

## **The role of social and biological research in the Market Oriented Smallholder Dairy project at ILRI**

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Market oriented smallholder dairying is targeted as a system in which innovation and change is driven primarily by availability of input and output markets. However, as in the majority of livestock systems, income generation may not be the only objectives for keeping dairy cattle, which serve other purposes such as capital accumulation, insurance and manure provision. Technology focused research addressing productivity without consideration of the multiple roles of dairy animals has a high potential for failure. This paper describes initiatives to incorporate social research in the Market Oriented Smallholder Dairy project (MOSD) at ILRI and discusses how the research could be improved.

Within ILRI 20% of scientists are economists, some of whom consider themselves as social scientists, and one human geographer. Although economists use mainly conventional quantitative techniques, some initiatives have sought non-traditional approaches to understanding farmer perceptions, behaviour and valuation. For example, two MOSD students are using conjoint and discrete choice analysis to evaluate the non-market vs social values of cattle to identify why uptake of crossbred dairy animals is limited in areas where the market and agro-ecological conditions suggest dairy would be a profitable enterprise. These techniques have already been used in the institute to evaluate farmers' perceptions of animal health services. Nevertheless the methods remain quantitative.

Biological scientists in MOSD, together with national partners in research and extension, have also been seeking to incorporate social research techniques into their studies through implementation of participatory technology development as well as the more commonly used participatory appraisal. Technologies for farmers and market agents, validated under controlled on-station conditions have or are being tested under field conditions using mainly approaches classified as collaborative by Biggs (1989). Incorporation of participatory approaches is seen as important to permit the social context to influence outcomes as farmers control design and adaptation. The paper describes a number of examples of these initiatives including concentrate-feeding strategies and introduction of novel planted fodders. A common approach is that farmers are provided with information and advice, but choose how and where to test the materials or strategies themselves. Monitoring methods allow farmer adaptation and perceptions to contribute to modification of recommendations and identification of factors favouring adoption. Establishment of relationships between quantitative household data and GIS layers by the MOSD geographer has led to development of recommendation domain maps for particular technologies. Information gathered during field validation will be used to refine these maps and improve targeting.

Participatory approaches are also being used in an initiative to adapt the farmer field school methodology to disseminate animal production and health information in smallholder dairy systems. The aim of the FFS is to build the farmers' capacity to analyse their production systems in order to identify their main constraints, to test possible solutions, eventually identifying and adopting the practices most suitable to meeting farm household objectives. The FFS project is a particular example where biological scientists are applying social science methodologies to improve dissemination and adoption of biological science products.

As a result of increasing recognition that successful adoption of technologies depends on non-biological or economic factors, integration of biological and social research becomes increasingly important to achieve impact at the field level. Although technical scientists can, with the right attitude, apply many social techniques greater involvement of social researchers would institutionalize structured methodological approaches to complement those already used. Multidisciplinary studies combining biological and social aspects should be seen as crucial and independent studies avoided.