Starting a sustainable partnership between the forces of development and research in French Guyana

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Introduction

In the 1970s and the 1980s the French agronomic research institutes (INRA) used to support the farmers of the "Plan Vert" (Vissac 1990). But they have gradually withdrawn from the agricultural problematics of French Guyana. As a matter of fact, the partners of agricultural development are now facing multiple problems: increase in the food demand of the population, poor organization and fragility of the different sectors, difficulties in management of soil fertility and phytosanitary problems, lack of technical skills of the majority of the farmers. Therefore, the Chamber of Agriculture of Guyana appealed to the INRA Center of the West-Indies and Guyana (INRA AG) in 2005 to relaunch partnerships and facilitate the emergence of innovations. After several missions of researchers from the INRA AG, and in spite of the critical situation the Chamber of Agriculture, the Guyanese agricultural, institutional and professional partners (Regional Council, DAF,…) and the INRA AG all together appointed "AMBRE Développement" research consultancy in June 2009, in order to take an inventory of the needs and set up a sustainable partnership between research and development. The main prospects of the study were to define the requirements of an interface device in research and development, as well as the priority actions to be led within the scope of this device.
After a presentation of the methodology implemented (analysis of the agricultural Guyanese background, making-up of thematic working groups), we will set out the actions we consider doing within the limits of a partnership based on the choice of organizational devices and schemes to be conducted jointly.

Methodology

A three-phase setting-up of the partnership.

1) Achieving an inventory of the farmers organisations, farmers production systems and extended technical services:

This analysis allows us to assess the feasibility of the partnership. It rests on bibliographical data and interviews of representatives of the different agricultural partners (public services, local communities, farmers' economic interest groups, associations and cooperatives), technicians and farmers.

2) Building-up working communities composed of development agents and researchers:

Following the interviews, three working groups composed of researchers, agricultural development agents and farmers were formed to consider the next farming systems:

- horticultural systems (three meetings),
- cattle breeding systems (two meetings),
- slash-and-burn or clear cut land farming (two meetings).

The purpose of those groups (Roybin, 2001) was to identify the requests of the professionals, reformulate them and co-create solutions while enhancing the research acquisitions.

3) Setting-up the profession requests and projects transfer within these working communities:

The function of the partnership in Guyana stands out from the usual purpose of research in partnership as generally described, which consists in strengthening the adequacy between the questions of development and research programs (Roybin, 2001, Toussaint Soulard, 2007). In this case, it is no longer a matter of building research programs but setting up schemes aiming at meeting the demand of the farmers by emphasizing the results of earlier research acquired in different contexts. Therefore, it is a question of projects transfer even if the actualization often requires the implementation of further diagnosis, and experiments which may fall within research. Such improvement aiming at being operational in new contexts can generate new knowledge, and result in scientific developments (Agro-Transfert Picardie, 2006).
Consequently, this partnership will focus on the co-construction of the demand, the development conditions, the transfer of knowledge and the expected results of the scheme.
To facilitate this co-construction, the meetings of the working groups are conducted by an engeneer in reseach and development who takes an inventory of the questions, informs on the present state of knowledge and research work, and contributes to the construction and formalization of a common work schedule. This mediator helps to "manage the distance between the problems encountered by the practitioners who intend to work on a situation or remedy it, and the aims of the researchers more specialized in the understanding of phenomena and their theoretical formalization" (Fleury et al, 2000).

Results and discussions

Two types of actions came out of the working groups discussions:

1) Actions aiming at strenthening the technical backing operation set up in Guyana:

1-1) creation of an online documentary basis allowing the centralization of the whole technical knowledge about the Guyanese productions (reports, technical data, tests synthesis, etc…);

1-2) creation of a regional technical group, working on the horticulture problematics, aiming at sharing information and knowledge, mutualizing the means in order to organize training and technical support sessions.

2) Transfer projects chosen according to the following criteria :

- themes which raise interest and receive general approval within a group representative of professionals,
- attendance of advisers and technicians who maintain the circulation of the results among the farmers,
- available research work on the given theme,
- identification of researchers who are likely to take part in the project as experts or intermediaries next to research teams whose works are actualized.

2-1) Conceiving innovating means to fight against the bacterial wilt in horticultural cropping systems:

One of the major brake upon the tomato culture in the open ground in Guyana is the bacterial wilt, due to the bacteria *Rastoria solanacearum*. This illness, against which no efficient chemical treatment has been found, can also affect plants belonging to the Cucurbitacae. The CIRAD Martinique is currently testing the effects of about twenty experimental plants on the development of the bacteria so as to propose an agro-ecological management of the illness. This project is intended to adapt and test the methods proposed in the West-Indies, after having completed a diagnosis of the infestation and the practices of the Guyanese farmers.

2-2) Conceiving production systems intended to meet the expectations of the small farmers practicing slash-and-burn farming (The Guyanese clear cut land 'abattis'):

Slightly more than 4700 out of 5300 farmers practice slash-and-burn agriculture. The demographic pressure and the constraints linked to the infrastrures development have lead the producers to reduce the time required by the practice of fallowing land after 4 or 5 years of soil exploitation, which leads to a fall in productivity and increased working time. The purpose of the project is to conceive innovating systems which allow a faster restoring of fertility so that clear cut land agriculture may take part in the satisfaction of the food needs of the populations. Research works on agro-forestry systems conducted in Brazil and at INRA AG, associating leguminous plants and timber trees, could be enhanced in the Guyanese context.

2-3) Conceiving fodder plants management methods allowing to satisfy the food needs of the ruminant cattle all over the year:

Guyana goes through a long dry season in the course of which a significant weight drop of the original livestock can be observed, with a major effect on the subsequent animal performances. The reproduction rhythm is thus highly affected. A CIRAD team has recently worked on the Guyanese grassland potential in order to better pilot the grazing. These works have so far found low actualization. This project is supposed to widen and spread these works, and experiment new local fodder plant cultures.

Conclusion

The co-creation of work schedules will go on during the following months and everyone's function will be defined in accordance with the partnership agreements. An assossiaton will also be created to recruit a project leader for each of the transfer projects. Finaly, these first steps in the setting-up of a partnership will not take shape without a strengthening of the teams inside the development structures.

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