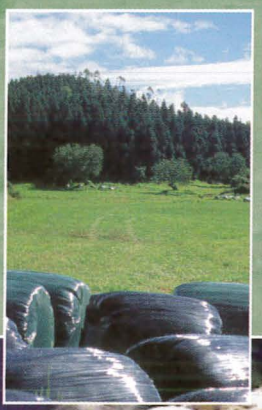
Actes du Séminaire Inra-Cirad

et

Journées préparatoires au Colloque régional

Coordonnateur : **Patrice GRIMAUD**



Les outils d'aide à la gestion des fourrages

13 - 17 mai 2002
Pôle Elevage du Cirad à la Réunion

Comité organisateur : **M. DURU, P. GRIMAUD, H. GUERIN, P. LECOMTE, P. THOMAS**

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Farming systems research in KwaZulu-Natal

Hannes de Villiers
KwaZulu-Natal Department of Agriculture and Environmental Affairs
P/Bag X9059, Pietermaritzburg 3200, South Africa

Introduction

The mission of the Farming Systems Research (FSR) Section in the Directorate: Technology Development and Training is to work in close co-operation with extension to develop and understand the small-scale farming household and the environment in which it operates, to identify the agricultural constraints faced and to research potential solutions which can be implemented within the existing socio-economic environment, to increase the overall productivity of small-scale farmers by improving food security and farm income without reducing the potential of the land for future generations.

The FSR Section is using a multi-disciplinary, demand-driven and on-farm, community-based agricultural research and development approach. This approach has the potential to provide solutions under actual on-farm conditions and is effective because it is based on the farmer's own needs. The significance of this approach is the opportunity of strengthening linkages between the research and extension services. FSR have also strong links with commodity researchers (on-station-based researchers), staff at the University of Natal and other role-players in the agricultural sector, such as NGOs operating in KwaZulu-Natal.

The outputs of the FSR Section can be summarized as follows: (i) Diagnostic surveys and identification of farming systems practised by small-scale farmers throughout the Province and accompanying constraints, (ii) Development of improvements to existing farming systems through community-based agricultural research and development, (iii) Technology transfer and (iv) Development of staff expertise.

Agricultural constraints identified in communities

The agricultural constraints identified through formal and non-formal surveys show a wide range of problems experiencing by small-scale farmers in rural communal areas of KwaZulu-Natal (Table 1).

Results from a subsequent verification survey conducted among 50 farmers two years after the initial diagnostic survey in one of the communities showed that the mean field size at the homesteads is 0.142 ha (varying from 0.01 to 0.53 ha). Maize yields were measured on approximately 41 fields and the data show that 41.5% of small-scale farmers obtained maize yields ranging from 0 to 0.5 t/ha, and only 2.4% obtained yields higher than 2 t/ha. The farmer-researcher-extension team are addressing some of the constraints through on-farm research, and farmer-managed trials and demonstrations to improve both crop and livestock production.

Table 1 **Agricultural constraints identified by people interviewed in rural communal communities of KwaZulu-Natal (not in order of priority)**

Livestock	*Crops*	Vegetables
Redwater	*Low yields*	Lack of knowledge
Ticks - infrequent dipping of cattle	*Weeds*	Low yields
Stock theft	*Cattle & goats getting into fields*	Tillering of cabbages
Winter shortage of feed - cattle thin	*Cutworms, stalkborer*	Blight in tomatoes
Mastitis	*Inadequate management skills*	
Goats do not get fat	*Inadequate storage of grain (rats)*	
Owners do not take responsibility for their grazing cattle, or for where cattle graze - often on crop fields	*Unsatisfactory quality of crops*	
Newcastle disease	*Lack of technical knowledge*	
Calf mortalities	***Potatoes***	
	Need advice from extension services	
Long inter-calving period in cattle	*Moles destroy crops*	

Research interventions

The following actions are being taken in communities, in the communal fields, community gardens and communal grazing areas to improve crop and livestock production, as well as food security:

- Studying the current usage of draught animal power and to identify constraints - to identify extension and research needs ;
- Studying the community garden practices in Nkwezela to identify specific constraints experienced by garden members ;
- Studying crop production practices used by small-scale farmers in the Nkwezela community ;
- Market survey in Obonjaneni area to determine possible markets for vegetables grown in the community garden ;
- Socio-Cultural analysis and economic evaluation of community gardens in KwaZulu-Natal: A case study in two Extension Districts ;
- Cultivar trials (including the farmers' own seed) in farmers' fields with the aim to improve maize and dry bean production ;
- The effect of correct lime and fertilizer application, as well as weed and pest control in the communal fields and community gardens - also farmer-managed trials.