Economic and social benefits of new forage technologies in Mindanao, Philippines and Tuyen Quang, Vietnam.

R. H. Bosma, R. L. Roothaert, P. Asis, J. Saguinhon, L.H. Binh, and V.H. Yen

Centro Internacional de Agricultura Tropical (CIAT)
in collaboration with
Cagayan de Oro City Veterinary Office
Malitbog Municipal Agricultural Office
National institute of Animal Husbandry, Hanoi
Tuyen Quang Province Department of Agriculture and Rural Development

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Summary

This study assesses the impact of the Forages for Smallholders Project (FSP) in the Philippines and Vietnam from 1995 to 2002. FSP was convened by Centro Internacional de Agricultura Tropical (CIAT), and implemented by national partners in several countries in southeast Asia. The use of participatory processes in FSP resulted in the widespread adoption of improved forage and pasture technologies. This report looks at the financial and social benefits of the improved forage systems developed at two project sites: Mindanao, southern Philippines; and Tuyen Quang province, northern Vietnam. Participatory evaluation tools together with conventional survey techniques were used to collect data from a total of 124 households. Both social and economic parameters were used to compare the livestock production systems of early and recent forage adopters. The difference in the financial status of the two groups was attributed to the prolonged use of forages. The evaluation and comparison of income per labour day in the various systems made accurate assessments possible. Results were stratified by wealth categories and other important cultural factors. Meetings to validate results and record farmer feedback along with farmer training sessions were conducted toward the end of the study.

Livelihood at all sites consisted of a variety of crops, a variety of animals and several sources of off-farm income. Fish production was only practiced in Vietnam. Farm size ranged from 1.1 hectares in Vietnam to 4.5 hectares in the Philippines. The average number of large ruminants per farm was 0.8 in Vietnam and 4.2 in the Philippines. Livestock activities comprised 10% of the total livelihood for recent adopters, 20% for early adopters, and 30% for dairy cattle farmers in the Philippines. Farmers in the Philippines owning large livestock made 25% of their livelihood from livestock, whereas farmers with just small livestock made only 15%. In Vietnam, the contribution of livestock to livelihood was stratified by wealth class and ranged from 39% in the poorest group to 32% in the wealthiest.

In the Philippines, improved forage species increased animal production, improved soil conservation and saved farmers time. Net yearly income per household from animal production increased from[1] $54 to $157 in the farming community at Malitbog, and from $68 to $503 in Cagayan de Oro. The average net income from animal production increased from $0.44 to $1.06 per day of labour in Malitbog, and from $0.40 to $1.34 in Cagayan de Oro. Planting forages in contour lines increased crop production slightly and contributed another $22.50 to yearly income. The reduction in labour requirements allowed households to make $36 per year from other activities. The drop in labour time enabled households with low labour and land availability to acquire animals, and other more lucrative farmers to increase their herd size or extend their crop activities.

The introduction of new forages had a gender effect in the Philippines: the involvement of women and children in tasks like herding and cutting diminished, and men were responsible for more livestock tasks. A large increase in the number of animals owned by early adopters resulted in the need for greater labour input. This created labour in rural areas and reduced labour migration by young people. The introduction of cutting and carrying reduced the destruction of crops by grazing animals and affected social life in villages where herding was previously conducted on communal rangelands.

In Vietnam, improved forage systems also had a pronounced effect on income levels and welfare. Net income from ruminant-fish production systems increased from $99 to $199 per year. Converted to net income per day of labour spent in the systems, the rates increased from $0.33 to $1.13 for the ruminant system and from $ 0.80 to 2.33 for the fish system. Saved time also allowed households to increase their income from other, mainly agricultural, activities. This contributed to an additional yearly income of $52 per household. Overall, the financial situation improved due to increased income from investments in tree crops, but the percentage contribution

[1] All $ = US dollars

of livestock to total livelihood actually decreased. Forages increased net income per household from pig production, but not the return from labour.

Positive gender effects were more significant in Vietnam. Women and children benefited most from the reduction in time spent cutting, carrying and herding. They used this extra time for educational and cultural activities. Poorer farmers who depended more on livestock due to small land area, benefited most from the improved forages. Improved forages allowed them to keep large ruminants—increasing their income from livestock— and intensify their production systems. Other positive effects on rural development included a reduction in the number of farming conflicts, rehabilitation of barren land and reduced use of pesticides.

The adoption of new forage was highly dependent upon the livestock dispersal and credit programs in Mindanao, affecting further adoption and scaling-out negatively in one municipality. In Tuyen Quang province, the scaling-out of improved forage technologies was not influenced by livestock distribution schemes. The many advantages and favourable socio-economic conditions associated with the adoption of *Panicum maximum* systems, enhanced an autonomous farmer-to-farmer process of scaling-out. However, the introduction of other species and accessions still needs a structured extension system.

Several recommendations are made on the basis of this study. All farmers cultivating forages need training on ruminant nutrition and the importance of consistent feeding practices. The causes of high mortality in goat kids requires more research. Further study is needed to produce more accurate girth–liveweight tables for local livestock species. The traditional *alima* system, whereby animals are given in trust, is an obstacle to equal income distribution and ought be revised to increase the share of benefits going to caretakers. People without long term rights to land use could not profit from forage systems: there is an urgent need to provide land rights to the landless. The project should work with farmers owning small livestock, as an alternative to working with farmers who receive large livestock through dispersal and credit schemes. There is scope for better market orientation for smallholder livestock producers, particularly in the Philippines.

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