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Collaborative Adaptation Research Initiative in Africa and Asia

Strengthening Evaluation Capacity in Organisations to Improve Adaptation Outcomes

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Titles in this series are intended to share initial findings and lessons from research and background studies commissioned by the program. Papers are intended to foster exchange and dialogue within science and policy circles concerned with climate change adaptation in vulnerability hotspots. As an interim output of the CARIAA program, they have not undergone an external review process. Opinions stated are those of the author(s) and do not necessarily reflect the policies or opinions of IDRC, DFID, or partners. Feedback is welcomed as a means to strengthen these works: some may later be revised for peer-reviewed publication.

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Abstract

Evaluation is an essential part of climate change adaptation efforts; it can help stakeholders to improve their processes to produce better outcomes as well as to build legitimacy and trust among partners, facilitating collaboration. However, carrying out a process of evaluation depends on the evaluation capacity of organisations implementing and participating in adaptation efforts. Drawing upon Climate Change Adaptation in Africa (CCAA)-supported projects, this paper looks at the challenges to and opportunities for improving evaluation capacity in organisations.

This working paper provides a conceptual framing of evaluation and evaluation capacity building, underlining their role in climate change adaptation. It considers the challenges to effectively evaluating climate adaptation in Africa and to building related capacity within organisations, and makes suggestions for overcoming them based on the experience of CCAA projects. The paper draws lessons useful for building evaluation capacity around adaptation within African organisations and for cultivating an evaluative culture. In addition to their importance for adaptation, such capacity and culture are necessary to access and manage adaptation finance.

Key words

Evaluation, results-based management, outcome mapping, climate change adaptation, Africa, evaluation capacity building

Résumé

Renforcement des capacités d'évaluation dans les organisations afin d'améliorer les résultats de l'adaptation

L'évaluation joue un rôle essentiel dans l'adaptation aux changements climatiques. Elle peut aider les parties prenantes à améliorer leurs processus de manière à produire de meilleurs résultats et à instaurer la confiance et la légitimité pour faciliter la collaboration. Cependant, la mise en œuvre d'un processus d'évaluation dépend de la capacité des organisations qui mettrent en œuvre et participent aux activités d'adaptation. En s'appuyant sur les projets financés par le programme Adaptation aux changements climatiques en Afrique (ACCA), cet article examine les difficultés et les opportunités liées à l'amélioration de la capacité d'évaluation au sein des organisations.

Ce document présente un cadre conceptuel pour les évaluations et le renforcement des capacités d'évaluation, en soulignant leur rôle dans l'adaptation aux changements climatiques. Il examine les difficultés liées à l'évaluation efficace de l'adaptation aux changements climatiques en Afrique et au renforcement des capacités connexes au sein des organisations, et il avance des suggestions afin de les surmonter en se fondant sur l'expérience des projets du programme ACCA. L'article tire des leçons utiles pour renforcer les capacités d'évaluation en matière d'adaptation au sein des organisations africaines et favoriser une culture de l'évaluation. Outre leur importance pour l'adaptation, ces capacités et cette culture d'évaluation sont nécessaires pour accéder et gérer le financement destiné à l'adaptation.

Mots-clés

Évaluation, gestion fondée sur les résultats, cartographie des incidences, adaptation aux changements climatiques, Afrique, renforcement des capacités d'évaluation

Acronyms

CCAA	Climate Change Adaptation in Africa
CSRP	Sub-regional Fisheries Commission
IDID	Initiatives pour un développement intégré et durable
IUCN	International Union for the Conservation of Nature
LGA	Local Government Area
M&E	Monitoring and Evaluation
NAPA	National Adaptation Programme of Action
NEST	Nigerian Environmental Study/Action Team
OSS	Observatory for the Sahara and the Sahel
RBM	Results-based Management
REPAO	Réseau sur les politiques de pêche en Afrique de l'Ouest
UNECA	United Nations Economic Commission for Africa

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Contents

1. Introduction

Adaptation to climate change is a process of adjusting to actual or expected climates and to their effects (IPCC 2014, 5). It is an iterative process of decision making, implementation, reflection and learning, of which evaluation is an essential part. Evaluation processes are critical for dealing with the uncertainties related to changing conditions. In principle, they can also empower people and organizations, build trust, and support collaborative progress towards outcomes.

A previous Collaborative Adaptation Research Initiative in Africa and Asia (CARIAA) working paper, based on the results of the Climate Change Adaptation in Africa Program (CCAA), highlighted the potential for institutions to both facilitate and constrain successful climate adaptation (Adjei-Nsiah et al. 2015). Organisations can have an important role in initiating institutional change (North 1993). We argue here that the capacities of regional, national and local organizations to evaluate performance, challenges and opportunities is a critical factor in their ability to instigate and engage with institutional reform. Strengthening evaluation capacity is therefore fundamental to the capacity of people, communities, organizations and states to adapt successfully to climate change.

With evaluation increasingly valued by donors, developing country organizations with limited evaluation capacity may have restricted access to bilateral and multilateral funding opportunities for adaptation. An organisation's capacity to make choices that correspond to its own needs and goals will be largely determined by its ability to acquire, analyse and use information for evaluation. Organisations lacking such capacity will have less autonomy in managing projects and achieving their objectives. Strengthening evaluation capacity can also benefit all sorts of informal adaptive processes. This paper uses the term "initiative" to refer to such processes as well as to formal projects and programs.

In addition to raising awareness about the importance of strengthening evaluation capacity, this paper aims to draw practical lessons from projects supported by CCAA about how to do so in such a way that it can strengthen adaptive capacity. It is, however, not a tutorial on how to plan a capacity strengthening program or how to evaluate adaptation. The intended audience of the paper includes those who can support capacity development efforts as well as those wanting to improve their own capacities. It therefore includes donors, managers of adaptation projects or programs, and community facilitators, as well as managers of organizations whose activities are—or will be—affected by climate change. It also includes evaluation specialists who can intervene as trainers or evaluators and need to know about the specific challenges that climate change adaptation poses to evaluation. Lastly, it includes evaluation champions within adaptation initiatives who could gain insights from CCAA's experience.

To help readers understand what kinds of capacities can be strengthened and how, the next part of this paper outlines concepts related to evaluation capacity, organizations and institutions, as well as examples of frameworks and tools used in the evaluation of adaptation initiatives. Part three briefly presents the approach used by CCAA to strengthen evaluation capacity in its partner organizations and within the program team. Part four suggests options for overcoming obstacles to effective evaluation and the strengthening of evaluation capacity, based on the experience of CCAA projects. Part five draws arguments together in a conclusion.

2. Conceptual framing

2.1 Review of main concepts

This section reviews key concepts for a discussion on how evaluation capacity can support organisations undergoing and enabling adaptation to climate change, including program evaluation, evaluative thinking, evaluative enquiry, evaluation capacity building, monitoring and evaluation (M&E) and accountability. It is useful to start with a definition of organisations. Ackhoff (1981) characterizes organisations as nested purposeful systems composed of people who have their own purposes. A distinction is made between organisations and institutions by North (1993), using games as a metaphor: organisations are players, while institutions are the game's rules. Combing the framing of North and Ackhoff provides a view of institutions determining how players interact and work together to achieve different purposes through different types of interlinked organisations.

Programs and projects are institutional arrangements where organizations and/or individuals are players, working together for a shared purpose. Through evaluative processes, these players can design their actions and institutions, adapt them to changing circumstances, and work towards their purposes in a coordinated way. Patton (1997, 23) defines program evaluation as "the systematic collection of information about the activities, characteristics, and outcomes of programs to make judgments about the program, improve program effectiveness and/or inform decisions about future programming".

The terms "evaluative thinking" and "evaluative enquiry" have been used to describe forms of evaluation that take place throughout an organisation's functions, and contribute to effective organizational learning (Cousins et al. 2004). Buckley et al. (2015, 4) define evaluative thinking as "… critical thinking applied in the context of evaluation, motivated by an attitude of inquisitiveness and a belief in the value of evidence, that involves identifying assumptions, posing thoughtful questions, pursuing deeper understanding through reflection and perspective taking, and informing decisions in preparation for action".

Evaluation capacity building (ECB), which includes the teaching or promotion of evaluative thinking, is "an intentional process to increase individual motivation, knowledge, and skills,

and to enhance a group or organization's ability to conduct or use evaluation" (Labin et al. 2012, 2). Building such capacity not only enables organisations to conduct evaluation but also to use their evaluations to further increase their capacity to reach their goals (Cousins et al. 2004). Taylor-Powell and Boyd (2008) have proposed an evaluation capacity-building framework that separately considers professional development opportunities, resources and supports as well as the organizational environment. In Preskill and Boyle's framework (2008), ECB strategies can lead to new knowledge, skills and attitudes of the persons participating; these need to be transferred to the work context in order to lead to a sustainable evaluation practice. In this framework, organizational learning capacity reflects how people learn about evaluation, how this learning is transferred to their work, and how evaluation is sustained. This capacity will be shaped by the organisation's culture of enquiry, how learning is valued, the communication channels for evaluation information, the mechanisms in place for engaging people in evaluation, and the influence of leadership in facilitating all of these. From these two frameworks we deduce that organizational environments—the institutions within organizations—should also be targets of evaluation capacity strengthening.

In adaptation to climate change, evaluation is not only needed for assessing and improving projects or programs, but also as a fundamental part of the adaptation process. The concept of adaptive management is strongly rooted in evaluation. More than three decades of applying adaptive management principles to natural resources management (Holling 1978, Walters 1986) have demonstrated the benefits of managing uncertainty through evaluations based on long-term and multi-disciplinary monitoring. Adaptive management is recognised as an effective model for managing local sustainable development and climate change adaptation (Tompkins and Adger 2004). The key features of adaptive management relevant to this discussion are the stress on expressing and testing assumptions, learning from successes and failures, and changing assumptions and interventions in light of new information. Evaluation is a logical and necessary component of these three steps.

Similar to adaptive management is Bandura's (1989) social cognitive theory of human agency. Central to this theory is the concept of efficacy, which can be individual (self-efficacy) or collective. An efficacy expectation is the conviction that one can successfully execute a behavior. This contrasts with an outcome expectation, which is a person's estimate that a given behaviour will lead to desired outcomes (Bandura 1977). People and groups who perceive themselves as efficatious will set higher goals and persevere more in the face of difficulties than those who do not. Self-efficacy of individuals contributes to organizational effectiveness and can be cultivated through processes involving self-evaluation and feedback (Bandura 2009).

Program evaluation takes various forms, usually depending on the evaluation purpose and processes used. A significant distinction is made in evaluation terminology between formative and summative processes. Formative evaluations typically happen during an initiative to improve or refine the model of intervention. The users of formative evaluations

are typically program staff, and the focus is usually on learning. In contrast, summative evaluations are conducted after an initiative is completed, or after it has run for a while, to assess what it has achieved, make judgments on its merit, value or worth, determine its future, or determine whether the model should be implemented at a larger scale. Such evaluations are often conducted for accountability purposes and, although not exclusively so, their users tend to be donors or external decision makers. Ultimately, both formative and summative evaluation depend on the idea that models guiding programmes and interventions can be tested and improved. Developmental evaluation, on the other hand, guides action and adaptation in innovative initiatives facing high uncertainty (Patton 2011). Because this type of evaluation works through cycles of action and reflection, it supports progressive innovation in an initiative's model.

Monitoring and evaluation (M&E) is an internal practice that is done during an initiative. The "monitoring" part refers to the continuous and systematic collection and organisation of information on the basis of which evaluative reflections are facilitated. The "evaluation" part can include evaluative thinking as well as developmental, formative and summative evaluation processes, as the information can be analysed and discussed to formulate hypotheses about what should be done, to test those hypotheses, and to decide how efforts should be improved. M&E can also provide information to be used in external evaluations.

Accountability—a term from the field of accounting—refers to "the obligation of evidencing good management, control, or other performance imposed by law, agreement or regulation" (Kohler 1975). Agencies that receive funds for adaptation need to demonstrate, and to provide evidence, that these have been spent effectively and are achieving objectives. Accountability is increasingly used in non-financial terms, often in the sense of ethical responsibility to stakeholders irrespective of financial or legal relationships. In this sense, adaptation projects and programs are accountable to a much wider range of stakeholders than just the donor. These stakeholders might include beneficiaries in a climate-vulnerable community, local and national government, and representatives of civil society and the private sector. These stakeholders also have interests in the outputs and outcomes of adaptation projects and programs. Accountability-oriented evaluation can support the building of trust in these relationships by providing evidence on progress towards meeting the expectations and needs of stakeholders. It can help individuals and organizations in strengthening their self-confidence, legitimacy and credibility, which can also help them to develop new partnerships.

2.2 Frameworks and tools for evaluating adaptation

Evaluation frameworks establish processes for evaluation and its use in decision-making and learning. They usually include sub- frameworks to describe intended change, sometimes including even more detailed sub-frameworks for the concepts involved, such as resilience, vulnerability or adaptive capacity. Associated tools such as checklists, templates,

tables and spreadsheets can be used to guide the development of indicators, enquiry processes, the compilation of information, and reporting of results.

In international development funding, results-based frameworks have become standard practice to express intended change, in compliance with the 2005 Paris Declaration on Aid Effectiveness (OECD, 2005-2008). These are also widely used in adaptation projects and programs (Lamhauge, Lanzi and Agrawala, 2012). In such frameworks, the model or "theory of change" is expressed through a results chain that links resources, activities, outputs, outcomes and impacts or final outcomes. Outputs are tangible products resulting directly from an activity. They can be reports, publications, infrastructure constructed, people trained. Outcomes are effects of the activity. Final outcomes, or impacts, relate to long-term effects of an intervention.

International funding programs specifically oriented towards adaptation have developed results-based evaluation frameworks (Adaptation Fund 2011, GEF 2014, CIF 2016) or have included logical frameworks in the program description (IFAD 2016). In these frameworks, goals and final outcomes tend to be defined in relation to resilience while different levels of outcomes or results areas relate to increased adaptive capacity and to reduced vulnerability, damages or losses. These frameworks also propose indicators. Common indicators and measurement methods are necessary to make comparisons or to aggregate data from different sources. Guidance on the development of indicators can also be found in the National Adaptive Capacity Framework (Dixit et al. 2012, WRI 2009), and in papers on "Tracking adaptation and measuring development" (TAMD, Brooks et al. 2011 and 2013).

The outcome mapping approach (Earl, Carden and Smutylo, 2001) has been developed to help people identify and document progress in sought outcomes of an initiative. In this approach, outcomes are conceptualised as changes in the behaviour, relationships, activities or actions of "boundary partners", these being the people, groups, and organisations with which a program works directly and seeks to influence. Because the documentation of such changes appeared suitable to track climate change adaptation processes, this approach was chosen by the CCAA program to feed into the Results Based Approach it used for reporting at the project and program levels. Outcome mapping also has the advantage of including visioning exercises in its initial stages, which can help define goals and purposes as well as help participants connect the initiative to their own aspirations. It also includes the setting of graduated progress markers, allowing for a distinction between expected, desired and ideal outcomes. Using such an approach can help results-based management (RBM) to foster more ownership and be more flexible. Indeed, RBM has been criticized for possibly encouraging projects and programs to focus on easily measurable indicators that could have less impact than more complex processes (Sjöstedt 2013).

Frameworks and guidance documents describing how evaluation can be planned and integrated into decision-making and learning include "AdaptME" (Pringle 2011), "Making adaptation Count"(Spearman and McGray 2011), and "Participatory Monitoring, Evaluation

and Learning" (PMERL, Ayers et al. 2012, and CARE 2014). In "Learning to adapt", Silva Villanueva (2011) highlights the importance of documenting processes of decision-making.

In a report that reviews a large number of tools, frameworks and approaches, Bours, McGinn and Pringle (2013) highlight the need for frameworks to be designed to go beyond reporting convenience and to consider process in addition to results. The authors mention that recent publications tend to focus mostly on the development of quantitative indicators while materials published some years earlier had acknowledged the potential for M&E to be harnessed for innovative applied research that recognizes local specificities. The authors also note that there has been an evolution from thinking in terms of resilience to adaptability, and more recently to transformation. Béné, Frankenberger and Nelson (2015, 23) define transformative capacity as "the ability to create an enabling environment through investment in good governance, infrastructure, formal and informal social protection mechanisms, basic service delivery, and policies/regulations that constitute the conditions necessary for systemic change". In other words, transformation refers to adaptations in institutions and organizational environments which, while complex, can be more easily documented than reduced losses in future climates.

It is important that the frameworks developed to evaluate adaptation also consider tracking the effect of adaptation initiatives on development, so that maladaptation can be detected and avoided. The contributions of adaptation to development can be documented as "co-benefits" of adaptation initiatives. It is also important that these frameworks allow the documentation of unintended and unexpected effects of the initiatives.

3. CCAA's approach to strengthening evaluation capacity

CCAA benefitted from operating within IDRC's Grants Plus model, which emphasises mentoring, training opportunities, and networking amongst recipients to strengthen capacity in addition to the provision of research grants. In this context, CCAA supported three capacity development workshops focusing on evaluation for staff from different cohorts of supported projects between 2007 and 2009. The first capacity development workshop concentrated mostly on the outcome mapping approach (Earl, Carden and Smutylo 2001), while the subsequent workshops integrated this approach with others into a RBM philosophy (Ndiaye et al. 2009). A participatory approach called Visions, Actions, Partnerships (Beaulieu et al. 2009) was developed and taught as a simplified introduction to outcome mapping and RBM for adaptation researchers. This adaptation of approaches included in capacity development workshops responded to the mid-term evaluation of the program and feedback from project teams about difficulties in learning and applying the outcome mapping approach, and a perception by some that it was being imposed on them (CCAA 2010).


Figures 1 – Group sessions in a Monitoring and Evaluation workshop in Gorée, Senegal, December 2009

Photo credit: IDRC/N. Beaulieu

In addition to these training opportunities, the Grants Plus approach allowed additional close mentoring of project teams to strengthen evaluation capacity. Sixteen projects benefited from the support of consultants who accompanied research teams in the field and facilitated outcome mapping sessions for them and their partners. With the aim of strengthening capacities of African evaluation specialists in the application of evaluation to climate change adaptation, consultants involved in the delivery of workshops and mentoring project teams were members of the African Evaluation Association from Western, Eastern and Southern Africa.

In addition, participatory M&E was included in the Participatory Action Research methodology training workshops and mentoring. CCAA also stressed the role of program officers, who maintained close relationships with partners and were able to discuss evaluation approaches and act as sounding boards for new ideas. The annual and final technical reports submitted to IDRC—in which research results were expressed in terms of research findings, outputs and outcomes—were opportunities for program officers to reflect jointly with research teams about different aspects of the evaluation process. Together with field visits, they were opportunities for the program officers to give feedback to researchers about the way outcomes were documented and how they could be interpreted. Program officers also learned from project teams in the process.

The CCAA program also implemented its own M&E efforts, which strengthened capacities within the program team. A logical framework was developed during the program's design, stating a number of desired outcomes. As projects were developed and supported, program officers maintained an outcome journal for each project they oversaw in order to compile observations of progress on each of the desired outcomes identified in the program's logical framework. This information was gathered from project reports, field visits and other interactions with project teams. Learning meetings among program staff were held during program retreats and conference calls to discuss how these outcomes were unfolding in

projects over the continent and to identify obstacles. The program's annual and final reports were used to synthesize observations for each desired outcome. The logical framework, including the desired outcomes, was updated twice during the life of the program.

Four outcome areas were identified:

1. Research teams better able to assess climate-related vulnerabilities and to evaluate and develop adaptation options
2. At-risk groups, policy makers and researchers share learning and expertise on climate vulnerability and poverty
3. The poor in rural and urban environments apply their experience of adaptation with the knowledge & technologies generated by research to implement improved and effective adaptation strategies
4. Policy processes are informed by good quality science-based work on vulnerability and adaptation, and by the experiences of the rural and urban poor.

CCAA's final evaluation (Lafontaine et al. 2012) found that the capacities of program partners in M&E had increased significantly. The vast majority of project partners interviewed acknowledged the effectiveness of the Outcome Mapping approach for monitoring, evaluating and reporting in a participatory way. However, all found it a very intensive and time consuming process. Also, as for other areas of skill and knowledge, it was difficult to assess how the capacity was extended from the individuals to their organisations.

The CCAA program also supported a project that developed an evaluation toolkit and capacity development approach and tested them with five different adaptation initiatives (Redda 2012; Issa, Ben Khatra and Bello 2011). This project was coordinated by the United Nations Economic Commission for Africa (UNECA) in collaboration with the AGRHYMET regional centre, the Observatory for the Sahara and the Sahel (OSS) and the International Union for Conservation of Nature (IUCN). The capacity development approach used in this project combined the preparation of training material, the holding of formal workshops, the implementation and testing of the tools with partners in the field, and an online community of practice. Training material was developed for a coherent set of eleven tools used to plan, monitor and evaluate adaptation initiatives (Somda, Faye and N'Djafa Ouaga 2011).

In one of the five case studies of this project, the IUCN tested the toolkit with the Programme d'amélioration de la gestion de la Volta (Improved Management of the Volta program) (Onadja et al. 2011). Participatory tools such as hazard mapping, vulnerability matrices, and analysis of vulnerability factors have helped the community understand how different hazards were affecting different resources and what factors affect vulnerability. The tool Vision, Actions and Partnerships allowed them to identify the roles and responsibilities of the different actors. Outcome mapping tools allowed them to identify partners to influence and to define graduated progress markers. Members of the community in Burkina Faso mentioned to IUCN facilitators after just two days of meetings

that these tools helped them understand the relevance of the project to their needs better than they ever had in the four years of the project's life until then (Somda, personal communication).

The experience of this particular project showed that, beyond a management tool for project implementation, the evaluation process can be used to empower and build the adaptive capacity of project beneficiaries. This can then increase the likelihood that sustainable adaptation is achieved and continues beyond the life of the project or program. The five different case studies of this project highlighted the need for training of field staff in the M&E tools. A large number of people are involved in planning actions and collecting observations and data, and knowledge of the tools cannot be concentrated in a few staff members dedicated to M&E. The toolkit developed through this project continues to be disseminated by IUCN today in West Africa.

4. Overcoming challenges to strengthening evaluation capacity in adaptation initiatives

The professional field of evaluation and the everyday practice of evaluative thinking face many challenges that also affect the strengthening of evaluation capacity. Their application to adaptation on one hand, and in developing countries on the other hand, brings additional difficulties. This section reviews challenges that have been noted in practice and in the literature and proposes ways to overcome them, based on the experience of CCAA-supported projects.

4.1 Spreading evaluation capacity throughout organisations and to those who are adapting

M&E practices and systems are now common in international development programs and governmental agencies. Nonetheless, there remains a tendency for evaluation in Africa to be project-based, donor-driven and focussed on financial aspects of accountability and project impact. Often, donors rely on external consultants for evaluation missions to get an 'objective' assessment of a project's performance rather than building local capacity for evaluation and relying on self-reporting. This means that capacity for evaluation and accountability does not always grow within African organisations at the same rate as technical capacities. In the worst cases, this has led to dysfunctional relationships, with accountability to the donor taking precedence over accountability to other stakeholders in the recipient community and nation (World Bank Operations Evaluation Department 1999).

In collaborative approaches to evaluation, evaluators can play an educational role, especially when the objectives are oriented towards learning and improvement (Shulha et al. 2015). Participatory approaches, and in particular participatory M&E, are good options

to spread evaluation skills through "learning by doing". Such benefits are referred to as "process use" in evaluation terminology (King 2007).In community-based approaches, community facilitators need to share evaluation skills with participants.

The CCAA project on agricultural innovation in Tanzania and Malawi (Majule et al. 2012) worked with farmers in learning plots to experiment with soil management practices and alternative crops and varieties. It also explored policy options that could help reduce the vulnerability of farmers. Team members who participated in a training workshop on outcome mapping at first found the approach extremely complex and did not know how to transmit it to farmers. This project was one that benefited from mentoring by a consultant in M&E who trained a larger number of partners in the study sites and helped to simplify the approach. Although the team members were not trained in how to train others in M&E, they overcame the challenges of the transmission of capacity and found ways to explain the philosophy to the participating farmers. They organised annual learning visits with all project staff in the communities of intervention, and also involved agricultural extension officers. They identified "boundary partners", desired actions (or changes in behavior) by each of them, and their knowledge needs, in order to design further research. This allowed them to engage with these partners in order to negotiate support and complementary actions. For example, in Malawi, as a result of these interactions, the government purchased treadle pumps for Chikwawa District farmers, to help them face increasingly irregular rainfall. In Iramba District in Tanzania, the Ministry of Agriculture incorporated into its budget the purchase of agricultural equipment to allow farmers to implement rain harvesting in their fields. The equipment includes Magoye rippers for tillage and spring Jembes for deep ploughing. The learning plot experience changed the practice of the participating extension officers who have replicated it in other villages. Collaborative evaluation therefore contributed to improved adaptation outcomes in this case.

The CCAA-supported project on rural-urban interactions in Nigeria (Okali et al. 2012), coordinated by the Nigerian Environmental Study/Action Team (NEST), has facilitated the formation of reflection platforms in six communities in and around the city of Aba. The participants of these platforms have conducted participatory visioning and diagnosis meetings, and have planned, implemented and evaluated adaptation options. The project also facilitated a municipal-level platform for technical staff from the concerned Local Government Areas (LGA) that allowed participants to reflect on policy actions to support adaptation in the overall city and its region, as well as on how to support actions of the community-level platforms. Representatives of all the platforms participated in a training workshop on M&E and used the tools in meetings facilitated by the project team. Using the outcome mapping approach, each platform identified its "boundary partners" and the expectations it had for them. The partners of the community-level groups invariably included LGAs, and the various reflection meetings allowed the groups to discuss their expectations and negotiate support. For example, the community of Eziukwu identified waste removal as a critical responsibility of the LGA for the prevention of floods, as waste clogs the drainage systems and prevents them from functioning. The community of Ogbor

focused its efforts on health issues related to climate change and constructed a small clinic. It has obtained a pledge for support from the LGA for the provision of health services in the clinic.

In this project in Nigeria, this reflection process has empowered community groups by allowing them to gain a better understanding of climate change-related issues, establish consensus about priorities, coordinate their actions, and obtain support from authorities and the project team. Their interactions with local and state authorities through the process enabled them to contact these persons at later dates with respect to other needs. Capacity for reflection and evaluation has been developed through this process, not only among the project team but also among local government staff and members of community groups. As a result, the evaluation process has cemented relationships that will support the ongoing evolution of adaptive capacity beyond the project's life.

4.2 Overcoming organisational, political and cultural challenges to learning

Most people feel some degree of anxiety when their behavior or achievements are being evaluated, related to the fear of being found deficient or inadequate by others (Donaldson, Gooler and Scriven, 2002). Developing effective evaluation can be particularly problematic in authoritarian regimes or organisations. It can be politically sensitive, especially if conclusions might be critical.

The culture within an organisation or in a society can greatly influence how learning is valued. Building an evaluative culture requires deliberate and sustained effort by organisations, especially by leaders. This effort can include regular and structured learning events, decisions being routinely informed by information about results and a tolerance for honest mistakes (Mayne 2010).Strategies proposed by Donaldson, Gooler and Scriven(2002) to overcome evaluation anxiety include the facilitation of learning communities, which allows stakeholders to discuss and affect the evaluation process, and provides continuous and balanced feedback that does not focus solely on needed improvements but also recognises achievements made. Bandura (2009) also recognizes the importance of feedback that is supportive and enabling in learning how to manage failure so that it becomes informative rather than demoralizing. Evaluation processes should have explicit aims to strengthen perceived efficacy while at the same time identifying where corrections should be made. This could help improve self-confidence of persons and groups as well as trust between them, reducing evaluation anxiety and further increasing the likeliness of learning.

Effectively conducting a joint reflection process between relevant players can be challenging. Through the modality of participatory action research, most CCAA projects have convened such meetings and created reflection groups, or "piggy backed" on existing groups. Group reflections contribute to social learning, a type of learning that leads to

shared ways of knowing and that is fundamental to climate change adaptation (Harvey et al. 2013, Ensor and Harvey 2015).

Nonetheless, both formal and informal organisations may have challenges with leadership and be unable to convene meetings between organisations. For instance, in Benin, the National Adaptation Program of Action (NAPA)'s pilot project included using meteorological information to provide recommendations to farmers. The national climate change committee and the development of the NAPA was under the auspices of the Ministry of the Environment and Protection of Nature (MEPN), but the Ministry of Agriculture, Livestock and Fisheries (MAEP) also thought it held the mandate to lead the process. The CCAA-supported project on agriculture and food security in Benin (PARBCC 2011) was able to create, in 2007, a national committee that made recommendations to farmers on the basis of evaluations of climatic data and crop growth information collected in different agro-ecological zones. This committee, which included representatives from MEPN and MAEP, was part of a national system for early warning. Together with its partners IDID-ONG, the small NGO leading the project, was able to achieve something that none of the governmental organisations had. It had the funds to organise the meetings while not in competition with the other organisations for the leading role in climate change adaptation of the agricultural sector. After the end of the CCAA-supported project, and with delays caused by difficulties in defining the roles of the ministries involved, the NAPA pilot project continued the early warning system but working with a smaller number of local governments.

Challenges to learning are closely related to the type of organisation, whether it is highly hierarchical or not (Rogers and Hough 1995). Organizing evaluation meetings can be particularly problematic in hierarchical administrative systems as these can lessen the ownership of program staff and partners and their motivation to collect data for M&E (Hassanin 2012). Stakeholders will be reluctant to engage if there is not enough prior sensitization on how the data they provide is going to be used. Sometimes they can be apprehensive whether data they are providing could be used against their interest. For example, in the project on water scarcity in the Saïss basin in Morocco (Legrouri, Kettani and Kalpakian 2012), the team initially had difficulty collecting data on water consumption by farmers, most likely due to concerns that monitoring consumption of irrigation water was the first step towards metered tariffs. The project team demonstrated the potential of joint reflection processes to address such challenges, so long as the data collected is relevant to the issues discussed and the decisions to be taken, and the processes have assured confidentiality. A user-focused evaluation philosophy is essential, where the participants in the program are the main users of the results and the evaluation is used to develop capacity.

Some key aspects of adaptation can also create organisational challenges. These include the fact that adaptation is happening simultaneously at different administrative levels (Vaessen and Todd 2008). It is very difficult to define indicators that can be transferred between scales. The sharing of lessons across administrative levels is even more problematic in

regional projects. Regional initiatives are likely to coordinate national-level teams who in turn also carry out activities at the local level. It is challenging to bring information from the local level up to the national level and then from the national level up to the regional level. Moreover, sharing data between organisations can be very difficult. Strong consensus must be built around data sharing and which indicators and methods to use.

The CCAA project on adapting fisheries policy in West Africa (APPECCAO 2011) convened a series of reflection groups at the sub-regional, national and local level. At the sub-regional level, a policy dialogue was facilitated by the network for research on fishery policy in West Africa (ENDA-REPAO) in partnership with the sub-regional fisheries commission (CSRP). Decision makers from fisheries ministries in the seven country members of CSRP, researchers, and representatives from various groups of fishing professionals reflected on research conducted by national teams in Senegal, Cape Verde and Guinea. The teams in these countries, in turn, facilitated national- and local-level reflection groups that periodically examined the results of the research teams regarding the state of current knowledge about the effects of climate change on fisheries, an analysis of fisheries policy and practices, and surveys of local knowledge. The local and national groups defined their intentions using the Visions, Actions and Partnerships approach. Groups at the three levels explored scenarios of possible futures regarding climate and management practices and developed a series of adaptation strategies. Information from the local level was brought up to the sub-regional level through detailed meeting reports as well as research reports on local practices and knowledge. These meetings were opportunities to openly discuss adaptation strategies. It became obvious that, with or without climate change, present management practices would lead to the depletion of fish resources shared by the countries of the region. The enforcement of current regulation for the preservation of the resource (regarding quotas, fishing practices, and the preservation of habitat and reproduction areas), as well as the coordination of policies among countries, were identified as crucial for the resources to withstand the pressures of climate change.

CCAA projects have demonstrated that these challenges can be partly overcome by including periodic multi-stakeholder reflection workshops in the activities and budgets of programs. Such activities can help build trust in and ownership of evaluation processes as long as they provide information that is useful for those who participate.

4.3 Conceptualizing intended change

Conceptualising intended change is a challenge in all initiatives, even more so in complex social systems where the behaviours of the involved actors is uncertain. Global warming is increasing climate variability and the occurrence of extreme events, which are further increasing uncertainty. As a result, there is still much debate about how to assess the success of climate change adaptation initiatives. Adaptation involves increasing preparedness for a modified climate without knowing how modifications will unfold and how livelihoods will be affected. The long timespan over which climate changes take place

also necessitates models of change that can be modified along the way while expressing long-term development objectives.

Establishing baselines at the start of adaptation interventions in order to monitor the impacts of activities is common practice. However, in the process, program staff and evaluators are faced with the challenge of determining what should be measured. Adaptation projects and programs often start with local activities assessing present climate-related risks, exploring possible future climates and planning activities to adapt or strengthen adaptive capacity. Stakeholders may not know at the onset which specific vulnerabilities will be addressed and what adaptation options will be chosen to implement. Therefore they do not yet know which indicators should be measured and tracked overtime. An initial diagnostic assessment of the situation for planning purposes will often be too general to be used as a baseline for impact assessment. In order to make evaluation cost-effective, it is important to focus on a subset of indicators that 1) are hypothesised to relate to key aspects of desired change, and 2) are of interest to stakeholders. Identifying these key indicators requires a conceptualisation of pathways to desired changes. Initial assumptions may well be overturned by experience. For example, the above-mentioned project on urban-rural interactions in Nigeria repeated its baseline study towards the middle of the project when the community-based groups had planned their interventions. This underlines the iterative nature of evaluative thinking, in which approaches are revised based on careful assessment of their purpose, the information needs of users, new information and working hypotheses.

The varieties of definitions for terms such as vulnerability, adaptive capacity and resilience given by different authors or organisations is another challenge facing those engaged in planning and evaluating adaptation. For example, in some contexts vulnerability is used in a way that is similar to the concept of risk as developed in the natural hazards literature, whilst in other contexts it is defined in terms of socio-economic factors that affect how people cope with stress or change (Brooks 2003). Working group 2 of the IPCC Fifth Assessment Report (IPCC 2014) considers exposure as a separate factor from vulnerability, whereas in previous reports it was considered to be included. Clarification and shared understanding of agreed concepts is a precursor to operationalizing them in adaptation planning and evaluation. Similarly, it is important to develop conceptual frameworks that clarify linkages between interventions, consequences and anticipated changes along the way. Indicators of poverty (including those developed through assets-based approaches, which examine many non-monetary aspects of poverty) are sometimes used as proxies for vulnerability. However, adaptation initiatives can reduce vulnerability more rapidly and in more diverse ways than poverty indicators would capture. Such frameworks also require iterative refinement in the light of new knowledge. Drawing causal connections between adaptation interventions and outcomes can be highly challenging, depending on the complexity of the desired change. For example, the effectiveness of new techniques for soil fertility management can be empirically tested. However, evaluating the benefits of enhanced soil fertility for household income is a much harder proposition.

Although research efforts have intensified, furthering debates around some of these conceptual issues, there is still no consensus or "one size fits all" approach to evaluating adaptation (Pringle 2011; Spearman and Mc Gray 2011; Bours, McGinn and Pringle 2013).

4.4 Recognising challenges with attribution

The term *impact* sometimes refers specifically to the portion of the change that can be attributed to a given initiative. Impact assessment, in this sense, is an approach that measures the outcomes of a program intervention in isolation of other possible factors (Baker 2000). Using counterfactual logic, experimental or quasi-experimental approaches can be used, when possible, to separate the effects of the program from those of other factors.

Attribution is one of the primary issues surrounding the evaluation of impacts in externally funded projects and programs. In development and adaptation programs, however, it is often impossible to isolate the effects of a project from other factors affecting results. Many initiatives are, on their own, neither sufficient nor necessary to produce the intended results, and are best conceived of as part of a causal package (Mayne 2012, Stern et al. 2012). Indeed, in many cases, the intended results could be obtained through other means, and moreover they rely on many factors other than the initiative itself.

Other factors further complicate attribution analysis. There can be a substantial time lag between the start of an adaptation project/program and measureable impact. This challenge is all the more important for short initiatives. In longer-term ones, migrations and mobility can make it difficult to know the extent to which individuals were involved. In the project on agricultural innovations in Tanzania and Malawi (Majule et al. 2012), this has posed some problems for the project team as some farmers were mobile. Success or appropriateness of an adaptation project/program can be difficult to frame given the uncertainties of future climates and societal changes. Determining what would have happened without the initiative is extremely difficult in the context of a changing climate which adds to the difficulty of isolating the effects of an adaptation action.

For all these reasons, it can be much more useful to document contributions rather than to try to measure attribution. This has been recognized explicitly in the Adaptation Fund's evaluation framework (Adaptation Fund 2011). The evaluator can gather evidence to determine the type, nature and level of contribution the activities have made to the adaptation process, rather than attempt to attribute impacts and outcomes to an intervention (Pringle 2011, 21).

Because other necessary factors are often related to other players taking action or changing their practices, outcome mapping can be used by participants of an initiative to develop a theory of change, identify progress markers for "boundary partners", and gather evidence of change. The project on agriculture and food security in Benin (PARBCC 2011) has used this approach and has kept an outcome journal to document key achievements and changes in

the practices of local elected officials, farmers and extension services with whom the project worked. The lead organisation of this project, IDID-ONG, has kept up the practice after the initiative and has used outcome journals in other projects. Enquiry techniques such as Most Significant Change (Davies and Dart 2005) can be used to capture the meaning of this change for those involved and help to identify unintended changes that are significant for participants.

Stern et al. (2012) present a broadened definition of impact evaluation that frames causality in terms of contributions. It also suggests ways to ensure the quality of evaluations without necessarily including a counterfactual logic while also highlighting many other aspects of an evaluation's reliability, robustness, transparency, validity and rigour. A paper by White and Phillips (2012) presents an overview of approaches (including outcome mapping)to address attribution in "small n" cases, when "there are too few units of assignment to permit tests of statistical difference in outcomes between the treatment group and a properly constructed comparison group" (p. 4). Attribution here is addressed in the sense of demonstrating causality by using evidence to validate, invalidate or revise hypothesized causal chains and alternate causal explanations. It does not necessarily imply quantification.

Another type of attribution challenge arises in the distinction between adaptation costs and development costs. The funds that are managed by the Global Environment Facility (GEF), namely the Least Developped Country Fund (LDCF) and the Special Climate Change Fund (SCCF), require the calculation of additional costs relative to those of development in the absence of climate change, the latter being referred to as "baseline costs" (GEF 2014). Because climate change is already affecting livelihoods in a way that increases basic development needs, baseline costs can vary and further complicate attribution.

4.5 Working with limited resources

In developing countries, many organisations are resource-constrained and, through necessity, concentrate their efforts on delivering essential services while not necessarily prioritizing evaluation. Many climate change projects and programs in Africa are based on donor funding with a fixed duration, beyond which evaluation costs are not covered. Financial resources can be a limitation even during projects if evaluation systems were not adequately planned and budgeted at the beginning. As highlighted in the examples above, to be optimally successful, evaluation processes require meetings and other face-to-face encounters which are necessary to build trust and legitimacy in the process—but also come at a cost. In the absence of dedicated budgets, projects need to rely on the goodwill and contributions of participating agencies, each of which will have financial constraints.

Evaluation has significant cost implications in terms of staff time, meeting and workshop costs, logistical expenses in data collection and so on. These challenges are often more severe for local and small-scale organisations which usually lack resources in comparison to national and sub-regional organisations.

In projects, financial challenges can be reduced by taking evaluation into account during the design of the budget. Specifically, evaluation funds should be allocated and expended from the onset of the project. Early availability of funds is necessary for organising multi-stakeholder reflections, generating good-quality assessments of initial conditions and acquiring baseline data. In participatory action research, evaluation processes are often embedded within research and decision-making activities. They then become a fundamental part of building adaptive capacity rather than an additional activity.

Funding agencies might specify a proportion of the total budget to be allocated to evaluation. This should be additional to funds allocated to sustaining multi-stakeholder learning meetings where M&E data and results are discussed. It should also be additional to those allocated for experimentations to determine the effectiveness of tested adaptation options. Costs can be reduced by restricting accountability-oriented evaluations to a few key and realistically measurable indicators. Impact evaluations through experimental or quasi-experimental methods are extremely costly, and should only be attempted if the necessary conditions are met and if the funds to acquire meaningful datasets are available. Consideration also needs to be given to the long-term financial sustainability of evaluation processes beyond the timespan of initial external funding. Funding agencies should be open to supporting evaluative processes that have been initiated before their involvement.

5. Conclusion

Evaluation is essential to support adaptation outcomes in Africa, and strengthening evaluation capacity is fundamental to strengthening adaptive capacity. However, approaches are required that go beyond accountability-driven project implementation and management. The CCAA program used a combination of workshops, mentoring and learning-by-doing approaches to strengthen these capacities. Whilst many methodological debates around how to evaluate adaptation remain, CCAA's approach—using participatory action research and outcome mapping feeding into results-based reporting—supported accountability and governance functions, strengthened credibility and partnerships, and allowed shared learning. Participatory action research and outcome mapping also support key aspects of adaptive capacity, which are learning from experience rigorously and flexibly. As well as contributing to improved outcomes, the experience of many CCAA-supported projects has shown that African organisations and communities that engage in joint evaluation processes can be empowered through increased legitimacy and can adapt rules and practices to changing conditions.

There are, however, many challenges that must be anticipated and properly addressed in order to be overcome. The challenge of spreading evaluation capacity throughout organisations and to those who are adapting can be addressed by fostering ownership of evaluative processes by the different players involved. For this, the knowledge generated and data gathered should be of interest and accessible to participants. Inclusive multi-stakeholder learning and reflection meetings of different types can also help address this

challenge as well as many organisational, political and cultural obstacles to learning. The aim of strengthening self-confidence of players and trust between them should be clearly articulated for evaluation processes. Failures and corrective measures should be identified realistically and seen as a source of learning for adaptation.

For many reasons, it can be difficult to define the success of an adaptation initiative in terms of changes in biophysical or socioeconomic conditions and to quantify how much of that change is attributable to the initiative. This can be tackled by documenting contributions of the different players rather than trying to determine attribution. It can also be done by documenting changes in the institutional arrangements, decision processes, procedures and rules that make it possible to adapt to changing conditions. Documenting changes in key functions at different administrative levels, necessary to reduce vulnerability and increase resilience to shocks and stresses, could help regional initiatives to assess changes in transformative capacity. This can help identify success as well as areas where changes are needed. Most importantly, the models of change developed for initiatives must be adaptable to changing conditions and to emerging issues. Nonetheless, these models should reflect, in a stable way, the development goals of the players participating.

Evaluation specialists play an important role in strengthening the capacities of organisations while they intervene as evaluators, trainers or mentors, including during evaluations and donor-recipient exchanges. It is therefore also important to strengthen their capacities in climate change adaptation and in how to overcome the associated methodological challenges.

In addition to being clearly important for its own sake, developing adaptation evaluation and the capacity of African organisations to undertake evaluation processes is important to enable their access to adaptation finance. Evaluation is also an important component in supporting the accountability and capacity of African organisations managing adaptation finance-supported projects and programs. African organisations can invest in the research, development and use of evaluation tools and approaches for assessing adaptation. In so doing, they can strengthen their own evaluative culture, and also use the resulting knowledge to shape and influence international debates on adaptation and adaptation finance.

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