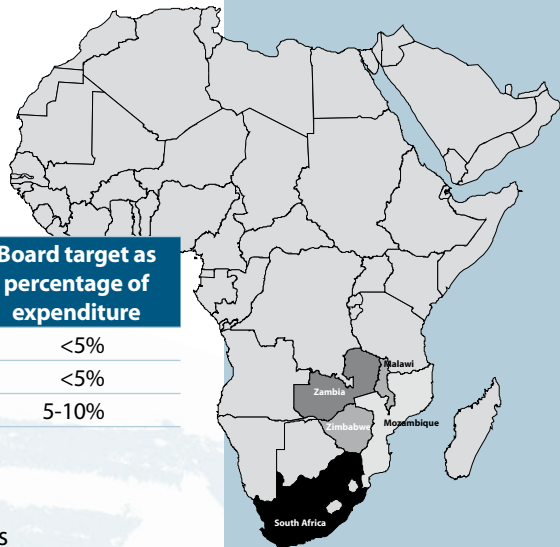


Southern Africa



Financial year	Regional expenditure	Percentage of total bilateral expenditure	Board target as percentage of expenditure
2004-05	\$735,199	2.6	<5%
2003-04	\$745,392	2.9	<5%
2002-03	\$1,219,403	4.6	5-10%

ACIAR's program operating in southern Africa concentrates on the Republic of South Africa. Some projects led by International Agricultural Research Centres in other countries are concluding. For the region, the Board and Minister have set an expenditure target of less than five per cent of our overall bilateral research expenditure.

Page

Southern Africa

72



Southern Africa

Active projects in 2004–05	8
AOP budgeted expenditure in 2004–05	\$780,000
Actual bilateral country expenditure in 2004–05	\$735,199
Bilateral country expenditure in 2003–04	\$611,352
Bilateral country expenditure in 2002–03	\$1,219,403

Key performance indicators	Performance 2004–05
<ul style="list-style-type: none"> Analysis of fertiliser experiments and predictive modelling for smallholder maize production completed and results disseminated 	Ten farmers hosted trials at three sites selected for testing low doses of fertiliser, however erratic rainfall saw only four trials planted at Zebediela, five at GaRampuru and one at Giyani in RSA. Rates of financial return on fertiliser investment at low rates were much more favourable than that at recommended rates.
<ul style="list-style-type: none"> Four farmer groups performing 'mother-baby' trials on crop yield under different soil fertility management approaches established 	Development of strong capacity for modelling smallholder maize production. Recommendation for smallholders to use low inputs. Commercial partners now packaging fertiliser in small lots to accommodate new recommendations.
<ul style="list-style-type: none"> Initial identification of hybrid eucalypts suitable for dry, degraded sites in southern Africa 	Analysis of eucalypt hybrids and lesser-known species for marginal lands completed. Cross-breeding to produce these hybrids conducted, and field trials to evaluate potential will be established in coming year.

Position

The Republic of South Africa is the primary focus of ACIAR's southern Africa program. Bilateral projects focus on emerging farmers, matching areas of complementarity to Australia's research capacity in temperate, subtropical and tropical agricultural environments. ACIAR has been involved in southern Africa since 1983, with many projects led by IARCs. The last of these projects are now concluding in other countries in the region, with new bilateral and IARC-led projects now targeting South Africa.

ACIAR's program emphasises income generation in crop–livestock farming systems and also forestry, to benefit smallholder farmers. The program aims to deliver these benefits to emerging smallholder farmers best able to capture improved technology and positioned to lead in the dissemination of these approaches to previously disadvantaged farmer groups.

Achievements

Improving the use of fertilisers in the dryer areas of South Africa and beyond is the subject of two related projects. Low soil fertility is common in southern Africa, but fertiliser use is very limited. Improved recommendations for fertiliser application, recognising the ability of farmers to purchase only small amounts and matching dose levels accordingly, have been developed for Malawi and Zimbabwe. Two pilot

sites at Chisepo district in Malawi were used to introduce and test farmer participatory approaches. These include low applications of nitrogen and phosphorus fertiliser and integrated maize–legume species crop rotations. Improved yields have resulted and farmers surrounding the trial sites are seeking legumes to plant. NGOs in Malawi and Zimbabwe have organised study visits to trial sites to allow farmer groups to see the benefits first hand. Groups that decided to participate received follow-up visits from project scientists. More than **3000 farmers in northern Malawi's Ekwendeni region are now planting legumes** and applying fertiliser. In South Africa's Limpopo province the associated project is building a similar network of farmer groups and has completed its first year of trials. Manuals on fertiliser and legume use have been distributed. Maize yields in trial sites using very small amounts of fertiliser have reached 920 kg/ha compared to 650kg/ha in control trials. The project is now scaling-up these recommendations. A secondary focus is on **the use of crop simulation modelling of fertiliser inputs** to gauge the suitability of loans to smallholders from the Landbank, a founding member of the Progress Community Development Program. A newly commenced project is addressing the relationship between legumes for cropping systems and their use as forages for livestock. This aims to help severely disadvantaged farmer groups in lands where continued pressures of cropping and grazing are exhausting the soil.

A comparison of indigenous and commercial breeds revealed that no barriers of quality prevent smallholder farmers from selling beef to commercial markets. With project assistance the **profitability in the smallholder cattle sector is continuing to rise** (see box on next page).

An improved **vaccine against the tick-borne disease anaplasmosis in cattle** is a step closer to widespread implementation. Field trials in Zimbabwe have proven to be successful in reducing disease incidence. These trials have also proven that vaccinating against anaplasmosis can be undertaken in conjunction with other tick-borne disease vaccination programs. This should allow development of a more user-friendly approach to vaccination for both cattle owners and field officers. Cryo-preservation methods for freezing vaccines prior to transport have been developed. These maintain the viability of vaccines for up to nine months. Vaccines are now in widespread use in Zimbabwe with no negative reactions reported. In many provinces a significant reduction in the number of clinical cases has been observed.

Eucalypt and acacia species have valuable uses in establishing agroforestry systems in marginalised, degraded land. A **review of eucalypt hybrids and species suitable for such conditions has been finalised for Australia and South Africa**. Clone banks of some of these have been developed and expanded in both countries. Genetic analysis techniques for field and data contexts have been adapted to local conditions and ground-truthing of suitable varieties undertaken. A significant rise in capacity for South African forestry scientists has also resulted from this



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project. A similar project approach has recently commenced to examine Australian acacia species for agroforestry and plantation suitability in degraded lands.

New markets begin to benefit smallholders

For the Magatle, Maboi and Khomele farmer teams the Beef Profits Partnership project has opened doors that were previously closed. Those doors have opened to new beef markets and the key has come through ACIAR-supported research led by the Cooperative Research Centre for the Cattle and Beef Industry.

Prior to the project, beef markets in South Africa were closed to smallholders based on the incorrect assumption that their cattle did not produce meat of appropriate quality. Commercial farmers dominated the market, yet despite the large number of smallholder cattle, South Africa was a net meat importer.

Trials comparing the quality characteristics of smallholder and commercial cattle breeds were conducted. Several parameters regarding growth and quality in 250 steers from three smallholder and three commercial breeds were assessed. Growth rates, feed conversion efficiency (a measure of how well the cattle utilise feed to put on weight), disease incidence and carcass and meat quality were measured for cattle from both sectors. The result—there is no difference between smallholder and commercial cattle in meeting industry specifications.

The Beef Profits Partnership project is now applying these results more widely and teaching previously disadvantaged farmer teams management practices to improve cattle rearing

for better quality meat.

Seventeen farmer teams, including those at Magatle, Maboi and Khomele, are now involved in focused action to test and develop methods to further increase profitability. This information is now available at farmer field days, which have increasingly aimed to attract resource-poor farmers and demonstrate project results.

More than 250 individual farmers are actively participating in project activities each month. This is substantially aiding in increasing the numbers of farmers being resourced and trained in marketing skills, gross margins, weighing cattle and keeping farm records.

Farmers involved in the project sold 581 cattle last year, through project-organised on-farm auction sales or sales where the farmers pre-weighed their cattle and knew in advance the market price for their sale animals. The sale price for these cattle totalled R1,028,620, an average of R2080/head.

Prices for smallholder cattle have not yet reached current market rates but are moving closer to commercial values and have improved considerably since the project began in 2002. As prices continue to rise and the message about improved profitability spreads the likelihood of South Africa being able to provide enough meat to match demand is also rising.