

Participatory Action Research

to enhance the adaptive capacity of smallholder farmers
to better respond to climate change and variability

Synthesis Report



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ABBREVIATIONS USED

| | |
|---------------|--|
| CC | climate change |
| CCAA | Climate Change Adaptation in Africa |
| COP | Conference of the Parties (to the United Nations Framework Convention on Climate Change) |
| DFID | Department for International Development (UK) |
| EU | European Union |
| FAO | United Nations Food and Agriculture Organization |
| ICART | Implementation and Coordination of Agricultural Research and Training (SADC) |
| IDRC | International Development Research Centre (Canada) |
| IIED | International Institute for Environment and Development |
| IISD | International Institute for Sustainable Development (IISD) |
| ISFM | Integrated soil fertility management |
| MAFC | Ministry of Agriculture, Food and Cooperatives (Tanzania) |
| NGC | National Consultative Group (Malawi) |
| NGO | Non-governmental organization |
| PAR | Participatory Action Research |
| PARBCC | Strengthening the Capacity to Adapt to Climate Change |
| PRA | Participatory Rural Appraisal |
| SADC | Southern African Development Community |
| SCF | Seasonal Climate Forecasting |
| SMAP | Small and Middle Term Adaptation Plan (Morocco) |
| WWF | World Wildlife Fund |



Extensive research indicates that climate change is one of the most serious threats to sustainable development, with adverse impacts expected on the environment, human health, food security, economic activity, natural resources and physical infrastructure (Roncoli, 2006; German et al. 2009).

The main direct effects of climate change on agriculture involve events such as droughts and floods, and changes to temperature, precipitation and length of growing seasons. All of these affect crop and livestock production, as do the changes in atmospheric concentration of carbon dioxide (CO₂). Farmers, including pastoralists, in many African countries have developed complex coping strategies to deal with climatic and other vulnerabilities over the millennia. However, in recent years their coping strategies and capacity to cope have increasingly been taxed by rapidly changing socio-cultural, political, economic and climatic systems with which they have been confronted (German et al. 2009).

In the face of these challenges, the International Development Research Centre (IDRC) of Canada and the Department for International Development (DFID) of the United Kingdom (UK) embarked in 2006 on a major initiative to enhance adaptive capacities to cope with climate change in a program called Climate Change Adaptation in Africa (CCAA). The program supported more than 40 projects to enhance resilience and adaption to climate change in a range of sectors, including agriculture and food security, coastal erosion, health and urban issues. This report draws from 26 projects that focussed on exploring the intersection between agriculture and climate change. The primary focus of the research and enquiry of these projects was to understand how climate stressors are affecting agricultural productivity and exacerbating food insecurity and poverty.

The CCAA program explored and applied Participatory Action Research (PAR), which, as Ziervogel & Opere (2010) note, provided new insights and ensured that adaptation techniques are not merely theoretical. Thus, researchers worked directly with farmers, extension officers, meteorologists, and policymakers to address challenges brought about by climate change. In the CCAA context, the PAR approach was used to enhance adaptive capacity through mechanisms and procedures that facilitate: (1) adoption of new technology; (2) experimentation; (3) evaluation of results and integration of lessons learned into a new participatory process that involved all the intended stakeholders, through a variety of learning mechanisms.

The valuable research work in climate change adaptation during the six years of the CCAA program has generated considerable knowledge across the livelihoods–agriculture sector. These research findings are now being considered for utilization by a wider audience across the continent and beyond.

This synthesis paper emerged from a workshop held in July 2011. The workshop aimed to document experiences and lessons on how PAR was being applied to facilitate adoption of various distinctive farming techniques as adaptive strategies to deal with climate variability and change. Overall, the paper seeks to address three important key questions. (1) What can PAR contribute to mitigate the problems linked to climate change, as compared with other approaches? (2) To what extent can PAR facilitate adaptation to climate change? (3) What are the implications of using PAR to facilitate climate change adaptation?

Experiences analyzed in this paper are intended to provide insights to those who do not have direct experience or who are unfamiliar with the PAR process, and to those who would like to apply PAR in future climate change adaptation work, particularly in agriculture. Specifically, the paper is intended to be accessible to both scientists and to a non-scientific audience. The aim is to make these important research findings available to a broad audience, including researchers, scientists, rural development practitioners, extensionists, donors, non-governmental organizations (NGOs) and policy makers. Thus, an attempt has been made to find the right balance between theoretical and practical insights.

2 Climate Change Adaptation, agriculture and livelihood context

2.1. Climate change adaptation, Africa's smallholders and livelihoods

In 2010, the United Nations Food and Agriculture Organization (FAO) estimated that there were nearly one billion hungry people in the world (IIED, 2011), with 239 million coming from sub-Saharan Africa (World Hunger Education Service, www.worldhunger.org). To ensure, preserve and enhance food security in the decades to come, agriculture will need to become both more productive and more resilient to shocks¹, such as droughts and declining soil fertility. In particular, it will require us to find strategies to tackle key environmental issues, including climate change (IIED, 2011).

A range of impacts is associated with climate change and variability in Africa. Among them are decreases in grain yields, changes in runoff and water availability, increased stresses caused by more severe droughts and floods. Projected reductions of yields in some African countries are as high as 50% by 2020. Net crop revenues could fall by as much as 90% by 2100, and small-scale farmers would be the most affected (Howden et al. 2007).

In recent years, adaptation² has become a key focus of the scientific and policy-making communities and is now a major area of discussion in the multilateral climate change process (IISD, 2011; Ziervogel and Opere, 2010). According to Adger et al. (2005), adaptation is a continuous stream of activities, actions, and attitudes that informs decisions about all aspects of life and reflects existing social norms and processes. Adaptation research undertaken now can help inform decisions by farmers and policy makers with implications over a range of timeframes, from short-term to long-term tactical strategies (Howden et al. 2007).

Hagmann and Chuma (2002) contend that one of the challenges in agriculture and livelihoods is how to enhance farmers' and other stakeholders' own capacities so that they can make well-informed decisions and adaptively manage their resources. This is the basis for the thematic focus by CCAA to support local agricultural responses to climate change.

As mentioned earlier, agriculture remains one of the main development sectors through which the poor and most vulnerable feel the impacts of climate change, particularly in Africa. In recognition of the importance of agriculture and the fact that smallholder farmers have adaptation strategies, which unfortunately are not robust or sufficient to enable them to adapt to the changing climate, CCAA has generated knowledge on distinctive innovative farming techniques / practices that can strengthen smallholders' adaptive capacity. These include:

- soil conservation and fertility
- water harvesting and savings
- new crop varieties
- improved seeds
- integrated seasonal forecasting and dissemination of climate information

These techniques and practices are not new but in the past they have not lived up to expectations to produce significant results. However, through the PAR approach, the CCAA program has identified and validated distinctive and innovative factors that have led to the development of a number of social innovations.

¹ These shocks and the vulnerability of African agriculture are not due only to climatic drivers. There is a kind of contextual vulnerability in general, and some non-climatic drivers such as policy, markets and lack of access to sound technologies, are also increasing this vulnerability.

² Adaptation can be reactive; for example, changing planting dates or controlling erosion. Or it can be proactive, anticipating impacts before they happen; for example, by developing new drought or salt-tolerant crops and animal breeds, or by diversifying crops and improving soil management (IIED, 2011).



3 Participatory Action Research and Climate Change Adaptation

Empirical research can guide action by characterizing situations, thereby setting the context and rationale for development-oriented interventions. Action-oriented research, on the other hand, has a fundamental role to play in synthesizing action-related findings (“What works, where and why?”) for a broader audience and also in determining how empirical research results can best inform development practices, and thus promote scaling out the impacts of location-specific development interventions (German and Stroud, 2007). The purpose of this paper is not to set or examine the boundaries of the different types of research. Rather, it aims to broaden the discussion on PAR and on how, like other research approaches, it can play an important role in achieving developmental impact when used in the context of the CCAA program and other climate change projects.

3.1. The PAR approach: an overview

Participatory Action Research refers to a spectrum of approaches that involve combinations of research and action (Savin-Baden and Wimpenny, 2007; Parkes and Panelli, 2001) in a series of processes that define, address and reconsider issues. PAR approaches are widely employed in fields as diverse as agricultural development, health, sociology, and rural studies. They can be differentiated from other conventional methodologies in that they are more inclusive, even sometimes emancipatory (Parkes and Panelli, 2001).

PAR involves forms of inquiry that bring together researchers and the researched population as collaborative partners so that they can work to identify and address mutually conceived issues or problems. The two core components of PAR — action and participation — characterize both the goals and strategies of this type of research. First, PAR involves an interest in “action” — in working towards or achieving some wider social or community goal through the process of research. In this form, action is reflective and focused and it involves both explicit purpose and reflection. Second, PAR is implemented through goals of “participation” of the researched population. The focus on participation ensures that those being researched, those the research is intended to benefit, are involved (to varying degrees) in the research program (Parkes and Panelli, 2001; Baum, et al. 2006).

3.2. Why PAR for climate change adaptation?

The negative impacts of climate change will continue for a long time to come. They will be felt particularly by resource-dependent communities through a multitude of primary and secondary effects cascading through natural and social systems. This has led to calls for adaptation as the most viable option for reducing the threats associated with climate change, particularly in Africa, which is considered the continent most vulnerable to climate change (Adger, 2003).

3.3. How CCAA projects applied PAR

For the CCAA projects, PAR has been defined as a process of social learning and change carried out by local development actors themselves, including villagers, extensionists, local leaders and policy makers, the private sector and researchers. The process is operationalized through an iterative process of planning, action, reflection and modified action (Figure 1).

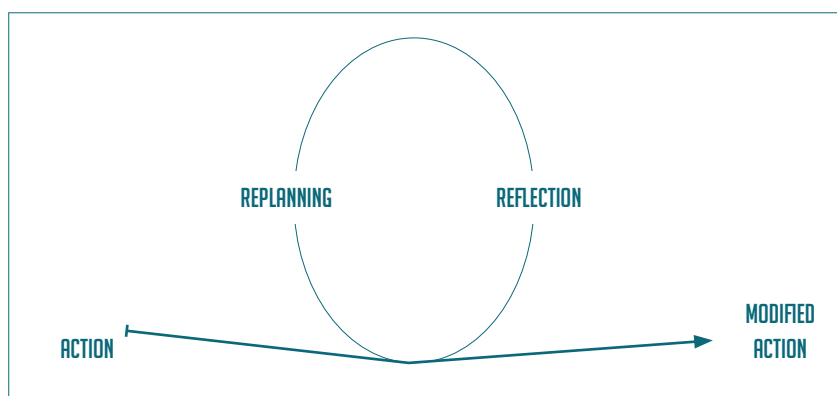


Figure 1. Action Learning / Research Loop

In CCAA projects, the PAR steps were implemented as shown in Table 1.

Table 1. Step-by-step PAR process in CCAA projects

| STEPS OF THE PAR PROCESS | | HOW THE STEP WAS IMPLEMENTED |
|--------------------------|--|--|
| 1. | Getting started | <ul style="list-style-type: none">• Team building• Partnership• Mobilization |
| 2. | Understanding the starting points and aims | <ul style="list-style-type: none">• Diagnosis and baselines• Conceptualizing change |
| 3. | Planning | <ul style="list-style-type: none">• Participatory action planning• Action research planning |
| 4. | Managing change | <ul style="list-style-type: none">• Supporting the implementation of planned actions• Monitoring, evaluation and adjustment |
| 5. | Empirical research inputs to PAR | <ul style="list-style-type: none">• Deeper analysis of the system• Impact Assessment |

4 Ensuring quality in the PAR process

Much of the debate on the quality of action-oriented research has arisen as a response to the perception and arguments that this kind of research is not “scientifically robust” (Burns, 2007: 155). In the view of Campbell et al. (2006), it is difficult to pin down quality processes that should be inherent in PAR. However, others (Hagmann 2011; Zuber-Skerritt and Fletcher, 2007; Reason, 2006), contend that the quality of action-oriented research can be assured if it meets certain requirements, as discussed below. Reason (2006) argues, however, that none of these criteria is in any sense absolute; rather they represent choices that those undertaking the action research must make in the course of their work.

Hypothesis

The conceptual background and context of any research need to be clearly and explicitly described at the outset of the project, action research or otherwise. This means that the researchers begin by situating the study in the existing literature. Out of this, its aims, research questions or hypotheses flow (Barker and Pistrang, 2005; McKay and Marshall, 2001). McKay and Marshall (2001) emphasize the need to clearly formulate research questions or hypotheses before starting an action research project.

Effective implementation of PAR research loops depends heavily on processes and management that facilitate and ensure quality of the work. According to Campbell et al. (2006), facilitation for process management is about coordinating, negotiating and managing high quality learning processes. This is achieved by facilitating and promoting cross-disciplinary integration, knowledge sharing and learning among stakeholders. Experience accumulated elsewhere (Ngwenya and Hagmann, 2009: 223) reveals that there is direct link between the quality of facilitation and the impact of participatory research approaches.

Clear methods and tools

The PAR approach draws on the paradigms of critical theory and constructivism and may use a range of qualitative and quantitative methods. This allows researchers working in the development context to employ a number of research tools, including surveys and interviews (Baum et al., 2006; Parkes and Panelli, 2001; Coughlan and Coughlan, 2002). Coughlan and Coughlan (2002) note that the use of these methods and tools by the researchers should be negotiated with community members that are involved in the research process.

Rigour in application and analysis

Establishing credibility among and between participants is one way of increasing rigour and validating the action research process (Melrose, 2001). Melrose (2001) suggests some ways through which rigour in action research can be improved. First, the action research process should proceed through a number of cycles, and early cycles are used to help shape the later ones. Second, the use of critical reflection in each cycle allows the action to be integrated with research, and this permits and promotes a more thorough probing of the situation and practices under investigation.

Systemic and analytical approach for observation

It is important to develop a systemic approach for observation. It is through this observation that assessments can be made of the quality of the implementation of the action-oriented research process and of the degree of interaction by the participating stakeholders. The systemic approach is also important for incorporating lessons learned in one cycle into the next learning cycle. This ensures continuous learning and conceptualization of the lessons learned (Campbell et al. 2006; German, et al. 2009).

Adaptation and learning within the process

While facilitation is the foundation of any dynamic process, other tools are required to enhance the process of adaptation and learning (German, et al. 2009). Rapid feedback in the learning cycle and documentation of the process are two important tools for enhancing adaptation and learning.

Rapid feedback in the learning cycle

In reality, the PAR process is not a straightforward set of neat, self-contained spirals of planning, action and observation. Throughout the process, action researchers should also stand back and reflect on each action as it happens and in this way ensure that it contributes to the body of knowledge. The action researcher can enhance the learning process by sharing the collected data and feedback with the clients for analysis. In this way, each action research cycle leads to the next and thus provides an opportunity for continuous learning to occur. Thus, the action research project may be one major cycle with several minor cycles within it (Coughlan and Coughlan, 2002; Savin-Baden and Wimpenny, 2007).

Process documentation

Documentation of the process is designed to ensure that action researchers reflect on the approach used to facilitate change and how the facilitation process itself influences outcomes at each stage of any change process. It is a process of group reflection, analysis and recording of the approaches used, as well as the outcomes. It captures a record of what really happened — not what should have happened. Process documentation is being advocated for use by research and development teams involved in facilitating change. It enables them to learn lessons that then feed into and improve the facilitation approach (German, et al. 2009).

Joint ownership of the PAR process

Regardless of how a project is initiated and how committed and open the primary researcher is, the success of any PAR inquiry depends on joint ownership by all stakeholders involved (Savin-Baden and Wimpenny, 2007). This ownership provides the momentum that drives the PAR process.



5 Case studies: measuring the quality of PAR

CCAA supported 26 PAR projects in agriculture and livelihoods. Of these, seven received additional support through a mentoring process. This section uses the quality criteria of action-oriented research described above to assess how these seven mentored teams of CCAA researchers implemented the PAR approach. It examines two cases studies to explore how well the mentored research teams adhered to the PAR requirements described above.³ One of the case studies shows how the researcher teams implemented integrated soil fertility management (ISFM) in Ghana, Tanzania and Zimbabwe; the other how research teams implemented climate forecasting in three districts of Ethiopia, namely Meisso, Adama and Boset.

Table 3. Assessment of two case studies: meeting the PAR requirements?

| QUALITY CRITERIA | CASE STUDY: INTEGRATED SOIL FERTILITY MANAGEMENT IN GHANA, TANZANIA AND ZIMBABWE | CASE STUDY: CLIMATE FORECASTING IN THREE DISTRICTS (MEISSO, ADAMA AND BOSET DISTRICTS) OF ETHIOPIA |
|-------------------------------------|--|--|
| Hypothesis | <ul style="list-style-type: none"> The research team, extension officers aimed to use ISFM as an entry point to intensify productivity and increase crop yields of farmers. | <p>General objective:</p> <ul style="list-style-type: none"> to enhance farmers' adaptive capacity to the impact of climate change and variability through PAR to solve local level problems and social issues related to CC adaptation through PAR |
| Process facilitation and management | <p>Through facilitation, the research team:</p> <ul style="list-style-type: none"> convened meetings with stakeholders working with communities established platforms of stakeholders to enhance CC adaptation enabled the stakeholders to define the roles relevant for the implementation of ISFM | <p>Using facilitation, the research team:</p> <ul style="list-style-type: none"> established a forum composed of researchers and development workers to support farmers' initiatives mobilized farmers by exposing them to work done by local innovative farmers engaged local leaders as an entry point for farmer mobilization |
| Clear methods and tools | <p>Methods and tools used:</p> <ul style="list-style-type: none"> formal survey to establish a baseline focus groups to identify the problem and develop a desired vision for change | <p>Methods and tools used:</p> <ul style="list-style-type: none"> Participatory Rural Appraisal (PRA) tools to identify problems and possible solutions focus groups for perception of climate change (CC) and its impact on agriculture survey on agroforestry to identify options to combat CC and variability, and increase household income informal interviews to assess farmers' available options on water harvesting questionnaires to get community members' perceptions on CC variability |
| Rigour in application and analysis | <p>Research team, extension officers, farmers agreed on:</p> <ul style="list-style-type: none"> main indicators developed against the baseline information for impact assessment the processes that they would follow for data collection | <ul style="list-style-type: none"> Due to the work overload of the development workers, some relevant data were not collected in Miesso District. Data on CC variability collected through questionnaires were analyzed with SPSS software. |

³ From the information obtained during the workshop held in July 2011 (in Nairobi) and from mentors who supported these cases, the mentored research teams that implemented these case studies managed to better implement all the PAR steps than did the other teams that were not involved in the mentoring process.

| | | |
|--|--|--|
| Systemic analytical process to observation | <ul style="list-style-type: none"> Events organized around the learning centres provided an opportunity for joint assessment of deficiencies and benefits of tested ISFM technologies. Progress was reviewed at the end of each season together with communities, and lessons used to implement new milestones. | <ul style="list-style-type: none"> Farmers' opinions and knowledge were systematically collected and used in the selection of early maturing varieties. Farmers were given an opportunity to assess crop varieties based on their criteria. Monitoring and evaluation were done during field days. Observations were done daily by development agents, weekly by the researchers and monthly by the all stakeholders. |
| Adaptation and learning within the process | <ul style="list-style-type: none"> Feedback on the PAR process and documentation of experiences were done during events organized around learning centres, including field days, tours, and exchange visits. Feedback through the local structures (committees and local leaders) enhanced emergence of new ideas and subsequently the innovation process. Effective tools such as drama, dance and poetry were used for generating knowledge for sharing, feedback and documentation. Researchers provided extension officers and farmers with materials for documenting change processes. Processes and experiences were documented in brochures, video clips and pictures. | <ul style="list-style-type: none"> Monthly feedback meetings were held by the participating stakeholders to reflect on the progress and make adjustments to the process. Each two weeks, the research team come together to reflect on implemented activities and distil the lessons that they would use for new process steps. Documentation of the process was done during the different steps of PAR: diagnostic, conceptualization, implementation of planned activities and during the sharing of experiences during field days. |
| Ownership by all actors | <ul style="list-style-type: none"> Farmers were mobilized to form groups to address identified action points. Established Implementation committees worked with contact persons from participating institutions to address major action points. Learning centres, driven by the local committee were formed as a platform for identifying and testing technologies as well as for knowledge sharing and exchange. | <ul style="list-style-type: none"> Research team mobilized farmers into various interest groups that addressed technical issues on crop variety selection, agroforestry and water harvesting. After each planned event, farmers sat together and evaluated their team performance. |

There are some major similarities and slight differences in the manner that the two research teams facilitated the PAR processes in their respective areas.

- Both research teams used surveys and focus groups to generate baseline information and identify problems. However, the research team from Ethiopia seems to have used many tools for certain specific technical interventions (e.g. agroforestry and water harvesting) and went further to analyze data by using SPSS software.
- Both research teams established platforms at local levels to enable farmers to participate and enhance their access to technological information and knowledge. The research teams also established stakeholder platforms to support farmers' initiatives. These local community forums are a key to the ownership of the PAR process, to adaptation and learning, and to rigour in the process and generation of information for sharing and documentation.

What emerges clearly from the two case studies is that facilitation was at the heart of PAR implementation designed to enhance capacity of the farmers to adapt and deal with issues of climate change and reduce their vulnerability to them. Hagmann and Chuma (2002) assert that facilitation, unlike teaching, stimulates people's creativity and helps them increase their expertise (see also Groot and Maarleveld, 2000). Overall, facilitation⁴ of the PAR steps in the two case studies was handled primarily by the researchers that were trained in process facilitation. Extension officers were also involved to some extent in the facilitation of some PAR steps, particularly at the community level. Mentoring of the researchers during the implementation of the PAR for these two cases was provided by the external back-stoppers who provided the researchers with training in process facilitation.

⁴ The research team that implemented Integrated Soil Fertility Management set up an interesting arrangement, which meant that by different actors at different levels handled the facilitation. Local extension workers, farmers' group leaders and traditional leaders were the main facilitators for implementation at community level. The district extension officer facilitated activities of the district platform, while the head of the soils division in the national research department facilitated higher order policy dialogue meetings and technical workshops. The research teams continued to play a catalytic role at the different levels, and facilitated communication among the local, district/regional and national platforms.

6 PAR provides insights for Climate change Adaptation

6.1. The PAR experience: achievements

During the CCAA workshop held in July 2011, participants analyzed the achievements with respect to the use of PAR in their projects. These general achievements (for details of the achievements, see Annex), which cut across the different projects, were clustered into the following four themes:

- farmers and other stakeholders acquired knowledge on various aspects of climate change and use it for planning
- farmers have been mobilized to establish their own committees to implement various PAR steps
- researchers use farmers' knowledge as a basis for their research agenda to address farmers' demands
- various platforms have been established for sharing experience and developing capacities

6.1.1. Stakeholder platforms: fora for change

The research teams in almost all the projects of the CCAA program have been involved in stakeholder platforms, and in some cases, have facilitated the establishment of the platforms. Most of the stakeholder platforms have supported the experimentation processes:

- In Tanzania, arrangements were made through the Research to Policy for Adaptation (RPA project for the PAR team to engage with other forums. One is the Agricultural Sector Consultative group, which meets four times a year. The focal point of the Agricultural Sector Consultative Group is the Director of Policy and Planning at the Tanzanian Ministry of Agriculture, Food and Cooperatives (MAFC). A second group with which the PAR team has engaged is the Development Partners Forum, hosted by FAO and the World Wildlife Fund (WWF) Climate Witness Programme.
- In Malawi, the project linked to various other initiatives through the National Consultative Group (NCG). The NCG was established as an advisory group to explore how PAR can be used to identify and exploit potential and actual policy spaces. Through the NCG, the project established useful contacts with the Parliamentary Committee on Agriculture and Natural Resources and with the Civil Society Coalition on Climate. This gave the project team substantial visibility, which enhanced their stature in policy processes and their influence. In addition, the project forged strong links with the media. The national television station, TVM, plans to produce a documentary programme on climate change based on the outcomes of the project.
- In Zimbabwe and Ghana, learning centres have become an effective platform for knowledge sharing, participatory evaluation of complex technologies, and stimulating farmer experimentation. The learning centres have also enabled the participation of private seed and agro-chemical companies, which were initially only observers during the diagnostic, visioning and action planning phases of the PAR process. These private companies became more active during the main implementation phase by providing prioritized crop varieties, cultivars and fertilizers, and taking part in farmer training.

Private companies began as spectators during the diagnostic and mobilization stages of the PAR process and then became participants later on, providing inputs and markets for the legumes and cereal crops.

Unlike the above-mentioned CCAA PAR projects that focused on field experimentation, the Morocco project on “enabling stakeholders in Moroccan coastal management to develop sustainable climate change adaptation policies and plans” concentrated on the development of deliberation capacity and knowledge exchange. The research team worked closely with multi-stakeholder platforms developed by the European Union (EU) Small and Middle Term Adaptation Plan (SMAP) on integrated coastal management to embed climate change into coastal management plans. The research team also capitalized on

new relationships to build linkages with other initiatives, such as the Ministry of Agriculture's Maroc Vert planning process. The project team saw this as extremely relevant, given its focus on multi-sectoral analysis and macro-scale planning, and given that coastal adaptation is a medium- to long-term experimental process, rather than something which can be adopted in just three years, the length of the project.

6.1.2. Mobilizing farmers as research partners

In an effort to facilitate adaptation to climate change, almost all the projects (with the exception of just a few⁵) worked directly with farmers and their organizations. While most of the research teams mobilized farmers through community meetings, the research team from Ethiopia used three different strategies to accomplish this:

- In the case study of in the Boset District in Ethiopia, community leaders were engaged as catalysts for community mobilization. Community members gave the mandate to community leaders, who led the process of social mobilization, which was to be carried out by community members. Although illiterate, the community leaders were able to understand the process and helped to facilitate community meetings and obtain feedback from community members. In addition, social organizations such as "idir" (community association) and elders played a great role in mobilization activities in the communities.
- In Mieso District, Ethiopia, about 98 farmers were invited by development agents at a farmers' training centre to participate in an awareness-creation meeting on the impact of climate change on agricultural productivity. This was followed by a visit to the field of a farmer with a wealth of experience on relevant activities of flood diversion, agroforestry and field variety evaluation. The farmer shared his experience and researchers demonstrated the use of improved farm implements (moldboard plough and tie ridger) to the other farmers. The farmers told the researchers that they were now motivated to try out the technological options to which they'd been exposed.
- Model farmers from Hararge in Ethiopia were invited to share their experience on soil and water conservation technologies with farmers at Guraja-Furda PA village for 10 days. As a result of this awareness creation session, between 500 and 600 farmers were active participants in every mobilization event and other subsequent PAR steps.

An interesting example of social innovation is shared by the research team that used the ISFM methodology. They used learning centres to revitalize a traditional practice in Zimbabwe, "Zunde raMambo"⁶, a traditional social security arrangement to assure food security in the event of drought or famine, which involved a communally worked field to produce a strategic grain stock for the most vulnerable members of the community. This local safety net was revived to enhance adaptation to climate change and reduce vulnerability by improving food security. The communities found that harvests of maize, soybeans and cowpeas could be improved even on sandy soil. Using these local safety nets, there were demonstrated increases in maize yields and production of grain legumes, which thus met the needs of the most vulnerable and poorest members of the communities. This adaptive process had so much impact that farmers in the participating communities, researchers and other service providers have worked together to develop guidelines for further development and improvement of Zunde raMambo.

6.1.3. Getting the messages out

Experiences and lessons from climate change adaptation processes implemented by the CCAA projects were disseminated in various ways. The most common methods for disseminating climate change information to farmers were on-farm demonstrations, field days, and radio and television.

⁵ As examples, one such project focused on a stakeholder platform in Moroccan Coastal management and another focused on linking African researchers with climate change adaptation policy spaces.

⁶ Zunde raMambo is a traditional community safety net mechanism that protects vulnerable groups: widows, orphans, the sick, the elderly and those affected by unforeseen disasters.

At the community level, one of the mechanisms for sharing and disseminating information were the field days. These were sometimes attended by researchers, extension officers, farmers, policy makers and politicians. For example, the research team working in Zimbabwe and Zambia organized two field days in April 2009. More than 100 people attended in Zambia, including the Minister of Agriculture, permanent secretaries, heads of departments and farmers. More than 50 people participated in the field day in Zimbabwe, including district government officials and farmers. The Zambian government further aired 16 vernacular radio programmes on Seasonal Climate Forecast (SCF). Feedback to the radio station showed that this program was the farmers' favourite and that the audience was larger than originally thought. In Zambia, the dissemination of SCF information using radio broadcasts was more cost-effective than with print media, which are largely inaccessible to smallholder farmers.

However, for dissemination of information to colleagues, extension officers and policy makers, researchers found that a variety of methods could be used effectively. These included radio and television, websites (including "YouTube"), journal articles, bulletins, and presentations at conferences (e.g. Conference of Parties (COP) to the United Nations Framework Convention on Climate Change, including COP 14 in Poznan and COP 15 in Copenhagen).

6.1.4. Different stakeholders, different changes and outcomes

However, all the achievements outlined above say little about what effect PAR has in changing the way people

| BOUNDARY PARTNERS | CHANGE |
|---|---|
| <ul style="list-style-type: none"> Farmers | <ul style="list-style-type: none"> can interpret SCF and integrate it in their plans use appropriate seeds and plant drought resistant crops/varieties on time and in rows train fellow farmers on climate issues record temperature and rainfall measurements and use the information to guide land preparation test/evaluate different crops and soils and water management practices and share acquired experiences |
| <ul style="list-style-type: none"> Extension | <ul style="list-style-type: none"> interpret SCF and integrate it in their planning visit farmers more frequently than before train farmers on climate change and crop management practices distribute and disseminate required planting materials and inputs to farmers from district councils (e.g. power tillers and mangrove rippers) |
| <ul style="list-style-type: none"> Researchers | <ul style="list-style-type: none"> appreciate Indigenous Knowledge Systems (IKS) in predicting weather and integrating it with SCF, to better advise farmers write more project proposals on climate change, eg. Rockefeller climate change and Implementation and Coordination of Agricultural Research and Training (ICART) of the Southern African Development Community (SADC) participate more in climate change conference/workshops and dialogues (e.g. Majule in Barcelona in 2010, training in Rwanda on policy dialogues in 2010) take the lead in the development of climate change programs |
| <ul style="list-style-type: none"> Policy makers | <ul style="list-style-type: none"> appreciate the importance of SCF in decision making at farmers' level politicians visit the farmers' experimental sites following the coverage of their work in newspapers and television |

do their business. To this end, the research team from Zambia, Zimbabwe, Tanzania and Malawi managed to map out these changes at different levels and summarized their analysis, as shown in Table 2.

Table 2. What different stakeholders are doing differently as a result of the interventions facilitated by the researchers?



In addition to the above changes, the research team implementing ISFM noticed a considerable change in how private sector actors in Zimbabwe approached the issue of climate change adaptation. Private companies began as spectators during the diagnostic and mobilization stages of the PAR process and then became participants later on, providing inputs and markets for the legumes and cereal crops.

The research teams (from Zambia, Zimbabwe Tanzania and Malawi) found that most of the changes listed in Table 2 were triggered largely by engaging farmers in experimental processes. This meant engaging with them at demonstration plots, organizing field days and establishing a strong working relationship among all stakeholders involved in the change process. In addition, the research team from Tanzania and Malawi emphasized the power of media in drawing the attention of policy makers to the issue and disseminating success stories from the climate change adaptation processes.

6.2. PAR experience: challenges

Just as they catalogued the achievements, participants of the CCAA workshop held in July 2011 also managed to distil generic challenges that cut across their projects. The clusters of challenges they identified are listed below (for more details on these challenges, see Annex)

- facilitating partnerships and engaging in on-going platforms
- how to balance community expectations and benefits
- scaling up policy engagement
- ensuring quality of process

Analysis of these challenges and others that were specific to individual projects reveals that most of them were not about how to implement the PAR process. Rather, the shared challenges emerged during the facilitation of adaptation processes while using PAR. Some of the challenges from specific projects are listed here.

- In Senegal, the critical challenge faced while involving farmers in the establishment and management of tree nurseries related to unavailability of water. To overcome this challenge, the project provided water to the farmers. However, there is obviously doubt that this intervention by the project is a sustainable option. Nor is it clear from the information provided whether the project is working on measures that would foster self-reliance in accessing water to irrigate the tree nurseries.
- In Zambia, most farmers did not have access to a Seasonal Climate Forecast. The few who had access to the information an SCF provides were unable to interpret and use it to come up with crop management decisions. The researchers had to negotiate with the provincial officers to avail SCF information to district extension officers soon after its release to share with the farmers. It would be useful to follow up and monitor what the farmers are doing with the SCF information provided to them, how they are using it.
- In Malawi, the main challenge was the high turnover of extension officers caused by their frequent transfers to other stations. This risked negatively affecting the integration of CCAA project in formal activities of the Ministry of Agricultural Development and also the sustained support from extension officers formally assigned duties on project sites.

One of the challenges that researchers encountered was the incompatibility between the expectations of some farmers and what the project could offer. For example, in Malawi, some farmers that had joined the learning plots withdrew when they realized that they were not going to get free inputs for their individual plots.

A similar situation apparently arose in Ethiopia. Observations from the case study in the Miesso District in the Central Rift Valley and the western Hararge Zone of Oromia Region, illustrates the challenges researchers confronted in these areas.

- During the process of mobilization, the major challenge was farmers' eagerness to participate in activities

beyond their capacities. This became clear when poor farmers wanted to be involved in water harvesting activities, which require substantial initial investment and costs.

- Farmers initially interested in agroforestry activities wanted to participate in participatory variety selection activities, but agroforestry activities involve trees and thus require longer periods of time than annual cropping ones.

To deal with the last two challenges, the research team from Ethiopia organized more meetings to engage the farmers on these issues. The farmers were also given enough time and opportunity to understand and identify the main causes of their problems or frustrations, to encourage and enable them to make appropriate choices.

The challenges in facilitating PAR process steps differed from one project to another.

- There were researcher teams that had difficulty understanding the approach during the initial stages of its implementation (examples are from the research team in Ethiopia and the one that put together the factsheet on crop diversification⁷). For the Ethiopian research team, mentoring on PAR was organized in the community so that the team could learn practically how to facilitate the process.
- The research team that focused on ISFM noted that early withdrawal of extension officers from the projects was a factor that affected the PAR process, particularly in the second cycle. Similarly, the research team working in Tanzania and Malawi noted that the transfer of extension officers from learning centres in the two countries had affected the scaling out of innovations that farmers had initiated.
- The Moroccan research team working in two rural communities, one on the plains and the other in the mountains, focused throughout the project on understanding existing adaptation rather than on PAR field experiments. Nevertheless, the team will be looking at implementing limited experiments in the extended phase of the project.
- The reflection by the research teams⁸ working on the use of Seasonal Climate Forecasts found that the PAR approach was time-consuming, and that it required a lot of resources. The same issues were identified by the researchers that produced the factsheet on crop diversity, covering experiences from Benin, Cameroon, Madagascar and Zimbabwe.

An analysis of the challenges discussed here suggests that one of the key elements in addressing many of them is quality facilitation. According to Hagmann and Chuma (2002), facilitation is about asking the “right” questions at the “right” time in order to enhance people’s critical capabilities, improve self-reflection, discovery and self-awareness, without pre-empting the response. Several measures can be taken to address the challenge of quality facilitation.

- There is a need to invest in **quality mentorship** to support researchers during the field implementation of the PAR process and to equip them with the skills it requires. Previously, most of the mentoring support that was provided to the researchers was more technical⁹ than it was focused on soft issues, such as how to facilitate processes at the community level.
- **Exchange visits** between the PAR projects should be encouraged to enable the research teams and farmers to learn from each other. These exposure visits should be facilitated in such a way that they answer the following questions: (1) What are our identified and prioritized challenges or needs?; (2) Which project representatives should go for exposure visits and what criteria should be used in their selection?; and; (3) When should the representatives give feedback to the rest of the group?
- Researchers should develop **facilitation tools** that can be used to create awareness of climate change challenges and to simplify technical and scientific information that they want to share with farmers.

⁷ This research team put together experiences from Benin, Cameroon, Madagascar and Zimbabwe.

⁸ This is the research team that developed a factsheet on the use of seasonal focus from implementation experience in Benin, Senegal, Kenya, Ethiopia, Zambia and Zimbabwe.

⁹ For example, the research team in Benin appreciated the mentoring support they received that enabled them to publish on the evaluation of pre-alert systems and farmer experimentation. The research team that is working on a project aimed at “linking researchers with adaptation policy spaces” has called for mentoring support for its partners in techniques to engage effectively with policy makers.

7 Lessons from PAR: a useful tool for climate change adaptation

7.1. Lessons learned from the PAR process

Generally, the implementation of PAR within the CCAA context has not been easy for either the research teams or the participating partners. In many instances, the outcomes from the PAR process were of an evolving nature and final outcomes were thus not predictable. Implementing PAR in local communities requires transmission of complex concepts and information and for this, good facilitation is a prerequisite. This was evident when the research teams from Ethiopia and Malawi had to deal with the incompatibility between the farmers' expectations and those of the project.

Another illustrative example comes from the research team in Morocco, which has been supporting two rural communities, one situated on the plains and the other in the mountains. This team was at first frustrated by what they thought was the lack of experimentation in PAR and also the difficulty of mobilizing the community in Lamzoudia. But upon further reflection, the team realized that it had taken a highly appropriate course of action by using PAR, given the institutional and social constraints under which they were operating. By focusing on understanding past and current situations, the research team is now much better placed to identify those adaptation options that have a chance of success in trials. In this way, the research team recognized the potential to develop research proposals with contacts within the Community-Based Adaptation network.

In addition to cataloguing and documenting the program achievements and challenges, participants at the CCAA workshop held in July 2011 also analyzed the lessons gained from their experience of implementing PAR to enhance adaptive capacity of smallholder farmers to better respond to climate change and variability. These lessons are clustered as shown below (more details on lessons learned can be found in Annex).

- **Engagement of local leaders and farmers is critical** for the impact of adaptation strategies at local level.
- **Establishing innovation platforms** encourages the participation of multi-disciplinary research teams and private sector actors in the adaptation processes to climate change and variability.
- **Farmers have their own local adaptation options and strategies** that research should build upon.
- **Building on skills required to facilitate PAR** creates a better awareness of climate change, and results in better planning and implementation of climate change adaptation processes.
- **Sharing of climate change information and adaptation strategies** during field visits and through the media is important for scaling out and scaling up the PAR process.

These lessons may not look new, but they confirm some of the success factors that must be in place to implement PAR to build the adaptive capacity of smallholders to deal with the negative effects of climate change and variability. A further analysis of the lessons that emerged from the implementation of PAR can draw on the practical experience of using PAR (Hagmann, 2011) and the work of the difference research teams. Thus it can be concluded that:

- PAR works only when it is implemented with full understanding of the context where it is delivered and with meticulous attention to methodology in that context.
- The implementation of PAR may need considerably more investment in facilitation if the change process is to be managed effectively. On the same note, the research team that developed the factsheet on Seasonal Climate Forecasting has noted that there is a need to budget sufficient financial resources in any proposal that aims to use PAR during the project implementation.
- PAR is a flexible approach to address climate change adaptation processes at various levels, but mainly at the community level. It yields local solutions (technologies, approaches, and institutional innovation) to problems faced in climate change and vulnerability. It thus creates ownership of the processes, empowering local people to manage change effectively.
- High quality mentorship and coaching have the potential to increase the effectiveness and efficiency of the PAR process. Coaching and mentoring are needed to foster systemic learning processes that enable learning teams to create synergies with other less process-oriented research approaches.

7.2. Key findings about PAR application

7.2.1. Ownership

Discussion in this paper has shown that ownership of the research, both the process and its outcomes, is an important ethical issue. This is especially true of PAR because of its participatory nature. **PAR requires participants to work together as equals with the researchers and to build mutual confidence.** We have seen from some cases¹⁰ that when actors perceived adaptation to and the risk of climate change as being within their powers to alter, they were more likely to make the connection to the causes of climate change. This meant they were also more likely to experiment with various options and thus enhance their adaptive capacity.

From the analysis of CCAA cases¹¹ and projects¹² supported by PAR, it can be deduced that farmers that were mobilized came to see the value of climate information and also pass it on. For example, the ISFM research team has indicated that the learning centres are now owned by the communities. In addition, Zambian farmers are participating in the radio programmes on seasonal climate forecast.

By sharing experiences and successful farming practices through their learning plots and learning centres, the capacity of smallholders and other stakeholders to use climate information has been strengthened, as has collective understanding, supported by growing trust among the various actors. By promoting ownership of the process, as CCAA projects did, they appear to have increased the use of climate information and overall adaptive capacity among smallholders and other stakeholders.

7.2.2. Replicability

The strength of the PAR approach lies in the ability of the research partners, those for whom the action research is being undertaken, to solve problems directly, which is in contrast to other approaches. However, other commentators also see weaknesses in the PAR approach, particularly the issue of whether they are replicable. But there is the counter argument that PAR can take different forms in different contexts, whether environmental or cultural (Hagmann, 2011). The diversity of the contexts in which the CCAA program applied PAR to help farmers adapt to climate change should indeed be seen as an opportunity for enrichment of the knowledge that was generated and shared. The diversity of contexts also means, of course, that the research teams in the CCAA program could not present their knowledge and experiences to each other or take them home as ready-to-wear, one-size-fits-all solutions for adaptation to climate change.

It is thus clear that the PAR approach cannot and should not be perceived as a uniform set of instrumental standards that function as a kind of readymade checklist. The guidelines on how to apply and implement PAR are important and very helpful indeed. But in the end, the quality of the outcome depends on much more than just following steps in a correct way, or being corrected when one feels he/she had done something incorrect. For example, if one examines the way PAR was implemented in the CCAA program, it is evident that the approach was applied differently depending on both the contexts of the challenges that farmers were facing and on the research team's capacity to apply it. Hence the need for support from mentors with good facilitation skills and the requisite experience to repackage the approach in ways that help the research teams implement PAR in any context.

¹⁰ Particularly those that mobilized farmers to form local forums, as did the ISFM and Ethiopia cases.

¹¹ Cases analyzed in this paper: ISFM and Ethiopia cases.

⁹ Engagement of existing farmer groups in Tanzania and Malawi, using village meetings to support farmers in water management technologies (Burkina Faso, Morocco, Tanzania, and South Africa), meeting held with farmer groups to create awareness on the use of season climate forecast (Senegal, Zimbabwe, and Zambia).



7.2.3. Sustainability

The changing climate confronts humankind with immense challenges, and there is increasing pressure to meet those challenges now and in the future. Some of the researchers (those focusing on crop diversity) have indicated that funding is crucial if the implementation of PAR is to be sustained¹³. One of the workable options identified for sustaining the lessons from the CCAA program is the development of service-level agreements among the stakeholders and co-funding. In Benin, the program Strengthening the Capacity to Adapt to Climate Change (PARBCC) has organized an inception workshop in which mayors, researchers, non-governmental organizations (NGOs) and national policy makers have assisted and discussed concepts about climate change adaptation. As a result, Memoranda of Understanding have been signed between PARBCC and mayors of 35 rural municipalities to enable the creation of municipal committees to alert farmers and service providers about climate risks. Local government administrations have agreed to cover half of the expenses of the committee (they cover displacement costs for one of each two monthly meetings). The Mayors of the communes are the presidents of the committees.

As this new community of practitioners of PAR emerges and matures, the quality of facilitating these participatory processes will be central to the success of adaptation processes to climate change among the resource-poor. For the long-term sustainability of the adaptive process to climate change, there is a need to develop competencies of the researchers and extension officers in facilitation skills for effective implementation of PAR. To complement this process, there is a concomitant need to develop mentoring processes to ensure that those who implement PAR are receiving the necessary support.

To sustain the adaptation processes for climate change at the community level and eventually at all levels, there is a need to repackage the PAR process and use it to address new and emerging challenges in diverse contexts.

7.2.4. Scaling up

Research on climate change impacts, particularly the research undertaken by projects aiming to contribute to practical adaptation initiatives, requires active involvement and collaboration with community members, regional and national organizations that use this research for policy making (Pearce et al. 2009). This highlights the need for initiatives that create an interface bringing together researchers and policy-making bodies and agents, or create new partnerships between researchers and communities. Several CCAA project teams¹⁴ have documented the influence their PAR work has had on policy makers and politicians, and thus on policy. Perhaps the most interesting example comes from Senegal, where researchers have been strengthening subsistence strategies to improve agroforestry in selected areas. Farmers in the selected locations were trained on seed selection, harvesting and processing, enabling them to produce 7500 seedlings of different species for planting to ameliorate soil degradation in the study areas. Because of the positive impact of this initiative, forestry policies have been reviewed to incorporate issues that emerged from the project. Similarly, in Tanzania, village-based climate change committees were set up after a presentation of the CCAA project was made at a seminar attended by members of parliament.

¹³ Experience from Zimbabwe and South Africa in the development of participatory approaches illustrates the importance of investing funds to build the facilitation capacity of the supporting agencies and the local beneficiaries. Through quality facilitation, local organizations in Limpopo Province of South Africa were linked with service providers to address local technical problems. In certain instances, the strengthened local organizations were used to channel funds from government, particularly on big infrastructural projects that supported farmers' initiatives such as small-scale seed production. Through these organized local organizations, government funds have not been wasted, as is the case in many projects.

¹⁴ Some of the examples that reveal the high level of interest shown by policy makers and politicians to the work of the projects include: the Malawian president visited the project sites in Mphampha village; Minister of Agriculture in Zambia attended the field day and thereafter instructed all districts to have community radios where seasonal climate forecast should be broadcasted; in Malawi the CCAA project established fruitful contact with the Parliamentary Committee on Agriculture and Natural Resources; in Kenya the Departmental Head of government ministries at the district level in Turkana and Mandera used project outputs in raising awareness on the importance of weather information and Seasonal Climate Forecasts in livelihood planning and natural resource management.

The diversity of the contexts in which the CCAA program applied PAR to help farmers adapt to climate change should indeed be seen as an opportunity for enrichment of the knowledge that was generated and shared. The diversity of contexts also means, of course, that the research teams in the CCAA program could not present their knowledge and experiences to each other or take them home as ready-to-wear, one-size-fits-all solutions for adaptation to climate change.

Positive results from the action-oriented research undertaken using the PAR approach have been documented in a variety of fields and locations. Among them are traditional weather forecasting in Kenya, water demand and supply in South Africa's Western Cape, smallholder agriculture in Zimbabwe, and coastline management in Morocco. Already the CCAA program has helped Africans to create better informed and more effective policies and plans to confront the threats from climate change. These achievements have inspired new IDRC-supported research initiatives in Africa and elsewhere. As the program wraps up, it focuses on sharing these results and on ensuring that the findings are put to practical use not just by decision makers and scientists but also by African farmers in their local communities. It will also transfer leadership of some activities to strong African institutions that will continue the work (IDRC, nd).

Some CCAA projects have seen the benefits of using PAR approach and aim now to institutionalize it beyond the IDRC funding. On this note, while the research team in Morocco is disappointed that there is no option for a second phase in this project to take its work further, the team is engaging with authorities on how they might continue to engage communities without CCAA funding.

8 Conclusions

The “business as usual” approach used in the past to address agricultural challenges has not really benefitted smallholder farmers in developing countries. Climate change will significantly exacerbate developmental challenges such as endemic poverty and the lack of institutional support for the most vulnerable, the populations that are most in need of initiatives to enhance their adaptive capacity to cope with climate change and vulnerability.

Experiences from the implementation of CCAA projects have shown that strengthening the capacity of the most vulnerable to adapt to climate change is necessary so that they can implement their own adaptation responses rather than having them imposed from the top. Therefore, mobilizing and strengthening local organizations is key; this gives them the tools they need to test and evaluate different adaptive options. It also enables smallholder farmers to develop flexible responses and adaptive strategies that they need to cope with the complexity of agricultural environments and climate change impacts.

One of the most important components that became evident in the course of the CCAA program was the need to develop the capacity of the research teams in a number of areas, including on PAR. PAR has offered most of the projects the opportunity for learning spaces as arenas of iterative, experiential learning-by-doing processes of action and reflection. In these, the underlying causes of vulnerability have been challenged and alternative behaviour, visions, and trade-offs have been renegotiated and reformulated.

Several interesting lessons can be drawn from the CCAA projects on Agriculture and Livelihoods, and particularly from the PAR process. PAR, for example, has been instrumental in revitalizing the traditional and/or community-based organizations that serve as a platform for collective learning and innovation among different stakeholders (farmers, local leaders, service providers, district government, etc.). Participatory Action Research provides a range of opportunities that benefit all participants in these platforms. They have the opportunity to share and pool knowledge, and also to improve their skills and interventions through reflection, experimentation and re-planning of actions. In many cases, PAR also helped to revive the awareness of the importance of the role that extension services play as a crucial link in the chain of facilitation for the adoption of adaptation options. PAR also triggered the involvement of sometimes hard-to-reach actors in the private sector.

But, as was also evident in many of the CCAA projects, the PAR approach cannot work if applied in isolation. Nor is it sufficient in itself to enhance adaptation. PAR processes need to be dynamic and to draw on novel, externally generated knowledge to really fulfil their potential.

Implementing the PAR approach is time-consuming because it involves facilitation of diverse actors and interests. It also poses many challenges to researchers as they attempt to address issues of trust and power in the communities, rigour in the action-oriented research, and what are often conflicting agendas. However, one of the biggest challenges of PAR remains the uneasy marriage between developmental goals, such as community empowerment, improving community welfare and reducing vulnerability, while undertaking conventional quality research that is evidence-based and that produces quality data and replicable findings that can facilitate decision-making and scaling up.

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Annex: Achievements, challenges and lessons from the CCAA workshop Achievements

Farmers have been mobilized to establish their committees in order to implement various PAR steps

- Reaching the vulnerable to increase productivity
- Reaching the most vulnerable
- Mobilization of local stakeholders
- PAR helped mobilize social capital – establish groups per region
- Establishment of committees to carry out monitoring and evaluation of CCAA project implementation
- Increasing productivity (rainfed and irrigated)

Farmers and other stakeholders acquired knowledge on various aspects of climate change and use it for planning

- Farmers' understanding and use of climate information to plan farm activities
- Many stakeholders now consider CC in their planning
- Farmers' climate knowledge used in planning

Researchers use farmers' knowledge as a basis for their research agenda to address farmers' demands

- Building on farmers' climate and agricultural knowledge
- PAR helped researchers to establish study on CC based on farmer perceptions
- When using PAR, researchers address the direct farmer demands

Various platforms have been established for sharing experience and develop capacities

- Platform for building farmers' capacity
- Catalyzing information sharing
- Establishment of farmer plots / learning centres helps to get solutions from different stakeholders

How to facilitate partnerships and engage in on-going platforms

- Difficulty in managing partnership of stakeholders with different agendas
- How to use PAR to enhance existing research processes
- How and when to engage politicians in the PAR process
- How to manage community expectations
- How to lobby local leaders (chiefs) to support the PAR process
- How to ensure engagement of key stakeholders, including the private sector
- How to fit PAR in on-going development projects
- How to facilitate / manage different objectives of actors
- How and when to bring on board local authorities while using PAR
- How and when to bring on board different stakeholders in the PAR process
- How to involve decision makers at national level using PAR
- What are the processes for the different actors to be partners
- How to make sure other actors have time to share their views when politicians are invited to present (case of Mayor)
- How do we manage power dynamics within the PAR process
- How to engage and maintain institutional participation
- How to balance community expectations and benefits
- How to create incentives for communities to be involved in PAR without them being paid
- How to convey the benefits of PAR to the communities
- How to use PAR effectively where the level of poverty is very high
- How to help farmers access seasonal climate forecasts information
- How farmers could access and utilize SCF information
- How to develop mechanisms for farmers to access SCF information
- When to come and give support to poor people using PAR and what support should this be
- How research results can be taken out to farmers by extension agents

How to scale up policy engagement

- Engaging policy makers at the beginning
- PAR for CCAA in agriculture needs to link into local and national planning systems
- Do we have the evidence to convince national research institutions and research to use PAR
- Does PAR allow us to move beyond the projects for CC adaptation in agriculture to scaling out and have massive impact
- How can PAR be used to strengthen the national systems to support local systems
- How PAR can enable local plans to influence national systems
- Better understanding of the policy process
- Understanding what policy is, is key
- How do you effectively replicate and scale up successful interventions
- How to use PAR for the development of national plans for each country
- Introducing PAR in on-going projects (time and financial implications)

How to ensure quality of process

- How to access capacity for PAR quality process
- How to scale out and scale up PAR process from specific to broader concept
- How to communicate the PAR process
- How to show attribution of achievements due to PAR
- Project has generated valuable findings that need to be taken up by policy
- Integrate crop varieties into the production system of local farmers
- Who are the champions of PAR and do we have success stories
- How to demonstrate that yield increases are cost-effective
- How to increase options that address different diversities for improved crop production

- How to package the results and present them to farmers and policy makers
- How to communicate lessons of CCAA to policy makers and farmers who were not involved
- Integration of climate, hydrology and socio-economic and policy
- How to influence policy
- How to communicate the results and lessons learned to farmers (community) and government
- PAR may be expensive; and there is a need to find ways of sustaining the process after the project and funding end
- Are we using PAR in the right way in this project

How to create complementarity between PAR and other existing approaches

- How to convince conventional scientists that PAR is proper science
- How does the role of researchers change when they use PAR in CCAA
- How to use PAR to enhance existing research processes
- How to mainstream PAR in conventional approaches
- Uncertainty associated with climate forecasting
- Lack of integrated strategies with regard to land use planning

Engagement of local leaders and farmers is critical for the impact of adaptation strategies at local level

- Involvement of actors critical for achieving success
- Farmers as partners and agents of adaptation
- Involvement of local leaders helps in strengthening local organizations and institutions
- Strengthening local institutions helps to revive local processes

Establishing innovation platforms encourages the participation of multi-disciplinary research teams and the private sector in the adaptation processes to climate change and variability

- Adaptation research needs interdisciplinary research teams
- Establishment of innovation platforms through PAR encourages the participation of the private sector

Farmers have their own local adaptation options / strategies that research could build upon

- Start with what farmers have / know
- Building on farmers' knowledge is important
- Farmers have adaptation options / strategies that can be built upon

Building on the skills to facilitate PAR enhances better awareness creation, planning and implementation of CC adaptation processes

- PAR for CCAA as complementary to conventional research where there are efficiencies
- Mentoring of researchers helps to enhance PAR implementation
- Scientists using PAR need different skills
- Establishing several plots is good for farmer-to-farmer sharing and interaction
- PAR helped to create awareness in communities on ways to reduce soil degradation
- Awareness creation encouraged many farmers / stakeholders to consider climate change in their planning
- Training farmers on agro-ecological practices helps them to improve their yields (tools and methods)

Sharing of CC adaptation during field visits and through the media is important for scaling out and scaling up the PAR process

- Farmer events and different types of media help to scale out the process (depends on how these are used)
- Important to involve policy makers during field visits to expose them to CC adaptation options





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Synthesis Report

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