The FSP in Malaysia – Where does it fit and what can it achieve?

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Introduction

The Malaysian Agricultural Research and Development Institute (MARDI) is the implementing agency of the Forages for Smallholders Project (FSP) in Malaysia. The overall objective is to increase the availability of adapted forages and the capacity to deliver them to smallholder farming systems, in particular, to agroforestry and other upland systems in Southeast Asia.

The four specific objectives are to:

1. Identify forages for different ecoregions in agroforestry, upland cropping, and plantation systems.
2. Integrate forages into these different farming systems through participatory research and development (R&D).
3. Increase the capability of national staff through training.
4. Improve the effectiveness of regional R & D activities through networking.

The specific terms of reference give MARDI the mandate to support the FSP by assigning one staff member of MARDI as the Malaysian coordinator (part-time) for the FSP project, providing reports of the progress of collaboration, and expediting project activities in Malaysia.

The FSP agreed to provide training in participatory R & D methods for two scientists from Malaysia, send one collaborator from Malaysia to attend annual project meetings and a regional conference at the conclusion of the project, and support the publication of a regional newsletter to foster linkages between forage R & D workers in Southeast Asia.

The role of FSP in Malaysian Forage R & D

Based on the terms of reference, the FSP provided adequate opportunities for its Malaysian partners to attend meetings and training courses. We have learned a lot from our involvement in the FSP (on areas such as germplasm supply, seed supply, training in participatory research, and training in forage agronomy and seed production), and we were able to share our experiences and technologies with colleagues from other Southeast Asian nations, particularly on the forage technologies we have developed for plantation systems.

However, our contribution to the project could have been greater had Malaysia been included as full partner and recipient of assistance in the overall program. The demand for forages and forage R & D in Malaysia is continuing. There are frequent requests for better forages for exotic animal species, such as deer and ostrich. There is interest in creeping grasses that can persist in mango plantations to allow integration with ostrich. In this case, we have little to offer that can be established from seed apart from the *Brachiaria* species. We also receive requests for shade-tolerant grasses and legumes, but only a few productive species are available for commercialisation. Creeping grasses

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are also popular for soil erosion control on hill slopes, for terracing and for turfing. These and many other possible uses of grasses and tropical legumes have not been adequately exploited in Malaysia. In this regard, FSP can do more than limit its mandate on participatory research and development.

Possible future role of FSP in Malaysia

The FSP could assist in forming the national livestock policy of Malaysia. The agricultural sector is still an important contributor to the national economy, both as a producer of export-oriented commodities and as a supplier of food and resources to the food-based industries. The livestock and livestock product industry was the fastest growing industry in the agricultural sector during the period of the Sixth Malaysian Plan. In 1995, the ex-farm value of the livestock production sub-sector was estimated at RM 4.2 billion and has registered an average growth rate of 7 % per annum since 1990. The poultry and swine industries continue to be major contributors, with poultry contributing 69% and swine 26% of the total ex-farm value. The balance of 5% total ex-farm value is contributed mainly by beef, mutton, and dairy. To further develop agriculture, the Seventh Malaysian Plan outlined the following policies:

1. Encourage greater participation of the private sector in agriculture on a large-scale basis, particularly in the production of food commodities and high-value produce, with the government providing the required support services.
2. Reorient production methods to improve competitiveness in the context of a more liberal market environment.
3. Consolidate the areas planted to rubber, oil palm, and cocoa with the end in view of reorienting production to meet the needs of the local agro-based industry.
4. Integrate and maximize agriculture and forestry land use.
5. Use modern technology.
6. Motivate plantation companies to explore new activities, particularly food production which has high value and can be produced on a large scale.

Modernization in livestock production means a deviation from current practices toward mechanization and increasing livestock density per unit area. We need to adopt a scientific and progressive R & D approach to achieve these objectives.

The more recent livestock production systems in Malaysia involved plantation-livestock integration, crop-livestock integration, and intensive feed lots. These systems of production have contributed to an increase in beef production from 12,200 t in 1990 to 15,600 t in 1995. Several plantation companies are actively involved in livestock production — cattle and sheep are reared in plantations to maximize land utilization and promote more sustainable farming. The feedlot system is widely adopted among commercial farmers. However, most of the raw materials and ingredients for feed production are still being imported. Private sector involvement in livestock production is being encouraged and the privatisation of livestock farms and abattoirs in the public sector is continuing.

To provide and promote livestock production as an attractive medium for long-term investment, the livestock production sub-sector will be developed into an efficient business enterprise, capable of providing enough supply for domestic and export markets and overcoming pollution and environmental problems. In the short term, there are proposals to designate specific zones for livestock production and ensure more effective implementation of regulations and standards, and promote large-scale cattle and sheep integration under plantation crops.

Based on this new agricultural policy, there is scope for forage development to serve the needs of the livestock industry. The following aspects need attention:

1. Forages (including fodder shrubs or leguminous trees) with high nutritive value need to be identified for cattle, sheep, deer, ostrich, and equine enterprises.
2. New forage ecotypes which are adapted to acidic soils, need to be tested in agronomic trials; forage species must be evaluated as conserved fodders in animal feeding trials.
3. Planting materials derived from selected germplasm of the genera *Brachiaria*, *Stylosanthes* and *Arachis* need to be made available to livestock producers. The species provided should match the ecological niches of the different production systems.
4. Many research activities on forages were done in the past. There is enough information compiled to develop a tropical forage database. The data could be used to develop systems and simulation models. At present, we tend to repeat work done elsewhere under similar conditions. A database for use in computing and simulation studies would save a lot of time and money.
5. There is a need to develop efficient seed production technology to meet domestic requirements.
6. Better cover crop legumes must be identified for the plantation environment. Little has been done to screen new materials for such environments.

Conclusions

Under the terms and conditions of the MOU with Malaysia, the achievements and progress of the project have been satisfactory. However, much more could be achieved with greater cooperation between MARDI and the FSP. By definition, the FSP focus on smallholders has actually marginalized Malaysia's forage needs. The FSP is promoting participatory research and development and is applying the concept of 'participation' in planning its activities.

However, the FSP must recognise the uniqueness of each of its member country and it should try to help meet their diversified needs. The scope of the FSP can be broadened to include a variety of R & D activities that focus on the specific needs of the feed resource in each country and region. In this way, a stronger linkage between member countries could be fostered in the longer term.