

Developing forage systems with smallholder farmers in Malitbog, Bukidnon, Philippines

Willie Nacalaban¹

The development of viable forage systems is needed to sustain ruminant production in Malitbog. This can only be achieved by making improved forage species available to smallholder farmers and working with them to integrate these forages into the existing farming system. From the farmers' perspective, their limited landholdings have to be intensively developed for crop production while animal production is usually regarded as a by-product which is less important. In the past little effort was made to integrate improved forage species because of lack of access to planting materials and the perception that livestock has less commercial value than crops. This situation is likely to change as policymakers realise the negative influence of increased beef imports on the domestic economy.

As land becomes more and more limiting, the potential for integrating ruminants with cash crops will have to be explored. Successful exploitation of these resources requires that suitable forage species and management strategies are developed. This case study describes how farmers established and evaluated different forage options to select a range of forages suited to their situations in Malitbog.

Forage establishment options

Rows of forages in crops

Where time, labour, and capital are substantially limited, smallholders were able to integrate forage species with a standing corn crop. After the hilling-up operations, species, which were erect and perceived as shade-tolerant, were planted in between the corn furrows. Farmers who grew forages this way said that it is practical and economical. The system, they added, can provide them with food and their animals with feed in just one cycle of land preparation. In some sites, a number of farmers were able to establish five or more different grass and legume varieties.

To ensure food availability, vegetables such as okra and eggplant, were incorporated in between rows of cut-and-carry forages. Farmers expected competition between lines of Napier, *Panicum maximum*, *Setaria sphacelata* and *Andropogon gayanus* and the food crops. Thus, they applied manure to fertilise food and forage crops to minimize this competition.

Almost all farmers involved in the project have expanded their forage area with cut-and-carry species grown in rows. Forage grasses and tree legumes were planted separately in rows adjoining each other or alternately in 10 m rows. One farmer said that due to area limitation and personal preferences, cut-and-carry species were wanted more than grazing species. Between the cut-and-carry rows farmers can still grow crops such as vegetables.

Plots

Several farmers involved in the FSP planted cut-and-carry species in separate plots. Each farmer has 4 - 5 plots. These forage species were planted along or under banana and coconut trees and also in open areas. The farmers grew the various species to

¹ Municipal Agriculture Office, Malitbog, Bukidnon, Philippines.

establish their yield performance and ability to survive. *Arachis pintoii*, *Stylosanthes guianensis* and *Centrosema pubescens* may also be noticed as intercrops in some cases.

Arachis pintoii was also planted in blocks, usually in front of the farmer s' house as an ornamental and soil cover. Growing forages in this way not only makes the surroundings clean but also provides a feeding ground for ducks which relish on the protein-rich flowers and leaves. As a result of this better nutrition, egg production doubled.

Hedgerows

To arrest soil erosion, which is a major agricultural problem in the community, farmers planted Napier as hedgerows. To get more yield, better quality feeds, and reduce surface runoff, *Calliandra calothyrsus*, *Gliricidia sepium* and *Leucaena leucocephala* (K636) were grown as newly established hedgerows.

Participatory diagnosis identified problems of soil erosion, low income, and inadequate livestock feed. Instituting an option such as planting forages in hedgerows has positive consequences in terms of reduced water run off. Though the aim of farmers in the earlier stage of FSP is to assure a plentiful supply of livestock feed (almost all have established forages in blocks or home gardens for feed availability) efforts to establish hedgerows still continue after farmers realize its importance in the long run.

Conclusions

The participatory process proved to be crucial in finding solutions to major problems in the farming systems. One farmer commented that although the participatory process itself is new to them, the whole system itself is understandable. The information given helps them to make decisions on forage development objectively. The farmers added that the farmer participatory approach faces problems and needs squarely. It also encourages positive outlook and advocacy toward a self-reliant farming community.