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► To cite this version:

Jean Philippe Choisis, Jonathan Vayssières, Philippe Lecomte. Research & Development initiatives designed to promote interactions between researchers and stakeholders. 8th European International Farming Systems Association (IFSA) Symposium, Jul 2008, Clermont-Ferrand, France. pp. 943-945. hal-01436497

HAL Id: hal-01436497

<https://hal.science/hal-01436497v1>

Submitted on 16 Jan 2017

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To cite this version : Choisis, Jean Philippe and Vayssières, Jonathan and Lecomte, Philippe *Research & Development initiatives designed to promote interactions between researchers and stakeholders*. (2008) In: 8th European International Farming Systems Association (IFSA) Symposium, 6 July 2008 - 10 July 2008 (Clermont-Ferrand, France).

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Research & Development initiatives designed to promote interactions between researchers and stakeholders

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Abstract: In this article, we assess the participatory experiences of a CIRAD research group created more than 20 years ago to provide support for a rural development plan for cattle farming in the highlands of Reunion Island. On the basis of an analysis of various Research & Development (R&D) projects, we evaluate the benefits and difficulties of a “Bottom-Up” approach. Four types of stakeholders have been systematically involved in these R&D projects. They all participate in the various steps of the innovation process. Although participatory approaches can be seen as time-consuming and involving a risk of dispersion from the researcher’s point of view, they lead to radical changes in the respective roles of the various stakeholders involved, beneficial for both the effective production and dissemination of innovative measures.

Keywords: Participatory action research, on-farm research, decision support system, cattle farming, Reunion Island

Introduction

More than twenty years ago, CIRAD (French Agricultural Research Centre for International Development) set up a field research group to assist with the development of the animal production sector in Reunion Island (a French department in the Indian Ocean). The main objective was to assist with the rural development plan for cattle farming in the highlands. Due to this objective and the fact that the regional authorities funded most of the research group’s activities, research projects were focused on the local need for applied results. Over the years, the research group was deeply involved in participatory research and thus developed expertise in its management. In this article, we show that an R&D approach emphasizing the important role of exchanges between researchers, farmers and their advisors leads to the emergence and dissemination of adapted innovations in rural communities. With this in mind, we analyse different projects addressing various research areas (see Table 1). The variety in the experimental designs and research practices adopted by researchers provided the material for a common assessment, within the research group, of the best research approach to adopt and its consequences for project management.

Stakeholder involvement in participatory approaches

The ‘Livestock Farming’ research group carried out various projects in response to the needs expressed by its partners (Table 1). Regardless of the themes implemented, four types of stakeholders were involved: researchers, farmers, their technical advisory organisations (with very active participation of the advisers) and regional fund providers. In the absence of an experimental farm, all research was carried out on commercial farms.

Table 1. Main themes addressed by the research group

Research themes	Farmers concerned
Forage resource management and improvement of animal performances	Suckler and dairy farmers
Study of infertility risk factors	Dairy farmers
Feeding, pathology and milk quality	Dairy farmers
Modelling of technical and economical functioning of livestock farms	Suckler and dairy farmers

All of the research projects begin by making a participative assessment between all of the partners. The objective of this phase is to assess the precise research issue to be addressed to promote livestock farming development and to reach a consensus on the basis of this assessment in terms of concrete project orientations to be adopted. This phase contributes to the participation of all of the

stakeholders concerned (especially advisers) as of the initial phase of the project (Table 2). Stakeholders are not only the target of the disseminated results (the final stage), but contribute to various phases of the project, depending on the case. This allows them to have a direct impact on the methodological choices and even on the type of innovations generated. Creativity is therefore no longer regarded as being the sole property of researchers. For example, the GAMEDE model (a whole dairy farm model) was co-designed with six farmers. They were consulted twice a month on an individual basis and every three months on a collective basis for three years. The farmers' influence was reflected in the modelling methodology and in the nature of the model (Vayssières *et al.*, 2007).

Table 2. Stakeholders' participation in two innovation processes

Innovation	Phases				
	Assessment	Definition of research aims and questions	Innovation design	Formalisation of results	Dissemination of results
Indicators for pasture management (1992-1996)	R, A	R, A, P	R, A, (F)	R, A	A, P
GAMEDE: a whole farm model (2003-2007)	R, A	R, A, P	R, F, (A)	R, F, A, P	F, A, R

F: farmers, A: advisers, R: researchers, P: fund providers; Stakeholders are listed by order of importance.

Benefits of stakeholder participation

First of all, participation allows researchers to develop an increased awareness of the actual needs of their partners, thus reducing the well-known problems of "translation" between Research and Development. Questions arising from research are therefore often better accepted, since all of the stakeholders can express their point of view and, above all, new relevant questions can emerge.

In fine, the participation of farmers and advisers facilitates the relevance and dissemination of innovations, *e.g.*, new indicators for pasture management (Blanfort *et al.*, in press). In such an approach, appropriation of research results no longer appears as a transfer of turnkey knowledge but as cooperation between researchers and professional stakeholders for both the co-construction of knowledge and its dissemination. Moreover, the research group partners declare themselves satisfied with the way their points of view are taken into account. This then results in the increased confidence of fund providers in the effectiveness of the final outcome of research projects.

Difficulties encountered during participatory research

Participatory research also generates difficulties. One of the main difficulties results from the high cost of researchers. As other researchers have already observed, participation is time-consuming and leads to tensions due to the short-term expectations of the other stakeholders and the long periods of time often required to do research (Carberry *et al.*, 2002). Furthermore, there is a high risk of dispersion for researchers because of multiple and changing issues raised by the stakeholders. Compromises must therefore be made to find a happy medium between the stakeholders' expectations and the researchers' requirements. The research group opted for a flexible functioning based on medium-term projects (five years). The goal of any research project is to provide methods and decision-support systems for farmers and/or their organisations.

Respective role of the various stakeholders

Using a "Bottom-up" design radically modifies the role of the various stakeholders. Researchers no longer personify the figure of the external observer entrusted with objective knowledge. Although they play a specific role in relation to data processing and the formalisation of information, they are now on a par with the other stakeholders, and they play an essential role in terms of coordination. The role of assessment is sometimes delegated to the advisers, and the farmers are no longer just considered as the final end-users of the results but play the role of experts, just like the other stakeholders.

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