

**From participation to partnership, a different way for researchers to accompany innovations processes: challenges and difficulties.**

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Innovation Africa Symposium, 20th-23rd November 2006, Kampala, Uganda

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**Acknowledgements:**

The authors thank the stakeholders of the different case studies for their multi-faceted contributions, and the many CIRAD colleagues who have helped shape many of the ideas and perspectives presented in this communication.

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### **Abstract:**

A study was launched in 2005 to systematize and compare a series of ten contrasting past and on-going experiences in which research has been conducted with local actors (such as farmers and farmers' organizations, but also extension services, governments, private sector, etc.). The main objectives of this study are (i) to draw lessons in terms of research approaches, modalities, methods, tools, and results and (ii) to propose guidelines to improve the design and conduct of research projects focusing on the conception of innovations in partnership among multiple stakeholders. Cross-analysis of the case studies was pursued in three directions: (1) the balance reached between problem resolution, knowledge generation and empowerment of local actors, (2) the formalization of partnerships and (3) the modalities adopted for steering activities and for partnership governance. Assessing the distance between actual project practices followed in each experience, and what could be called an "ideal" action-research process, rigorously based on established A-R concepts, lies at the heart of this analysis.

Preliminary results confirm that each experience is the result of an encounter among specific individuals, who purposefully broke away from paradigms reigning locally or institutionally for effecting change. It also shows that the research and innovation process is not a linear process with different well planned phases and cycles, but results from how projects deal with tensions between stakeholders and how they generate the adjustments necessary to achieve eventual success in problem-solving and generate knowledge. The diverse set-ups co-constructed among stakeholders are not only means to achieve common objectives, but they also embody high-stake challenges throughout the project life. To keep the spirit of the partnership, it may be useful to formalize mutual commitments: this helps to avoid the disruptive consequences of the corresponding power struggles, and eventually deliver useful outputs. Effective involvement of farmers' organizations in partnership with research is both critical yet difficult to achieve, because of the time needed to build trust, elaborate a common language and achieve needed commitments. It also requires professionals to develop new skills such as mediators. Finally, even projects that do not follow strictly the established principles of action research seem to achieve noteworthy results. These latter vary however greatly from one project to another in terms of knowledge production, learning process, and problem solving.

### **Key words:**

Action research, partnerships, case studies, innovation, methodology

# 1. Introduction

Top-down approaches to innovation development are still frequent or even dominant in many circles. Among other features, they are characterized by the sovereign role of researchers in developing hypotheses and designing a research process, the results of which are then passed over to specialized agencies (such as extension) in charge of disseminating the technologies and other solutions imagined by researchers. However, such approaches have long ceased to be the only paradigm for designing and delivering the innovations needed to help agriculture, and most notably farmers, adapt to a rapidly evolving set of demands and a changing natural and socio-economic environment. Agriculturalists that decided to move away from top-down approaches were indeed following the steps of a number of social scientists who embarked in research conducted in close interactions with actors as early as in the late 1940s, starting with Lewin (1948), who promoted the new concept of Action-Research on the basis of his work with social groups. Agricultural researchers were however slower in following suit. In the seventies, Farming System approaches were gradually developed in the English-speaking sphere, and were soon followed by the emergence of participatory approaches: from Participatory Rural Appraisal (Chambers 1989) to Participatory Technology Development (Ashby and Sperling, 1995; Veldhuizen and al., 1997), up to Participatory Learning Action (Scoones et al., 1994). A similar type of evolution occurred in the French speaking countries with the “Systèmes Agraires” and “Recherche-Développement” concepts (Jouve et Mercoiret 1987), subsequently followed by more participatory approaches aimed at strengthening farmers and farmers’ organizations. In both cases, this gradual evolution in approaches highlights the growing awareness by researchers that it was crucial to know better farmers’ practices and strategies, and to involve them in the research process. A number of authors go further and point out the importance of empowerment (Gonzalves et al., 2005). Today, many researchers are engaged in refining the corresponding approaches and methodologies, with a view to improve further the way research works with a diverse array of actors and stakeholders of the rural sector, with the hope this will improve the eventual success and speed of the innovation process more and more considered within an innovation system perspective (World Bank 2006).

Action-Research is one of the fields in which significant efforts have been invested recently. It brings to the fore a departure in approach that participatory approaches does not necessarily entail. Liu (1992) explains the specificity of Action-Research as a process based on four principles: (i) an equilibrium between a will to change and a research purpose, (ii) a dual objective aimed at resolving a problem and at producing new knowledge, (iii) a collaborative work between researchers and stakeholders producing a mutual learning process, (iv) an ethical framework elaborated by all the participants. ). A research-action project comprises three main overlapping phases: (i) the initial phase, which includes the definition of the problem, the objectives and the commitments, (ii) the realization phase, including diagnosis, planning of activities, implementation of solutions, and evaluation, (iii) the disengagement phase, at the end of the action-research or at least the end of the research involvement in the process. The second phase may include several successive cycles, as the evaluation of the results of one cycle of activities leads to a new cycle, in which hypotheses and set-ups will have been adjusted. Recently, the notion of Action-Research in Partnership was used (Chia et al., 2005) to emphasize the importance of associating multiple stakeholders more thoroughly in the research process in all aspects of the action-research process, from problem identification to objectives, evaluation and setting-up of governance mechanisms. It bears many similarities to what is being labeled Participatory Innovation Development in the English-speaking world.

When looking back over this period of 2 decades, one realizes that this shift away from top-down approaches and towards what could be called genuine partnership between researchers and farmers (and other stakeholders), is still far from complete and has not been without hurdles and resistances. The first few steps, up to introducing a fair degree of participation of farmers in the research process, has been relatively painless because it does not imply losing too much control over the research process. However, the subsequent steps, leading to the developing of full-fledged partnerships, has been much more difficult, because it obliges researchers to reassess thoroughly many conventional research approaches and methodologies, as well as to scrutinize deeply held individual and institutional values and visions about how key research decisions are made and by whom.

Understanding better what some of these difficulties are, and what lessons can be drawn from experiences with this type of approaches, in their diversity and notwithstanding their empirical and ad hoc nature, is the focus of this paper. Drawing from a pool of 10 projects conducted mostly by or with researchers from CIRAD working with farmers in a variety of contexts over the past 10 years or so, it provides insights and lessons about 5 major issues: i) the conditions which led to encounters between individual researchers and farmers and their organizations including the break-ups (“ruptures” in French) that such encounters imply with respect to the conventional mode of operation of individuals and institutions, ii) the non-linearity and low predictability of the corresponding project trajectories over time, iii) the diversity and specificities of the set-ups which are developed over time, iv) the role of the farmers and farmers’ organization in the partnership, tackling such issues as representativeness and legitimacy of farmers who collaborate with research, the nature of the relationships and commitments, and v) the type of results. In conclusion, the paper proposes a number of avenues for further analysis and action.

## **2. Materials & Methods**

This paper is based on the comparative analysis of 10 case studies which were developed within the context of a three-year research project launched within CIRAD in 2005 and called CIROP (Construction of Innovation and Role of Partnership). CIROP aims to design and implement research projects co-constructed in partnership between researchers and a diverse set of stakeholders, and to develop research approaches and methodologies with a triple objective: i) generate knowledge, ii) solve problems faced by stakeholders in the real world and iii) strengthen the autonomy of the stakeholders. CIROP endeavors to answer 2 inter-related key questions: what type of partnerships are required to strengthen the capacity of rural societies to innovate? Which mechanisms related to Action Research to do so? Two research objects are being considered in CIROP: innovation processes and partnerships. Within the context of CIROP, innovation processes are being considered in their technical, social and organizational dimensions, whereas partnerships is defined as the set of formalized linkages established among actors, on a given territory, to federate means (material and immaterial) around projects or programs constructed jointly to achieve shared objectives (Lindenperg 1999).

The activities of CIROP develop around 2 main interactive components: i) the revisiting through a systematization and comparative effort (but without getting involved ) of past or on-going research projects in which local actors have been involved to different degrees and in different ways in the conception of innovations, ii) the planning and implementation of Action-research projects in 2 contrasting sites (one Western Burkina Faso, one in Southern Cameroon), in which there was a willingness to change by the stakeholders and the intention of conducting research.

The remainder of this paper will solely focus on what has been achieved so far within the context of this first component.

## ***The Case Studies***

Table 1 lists the ten experiences selected for systematization. Six of them took place in Latin America, 2 in Africa and 2 in France (one of them in an overseas territory). CIRAD researchers were directly involved in 7 of them. Issues addressed within the context of these 10 projects are highly diverse. They range from focused technical interventions (germplasm evaluation and development for Sorghum and Durum wheat, dissemination of vegetative banana material, conservation agriculture), to strengthening of the adaptation capacity of farming systems to drought, supporting decision-making at the farm level or structuring the quality cocoa supply-chain, to territorial development and creation of scenarios for agriculture of the future. Four out of 10 of these experiences are still on-going, while six of them have now been completed over the past 2 to 10 years. In all cases, research and farmers' organizations are the main stakeholders involved. In half the cases, they are being joined by extension services. In about half of the cases as well, another type of stakeholder has played a strategic role: cocoa importing agro-industry (Equator), education consortium (Brazil-Cerrados), land use planning agency (France-Reunion Island), an NGO providing diversified technical support, including research (Brazil Northeast). Selected cases include projects in which researchers expressed the desire to do research in close cooperation with farmers (« doing research differently »). However, only one of them, Costa Rica, explicitly claims to be conducting an action-research project. Diversity in disciplinary orientations and institutional affiliations of researchers has been another key criterion for selecting experiences.

These 10 cases may be divided in 3 main classes, depending on who took the initiative in launching the project.

### ***i) Class I: Projects launched and mostly steered by research (7 cases)***

- **Central Cameroon**: To achieve the objective of large-scale diffusion of vegetative multiplication techniques developed by research, research needs a strong participation of farmers (no explicit intention of forging a research partnership).
- **Nicaragua** : the researcher who coordinates the project wants to develop a partnership well as to generate germplasm. He strives to conduct studies, engage various components and establish relationships with several actors, without being completely successful for lack of time on his part, and because of the limits farmers and their organizations place in their own involvement in the project, and because the NGOs involved are being restrained by their respective donors. Relationships never actually evolve into a genuine partnership.
- **Northern Cameroon**: Research wants to go out of the experiment station, while the cotton development board (Sodecoton) wants to promote farmers' organization with the capacity to handle input supply and cotton marketing. Researchers establish linkages with development agencies, and move away from the diffusion of technical messages and into whole-farm management advice. In doing so, they support farmers' groups volunteer for conducting trials. Extension agents for their part shift from simple extensionists to advisers.

- **Reunion Island**: research collaborates with a farmers' organization (CAH) to devise a CTE as established by a new agricultural policy framework (farm technical contract). Bases for establishing a formal partnership are created by a sudden change in agriculture policy obliges to stop the project.
- **Mexico**: the researcher responsible for the project engages in a multiple stakeholder coordination before catalyzing a more formal partnership between a large-scale farmer organization, state government, research and other stakeholders. A new structure is indeed created which formalizes the set-up, but at the same moment, the government takes over control of the project, and most research efforts stop while energies are geared toward large-scale dissemination of conservation agriculture techniques and subsidies.
- **Brazil-Cerrados**: researchers directly link with a farmer trade union and community organizations of the Agrarian reform sector to engage in development, in development of technical / marketing innovation and improved access of farmers to markets. In parallel and in collaboration with an Education Consortium, they engage in the training of farmers' sons to ensure the future sustainability of the innovation process and the empowerment of farmers. The resulting group of trained young farmers becomes a key partner for effecting change at the regional level.
- **Brazil-North-east**: from the start, the NGO initiating the project (which also undertakes research functions) established preferential relationships with farmers' organizations which they consider as the genuine responsible for conducting the process. Consequently the NGO puts itself in the position of support and backstopping for the FO.

*ii) Class II: 2 projects launched by stakeholders other than research*

- **Equator**: A private French cocoa agro-industrial launches the project and establishes a genuine partnership with a number of Farmers organizations in Equator. Research work takes place within this context, and the main researcher has a contract with the agro-industry
- **Southern France**. Farmer trade unions launch the project by contacting research to identify and develop germplasm suited for organic Durum wheat production and transformation by millers. Research responds by conducting participatory evaluation and breeding as well as other activities, the partnership is light but productive at a local scale..

*iii) Class III : 1 project launched by Research and Farmers- organizations together*

- **Costa Rica**.  
Representatives from a regional farmers' organization are worried about the future of small scale agriculture in the context of globalization. They contact research, whom they know and appreciate from previous joint work on innovation processes), and ask them to help them to devise scenarios for tomorrow's agriculture. For its part, research is keen to reshape research programs by combining technological innovation, strengthening of F.O. coordination among stakeholders and public policies

Altogether, these 10 cases do not constitute a representative sample of the diversity of such types of projects, because a series of selection biases were introduced purposefully: over-representation of projects in which CIRAD and research in general, had a leading role, under-

representation of African experiences, priority focus on the relationships between research and farmers, etc. However, the mere diversity of situations found among selected case studies allows an in-depth, qualitative exploration of several key issues related to these types of approaches.

### ***Case Study framework and development***

Case studies were all developed following a similar process and applying a unified framework. The framework, developed around established concepts and steps used in action-research (Liu, 1992, 1997), was structured into 5 main headings: 1) Elements of context, 2) a description of the various phases of the experience (initial demand, negotiation process, dynamics of implementation of the set-up, disengagement), 3) an analysis of the results/impacts obtained by the project, 4) a synthesis of the most outstanding features of the experiment and 5) major doubts and questionings drawn from the experiences. Such a methodological choice is not without drawbacks when applied to experiences which in general did not follow strictly these research-action principles or formal definitions of what partnership is (see earlier). It however greatly facilitates the comparative analysis of the various case studies and the extraction of lesson of general interest around what we call Action-Research in Partnership (ARP, or RAP in French).

The application of this framework, resulting in a document of about fifteen pages is conducted in inter-related phases. A first one consists of a bibliographic review of formal and grey literature produced by or on each experience. A second one consists of conducting interviews with the researchers closely associated with these experiences, some of them having been the actual project leaders. Whenever possible, these interviews took place in France to save resources. In a few cases, they were actually conducted on-site: in such cases, they also included a number of stakeholders. Interviews were led by one or 2 "external" interviewers using an semi-structured interview technique. Combining bibliographic insights and materials collected during the interviews, the researcher in charge of writing a given case develop several versions of the draft case study, each one receiving feedback from a number of other CIROP researchers, as well as from the project staff interviewed initially. Documents will eventually be reviewed formally by external reviewers, to be published in the near future in a suitable form.

### ***How cross-analysis has been conducted***

Based on input received from CIROP external scientific committee, the Cirop team focused initially the comparative analysis on the detection of deviations between each case study and what would be considered an ideal ARP project. This allows for the detection of agreement and divergences between actual projects and existing concepts and theories. The first comparative reading done so far focused specifically on three main issues: (1) the types of results obtained by the 10 documented case studies, (2) formalization of commitments and relationships, and (3) operational and governance set-ups.

## **3. Selected lessons learnt from the case studies**

The on-going analysis of the case studies has already provided a lot of valuable information and lessons. Some of the main are highlighted below. .

### ***Encounters among key individuals and break-ups***

The above typology of case studies illustrates that in most case studies, it is research that initiated the participatory process, by proposing to its would-be partners to conduct activities

aiming at solving problems they faced, a situation that can be characterized as a supply-driven process. In other cases, it is the non-research partners who take the initiative and contact research as a contributor to solving a previously identified problem or constraint: this is hence a demand-driven process. Rarely do supply and demand coincide simultaneously at a given time: only in 1 case of out 10 did such a situation take place.

Beyond the supply-demand dimension, all case studies show that individuals with specific skills and historical trajectories play a strategic role in initiating the process more than institutional mandates per se. Institutions do intervene by allowing a certain degree of freedom to these individuals, or in the best cases, by giving them an actual mandate for “doing things differently”. In other cases, it is up to the individuals themselves to create a space in which they will have enough freedom to engage in such processes: in the context of research institutions, benefiting from a fair degree of freedom is relatively common, but this may not be the case for other types of institutions.

Reasons explaining why these individuals are keen to work with other actors are many. For one, some of them, keenly aware of the problems and dead-ends associated with more conventional approaches, are in active search for more pertinent and efficient approaches to innovation development and diffusion. For example, in Mexico, adoption of Conservation Agriculture was not getting anywhere after more than 10 years of conventional (top-down) development and diffusion efforts, and it appeared that lack of coordination among stakeholders was a major constraint. A similar reasoning applies to the cases of Nicaragua, and Southern Cameroon. Other individuals are simply convinced that they cannot reach their objectives without dialogue and cooperation with other stakeholders (cases of Mexico again, but also Costa Rica and Reunion Island). Others still want to give the same importance to scientific and social objectives, which implies that research has to identify organizations with a strong social and political legitimacy to work with. Such is the case in the two Brazilian cases. For the Cerrados case, researchers had not previously dared to work directly with the Agrarian Reform sector, because they perceived it only in political terms rather than as a legitimate concern / object of research. Others still had not a real choice: working jointly between farmers and researchers was the only way forward for an otherwise neglected or orphan theme and constituency (Southern France).

Whatever the specific reason, in all cases, these individuals did not discover the need for working with other actors all of a sudden: they had actually started their journey quite some time before, by embarking gradually in a reflexive process of reassessing and reorienting their approaches and methodologies: hence they knew exactly what they didn't want to do and why, without necessarily knowing precisely what they would substitute it with. This is why they may have engage in a collaborative process new at least to them and to their partners in a very empirical, “ad hoc” manner, accepting the challenge of learning by doing and adapting the approach as they moved forward. In other words, they took the bet (along with the associated risk) to move away from conventional research and development approaches and routine procedures and break new ground.

How their partners in this journey, and particularly farmers, reacted to these novel approaches is variable, and have evolved over time. Some watched intently (Southern Cameroon), others instantly adhered (such as in Nicaragua, where farmers had already formed small groups in the past to conduct farmer experimentation), others started by watching “over the hedge” the behavior of these unconventional researchers before involving themselves actively (Nicaragua again). Some were quite ready to take over responsibilities previously assumed routinely by

Research (Northern Cameroon), but without accepting the integrality of what researchers would like them to do (such as the active involvement of women). Some times, as farmers got gradually reassured by what they saw from this new style of research, they participated relatively freely and comfortably in the joint design and implementation of activities (Brazil-Cerrados and NorthEsast).

In the case where farmers took the initiative (Southern France), their requirements and expectations vis-à-vis Research were clearer (“we are the ones who give the criteria on what we want to do research on”). This led to an immediate definition of terms of reference for the interaction farmers-researchers, which was gradually refined later on, in the course of the joint project. Finally, things played out quite different in Equator: in that case, the researcher involved played the role of a mediator between the agro-industry and the farmers’ organizations, by putting them into direct contact with one another.

In summary, our case studies illustrate the key role played by individuals (mostly researchers in our small sample, but it does not have to be so) who embark on a long-term professional trajectory, which eventually leads them to work closely with actors and stakeholders they did not necessarily know before hand. In doing so, they usually can count on the discrete benevolence of their institutions, but not always. As they take such a step, they reveal to the farmers with whom they work side by side a new face of research and of themselves as individuals, which farmers were not used to contemplate. This encounter creates in turn favorable conditions for engaging into fruitful dialogue and negotiating objectives and modalities for joint work. A similar situation applies to other actors as they decide to work with research. The story does not of course end with the encounter, however successful it might be. Other challenges soon follow suit, such is how to mobilize the resources necessary for the implementation of joint activities. But a key lesson is that the conditions under which these initial encounters take place bear in themselves the key ingredients for eventual success of the project.

### ***Non-linear pathways of projects in partnerships***

Typically, the sequence of phases (such as diagnosis, action plan design, implementation, evaluation) followed in one way or another by our collection of case studies, or the often times cyclical nature of these phases, does not differ much from what occurs in more traditional on-farm or participatory research projects. Hence one could easily think that there is a comfortable level of mechanistic, rather predictable unfolding of this type of projects.

However, the very nature of working in partnership implies that there is nothing automatic in the actual **trajectory** of the corresponding projects, which frequently follow non-linear, highly unpredictable pathways.

Many reasons may explain why this is the case. For one, in most cases, the projects were the result of highly personalized interactions and negotiations at the local level, with no or only limited efforts made at scaling up and formal institutionalization of the corresponding agreements and approaches. Hence changing course tends to happen matter-of-factly, as soon as the corresponding need was perceived and agreed-upon (Case of Costa Rica, or Southern France). In other cases, stark differences in the core interests and objectives of the various participants (both at the individual and institutional) emerged over time, despite the apparent initial consensus and agreement on a set of objectives and activities. This is because deep-seated values held by participants came to the fore in the course of implementing project activities, which differed from the more consensual, politically-correct values agreed-upon during initial negotiations, in the relative comfort (physical, intellectual) of a short meeting or workshop. In addition, some stakeholders (and particularly those who do not have a long-term presence in the region of operation of a given project) lack the intimate knowledge of

how things actually operate locally. This may mean that they only discover on the go (i.e. some time after the project is launched) certain facts about prevailing social interactions, such as power relationships and the related challenges or opportunities this represents for working with the various stakeholders. This was for example the case in Mexico, when it became apparent after a while that none of the many stakeholders was ready to challenge decisions and reorientations decided suddenly by the most powerful of all the stakeholders (the state government), even when they were going counter to what has been previously agreed-upon by all, and when it affected the very coherence of the project. Another reason for non-linearity has to do with the unequal ability (at times willingness) of the various participants of a multiple stakeholder project to follow agreed-upon rules for project operation, especially when these latter differ markedly from conventional ones, or if the rules put on the table are not very realistic. For example in Costa Rica, after a while, farmers got tired of periodic meetings, and some of them decided to completely overhaul the process followed for coming up with a vision of the future. Furthermore, a number of adjustments have to do with the balance of power relationships among the participants, which typically evolves over time, some participants becoming stronger, other weaker, based on the relative investments and degree of appropriation.

In conclusion, it appears that non-linearity and unpredictability are key intrinsic features of R-A projects. Providing or negotiating enough time is a key factor for the eventual success of such projects. Time is critical if they are to evolve “naturally” over time. Time is also critical for the corresponding partnership and set-ups to gradually take shape and mature thanks to the mutual knowledge gained by individuals and institutions willing to adjust mutually to each other’s vision and behavior. All these factors contribute to the need for projects to give themselves enough time revisit periodically not only their activities but also strategic aspects such as objectives, modes of operation, roles and responsibilities of each partner, etc. (Liu, 1992). Unfortunately, these much-needed adjustments do not necessarily occur smoothly and gradually, but rather in crisis mode, and more often than not perhaps, at odd / unexpected times. In Mexico, the decision to change the area of intervention of the project, or to rebalance the respective place of research vs diffusion activities were taken and implemented over very short periods of time. Such sudden crises may have lasting negative consequences, especially when they result in brutal changes of directions and hurt feelings among individuals and institutions. But whenever possible, they can often be considered as welcome, indeed necessary opportunities to address issues which had not been properly addressed in earlier stages of the projects or to allow appropriation of the project by the various partners. Our case studies illustrate that project teams would be wise to devise from the start mechanisms allowing for proper picking up of early, weak signals of impending tensions and crises, and for their adequate management once they emerge, in order to minimize collateral damage. Such mechanisms would allow the project to learn and get stronger, rather than weaker, from going through such crisis.

### ***Diversity of set-ups and governance mechanisms***

Conventional collaborative research projects use an array of established research methods and modalities (such as surveys, experiments on-station or on-farm, statistical analysis, diffusion of results, training, etc.) (Table 2). Tasks are possibly distributed among participating stakeholders. Including in the arrangement of a non-research partner which does not share the same operating culture disrupts the landscape and encourages the design of different operating modes at two distinct levels: operational set-ups and governance mechanisms.

An **operational set-up** is a place /moment where researchers and actors have jointly decided to carry out an agreed-upon activity (whatever the specific modalities of implementation selected, the intensity of collaboration, the level of protagonism, the type of steering), with the willingness to "do it together" but without necessarily a clear formalization of the "rules of the game". Our collection of case studies illustrates the huge diversity of operational set-ups for conducting diagnosis or monitoring and evaluation, training courses, exchanges and visits, focus groups, result assessment workshop, controlled or participatory experimentation, joint planning of activities, etc. Some of the set-ups indeed rely on the tools developed within the context of conventional research, even though they are being used and exploited in a different manner. Other set-ups are less conventional, as they are meant to contribute to developing organizational innovations: this is the case for experimentation piloted and managed directly by farmers (Mexico, Nicaragua, Northern Cameroon, Brazil Northeast and Cerrados, Southern France), to the organization of participatory training courses, the structured organization of exchanges and visits between farmers and farmers and researchers, the constitution of focus groups, the joint analysis of data. In all such cases, the shift towards the co-piloting of these set-ups is strong. A recurring question pops up in the debates taking place during joint planning sessions of the corresponding set-ups, such as "up to what point, the researcher must implement by him or herself such or such activity, or on the contrary, act in such a way that it will be co-assumed by his partners? However, the actual contribution of such set-ups to strengthening the capacities of the researchers and actors to work together, remains to be quantified and characterized with precision. It would be quite valuable to assess in what form and to what degree such set-ups not only fulfill the immediate objective which justifies them, but also contribute to strengthen the partnership spirit, the quality of the solutions and the generation of new knowledge.

This permanent concern of translating what co-piloting means into concrete terms not only illustrates but by itself accelerates the phenomenon of "breaking-away" mentioned earlier. It creates, of course, both adhesions but also resistances within research institutions. Fully preoccupied with testing the feasibility of the set-ups developed jointly with other stakeholders, project leaders and coordinators usually do not find the time or see the need of formalizing commitments.

In terms of governance mechanisms and set-ups, most case studies did not develop specific mechanisms or set-ups, allowing them to tackle together, but separately from logistical and routine coordination issues, such aspects as strategic orientations, or peaceful resolution of tensions and conflicts among stakeholders as they appear throughout the life of the joint project. Project coordinators tend to be much more accountable of their activities to their own respective hierarchy, rather than to each other. In few cases (Brazil Cerrados and Northeast, researchers associate closely other actors in the steering and leadership of the project, using diverse modalities. Two other projects (Costa Rica and Mexico) decided from the start that the inter-institutional governance system had to be by itself one of the explicit objectives of the project. In Mexico, this willingness went the furthest, and led the way to the rapid formalization of an inter-institutional platform, with the mandate to plan the activities and to assess the results obtained. But even in this case, modalities for decision-making, conflict resolution and communication were not well-defined, which led to serious problems down the road (marginalization of research).

In conclusion, our case studies illustrate the vital importance of formalization of governance mechanisms, which may be perceived as being as important for the medium- to long-term sustainability of the partnership than solving together a concrete problem..

## ***Role of farmers and their organization in a partnership***

Effective involvement of all stakeholders is a crucial issue in any participatory process. Indeed, the identification of objectives, the set-ups, or the lessons and conclusions drawn from the experiences, to name but a few, depend heavily on the actual capacities of each partner to participate, to carry out agreed-upon activities and to negotiate with other stakeholders. Our case studies illustrate how difficult it is to move away from nominal or token participation and ensure a strong, balanced participation of all the participants, and especially of the farmers. In this section, we examine in turn the diversity and difficulties related to farmers' participation, the issue of representativeness and legitimacy, the type of relationships among stakeholders, and the nature of commitments between them, and suggest ways to improve farmers' participation.

### **Diversity and difficulties related to farmers' participation**

Involvement of farmers' organizations depends on the origin of the participatory research. Unsurprisingly perhaps, research took the initiative with consequently more difficulty for strong farmer participation in seven out of our ten cases, while in three cases, farmers' organizations played a key role throughout the process or even in driving it. Involvement also depends on who represents the farmers, whether they participate as individuals (North and South-Cameroun), as representatives of relatively weak, young or weakly organized farmers organizations (Costa Rica, Nicaragua, Mexico, Brazil-Cerrados, Reunion Island), or strongly organized and politically vocal farmers' organizations (Equator, France, Brazil-Northeast). The size of the organizations is less important than its acquired capacity to organize its activities and to establish relationships with others stakeholders.

As a consequence of most projects working with relatively poor small-scale farmers, farmers' organizations tend to lack adequate financial resources, limiting ability of their representatives to participate in events or to carry out activities, and limiting their motivation to involve themselves intensively throughout the process. Time availability is also a key issue due to competing requirements for investing time in activities and commitments at the level of the farmers' organizations or at the farm level.

### **Representativeness and legitimacy**

Enrolling the right people in the collaboration, willing and able to create and accompany innovation processes is critical to the success of such projects (Akrich et al., 1988). In the absence of farmers' organizations, other stakeholders need to be somehow sure they involve farmers able or allowed to represent adequately the producers. An added difficulty is to determine which type of producers these individuals must be representatives of.

When farmers' organizations are involved, farmers' selection may be the result of a mostly internal process (Mexico) or more often, of an interaction between the farmers' organization and other stakeholders (Costa Rica, Reunion Island). Working with elected representatives of farmers' organizations is a natural tendency, since they possess a large experience of intermediating between the farmers' and the outside world, and their fellow farmers perceive them as having political legitimacy (Mercoiret and Berthomé 1995). But addressing effectively the specific objectives set out for the collaboration may require different arrays of skills than those brought by elected farmers' leaders. In several cases (Nicaragua, Brazil, South-Cameroun, and Ecuador), technical skills of farmers are indeed key to ensure that innovation and new knowledge are produced, such as in projects relying on a strong component of farmer-managed experimentation. Altogether, the role of personal characteristics and social status, the willingness to participate, the technical and inter-personal

skills (facilitating a meeting, reaching consensus), and the legitimacy inside the farmers' world are more important than representativeness per se.

As an example, in Costa Rica, 12 farmers from a national farmers' organization were initially selected to collaborate with research and government, using a set of agreed-upon criteria (interest to work a long period on the topic, having responsibilities inside his organization, having experience in negotiating with others stakeholders). One year later however, and after a period of tension, 4 farmers among the 12 decided to involve themselves more, to manage directly the process. With the assistance of only one researcher and one technician, they achieved the results expected.

### **Relationships between stakeholders**

Beyond the question of representativeness, the capacity to establish adequate relationships between the farmers' world, the technicians' world, and the researcher's world is another critical issue. All the case studies insist on the importance of trust and effective communication between farmers, technicians, and researchers, and propose different ways of dealing with it. An obvious aspect is that it takes time to build trust. In North Cameroon, a full one year period was needed to establish trust between technicians and farmers and to start working on the topics of real interest to the farmers. In addition to developing tools aimed at improving farm management capacities, there was also a need to develop specific tools and activities (such as field visits, training events, etc.) allowing stakeholders to know each other, to exchange experiences, and to progressively build a common language. Introduction by researchers of new concepts such as "gross margin" or "cash flow", useful for improving the analyses at the farm level, required long discussions because these concepts and words did not exist as such in the local language. Many more such examples illustrate why rapid participatory rural appraisal approaches are severely limited in their ability to generate adequate relationships between stakeholders and hence in providing a sufficient basis for solving problems through participatory processes.

Internal communication among stakeholders is also critical, even though it is frequently perceived as being managed poorly in our case studies and hence a frequent source of frustration to the participants. In most of the case studies, large meetings were or are being organized at key moments of the project life to discuss, validate and disseminate the results. But meeting reports is frequently not planned for a more fluent internal communication. Frequently, according to external communication, dissemination does not reach beyond those who take part directly in the project activities, thus making it more difficult to effect necessary changes and evolutions within the institutions or the farmers' organizations themselves. On the other hand, the case of Costa Rica illustrates the importance of regular meetings between grass-root organizations and their representatives who participate in the project to improve the proposals and facilitate the eventual appropriation of the results.

### **Nature of the commitments**

Another key issue has to do with the nature of the commitments and responsibilities of each stakeholder throughout the project. Of particular concern is effectively committing farmers to adhere to explicit objectives and work plans, or to following rules of the game. Not all commitments are of the same nature. Some are of a strategic nature, such as those related to quality management in cocoa production through producing and marketing adequate varieties in Ecuador. Others are more tactical or operational, yet critical, such as those related to the management of the field trials in Nicaragua. Some are global, and influence the whole process (case of Costa Rica with the six first months dedicated to defining the objectives and

the methodology) while others are partial and only involve some stakeholders (such as in the Brazil-Cerrados case, where separate agreements were reached between NGOs and farmers' organizations). Usually, project procedures allow for a realistic monitoring of how well commitments of the various stakeholders are being upheld, however none of the 10 case studies had any mechanism in place for enforcing sanctions when potentially dangerous deviations were observed: such occurrences are normally dealt with in an ad hoc manner, based on trust and reputation.

Formalizing commitments is a different issue than establishing and keeping them. Usually technicians and researchers trust in (i) written agreements based on negotiations between the stakeholders, (ii) specially established committees for planning and monitoring, for regulating potential conflicts between stakeholders, or for addressing scientific topics. While some case studies (Mexico, Ecuador, and Costa Rica) illustrate this situation, in most others, commitments and rules remain ad hoc or informal, at least from a researcher's or institutional conventional viewpoint. Beyond the legitimate discussion about whether unwritten agreements and commitments may or may not be formal, what seems to be key is to use forms engaging stakeholders in coherence with their prevailing values and culture. While farmers' organizations with a large experience working with others stakeholders may trust written agreements and formal committees, for other organizations, a commitment expressed in a special place or in front of respected individual is far more valid than a one described in a signed document.

Overall, the case studies illustrate three major issues related to commitments: (1) keeping commitments largely depends on the trust progressively established among the various stakeholders, and also on an effective learning process which gradually strengthens stakeholders' capacities and helps them understand the situation and the existing degrees of freedom. In this perspective, keeping commitments, while essential for ensuring success of a project, is by and large a product of the process itself rather than a starting point or a given, illustrating once more how complex it is to manage a participatory process; (2) from a practical point of view, the degree commitments are kept is (or should be) linked directly to the actual capacities of the stakeholders to fulfill them, which in the best cases increase over time, and (3) keeping commitments does not necessarily imply that they be formalized in written documents or through the establishment of formal committees.

## ***Main types of results achieved in partnership mode***

### **Production of knowledge**

As mentioned in the introduction, three types of results are produced as outcome of research-action processes (Albaladejo and Casabianca 1997, Avenier 2000, Liu 1992). While our ten case studies did not follow strictly A-R principles, they indeed produced noteworthy results in these 3 domains.

First, all case studies produced knowledge on the bio-physical process or on the farming systems related to the specific topics addressed in each project. But they also provide original knowledge on the strategies of the different stakeholders, according to the fact that every participant has to clarify their positions, defend their interests, identify solutions and implement actions. In the South-Cameroon case study, 8 academic reports were published, 5 of them on farming systems or supply-chain of the plantain banana, and 3 of them on the process of dissemination of new seeds.

Beside what can be qualified as routine production of research information and products, other types of products are equally important. For example, there is a need to develop documents targeted for the non-research stakeholders and aimed at describing the monitoring process, analyzing the data collected, and synthesizing the results. In the case study of Costa Rica, a specific report has been developed on family agriculture from the perspective of the farmers' organization. It is written in collaboration with farmers' representatives in a language understandable both by the farmers and the technicians and following a process which allowed a collective validation of the successive drafts up to the final version. In that sense, the production of such reports follows the rhythm and methods of the participatory process. This lies in contrast to what happens for purely scientific products targeted for the scientific community, which follow the conventional scientific standards (communications at congresses, articles undergoing a peer review system). Two observations can be drawn from our case studies: (1) such scientific products are however produced in relatively small numbers, (2) the main scientific production tends to occur after the end of the participatory process (In the case study in "La Reunion Island", the first communication was published 2 years after the end of the participatory research and the first scientific article 5 years after). Considered together, these 2 observations illustrate the difficulty researchers face in finding enough time to distance themselves from the pressure of daily activities and action-related commitments. Also, the existence of such a delay prevents an efficient use of the corresponding products by the stakeholders.

### **Learning processes and empowerment**

Learning is a key product of participatory processes. It derives from the dynamic exchanges of experiences which take place between the different stakeholders when addressing together the problems they decide to solve. Learning takes diverse dimensions. Participants build knowledge about new technologies (e.g. new germplasm in Nicaragua and France, conservation agriculture in Mexico). They also learn about organizational issues (experimental farmers' groups in Northern Brazil), about designing new projects (cocoa supply chain in Ecuador), or develop new capacities to negotiate with others stakeholders (with the ministries in Costa Rica and Mexico). The learning process is double, as it involves not only the farmers, but also the technicians and researchers participating in the process (Hemidy and Cerf, 2000). For example, in the case of Nicaragua, farmers learn about new varieties and methodologies and how to assess them, while the researcher learns about relevant criteria to select the varieties. However, stakeholders are not all equal in this learning process: in Mexico, technicians got an easier opportunity to learning because of more opportunities offered to them and some institutions also take more advantage of existing opportunities than others because of their higher power status.

The learning process is usually complex, as it is embedded in different activities mixing access to knowledge and know-how through classical trainings, strengthening of capacities during all the process, and development of competencies and skills by implementing acquired knowledge and capacities in action. While the first two are present in all case studies, the last one occurs only in few cases. Whatever the case, defining and quantifying precisely the nature of the learning processes remains very difficult: it would require identifying a set of unambiguous criteria, and assessing the corresponding impacts not only within the group of participants, but also outside.

### **Problem solving**

Last but not least, the projects' objectives aimed at contributing to solve problems collectively identified, in the form of the technical, organizational and institutional innovations developed. In Southern-Cameroun, technical innovations derived both from work and knowledge developed by the researchers (new techniques to grow young banana plants) and from the farmers (termite control, material needed for building nurseries, etc.). In North Cameroon, the main result is a new method for providing farm management advice implemented with the assistance of a public institution. In other cases, the innovation was more of an institutional nature. In Reunion Island, this consisted of defining more adequately the content of a "contract for territory development" between some farmers and the ministry of agriculture. In Mexico, the main innovation was the creation of a formal non-for-profit association in charge of coordinating and funding the work on conservation agriculture at a regional level, which continues to operate several years after the action-research was terminated.

All the case studies show that the problem initially identified by the stakeholders is never completely solved through the participatory process, even though relevant results have been achieved. Some times the participatory process terminates earlier than expected for political reasons (sudden re-orientation of the project by the government in Mexico, major policy changes following elections in "Reunion Island"). But most of the time, results are partial because of a rather imprecise or overly ambitious definition of objectives to be achieved at the beginning of the participatory process. Fortunately, the process of negotiation and research of new solutions tends to continue even after the formal presentation of the conclusions of the participatory process to the stakeholders, because they are usually convinced and because the process contributes to address complex problems deriving from a global context (case of South-Cameroun, North-Cameroun, Costa Rica, etc.). But it remains important however to plan properly for a phase of disengagement (if only because funding opportunities to work in a given context and topic do not last forever), and to identify the right moment to act this disengagement. From the research view points, and among other considerations, one has to avoid the continuation of participatory processes as mere comfortable routines, in which the researcher is no longer able to produce with his partners new useful knowledge.

#### **4. Conclusions, Challenges & perspectives for research**

A number of valuable insights and lessons have been gained so far by examining in a comparative manner a small set of contrasted experiences in which researchers engaged in close collaboration with a number of actors, foremost among them farmers, to develop innovations and knowledge addressing pressing problems and needs.

Our case studies confirmed that researchers and others who engage in such processes have distinct characteristics and professional trajectories, which lead them away from mainstream or conventional approaches and modes of operations of the institutions they belong to. In doing so, researchers discover that they need to find in front of them solid partners ready to get involved if they are to do research differently. The question immediately arises of how the process which is being engaged can eventually lead to strengthening partners' capacity (not to mention their own). Creating trust, managing communication properly are all necessary but not sufficient conditions, given that trust is as much a product of the project as a preliminary condition to launch the project. A number of key questions need to be addressed, for which answers are not straightforward. Among them: Who should assume these types of functions? How long should they be pursued? How can the operational set-ups and governance mechanisms best contribute to strengthening capacities? Or also: Which research modalities best contribute to the gradual empowerment of farmers and the reduction in asymmetries (power, resources, capacities, knowledge, access to information, negotiating

skills, etc.) that usually prevail at the beginning of a partnership process? Not to mention the reverse situation, when it is research that is the weak partner, a more and more frequent occurrence in a number of developing countries.

All this sends back to the design of such types of projects, and to the importance of dedicating enough time and efforts to the initial stages, during which the foundations of the partnership are laid down. Time indeed represents a central issue, as it would be illusory to launch and conduct projects in partnership mode over too short periods of time. But it might on the other hand be difficult to keep such projects alive very long, as several of our case studies show a mitigated will on the part of research partners to keep playing an active role over time.

Our case studies also stress the need to invest more thinking into a number of areas essential for improved performance of these types of projects, such as facilitation and negotiation skills, conflict prevention and resolution, building of common and realistic rules, etc. In all such endeavors, researchers have to think hard how they can learn and deploy new skills without losing their identity and becoming little more than able facilitators of social processes and advisers to farmers' organizations. On one hand, engaging in such processes leads to the emergence of new roles and functions, such as those of facilitators, communicators, negotiators and mediators, but also of catalyzers of unpredictable and non-linear innovation processes. But it appears difficult to allocate time to these functions, to action-related activities, without diverting it from time required for generating new knowledge and capitalizing it in forms acceptable to the academic world. A solution could of course be to share these functions more equally among stakeholders, but how to strike the correct balance remains unclear.

As roles evolve over time in any live partnership process, there is also a need to readjust periodically the balance among the partners in steering and coordinating the project, taking into account the often-claimed willingness to contribute to partners' gradual autonomy and empowerment. Such line of questioning leads to the critical reassessment by research of the level of control it must and can share with other actors over the overall partnership process without fearing it will fail to produce fully legitimate, useful science and knowledge. This also relates to how the various stakeholders commit themselves to the partnership rules and work plans, and whether formalizing such commitments is really pertinent, and how to enforce them (with a mechanism providing both sanctions and incentives).

Other insights from these case studies (not developed in this paper) confirm the vital importance of providing adequate training and education (to researchers, but more generally, to all involved stakeholders) in accompanying the emergence of novel approaches (Chia et al., 2005). They also illustrate the diversity of operational set-ups and methodological devices which are used, some of them quite original from a research view point (such as the figure of farmer-innovator).

Our cases studies also stress the many challenges researchers face when pursuing such a novel or at least unconventional line of work, promising sudden inflections at any moment along the way, with the consequent low predictability of results which may be achieved, be they in terms of the type of solutions, the generation of knowledge or the learning. Such uncertainties oblige researchers to negotiate carefully their place and status within their institutions in order to avoid complete marginalization and loss of status, due to the perception by the mainstream researchers that partnership work lacks legitimacy? Questions and challenges abound in this respect. For example, how fast can researchers so used to put their names first accept to take

the back stage in order to contribute better to the empowerment of their weaker partners? How can they find the time necessary for more self-critical assessment of what they do or should do, and how they do it, when pressure to deliver ever more ambitious results and impacts in ever decreasing time frames is mounting, not least because of reduced and more and more competitive opportunities for funding research and development work? How can researchers pursue the necessary systematization of results and lessons obtained within the context of partnership processes, with whom?

Ideally, a solution would be to somehow find a way of re-adjusting institutional signals and incentives, and investing significant efforts to provide adequate training (formally and by doing) on ARP principles, approaches and practice to many researchers and also to some institutional decision-makers. If this were to happen, researchers (and their partners) would find it much easier to invest their scarce time and resources in such risky projects, and hence they would acquire much more rapidly than is presently the case the skills and experience necessary for improving further the corresponding approaches. Certainly, a good first step to convince decision-makers and donors to move in that direction is to further evaluate the results and impacts of existing projects conducted in partnership between research and other stakeholders. This would provide much-needed evidence that they are indeed invaluable in contributing to reaching worthwhile societal objectives.

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## Tables

Table 1: Selected characteristics of the ten case studies used for comparative analysis

Sites	Main focus	Major stakeholders involved (*)				Period of Operation	References
		Research	F.O. (**)	Extension	Misc.(**)		
<i>Central Cameroon</i>	<i>Diffusion of banana transplants</i>	<b>XXX</b>		<b>X</b>		<b>1997-2002</b>	Mengue, 2000
<i>Nicaragua</i>	<i>Participatory sorghum breeding</i>	<b>XXX</b>	<b>X</b>	<b>X</b>		<b>2003-.....</b>	Trouche and al. 2005
<i>Northern Cameroon</i>	<i>Farm management advice</i>	<b>XXX</b>		<b>XXX</b>		<b>1999-2003</b>	Djamen Nana and al 2005
<i>France -Reunion Island</i>	<i>Territorial Development</i>	<b>XXX</b>	<b>X</b>		<b>X</b>	<b>1999-2000</b>	Dulcire and al 2005
<i>Mexico</i>	<i>Conservation Agriculture &amp; Irrigation</i>	<b>XXX</b>	<b>XX</b>	<b>XXX</b>	<b>X</b> (Input supplier)	<b>2000-2004</b>	Triomphe and al. 2006
<i>Brazil – Northeast</i>	<i>Innovations to cope with drought</i>	<b>XXX</b> (ONG)	<b>XXX</b>	<b>X</b>		<b>1992-2003</b>	Sabourin and al 2006
<i>Brazil -Cerrados</i>	<i>Sustainable Development in Agrarian Reform Sector</i>	<b>XXX</b>	<b>XX</b>	<b>X</b>	<b>X</b> (Education)	<b>2002 - ....</b>	Scopel et al., 2005
<i>Equator</i>	<i>Quality Cocoa Supply chain</i>	<b>X</b>	<b>XX</b>		<b>XXX</b> (Agro-industry)	<b>2000- ....</b>	Dulcire and Roche 2006
<i>Southern France</i>	<i>Participatory organic durum wheat breeding</i>	<b>XXX</b>	<b>XX</b>			<b>2003- ....</b>	Desclaux and al 2005
<i>Costa Rica</i>	<i>Imagining the future of smallholder agriculture</i>	<b>XXX</b>	<b>XXX</b>	<b>X</b>		<b>2004-2005</b>	Faure and al (in press)

*Notes:* (\*) Importance of involvement is qualified on a scale ranging from some (X), medium (XX) to very strong / leading role (XXX)  
(\*\*) F.O. farmer organizations. Misc = miscellaneous

Table 2: **Components of operational set-ups implemented in the 10 case studies**

	Surveys (*)		Training	Exchange Visits	Trials, experiments and other devices (nurseries) (**)					Farmer focus groups	Workshops		
	Diag-nostic	M&E			On-station	On-farm	Farmer innov.	Particip. Exp.	Nurse-ries		Data analysis	Result assessment	Planning of activities
<b>Central Cameroon</b>	X	X	XX			X			X				
<b>Nicaragua</b>			X				XXX	X			XXX	XX	X
<b>Northern Cameroon</b>	XX		XX				X				XX		
<b>France - Reunion Island</b>	XXX	X		X								XX	XXX
<b>Mexico</b>	X	X	X	XX	X	X	(X)	XX			X	X	XXX
<b>Bresil - Cerrados</b>	X		XX	X	X		X	XX		XX	XX		
<b>Brasil - Northeast</b>	XX	X	X	XX		X	XX			XX	XX	XX	XX
<b>Equator</b>	X		XX	XXX	X		X	XX	X		X	XX	X
<b>Southern France</b>	X			X	X	X	X	X			X		
<b>Costa Rica</b>	XX		X	X							XXX		XX

Notes: Importance of the component throughout the project: X= some XX : medium XXX very important  
 (\*) Types of surveys: **diagnostic**- (both comprehensive farming system surveys, or thematic ones), **M&E**: monitoring and evaluation surveys  
 (\*\*) **on-farm**: research-designed experiments on farmers fields; **Farmer innov**: experiments conducted autonomously by farmer-innovators , **Particip. Exp**: jointly designed and managed trials between farmers and researchers