Participatory research on multipurpose forages in Central American hillsides

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Background

Multipurpose forage based technologies can play an important role in improving the environmental and socio-economic sustainability of smallholder production systems in developing countries.

Farmer adoption of particularly legumes has been low. One explanation is that too much emphasis has been placed on supply-driven research with little participation of farmers.

Participatory procedures

Farmers' involvement in the research and dissemination process is expected to lead to the development of appropriate technologies and increase farmers' ownership.

In this study participatory procedures are being developed with farmers under diverse bio-physical and socio-economic conditions (Figure 1).

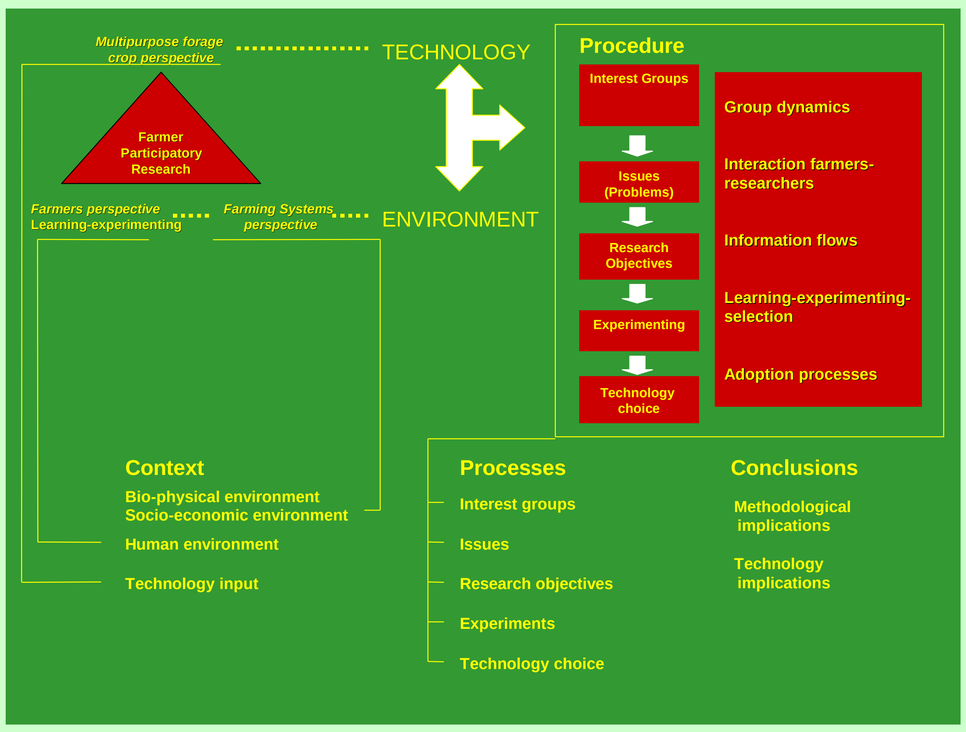

Figure 1. Research concept

The research is embedded in the BMZ/gtz supported project "Participatory selection and strategic use of multipurpose forage germplasm in Central American hillsides" implemented by CIAT.

In more than 15 communities in the department of Yoro, central Honduras, farmer-led experiments have been conducted with different types of grasses, leguminous cover crops and shrub legumes in three agro-ecological zones at different altitudes (Figure 2).

Figure 2. Farmer research groups discussing and establishing experiments

Farmers' objectives

Food security is the main concern of a large proportion of the population. Therefore food production and soil fertility improvement are equally important research objectives of farmer experimentation as production of animal feed. Seed production for own use or marketing is often mentioned as an additional objective (Table 1, Figure 3).

	Individual individual farmers on individual fields	**Semi-collective** part of the work done as a group, but on individual farmers' fields	**Collective** all activities carried out together on fields allocated to the group
lower altitude (< 800 m)	Adaptation trial with *Brachiaria brizantha* 26110 "Toledo" for grazing and seed production	none	Comparison trial of different cowpea varieties by youth CIALs as food crop (green pods, grains) and green manure
medium altitude (800-1200 m)	Comparison trial of different covercrops (Lablab, Canavalia, Cowpea) as green manure	Adaptation trial of *Cratylia argentea* to improve soil fertility	Comparison trial of *Brachiaria brizantha* 26110 "Toledo" with *Andropogon gayanus* for grazing and seed production
higher altitude (> 1200 m)	Comparison trial of *Canavalia brasilensis* with *Canavalia ensiformis* as a green manure	Comparison trial of *Cratylia argentea* with *Calliandra calothyrsus* for animal feed and firewood	Comparison trial of different Lablab varieties for food production and as a green manure

Table 1. Some typical examples of experiments and modalities at different altitudes

Figure 3. Multipurpose forages in use – Farmers evaluating *Brachiaria brizantha* "Toledo" for animal feed and seed production (left), different Cowpea varieties (*Vigna unguiculata)* for food, green manure and animal feed (right)

Initial findings and conclusions

- Multipurpose forages offering different options (both short-term and long-term) motivate farmers to become involved in participatory research processes.
- Methodological insights about the process of participatory research on multipurpose forage based technologies have been obtained.
- A range of promising multipurpose forages for small farmers has been identified.
- Feedback is refining on-station research to develop forages suitable to smallholder systems.

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