



Participatory research, advisory support systems, knowledge co-creation and agroecological innovations tailored to producers' needs

Introduction

Participatory research, advisory support and innovation tailored to producers' needs are essential to promote agroecological practices that meet local challenges.

Actors from a variety of public and private institutions (researchers, extension workers, producers and other stakeholders) work together to identify and implement activities to conduct diagnostic, identify, test and scale up relevant solutions. Participatory research, advisory support and the co-creation of agroecological knowledge and innovations adapted to the needs of producers are the focus of the partnerships supported under the Agroecology Programme for West Africa (AEP) of ECOWAS.

This note is one of seven (7) thematic ones resulting from the capitalisation of the AEP. It aims at documenting the participatory research and advisory support systems set up to develop agroecological innovations tailored to producers' needs. The analysis is based on a review of various works on the experiments set up throughout the region, general interviews with key stakeholders in agroecology at regional level, case studies in six (6) countries (Benin, Côte d'Ivoire, Ghana, Nigeria, Senegal and Togo) and the conclusions of a regional workshop to discuss the provisional results.



Summary of experiences

Description of systems

ACTORS AND OBJECTS

The promotion of research, advisory support and the co-creation of knowledge and agroecological innovations as part of the AEP has been based on (i) the development of 13 partnerships between stakeholders; (ii) capacity-building for national agricultural extension system agents, and (iii) the strengthening of platforms for the exchange of agricultural advice with a view to disseminating innovations. Participatory research, the identification or co-construction of solutions tailored to the needs of small-scale producers on the one hand, and advisory support and the dissemination of these solutions through various stakeholder platforms on the other hand, have been the focus of partnership projects. These partnerships bring together agricultural professional organisations, research centres, training centers and advisory support organisations. Broadly speaking, the participatory research supported by the AEP in the field has focused on the development of crops such as cassava, maize, soya, rice, sorghum, market gardening and/or fish farming, which are important for improving food security. They have helped to promote conservation agriculture and organic farming, and in particular the use of plants to improve soil fertility, new drought-resistant varieties and/or biopesticides and organic fertilisers.

SYSTEMS AND OVERALL APPROACH

A general pattern of research systems emerges from the experiments, but with variations:

 **CHOICE OF STARTER:** initially, this is often a problem felt by producers.

 **IDENTIFICATION OF PRODUCERS' NEEDS,** by means of a participatory diagnostic involving producers, the advisory support organisation and the research centre, to gain a better understanding of the problem. The way in which the roles of collecting and analysing information and identifying possible solutions are shared between the stakeholders varies from one system to another. For example, the surveys are carried out in some cases by the advisory support organisation and in others by the producers' organisation. In still others, they are carried out by agricultural research centres. Several methodological approaches are used to identify producers' needs. These methods are often based on a participatory approach and incorporate various tools such as community meeting, in-depth diagnostic and participatory mapping.

 **EXPERIMENTATION OF NEW SOLUTIONS:** it is generally the research centre that proposes technical solutions which are then experimented either in farmers' field schools (FFS) or on pilot plots (demonstration plots) and sometimes at the same time on farms with the support of the advisory support organisation. The results obtained are discussed. A process involving all the stakeholders, and usually led by the research centre, is thus initiated. However, many projects simply demonstrate agroecological practices with a view to scaling them up. This can be explained by the lack of time and resources to engage in genuine co-construction of innovations, but also by the pre-eminence of traditional research and development approaches and the lack of experience of the stakeholders in co-constructing knowledge and innovations. However, some innovations are reinvented by producers to extend their usefulness, as in the case of service plants, which are used to fertilize soils and increase yields in yam fields in central Benin.

 **VALIDATION OF INNOVATIONS:** in some cases, the innovations developed have been validated through feedback workshops. In other cases, a competition to identify and reward the best field school and the best grower is organised to motivate growers and serve as models of adapted practices. Bodies such as participatory evaluation committees are sometimes set up, but often lack formal tools for validating and sharing knowledge effectively.

 **EXTENSION AND ADVISORY SUPPORT:** practical demonstrations are then carried out by the advisory structure to help producers implement the new techniques, or exchange visits between producers are organised by the research centre to promote the sharing of experience and knowledge. To improve the effectiveness of farm advisory services, the training of national extension system agents in agroecology is often provided by consultants (development of training modules and running of sessions on farm advisory services, agroecology or advice in agroecology) under the management of the AEP National Correspondent.

 **SCALING UP INNOVATIONS AT LOCAL LEVEL:** to ensure that innovations developed on a large scale are disseminated, the advisory support organisation often sets up training courses for other producers supported by exchange visits organised by producers' organisations or other structures. Radio broadcasts on agroecological practices also contribute to this. The training centre publishes technical guides and practical information sheets to help



› Construction of integrated rice–fish ponds in collaboration with farmers under the AfricaRice–Catalyst–Suayemco partnership in Liberia.

producers adopt the new methods. Extension videos in local languages are also produced and shared with producers. Innovations are also sometimes scaled up through exchanges between different field schools, the setting up of exchange and ongoing training platforms and cascade dissemination systems based on relay producers.



SCALING UP KNOWLEDGE AT NATIONAL AND REGIONAL LEVELS: Efforts are being made to create synergy between agroecology advisory activities at regional

level, in particular with the Réseau des Services de Conseil Agricole et Rural d'Afrique de l'Ouest et du Centre (RESCAR-AOC), through the organisation of international webinars and the drafting of notes for decision-makers on the strategic levers that can be used to develop advisory services agroecology in West Africa.

Producers' participation, co-construction and appropriation of innovations

LEVELS OF PRODUCERS' PARTICIPATION

The level of participation by producers in the process of co-constructing innovations seems to vary from one experience to another. In some cases, participation appears to be quite extensive. Participatory diagnostics are carried out to identify the needs of producers, who can express their concerns about soil fertility, water management, crop diseases and the profitability of their activities. Through discussions, producers can identify the main priorities for improving their production systems, as well as helping to draw up proposals for alternatives to be tried out or selecting practices to be tested in a collective field (a school field, for example) or on their own farm. In this case, the field schools are places where producers can experiment directly with new practices to see by themselves the concrete results of the proposed practices, with a view to implementing them on their own farms. In addition, training sessions are organised on topics such as fertilizer plant management, crop rotation, organic fertilisation and water management. Producers receive technical support to help them overcome any difficulties they encounter and adjust their practices in line with the results observed. Regular monitoring enables practices to be corrected, yields to be optimised and the sustainability of the systems to be strengthened. This approach has enabled solutions to be co-constructed, with varying degrees of involvement from producers at each stage.

However, the participation of producers in the innovation and research processes seems to be less important in some cases. Their participation may be limited to the diagnostic and validation phases, and not to the development of innovation proposals drawing on their own knowledge and skills, or to the experimentation phase as such. The field schools are then designed as demonstration fields, used to enable producers to meet in the field, observe agroecological practices and discuss the results obtained.

Among the factors limiting producers' participation, the predominance of traditional approaches to research-development, where research alone is responsible for proposing innovations for subsequent implementation by producers the lack of access to information, the poor representation of small producers and socio-cultural barriers are often cited.



› Demonstration plots of several agroecological innovations from the CNTA CRI NAFFAWAG partnership in Ghana: maize–canavalia inter-crop-ping, fallow with mucuna, climate resilient maize (Opeaburo), and dual purpose cowpea (Zamzam).

DISSEMINATION OF INNOVATIONS BEYOND THE PRODUCERS DIRECTLY CONCERNED

The methods used to disseminate agroecological innovations to reach a wide audience beyond the producers who participated in the projects include (i) community channels and media (community awareness meeting, local radio, market day/place), (ii) digital channels and media (videos, SMS, digital platforms or online assistance to disseminate simple, practical information on agroecological innovations), and (iii) community leaders and relay producers as knowledge-sharing relays with their peers. In addition, the setting up of multi-actor platforms has encouraged the sharing of experience between producers and researchers.



Lessons learnt and conclusions

Positive and negative impacts

The effects of agroecology research and support systems depend in part on whether the innovations proposed are appropriate to the situation of the producers, their objectives and their constraints. For example, although certain crop combinations may be beneficial for productivity, they may not meet household self-consumption needs. The benefits of research and advisory support relate to the implementation of agroecological practices, the reduction in the use of chemical products and the management of natural resources. In terms of performance, the reported effects are improved yields, productivity, income security, improved soil fertility and biodiversity, and resilience of farming systems to climatic hazards. The positive effects noted following the implementation of participatory research and advisory support also include strengthening the capacity of producers, including women and young people. No challenges have really been reported.

The main difficulties that have limited the impact of the participatory research and advisory support systems are partly linked to the traditional methods of research and advisory support, in which the participatory nature is not at the heart of the approach, to the financial and material constraints on long-term project support, to the unsuitability of certain innovations for the situation of producers, and to communication difficulties between researchers and producers. To this can be added exceptional situations such as the destruction of demonstration farms and the fields of certain producers during attacks and the disruption of producer participation due to community clashes. These difficulties have often hampered the achievement of objectives by limiting the active participation of producers, slowing down the process of appropriating innovations and limiting the extent to which agroecological practices are disseminated.

Conditions for implementation and success

The implementation and success of participatory research, advisory support and the co-creation of knowledge are the result of the combined effect of several factors:

-  **INNOVATION:** the innovative design of research and advisory support, and in particular the genuinely participatory nature of this approach, have played a key part in the development of agroecological practices.
-  **PARTNERSHIP:** the existence of a multi-institutional partnership with complementary expertises has contributed to the success of participatory research experiments, with participants sharing principles of mutual trust, equality or equity, as well as common objectives.
-  **INTEREST FOR THE STAKEHOLDERS:** for participatory research to work, all the stakeholders must have an interest in it: a problem to solve for the producers (e.g. land degradation, very low yields, existence of outlets/markets, etc.), empirical data for the researchers, service or business opportunities for the support structures. Defining the purpose of partnership research is therefore of paramount importance.
-  **COMMUNICATION:** good two-way/multi-directional communication between researchers and producers is another success factor. This is the case when producers can give their opinion, ask questions and share their feedbacks on the proposed innovations. This means that researchers need to establish a climate of trust with producers to encourage their involvement. The language issue can also be a major constraint when technicians are not fluent in the producers' language or when there is a diversity of languages. Finally, the results must be disseminated in an accessible language to ensure that all stakeholders understand and can apply the knowledge generated.
-  **TAKING LOCAL KNOWLEDGE INTO ACCOUNT AND CO-CONSTRUCTING KNOWLEDGE:** producers are more or less involved in defining the objectives and methods for developing and testing innovations, throughout the research and advisory support process. A high level of producer involvement ensures that the research meets the real needs on the ground, because their knowledge and skills are essential to the success of the systems. This is the case when there are regular consultations and exchanges



› Demonstration plot on compost and mulch for cabbage cultivation under the CTOP ITRA ICAT partnership in Togo.

through participatory workshops, discussion forums and field schools, where producers share their experiences and difficulties and learn from each other.

-  **DURATION:** duration is also an essential factor in success. For example, a 6-year project gives time to truly co-construct and test solutions with producers.
-  **RESOURCES:** the resources made available to the consortia, however small and despite the difficulties of disbursement, have played a major part in the success of the participatory research projects. The deployment of resources at the right times for critical activities such as experiments, learning workshops, exchange and dissemination visits is considered essential.
-  **ACCESS TO SERVICES:** another important aspect is to put producers in touch with other institutions providing the services they need to implement agroecological practices. Depending on the case, these may be microfinance institutions, supply of agricultural equipment and inputs, specialist technical advice, marketing of agroecological products, etc.

Sustainability conditions

Several conditions for the sustainability of participatory research, advisory support and the co-creation of knowledge can be identified.

-  **DURATION:** supporting participatory research initiatives over the long term enables research teams to consolidate their position by mutually reinforcing their ability to work together on common agroecological research issues. This involves getting to know and accept each other, developing a shared understanding of the approaches and tools for collaboration and intervention, developing relationships of trust between stakeholders and boosting the self-confidence of all stakeholders, especially producers.

In addition, implementing participatory and co-construction methods takes time to produce tangible results.

-  **SUSTAINABLE FUNDING:** sustainable funding mechanisms are essential for the sustainability of participatory research and the co-construction of agroecological innovations.
-  **ABILITY TO INNOVATE AND ADAPT:** the environment, needs and interests of stakeholders are changing. Research bodies, advisory services and producers' organisations need to be able to renew their partnerships to maintain stakeholder commitment and seize new opportunities. Mechanisms need to be put in place to constantly renew research objectives and methods to meet the needs of other categories of producers, including women and young people.

Scaling up conditions

There is still a huge need for agroecological innovations that are appropriate to producers' conditions. These needs explain the importance of scaling up participatory research in agroecology. Scaling up participatory research and advisory support in agroecology requires (i) the availability of stable financial resources to facilitate the setting up and running of participatory research and advisory support consortia over a certain period of time; (ii) the strengthening of the partnership culture and collaboration capacity of development organisations; (iii) setting up systems or mechanisms for sharing information on opportunities for collaboration, making the most of digital technologies; and (iv) flexibility in the ways in which consortia are set up (objects of partnerships, number of institutions, types of institution, etc.) to allow contextualisation and adaptation to the specific needs of each institution.) to enable contextualisation and the emergence of innovative models that take account of the type of participatory research and advisory support to be undertaken.



Public policy recommendations

The aim of this section is to identify the conclusions related to incentive measures, frameworks and support systems that can be implemented by national, local and regional public authorities, to encourage sustainability and scaling up of participatory research, advisory support systems, knowledge co-creation and agroecological innovations tailored to producers' needs.

 **FACILITATING THE SETTING UP OF MULTI-STAKEHOLDER PLATFORMS** providing forums for the exchange of information, knowledge and research results. This includes support for the organisation of events that stimulate the development of agroecology: national and local workshops on the key issues of the agroecological transition, exchanges between producers, taking care to give producers a voice.

 **PROMOTING COLLABORATIVE AND PARTICIPATORY APPROACHES** by encouraging interaction between researchers, extension workers and producers involved in agroecology. This implies not only a commitment from research centres but also the political will to integrate agroecology into educational programmes and farming practices. By focusing on collaboration between all the stakeholders involved, including producers' organisations and training centres, it is possible to create an environment that is conducive to sustainable innovation.

 **DEVELOP AND IMPLEMENT A POLICY FOR MAKING THE MOST OF LOCAL KNOWLEDGE IN THE AGROECOLOGY RESEARCH AND DEVELOPMENT PROCESS.** Building the capacity of stakeholders in this area can help to promote the integration of local knowledge into research.

 **DEVELOP AND IMPLEMENT LONG-TERM NATIONAL PROGRAMMES** to support participatory and partnership-based research into specific agroecological issues, to encourage ongoing dialogue between researchers, advisory support organisations, producers and political decision-makers, thereby facilitating wider and more effective adoption of agroecological innovations. Agricultural professional organisations should play a central role in these programmes, and their position as the voice of producers should be strengthened.

 **PROVIDE TECHNICAL AND FINANCIAL SUPPORT FOR PARTICIPATORY RESEARCH** by developing human resources (integrating agroecology into training curricula), funding research infrastructure and experimentation facilities, and strengthening the institutional and organisational capacities of stakeholders (research, advisory support, POs, etc.).



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