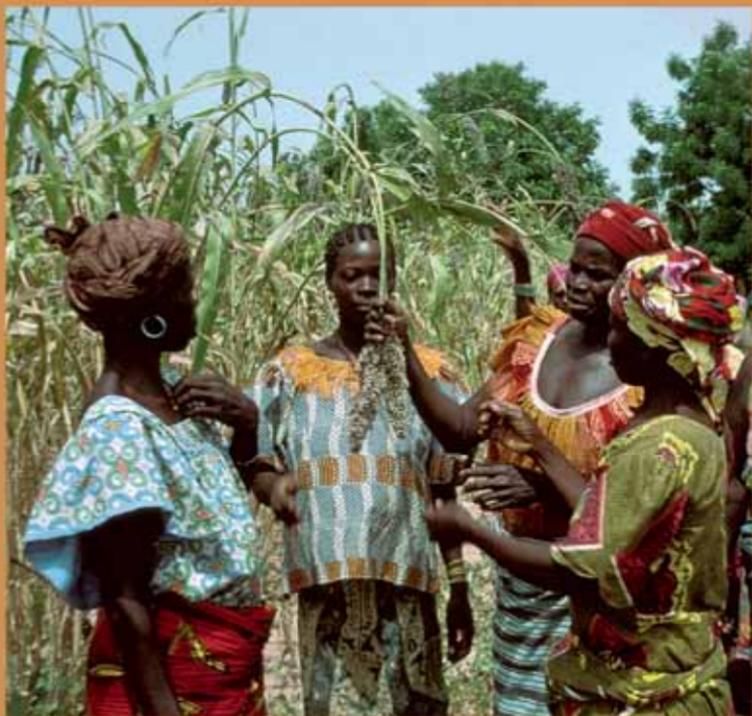




Innovating with rural stakeholders in the developing world

Action research in partnership

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12. Characterizing results of action research in partnership

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Hypotheses that shape the results

The specific and dual character of ARP (see Part 1) raises questions on what can be considered or termed as “results” or “outcome” and, by extension, on how an ARP can be evaluated.

As in other fields of research, evaluating the results of an ARP entails examining how far the initial objectives were achieved. And yet, it is common to obtain numerous intermediate results since several stakeholders are involved who implement activities in interaction with each other over the course of the project. Such interactions often lead to unexpected results, not initially identified or aimed for.

The result of an ARP or, rather, the quality of its result depends partly on the ARP’s origins and the degree of satisfaction of the partners (see Chapter 6, “Enrolling stakeholders and the place of researchers,” page 79 and Chapter 7, “Introducing action research rooted in partnership: the Unai project in Brazil,” page 97). This notion of satisfaction is fundamental: Have the stakeholders changed their perceptions of the problem and their situation, thus allowing them to jointly formulate solutions? To what extent has the identified problem allowed stakeholders to identify new partnership areas for helping them formulate solutions?

The ARP’s scientific legitimacy is based on the relevance of its results and the method of evaluating them. It is therefore necessary to distinguish, on the one hand, the research hypothesis, which shapes a long-term program for the researcher and, on the other, the action hypotheses that directly resulted from the action situation and that were worked out within the ARP collective.

The research hypothesis focuses on the principle that there is a need to know the determinants of change in order to validate explanations proposed for the phenomena under study. Action hypotheses relate to the ability of actions undertaken to come up with solutions to the



problem at hand. A specific ARP feature is to adapt research hypotheses to the outcome of the action.

Differentiating these two hypothesis types leads to a better understanding of how knowledge is created. The knowledge is “positioned” depending on the context, and is directly related to solutions and to what is at stake in the action.

In the research domain, two kinds of knowledge are required to validate the scientific positioning of the process: knowledge about the change itself and knowledge about the determinants of the change (its causes, conditions under which it occurs), which requires establishing causal relationships between the corresponding factors (Albaladejo and Casabianca, 1995).

As far as action is concerned, one of the key outcomes is the ability to come up with practical solutions to the identified problem, or even to change its conditions of expression. This change in the “conditions of expression” can be related to the innovative nature of the knowledge created and to the building up of the autonomy of stakeholders participating in the ARP.

Iterations that typically occur in an ARP process due to its cyclical nature (see Part 2) lead to periodical reviews of action hypotheses according to the intermediary results or solutions obtained, irrespective of whether they are positive or negative. The relevance of the results increases since, contrary to what is often the case in conventional linear approaches, there is no need to await the end of a project to get results and to evaluate them.

As the various partners increase their knowledge, they find it easier to pinpoint the conditions for validating initial research hypotheses. ARP thus allows the approach to be progressively fine-tuned using intermediate results. This assumes that all the stakeholders agree, at the outset, to modify their actions gradually as and when conditions for validating initial hypotheses become clear.

More specifically, ARP produces four broad types of results:

- New knowledge for the stakeholders, including scientific research;
- New questions for research;
- Resolution of problems encountered by the stakeholders;
- Building capacities and increasing the autonomy of individuals and collectives.



Producing new knowledge

New knowledge can be compared with knowledge already acquired elsewhere to identify its specificity and originality in the context of the intervention. Moreover, knowledge created through an ARP is often particular to specific situations (see Box 18). Approaches that compare different situations help build up more generic knowledge relating mainly to the conditions of change.

This knowledge can be valorized by the researchers, for example, via publications and training material, and by the other stakeholders, for example, by improving their skills and expertise or by using documents suited to their needs.

Knowledge is derived through a reflexive process. This process is manifested, for example, through the quality of questions on action and future research (relevance of research) and the modalities of

Box 18. Creating specifications for marketing pork in northern Vietnam

T.B. Vu (2002)

Producers decided to develop, with the help of research, specifications for the production of “quality pork” in the Red River delta in northern Vietnam. The purpose was to strengthen the negotiating power of producers by organizing the collective marketing of homogenous batches of pigs reared by different producers.

An ARP approach was implemented to provide answers to three questions: (1) how to define production criteria for specifying a “suitable pig,” (2) how to organize a local debate to change the practices of the producers to meet these criteria, and (3) what new knowledge to create, for the pig producers and with their help, to evaluate their practices and to encourage them to comply with the specifications.

The following knowledge was produced within this framework:

- A characterization of production systems and practices of pig producers;
- The definition of several pig rearing techniques, adapted to the diversity of production conditions of the producers so as to obtain pigs that comply with the specifications;
- Specifications in the form of a document used by the producers;
- An approach for addressing the marketing of pigs in other situations in the Mekong River delta.

Some knowledge was validated and valorized by the actors. Some was validated in an academic context and resulted in student reports and scientific publications.



knowledge creation (building up research capabilities of the various stakeholders) which help mobilize the stakeholders involved.

▮ Status of knowledge

ARP leads to the creation of knowledge in three main areas: stakeholder strategies, functioning of technical systems and ecosystems, and action-research methodologies.

The status of such knowledge can vary between:

- Remaining tacit and fostering a common representation that stakeholders have of their reality;
- Being “revealed,” i.e., it is spelled out by the stakeholders; this process may include a publication phase, for example, research or development articles, or public communications;
- Being valorized, due to its generic character, in other similar situations by other groups of actors, or in training programs.

All this knowledge allows processes of change and innovation to be better characterized. In addition, the creation of such knowledge helps increase social capital via the associated learning processes. Social capital can be defined as social relationships and common norms and values that build relationships between individuals. It can be built by time and energy invested by society or by the cultural heritage and behavioral standards inherited from the past.

Knowledge on stakeholder strategies

With the help of the specific set-ups put in place (see Chapter 8, “Governance mechanisms,” page 107 and Chapter 9, “Operational mechanisms, methods, and tools,” page 121), ARP creates or modifies interactions between the partners involved. Such a situation lends itself to observing the cooperative behavior (to help reach stated objectives), the formation of alliances (to have greater say in decision-making matters as compared to other stakeholders), the competitive behavior (to safeguard personal interests or in the form of an unwillingness to share technological advances), or even stonewalling or process-blocking behavior (incomprehension or divergent interests).

Studying the corresponding dynamics, i.e., the evolution of goals of the different stakeholders, their representations, their respective projects, and the room for maneuver they have at individual and institutional levels, can eventually help identify stakeholder strategies. In this way,



we can understand how rules, norms, networks, and conventions that shape individual and collective behavior are built.

Knowledge on the functioning of ecosystems and technical systems

ARP enables the creation of knowledge on technical systems and ecosystems through surveys for undertaking an initial diagnosis or for obtaining information required to conduct research.

ARP enhances the ability to address technical, social and ecological determinants of agricultural activity (Rey-Valette *et al.*, 2007) and thus improves the understanding of the functioning of technical systems at various levels. Indeed, several levels of observation can be involved, such as crop or animal, field or herd, production system, family unit, organization, territory, or supply chain.

In some cases, knowledge may relate to biophysical processes such as the performance of a crop in a given situation or the incidence of a parasite on the performance of livestock. This knowledge relates to the nature of the problem-set constructed by the stakeholders and to what is necessary to search for solutions.

Knowledge on action-research methodologies

The approach implemented helps generate methodological knowledge on how to initiate and conduct action research processes that are suitable, on the one hand, for the diversity of institutional and social realities and, on the other, for the diversity of members of teams carrying out such research.

Validation of knowledge and its use by scientists

ARP is a constructivist approach (see Part 1). A hypothesis is therefore validated not by declaring it true or false, but by specifying the conditions under which it is confirmed (Le Moigne, 1995). These conditions tend to make the results dependent on the framework and context of the intervention, which affects the possibilities of generalizing the results.

Two additional issues are involved in the specification of the conditions:

- Making explicit the stakeholder systems that shape and define the scope of relevance of the problem to be addressed and the avenues of action to explore;
- Specifying the domain in which the results are valid.



Validation thus follows from putting the domains of relevance and validity into perspective. In conventional research, the demonstration of the proof is based on rigorous experimentation and on the relevance of the results in relation to research hypotheses.

In an ARP, the demonstration of the proof requires detailed explanation of the conditions that had to be satisfied for effectively exploring the areas of the solution and for developing satisfactory solutions within that scope. The methodological success that leads to the testing of *research* hypotheses by using *action* hypotheses is at the core of the scientific validation of generic knowledge.

Three criteria (Liu, 1992) help improve the validation of the results of action research: the level of likelihood, the level of forecasting, and the level of feasibility. The level of likelihood can be increased not only by repeated observations, but also by multiple observers with convergent analyses. The level of forecasting allows a hypothesis to be confirmed through observation. Finally, the level of feasibility allows testing of the hypothesis by participants undertaking voluntary actions.

Validation occurs when actors examine two types of questions:

- How to frame the problem and transform it into a resolvable question (Darré, 1997) by identifying solution spaces?
- How to identify solutions by putting them to the test in real situations?

By answering these questions, stakeholders can generalize results by identifying what can be transposed from one situation to another. Thus, a trajectory of capitalization of knowledge, more methodological in character, focuses on procedures researchers use to formulate research questions and on procedures for testing research hypotheses.

Academic validation of the knowledge created remains difficult. In some cases, this knowledge is indeed published as scientific or non-scientific papers. Most of the time, however, the knowledge originating from the ARP process becomes part of the tacit knowledge of those participants who have appropriated it.

The manner in which this knowledge is created in an ARP process can make it difficult for scientists to make use of it. Indeed, this knowledge results from interactions between the stakeholders, which sometimes makes it difficult to identify its originator. And yet, insofar as the creation of knowledge is based on a joint effort, its authorship must be shared. It is therefore necessary to establish rules or some sort of



“ethical code” for the collective to prevent individuals from claiming credit for themselves while ignoring contributions from the group.

Moreover, this knowledge comes from interactions between disciplines (social sciences and biotechnology), which makes their validation in the form of recognized scientific articles sometimes difficult. This is why the ARP movement should try to get better recognition by publishers and the scientific community.

The issue is of the recognition of this multi-disciplinary and holistic research approach which, by and large, contributes to changes in scientific frames of reference and fulfills the aspirations of the partners involved.

Reformulating and updating research questions

Conventional researchers often work in isolation, focusing on their areas of competence and their discipline. Consequently, they are often unaware of interactions their research may have with other thematic or disciplinary domains.

This state of affairs of specialized researchers in their ivory towers, often leads to separate research efforts on the same theme, with researchers approaching it from the partial views of their respective domains, using separate protocols, at different periods. Such a segmented approach leads to duplication of experimental research and is not conducive to the coalescing of results.

By contrast, ARP proposes to mobilize several disciplines within a single project in a process of capitalization.

Finally, it is worth remembering that the results of an ARP can be achieved as much in the short-term (sometimes within one year, but typically within 5 to 10 years) as in the long-term (beyond 15 years, or sometimes even over 30 or 40 years). These longer periods of capitalization must involve feedback. The researchers must internalize the need to revisit the fields of action on a regular basis. This they must do with a willingness to accept changes that have taken place with a view of reformulating new questions.

Thus, the adoption of reflexivity linking knowledge and hypotheses engenders second-generation hypotheses. This feedback mechanism may throw up difficulties insofar as it may not force the researcher



to revisit the original question. It may instead highlight the need for completely new research, whose conduct was not foreseen and planned for in the project underway.

It is in this manner that an ARP can help formulate, if it is fruitful, new questions and research hypotheses, which may have a wider ambit, as shown in Box 19.

Box 19. Formulating a research program based on the results of an action research in partnership

C. de Sainte Marie and F. Casabianca

A research team assisted a group of farmer-processors of dry pork products from the mountains of Corsica. Their objective was to help them market these products, characteristic of their region, in a high-end market segment. The traditional nature of these production systems led to a strong reliance on the local expertise to propose innovative products: a “carry over” dry sausage (culling in winter for consumption in summer) and an 18 month-old dry ham. To develop these two products, the group had to be able to validate, at each step, research hypotheses, action hypotheses, and results. This allowed the main question to be addressed: how to innovate together in ancestral production systems.

In this case, it was by using retrievable memory of the local culture, particularly for products meant for self-consumption, that this question acquired meaning and was able to be further broken down into more practical questions: What techniques are used by farmer-processors to produce ham and sausage? Who are the people who possess this knowledge? How to mobilize this ancient knowledge to develop new products?

Questions in this ARP, which were specifically asked by producers or producer organizations in several other situations, then became constituents of a research program on developing new food products based on local knowledge. This ARP thus served as an example that has helped answer, through acquired knowledge, a much broader central question.

Answers to stakeholder questions

The third result of an ARP is the resolution of the stakeholders’ problem. It is important to consider two elements. First, the causes and the conditions of change are as important as the terms of the change itself (what it impacts). Second, technical aspects must be considered at the same level as aspects relating to human or institutional issues.

In fact, the diversity of stakeholders and partners involved in an ARP often allows the exploration and creation of new spaces for technical



and organizational solutions for well-known problems that were hitherto considered unsolvable. It also allows the progressive specification of those conditions that will have to be satisfied before some solutions can take effect.

For example, a new space for a solution to a problem that has no apparent solution at the individual level can open up when its scope is changed and it is treated at the collective level. The challenge then becomes knowing how to form this collective and how to lead it to look for solutions, and not to focus at the problem as it was originally formulated. We distinguish between results at the technical level from those at the organizational and institutional levels.

▮ Results at the technical level

In order to solve the problem identified by stakeholders, an ARP can lead, as with more conventional research, to the creation and dissemination of technical innovations related to, for example, agricultural production, product processing, or management of natural resources.

But in contrast to conventional research, such innovations are already tested and validated on farms, businesses, or territories and are better suited to the needs and limitations of the stakeholders concerned (see Box 20).

▮ Results at the organizational and institutional levels

Technical innovations are related to organizational innovation, as illustrated in Box 21. The resolution of the problem encountered by the stakeholders in an ARP thus requires a strengthening of the effectiveness of collective actions via improved coordination between stakeholders.

ARP leads to the building up of social capital that can, in some situations, result in the creation of formal organizations to sustain the dynamics of change. It can thus give rise to horizontally structured organizations, such as producer groups, cooperatives, and federations with the same economic goals, or to vertically structured ones, such as inter-professional organizations and integrated businesses.

In addition, such new coordination efforts can result in the emergence of new norms governing the relationship between organizations in the same commodity chain or territory. These norms are mutually agreed upon and strengthen the identity and distinctiveness of existing organizations.



Box 20. Technical innovations for plantain producers in central Cameroon

L. Temple and M. Kwa

Plantain producers in central and southern Cameroon find it difficult to expand their plantation with high-yielding resistant plants. In fact, conventional techniques of propagation by suckers encourage viral contamination.

An ARP was initiated in 2000 involving researchers, the staff of a development project, and producers. It helped perfect new techniques among the farmers for producing healthy suckers through micro-cuttings. The techniques were subsequently adopted by nursery owners who proposed modifications to the original methods based on their expertise and experience. This led to the establishment of a network of nursery owners that notched up sales of 100,000 seedlings. A monitoring and evaluation program of the corresponding partnership set-ups since 2002 led to the updating of concerns facing agricultural research. In this particular case, the success of the new techniques led to an increase in thefts from nurseries, so much so that nurseries had to be moved closer to human habitation. However, the use of sawdust in these nurseries led to the proliferation of termite hills, thus posing a risk for houses. Consequently the ARP, which had initially aimed at the creation of a new technology, had to initiate new research to solve the problem of termite attacks.

Box 21. Institutional innovation

L. Temple and M. Kwa

The ARP approach implemented in central and southern Cameroon created conditions for the emergence of two organizations that are complementary but located in different areas.

The first is an inter-professional network for plantain (Ribap, Cameroon) that consists of about 50 nursery owners (growers) and supervisors (field advisors). Its objective is to improve the techno-economic performance of member nurseries.

The second organization is an association of plantain growers in Leikie at Sa'a (Aspabal). It consists of 11 nursery owners whose main activity is the sharing of information on marketing opportunities, sharing of experiences, and commercial promotion of the new plantain material. These different initiatives institutionalize a network of experimenter-farmers based on seedling production.



ARP also modifies the coordination between institutions, particularly between research institutions and development agencies, between research and producer organizations, and between development agencies and farmer organizations. It can lead to the creation of social networks and building up of a strategic resource that is always difficult to assess: the trust between stakeholders in a territory or a commodity chain (see Chapter 7, “Context and issues,” page 97).

Building individual and collective capacities

▮ Building individual capacities

ARP is a learning process that relies on constant interactions between stakeholders to jointly formulate research questions, identify solutions, and evaluate results.

In the agricultural sector, the ARP stakeholders acquire new knowledge on plants, animals, interactions between the physical and human environments, and the functioning of organizations. They thus improve their ability to observe environments, their management skills, and their ability to experiment (Temple *et al.*, 2006).

More generally, participation in an ARP process leads to improved skills of individuals in the domains involved through the acquisition of knowledge or specific know-how. A participant thus regularly experiences collective recognition and also derives personal satisfaction from being a member of the ARP collective.

▮ Building collective capacities

In general, ARP improves the ability of the stakeholders to build partnerships that shape collective actions and increase the effectiveness of their activity (see Chapter 2, “Research in partnership,” page 31). It thus increases usable knowledge (actionable knowledge) and improves the ability of stakeholders to convert it into coordinated actions. Consequently, human capital and social capital increase simultaneously, even though it is often difficult to measure and evaluate them.

The degree of stakeholder involvement in collective action, i.e., the level of mobilization in the implementation of the ARP, is an important indicator of the degree of appropriation of the ARP approach by them.



||| Increasing autonomy

This acquisition of knowledge and know-how builds the capacity of participants to be autonomous, i.e., it enhances their ability to undertake new experimentation by themselves with an increased probability of success.

This increase in autonomy can, in some cases, be considered as an important criterion for assessing the success of an ARP. For this, we must be able to show that the autonomy imparted allows stakeholders to tackle a new, more or less similar problem, without external support.

Finally, institutional and organizational changes, development of new stakeholder capacities (posture, awareness, effective participation in action) and the collective ability to formulate problem-sets, mobilize expertise, and implement actions can all be viewed as results of an ARP.