



Securing a goat industry for the Philippines

The development of the goat industry in the Philippines and other countries in South-East Asia has significantly improved the welfare of poor families in the region.

Many government programs focus on goat farming to improve income and livelihoods for farming families, and most of the Philippines' 4 million goats are reared on backyard farms.

There is increasing demand for goat meat, and export potential for meat and other products. Smallholder farmers have an excellent opportunity to boost their incomes.

These farmers were challenged with mortality rates of 60–80% of their herds, usually caused by diarrhoea, parasites or pneumonia and particularly problematic in the wet season and for kids. Parasites further impact on farmers by reducing weight in animals. Annual losses had been estimated at US\$3.55 million due to roundworm alone.

Chemical de-worming is simple and effective but not widely used, possibly because it is expensive. Also the increasing problem of parasites developing drug-resistance to some chemical groups limits their effectiveness.



Research and extension has helped reduce the mortality rate of kids from 67% to less than 3%.

The response from ACIAR

ACIAR has played a significant role in reducing mortality and morbidity rates in goats in the Philippines, and in helping farmers boost their production levels and family incomes.

In 1996 the Centre supported a workshop on sustainable parasite control in Indonesia, which identified small ruminants as a high-priority livestock product for smallholder farmers in South and South-East Asia.

The International Livestock Research Institute (ILRI), and Philippine Council for Agriculture, Forestry and Natural Resources Research (PCARRD) then supported ACIAR in funding a project into developing sustainable endoparasite control for small ruminants in South-East Asia.

The project started in 1998 and involved research organisations in Indonesia, the Philippines and Australia. It was coordinated by ILRI and PCARRD. Other projects were subsequently funded by International Fund for Agricultural Development (IFAD), ILRI and PCARRD. PCARRD and the Department of Agriculture have continued to fund research and extension related to goats, notably through the Farmers Livestock Schools.

The ACIAR-supported project sought to develop and test sustainable endoparasite control strategies, to develop ways to better identify parasite-resistant genes, and to assess the extent of chemical-resistant parasites in sheep and goats. The project identified and developed a package of management technologies including:

- confinement of goats during periods of maximum parasite activity
- changes to feed and nutrition
- strategic use of anthelmintic drugs
- selective breeding.

Sharing new knowledge and skills

IFAD established a sister project in 2000 to develop and test an integrated approach to the control of parasites. The project encouraged farmers to choose and evaluate technologies from the ACIAR project. Together, the IFAD and ACIAR projects aimed to alleviate poverty by increasing productivity through integrated control of parasites.

Summary of benefits and costs of ACIAR project (AS1/1997/133)

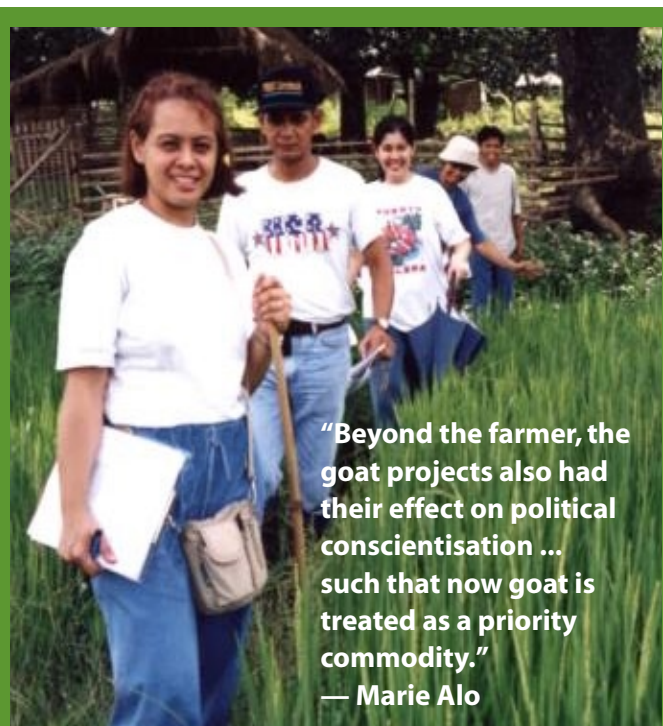
Item	Total project funding	ACIAR funding
Total costs (A\$m)	6.99	0.5
Total benefits (A\$m)	72.54	5.3
Net benefits (A\$m)	65.55	4.8
Benefit:cost ratio	10.4:1	10.4:1
Internal rate of return (%)	24.7	24.7

ACIAR

The Australian Centre for International Agricultural Research (ACIAR) operates as part of Australia's development assistance program, with a mission to achieve more productive and sustainable agriculture for the benefit of developing countries and Australia. ACIAR commissions collaborative research between Australian and developing-country researchers. It also administers Australia's contribution to the International Agricultural Research Centres. ACIAR conducts a program of independent impact assessments of the research it funds.

Assessing the impacts

In 2007, ACIAR and PCARRD commissioned an assessment into the impact of research into management strategies that reduced morbidity and mortality in goats in the Philippines. It covered research funded by ACIAR, IFAD, ILRI, PCARRD and the Department of Agriculture. As ACIAR was not the only agency supporting research it is difficult to attribute the welfare gains from the body of research and extension undertaken. The approach was to assess the returns to total investment and assume each agency earned the same average rate of return over the whole investment. As such, the benefits are attributed to each organisation according to their relative expenditure on the research.



“Beyond the farmer, the goat projects also had their effect on political conscientisation ... such that now goat is treated as a priority commodity.”
— Marie Alo

PCARRD senior science research specialist Marie Alo was country coordinator of the IFAD sister project that developed and tested the ACIAR-funded project's technologies with farmers.

“Once properly greased, technology testing by other users rolled like a wheel, ultimately relinquishing the need for researchers, as farmers themselves become scientists in their own right,” she said.

“As the technologies spread through word of mouth and trainings, different communities and institutions were likewise empowered. This contributed a lot to the development of the local goat industry.”

Lasting impacts

The major impact of the research and extension has been an enormous reduction in the mortality of kids from 67% to less than 3%.

This has led to a significant reduction in the unit cost of producing goat meat (10PHP/kg or 13%) and a steady increase in the adoption of the technology (almost 30% in Regions 1 and 7). Other impacts include:

- increase in average herd size from 8 to 26
- morbidity fell from 50% to 6%
- odour and fly numbers reduced
- net average income from goat production rose from A\$77 to \$170
- improvements in social competence, including farmer-to-farmer activities.

The introduction of superior goat breeds also increased live weight at market age, increasing production and revenue.

Considering the production cost reduction, the annual potential welfare gain (to the Philippines from adoption of the parasite control technologies by goat producers in Regions 1 and 7) was A\$5 million in 2007 values, with 83% of the benefits accruing to goat producers.

The impact assessment used a baseline scenario projected until 2030 to predict that the net benefits to the Philippines, in present value terms, amount to A\$66 million. This represents a return of over \$10 on every \$1 invested and an internal rate of return of almost 25%.

With increased adoption through continuing investment by PCARRD, DA and local government units, the impacts of this research will be seen for decades to come.

The full report

Management of internal parasites in goats in the Philippines (IAS No. 57) by N.D. Montes, N.R. Zapata Jr, A.M.P. Alo and J.D. Mullen from the Impact Assessment Series can be downloaded for free from www.aciar.gov.au/publication/term/25

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ACIAR's Impact Assessment Series

At ACIAR, we undertake careful analysis of R&D investments to assess our projects' effectiveness and quantify impacts. This information informs stakeholders and helps us to continuously improve. ACIAR has been commissioning independent impact assessments for many years.

- Impact assessment analysis of 90 ACIAR projects up to 2004 demonstrated total benefits of A\$6.6 billion.
- Benefit:cost ratio is \$30 for each \$1 invested.