



CARIAA
*Collaborative Adaptation Research
Initiative in Africa and Asia*

Institutions and Adaptation: Lessons Learned from the Climate Change Adaptation in Africa Program

CARIAA Working Paper #2



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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 CARIIA 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

Institutions play a critical role in shaping climate vulnerability and impacts – for example through mediating between individual and collective responses, and determining access to resources. As a result of this, institutions also have a role to play in adaptation, but it is important to identify how they can act as to enable it, as opposed to constrain it. Understanding what constitutes an optimal institutional framework for adaptation is lacking – and is often impeded by the nature of research which focuses on a small number of contexts. This report addresses this gap by synthesizing findings from a number of participatory action research (PAR) projects conducted as part of the Climate Change Adaptation in Africa (CCAA) program. Building on empirical research in 19 African countries (Benin, Burkina Faso, Cameroon, Cape Verde, the Central African Republic, the Democratic Republic of the Congo, Ethiopia, Ghana, Guinea, Kenya, Madagascar, Mali, Malawi, Morocco, Mozambique, Senegal, Tanzania, Zambia and Zimbabwe), the key messages regarding institutions will inform future adaptation research and practice.

The findings illuminate four inter-related key critical elements of institutional arrangements that successfully enable climate change adaptation. First, the role of local informal institutions is typically overlooked relative to national formal institutions. However, local informal institutions play a key role in enabling and/or constraining adaptation, and thus attempts should be made to overcome the current disconnect. Second, coordination among and between institutions is essential, particularly given the wide variety and type of institutions that are variously involved in/affect adaptation at different levels. A well-coordinated institutional framework should take into account the three main chains of connection: horizontal coordination at the national level; horizontal coordination at the local level; and vertical coordination between national and local institutions. Third, the most successful institutional landscape is a plural one that incorporates different institutions (national, local, formal and informal) all performing complementary functions to enable effective adaptation. There should be no need for any one institution to have priority or prominence over another if coordination is effective. Fourth, the effective coordination of a plural landscape of institutions operating a different scales requires the formation of effective partnerships which, in turn, are driven by and/or supported by strong leadership. In many of the CCAA projects this leadership process was initiated and/or catalyzed by the PAR projects; but overcoming resistance to build trust and create a shared vision typically takes time and patience.

These four key messages add to our theoretical understanding of institutions and adaptation, and the key features of an effective institutional framework. They can also inform the Collaborative Adaptation Research Initiative in Africa and Asia (CARIAA) program, by highlighting key elements of institutions which need to be examined in order to determine where there is a potential role to contribute to the development of effective institutional framework to successfully support adaptation in climate hotspots.

Key words

Climate change adaptation, participatory action research, institutional linkages

Résumé

Les institutions jouent un rôle essentiel dans l'établissement de la vulnérabilité et des impacts climatiques, par exemple en gérant les réponses individuelles et collectives et en déterminant l'accès aux ressources. Par conséquent, les institutions ont également un rôle à jouer dans l'adaptation, mais il est important de déterminer comment elles peuvent la faciliter et non l'entraver. La compréhension de ce qui constitue un cadre institutionnel optimal pour l'adaptation est insuffisante et est souvent limitée par la nature de la recherche qui porte sur un nombre restreint de contextes. Ce rapport aborde cette lacune en synthétisant les résultats d'un certain nombre de projets de recherche-action participative (RAP) menés dans le cadre du programme Adaptation aux changements climatiques en Afrique (ACCA). Tirant profit de recherches empiriques menées dans 19 pays d'Afrique (Bénin, Burkina Faso, Cameroun, Cap-Vert, République centrafricaine, République démocratique du Congo, Éthiopie, Ghana, Guinée, Kenya, Madagascar, Mali, Malawi, Maroc, Mozambique, Sénégal, Tanzanie, Zambie et Zimbabwe), les messages clés concernant les institutions guideront la recherche sur l'adaptation et la pratique à l'avenir.

Les résultats éclairent quatre éléments essentiels clés interdépendants des ententes institutionnelles qui permettent une adaptation réussie aux changements climatiques. Premièrement, le rôle des institutions non officielles locales est peu connu par rapport à celui des institutions officielles nationales. Toutefois, les institutions non officielles locales jouent un rôle essentiel pour favoriser ou entraver l'adaptation. Par conséquent, des tentatives doivent être faites afin de surmonter le décalage actuel. Deuxièmement, la coordination entre les institutions est essentielle, en particulier compte tenu de la grande variété et du type d'institutions qui participent à divers niveaux ou qui influent sur l'adaptation à différents niveaux. Un cadre institutionnel bien coordonné doit prendre en compte les trois principales chaînes de connexions : la coordination horizontale à l'échelle nationale, la coordination horizontale à l'échelle locale et la coordination verticale entre les institutions nationales et locales. Troisièmement, le paysage institutionnel le plus réussi est pluraliste. Il intègre les différentes institutions (nationales, locales, officielles et non officielles) tout en exerçant des fonctions complémentaires pour permettre une adaptation efficace. Une institution ne devrait pas avoir la priorité sur une autre ou être plus importante qu'une autre si la coordination est effectuée correctement. Quatrièmement, la coordination efficace d'un paysage pluraliste d'institutions fonctionnant à diverses échelles nécessite l'établissement de partenariats efficaces qui, à leur tour, sont soutenus par un leadership fort. Dans un grand nombre de projets réalisés dans le cadre du programme ACCA, ce processus de leadership a été entamé ou stimulé par les projets de RAP. Toutefois, surmonter la résistance afin d'établir la confiance et de créer une vision commune nécessite du temps et de la patience.

Ces quatre messages clés ajoutent à notre compréhension théorique des institutions et de l'adaptation et aux caractéristiques clés d'un cadre institutionnel efficace. Ils peuvent

également éclairer l'Initiative de recherche concertée sur l'adaptation en Afrique et en Asie (IRCAAA) en mettant en évidence les éléments clés des institutions qui doivent être examinés afin de déterminer où il y a un rôle potentiel quant à l'élaboration d'un cadre institutionnel fort pour soutenir efficacement l'adaptation dans les zones vulnérables aux changements climatiques.

Mots-clés

Adaptation aux changements climatiques, recherche-action participative, liens institutionnels

Acronyms

BoA	Bureau of Agriculture (Ethiopia)
CAR/IAA	Collaborative Adaptation Research Initiative in Africa and Asia
CCAA	Climate Change Adaptation in Africa
CLCC	Local Committee for Adaptation to Climate Change (Senegal)
COMNAC	Senegalese Climate Change Committee
COP	UNFCCC Conference of Parties
CRP	Regional Steering Committee (Senegal)
CSA	Senegalese Food Security Commission
DFID	UK Department for International Development
DGM	Directorate of Meteorology (Madagascar)
EIAR	Ethiopian Institute of Agricultural Research
FOFIFA	National Research Centre for Agriculture (Madagascar)
GTCC	Working Group for Climate Change (Madagascar)
IDRC	International Development Research Centre
IPCC	Intergovernmental Panel on Climate Change
LDC	Least Developed Country
NAPA	National Adaptation Programme of Action
NGO	Non-governmental organization
NMA	National Meteorological Agency (Ethiopia)
NRM	Natural Resource Management
PAR	Participatory Action Research
UNFCCC	United Nations Framework Convention on Climate Change

About the authors

The authors of this working paper are former grantees of various projects supported under the Climate Change Adaptation in Africa (CCAA) program, a joint initiative of the UK's Department for International Development (DFID) and Canada's International Development Research Centre (IDRC). The authors came together at the end of the program to synthesize results on common themes and issues. The CCAA program ran from 2006-2012. Through the Collaborative Adaptation Research Initiative in Africa and Asia (CARIAA), DFID and IDRC continue to build on the research and capacity developed through CCAA.

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1. Introduction

This report draws together findings from a number of research projects undertaken as part of the Climate Change Adaptation in Africa (CCAA) program, a six year joint initiative of the UK's Department for International Development (DFID) and Canada's International Development Research Centre (IDRC) that supported research and capacity building to reduce climate change and vulnerability in Africa using a Participatory Action Research (PAR) approach.

Adaptation is a critical mechanism for managing the risks of climate change. It is the process of adjustment to actual or expected changes in climate and the effects of these changes. It may include strategies for income diversification or changing the timing or frequency of various natural resource management practices or through physical mobility (shifting cultivation, grazing or fishing areas). The CCAA program aimed at understanding what the most vulnerable populations already were doing to adapt, what they knew, as well as to identify gaps and impediments to more effective adaptation.

As the CCAA program unfolded it became evident that a number of common themes were emerging out of different contexts, and that there was an opportunity to build on these cross-project findings, contributing additional evidence on adaptation practice. Cross-project workshops afforded the opportunity to discuss these emerging findings and how they related to different countries.

In particular, it was seen as important to ensure that existing empirical and methodological findings can inform and be incorporated into projects planned under the Collaborative Adaptation Research Initiative in Africa and Asia (CARIAA). CARIAA will investigate climate change impacts and adaptation in three climate change "hotspots" in Africa and Asia – different biophysical environments (glacial river basins, arid and semi-arid regions and deltas) containing large numbers of people exposed to potential climate change impacts.

2. Background

The CCAA program ran from 2006 to 2012 and funded 41 projects investigating various aspects of adaptation across the continent, mainly based on a PAR approach. A key emerging finding from many of the studies was the role of institutions and the critical part they play in enabling and/or constraining adaptation. Building on empirical research in Benin, Burkina Faso, Cameroon, Cape Verde, the Central African Republic, the Democratic Republic of the Congo, Ethiopia, Ghana, Guinea, Kenya, Madagascar, Mali, Malawi, Morocco, Mozambique, Senegal, Tanzania, Zambia and Zimbabwe, this synthesis paper highlights a number of key messages regarding institutions which should inform future adaptation research and practice.

The paper provides a brief review of institutions and their role in climate change adaptation. It is structured around the four overarching (and interrelated) findings from empirical evidence from the CCAA case studies, namely: local level institutions can enable and/or constrain adaptation; coordination among and between institutions is essential; the most successful institutional landscape is a plural one; and forging partnerships between institutions requires leadership.

3. Institutions and their role in climate change adaptation

Institutions encompass a wide variety of phenomena, including not only tangible governance structures but also more loosely defined, often unwritten “rules of the game” that shape the behaviour and nature of human interaction as well as the prevailing organizational structure (Jones et al. 2010; North 1990). As such, they can be formal (constitutions, rules, regulations, laws, rights, etc.) or informal (behaviour codes, cultural norms, traditions); both kinds serve to reduce uncertainty and facilitate exchange in the presence of transaction costs. According to Agrawal (2008), formal institutions display a number of characteristics: they are socially determined and govern social, political, cultural and economic exchanges and interactions; they define the range of choices, regulate risk and uncertainty and determine transaction and production costs and hence the feasibility and profitability of engaging in economic activity; they evolve incrementally, linking the past with the present and future; and they provide the incentive structure of an economy and set the tone of societal development.

Institutions influence adaptation and climate vulnerability in three critical ways: they structure impacts and vulnerability; they mediate between individual and collective responses to climate impacts, thereby shaping outcomes of adaptation; and they act as the means of delivery of external resources to facilitate adaptation, thus governing access to

such resources (Agrawal 2008). Three main types of institutions relevant to adaptation can be defined: civic, public, and private institutions (Agrawal et al. 2008). Each of these can then be further subdivided into their formal and informal forms. Institutions also exist at a variety of geopolitical levels, from the national to the local.

Many of the formal governance responses to climate change take place at the national level, where policies, strategies and action plans are put into place. The CCAA reports from project countries confirmed that formal attempts to address climate change were far more common at the national level than the local level. For example, the National Adaptation Programmes of Action (NAPAs) were created by the Least Developed Countries (LDCs) as part of their commitments to the United National Framework Convention on Climate Change (UNFCCC). The number of countries with plans to respond to climate change at national level is increasing, although the implementation of those plans is not occurring at such a rapid rate (IPCC 2014).

Local institutions tend to play a key role in determining how people at the grassroots level will be able to adapt (or not) in the face of climate change. Implementation of national policies, strategies and actions plans could often take place at the local level through formal governance structures, but such structures are typically weak in many African contexts. Local governance refers to processes of decision-making, as well as those by which decisions are implemented (or not implemented). Good governance at local level implies that decision-making in the arena of local public affairs is subject to scrutiny and oversight by citizens and communities, in an open and transparent, rule-bound, and participatory manner (Graham et al. 2003). Community engagement in climate governance plays an important role in the implementation of climate policy to ensure legitimacy and credibility.

Institutions shape the impacts of climate hazards on livelihoods through a range of indispensable functions that they perform in rural contexts, including: gathering and disseminating information, brokering knowledge, mobilising and allocating resources, developing skills and building capacity, enforcing collective rules, providing leadership, and networking with other decision makers and institutions. Their effectiveness in building the adaptive capacity of individuals depends on factors such as their embeddedness within the wider institutional landscape—both horizontal (with other local institutions) and vertical (with national institutions) linkages—the cohesion level of members, the resources and knowledge they possess, and the incentives they provide for individual and collective action (Agrawal et al. 2008). Strong local institutions enable community members to better manage their natural resources in a sustainable way and hence have the necessary capacity to respond to external shocks, including those related to climate. In addition, local institutions are the foundation that enables communities to voice their interests and fight for them by influencing decisions taken at higher levels and by holding policy makers accountable. Through strong local institutions, the adaptive capacity of communities is strengthened. Figure 1 illustrates the variety of roles that different local institutions can play to support agriculture-based rural livelihoods in adapting to climate change.

Local institutions have a long history of playing a role at the community level in the context of natural resource management (NRM). While climate change and its threats and opportunities pose a new challenge for local institutions, there are lessons that can be learned from the way in which institutions have addressed NRM. In the NRM context the regulation function of institutions was often impeded due to a multiplicity of actors working on the basis of different norms and rules that were not always convergent – for example, local governments imposing new governance regulations that may be at odds with local collective management arrangements.

Similar challenges were noted in CCAA case studies. Conflicts between local institutions and formal governance were found in Senegal and Mali, and non-governmental organizations (NGOs) and development agencies in Mozambique and Zambia were observed creating parallel institutions and criteria for benefiting from relief programs. This failure by local (traditional) institutions to regulate intervention processes is, in itself, indicative of the vulnerability of these local institutions to external institutional and policy pressures that arise in attempts to address climate change. It highlights how silent institutional conflicts may undermine the capacity of local institutions (not to mention how the nature of the interventions themselves may impede adaptive capacity, for example through creating dependency on externally-provided inputs). Institutional compatibility—in addition to effectiveness, flexibility, social acceptability, equity, and feasibility—is a key indicator of the quality of a local climate change adaptation strategy (Ifejika 2010).

Climate change is a complex phenomenon affecting all geopolitical scales, and addressing it effectively inevitably requires modifications in institutional arrangements. Understanding the roles of local and national institutions in relation to climate change is therefore a core component of designing interventions that can positively influence the adaptive capacity and adaptation practices of vulnerable communities. This paper outlines a number of key emerging lessons from the PAR approach of the CCAA program that will shed light on the critical elements of institutional arrangements that successfully enable climate change adaptation.

4. The key role of local institutions

The first overarching observation from across the case studies is the ***importance of local informal institutions in enabling and/or constraining adaptation*** to climate change. There is growing recognition of the critical role of institutions in facilitating adaptation to climate change (IPCC 2014). As the impacts of climate change typically occur at the grassroots level, local institutions are integral to support mechanisms, in addition to national institutions. Despite their importance, they tend to be overlooked in the development of strategies at the national level. Understanding local institutions' existing

adaptation practices and promoting their involvement can serve the most vulnerable populations in mitigating the impacts of climate change.

Disproportionate focus on national level strategies

National institutions are mandated to set goals and develop policies and strategies that address climate change. The first official adaptation plans in many African countries—specifically the LDCs, which were mandated to produce them for the UNFCCC—were the NAPAs. Of the case study countries considered here, this was the case in Malawi and Tanzania. But NAPAs have been criticised for overlooking local realities. According to Agrawal and Perrin (2008), most of the projects in the African NAPA documents have been aimed at building the capacity of national governments and agencies to coordinate adaptation, provide services to the general population, and create infrastructure, rather than at strengthening the capacity of local actors and institutions to undertake adaptation. Furthermore, the authors point out that only 20 of the 173 projects described in the NAPA reports identified local level institutions as partners or agents in facilitating adaptation projects.

Aside from the LDCs, many other countries have begun developing national policies, strategies and action plans around climate change. In Africa, climate adaptation plans have typically been led at national level by the ministry of environment or equivalent ministry. In Madagascar, for example, the Forestry and Environment Department has the role of coordination and validation of national strategies and has created several sub-groups, such as the Working Group for Climate Change, to support reflection and experience-sharing between stakeholders. Similarly, in Ethiopia, the Ethiopian Institute of Agricultural Research (EIAR) was created in 1997 to coordinate research activities (on plants, animals and natural resources including forestry) by different sectors (e.g. federal research centres, regional research centres, universities/colleges, and the Ministry of Agriculture).

Some countries have gone one step further—recognising the cross-sectoral nature of climate change adaptation and the fact that it needs to be mainstreamed into multiple national ministries—and set up cross-sectoral bodies. In Benin, oversight is ensured by the new National Committee on Climate Change, which is charged with the overall supervision of climate change adaptation actions. In Morocco, the government established a National Action Plan on Climate Change, which is led by the Climate Change Unit (CCU) within the Ministry of Energy, Mines, Water and Environment; other relevant sectoral ministries (e.g. agriculture) have their own strategies which consider aspects of climate change. The Ministry of Agriculture's 2008 Green Plan of Morocco, for example, aims to develop the agriculture sector in recognition of changing water availability.

Integrating local institutions into adaptation

Evidence gathered across CCAA projects demonstrates an absence of inputs from the local level and a lack of participation by local actors in the generation of policies, strategies and action plans relevant to climate change. National plans generally overlook the history of existing local coping and adaptation strategies. On the contrary, they have a tendency to marginalise and ignore the local level context. In addition, national actors often provide insufficient incentives to local stakeholders to embrace the adaptive practices that they are trying to promote. These factors have created a wide gap between the local and national institutions in Africa in terms of their mandates to address the challenges and opportunities arising from climate change. This gap needs to be closed if institutional capacity to manage climate risk is to be built. Better integration between local and national institutions also needs to be promoted and reinforced for institutions at both scales to have legitimacy and be effective.

A common reason for failure among externally-introduced grassroots adaptation initiatives is that they overlook the importance of adequately assessing the existence and state of functioning of local institutions. Efforts to address risks faced by the communities and to reduce their vulnerability through projects and programs are hampered by the fact that local institutions are often not taken on board during the design and implementation of such initiatives. Therefore, involving local institutions in formulating and implementing climate change adaptation practices is crucial to increasing the resilience of African communities at the grassroots level to new constraints related to climate change.

Capacity building may be a necessary prerequisite for the involvement of local institutions. In CCAA projects aimed at building agricultural resilience, the approach to strengthening local institutions varied depending on the context. Assessments of the institutional frameworks in the case study communities in southern Africa (Mozambique, Zambia and Zimbabwe) found the main local institutions to be weak or defunct and experiencing declining trust from community members. Thus, farmer-based field learning centres were established from scratch. This was in contrast to CCAA's experience in West Africa, where the case study communities in Burkina Faso, Mali and Senegal had functioning institutions and the most appropriate mechanism for supporting adaptation was to actively engage them with the PAR process and build on existing solutions that they were trialing.

As well as assessing the existence of local institutions, considering their function and status is also important as they are embedded within particular contexts in which power relations between groups may be unequal. Whilst the active involvement of local institutions in adaptation initiatives and in the generation of effective and participatory governance processes is important, it is also essential to ensure that local institutions include the most vulnerable members of a community, so that their voices are also heard. Indeed, leadership of local institutions is frequently dominated by the powerful elites in society. In the case of southern Madagascar, the CCAA project observed that a broader and more representative

range of perspectives would likely have been identified if gender-sensitive approaches were used, for instance by holding separate group discussions for women and for men. The processes to enable adaptation should respond to the need to proactively include marginalised social groups and consider gender equity in the process of bringing local and national actors together to establish commonly-agreed on rules of the game.

Short term, individual coping

Analysing how communities respond in the absence of local institutions reveals their enabling role. In the arid plain community of Lamzoudia in Morocco, for example, traditional ethnic institutions have been eroded and there is no forum for collective action to respond to the impacts of climate change. The leadership of the elders is limited to supervisory and governing roles, and does not address sustainable resource management or adaptive capacity building. Where they exist, local NGOs are concerned only with activities related to the rehabilitation and maintenance of irrigation systems, the supply of drinking water, and livestock feed supply. Individuals therefore adopt coping behaviours, diversifying activities and income in the case of medium and small households, or overusing natural resources (water and rangeland) in the case of more fortunate households. This is in contrast to other communities where institutions are facilitating longer-term adaptive strategies that will enable sustainable livelihoods in the context of a changing climate.

Similar coping strategies were observed in Wenchi, Ghana. Here, farmers increasingly resort to social and economic ties among themselves, and in many cases engage in support systems of sharing food and labour, including exchange and reciprocity. In times of climate-related disasters or famine, the most immediate sources of support are family, community and local reciprocal relationships. Particularly vulnerable members of the community, such as migrant farmers, who have low human and financial capital, rely mainly on reciprocal labour (Adjei-Nsiah et al. 2010). Whilst these strategies ensure immediate-term survival, they are not examples of long-term adaptation. Understanding local institutions where they exist and integrating them into planning strategies can lead to more effective adaptation in the long-term.

5. Coordination among and between institutions is essential

Related to the fact that local, informal institutions are often overlooked is the second overarching observation from the case studies: ***the critical nature of coordination***. There are three main chains of connection within a well-coordinated institutional framework: horizontal coordination at the national level; horizontal coordination at the local level; and vertical coordination between national and local institutions. In all of these chains, coordination refers to communication among formal government institutions, as well as

between government institutions and other non-government institutions. Vertical coordination should involve communication that flows both ways, top-down and bottom-up.

The standard model for policy-making is that government identifies problems, designs solutions, and intends for them to be implemented at the local level. This approach often results in the national level overshadowing, discouraging and suppressing local initiatives by promoting larger-scale agendas in standardised bureaucratic structures that complicate access to resources (Wilbanks 2007). The alternative—a bottom up approach—can lead to an unmanageable accumulation of smaller changes, a lack of sensitivity to larger-scale driving forces and issues, a lack of information about linkages between places and scales, and a lack of access to resources to support effective actions (Wilbanks 2007). Linkages and connections are often complicated by the fact that different institutions have different potentials and limitations that can be incompatible. Cross-sectoral coordination among institutions and agencies is often inadequate or absent at both national and local levels (Agrawal et al. 2011). The variety of institutions that exists and the contextual specificity of institutions mean that there is no simple recipe for coordination that will work in all circumstances. However, the CCAA case studies showcase promising methods for improving coordination between actors and across levels.

Horizontal coordination at the local level

CCAA's work in Morocco demonstrates good practices for facilitating coordination across local institutions. The mountain community of Tabant has a number of informal and formal local institutions in operation that work cohesively to promote climate change adaptation. Traditional ethnic institutions (*Jamâa Soulalia*) play major roles in managing their local natural resources (water, rangeland and forests) and conflicts related to resource allocation (for irrigation, grazing, etc.) in partnership with NGOs. They also mobilise human and capital assets for collective action in response to climate hazards such as floods, thunderstorms and droughts. The traditional ethnic institutions are also involved in designing the roles for the elected members of the communes board (a formal governance structure). Thus, within this community, horizontal linkages between formal and informal institutions are effective, and adaptation strategies are translated into actions rapidly and adopted efficiently.

People at the grassroots level recognize the importance of horizontal coordination not just between formal and informal institutions in one place, but also between informal institutions in different places. This is particularly relevant for climate change adaptation given the scale of exposure to particular climate hazards. In Nguéye Nguéye, Senegal, the local conventions for the management of natural resources bring together 10 villages that have accepted to be bound by the same (new) territorial and social boundaries and rules. This demonstrates that the local communities are becoming increasingly aware that isolated institutions and adaptation strategies will have little effect, both in terms of

changes in people's behaviour as well as improvements in the management of natural resources. In southern Africa, use of a learning-centred approach in the context of PAR rallied households within and across communities to break down the information and knowledge barriers to use of Integrated Soil Fertility Management technologies and improved farming practices. Farmers were able to lead participatory experimentation processes and reflect on the adequacies and deficiencies of current institutions regulating climate change adaptation processes. A major outcome was the formation of learning alliances and collective action groups bringing together farmers from different social backgrounds and geographic origins in Zimbabwe and Mozambique. These institutions enabled farmers to better access information, knowledge and resources.

Horizontal coordination at the national level

Section 4 highlighted how the establishment of climate change policies at national level may not be cross-cutting in practice. In Senegal and Guinea, structures were set up as a response to climate change risks to fisheries, namely: a national committee for policy dialogue in Guinea, and a national committee for the adaptation of fisheries to climate change in Senegal. Additionally, Senegal's National Alliance on Fishing has integrated climate change into its priorities. However, addressing climate change has been impeded by wider institutional changes, and the lack of coherence between fisheries policies and those of other sectors has proved problematic. In Senegal, management of aquaculture was transferred to the remit of the new Ministry of Ecovillages from the Ministry of Maritime Economy, but the development of aquaculture is still essential to achieving the objectives of the fisheries policies.

The agriculture sector in Madagascar initially had no coordination mechanism at national level. The CCAA project established the first multi-stakeholder coordination structure in 2008, comprising representatives from the Directorate General of Meteorology, Ministry of Agriculture, Livestock and Fisheries, National Plan for Adaptation team at the Ministry of the Environment, Water and Forestry, the National Research Centre for Agriculture (FOFIFA), and Conservation International, which later joined the Working Group for Climate Change (GTCC) in 2010.

Vertical coordination between the national and local levels

Though disconnects between national and local level institutions are common, evidence from the CCAA program demonstrates that these disconnects can be overcome. In Ethiopia, for example, improved vertical coordination between communities and national level departments dealing with climate change adaptation led to an improvement in the communication of weather and climate information. This in turn enabled better adaptive decision-making. At national level, key adaptation institutions include the EIAR, the National Meteorological Agency (NMA) and several NGOs. The EIAR works with the Board of Agriculture and NGOs to deliver its technological outputs to communities. The NMA is

responsible for collecting, analysing and studying the atmosphere, and providing weather forecasts and early warnings on adverse effects of weather and climate in Ethiopia. Climate information plays an important role in guiding the choices of agricultural enterprises, including choices about the diversification of agricultural activities, allowing farmers to make informed choices about crop varieties and livestock breeds. However, a blockage existed here, as a majority of farmers were not able to access the climate information from NMA. The information gap forced many farmers to seek information from informal groups such as indigenous weather forecasters. The CCAA project facilitated the formation of village-based platforms to bridge the gap between national and local institutions and a forum for integration of the scientific and indigenous forecasts for the benefit of the local communities (Habtamu, Degu, et al. 2010).

Kenya has also experienced similar challenges in vertical coordination – though less around the transmission of information than the understanding and capacity to use it at the local level. The Nganyi community, a sub-clan of the larger Abasiekwe Clan of Bunyore of Western Kenya, used scientific information from the Kenya Meteorological Service, which was accessible through print and electronic media. However, the use of the information was impeded by poor understanding and applicability in the local context. A change in policy enabled the appointment of Provincial Meteorological Directors with mandates to downscale the national forecasts to their specific provinces. Because the channels for dissemination already existed, this additional structure ensured the delivery of location-specific early warning climate information to inform adaptation actions at the community level.

Box 1 below on the CCAA InfoClim project in Senegal elaborates on the creation of a sound horizontal and vertical coordination structure improving institutions' communication of weather and climate information to farmers in Senegal.

Box 1: Improving institutional coordination to transmit weather and climate information – InfoClim in Senegal

InfoClim was established with the aim of improving farmers' access to weather and climate information that enables adaptive decision-making. Its success has hinged not only on opening communication channels between farmers and information providers, enabling them to share their needs, but also on the active involvement of formal and informal institutions at a variety of levels, including NGOs, local authorities, farmers, extension services, scientists and communities.

Building a favourable institutional environment

Following the first surveys and workshops of the InfoClim project, it was apparent that communication between the various extension services (meteorology, agriculture, forestry, livestock, etc.) was neither systematic nor well established, especially within the area of climate change. These services were assisting local communities in a very sectoral manner and natural resource-related information provided to producers was fragmented. This lack of coordination seemed less pronounced at the national level, where some inter-ministerial structures that appeared to support horizontal collaboration were created (e.g. the Senegalese Climate Change Committee (COMNAC) and the Senegalese Food Security Commission (CSA)). Collaboration between government and NGOs, on the other hand, was scant, particularly at the local level.

Based on consultation with various actors and the analysis of existing fragmented information flows, an InfoClim Observatory was established to facilitate the flow of information within and between the different organizations. The Observatory is managed and maintained by the communities as a mechanism for monitoring and disseminating climate information to farmers. From the production of information to its dissemination and use, responsibilities are shared between scientists, extension services, NGOs, local institutions and farmers.

Organizational Framework

InfoClim is embedded in an organizational framework that governs the communication between these different actors. the basis of which is comprised of the producers of the four targeted rural communities. Other groups involved include a forum of actors in each community, the Local Committee for Adaptation to Climate Change (CLCC), the Regional Steering Committee (CRP) and the National Scientific and Technical Committee. Figure 1 below shows how the various organizations are linked, both horizontally and vertically.

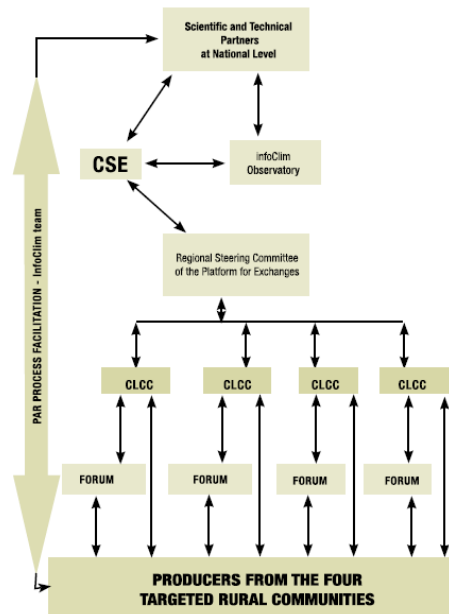


Figure 1: Organizational Chart of the Observatory

Within the Observatory, in each of the four communities, producers have organised themselves to elect the CLCC, acting as a liaison between them and the other partners. The CLCC is composed of seven members, six of which each deal with one of six themes (rain-fed agriculture, livestock, horticulture, arboriculture, forestry and water). The seventh is the committee coordinator. Its role is to collect information needs expressed by the community (through the occasional fora) and transmit them to the upper bodies of the organizational framework that can provide the information. NGOs support this process. Representatives of the different CLCCs also meet occasionally to share good practices and experiences in agricultural adaptation.

The CRP is composed of the regional technical/extension services working in different sectors (i.e. agriculture, water, forestry), the presidents of the CLCCs and representatives of the NGOs. Its role is central in the institutionalisation of the observatory. The CRP is under the authority of the Governor, the supreme authority of the Region, who appoints or confirms the CRP members, including the President. The CRP facilitates vertical coordination between, on one hand, producers and different communities and, on the other hand, producers and other technical and scientific institutions. It is responsible for analysing and facilitating access to the information needed by producers, through the CLCC. The President of the CRP (who is also Chief of the Regional Planning Office) coordinates the process of ensuring and facilitating the integration of climate change issues into planning processes. Building the President's capacity in these issues was instrumental in all phases of the project.

While there are many examples of good coordination, it remains difficult in many cases. Figure 2 illustrates the institutional framework for climate change adaptation in Madagascar, where ongoing challenges include the persistent lack of integration of local knowledge into national strategies (due to poor vertical coordination and communication) and lack of integration between climate change and development (due to poor horizontal coordination at national level, and poor implementation from national to local level). Similarly, Figure 3 highlights where there is a total absence of coordination, or where the linkages between institutions are presently weak, in Cameroon.

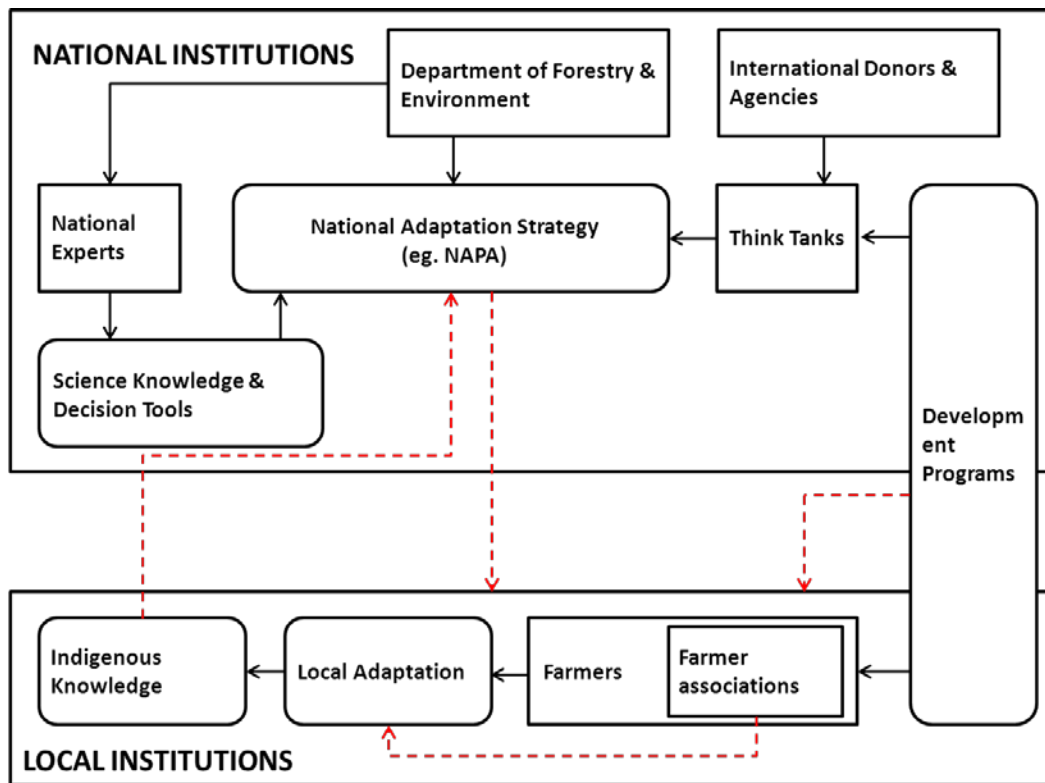


Figure 2: Overview of the institutional framework in Madagascar

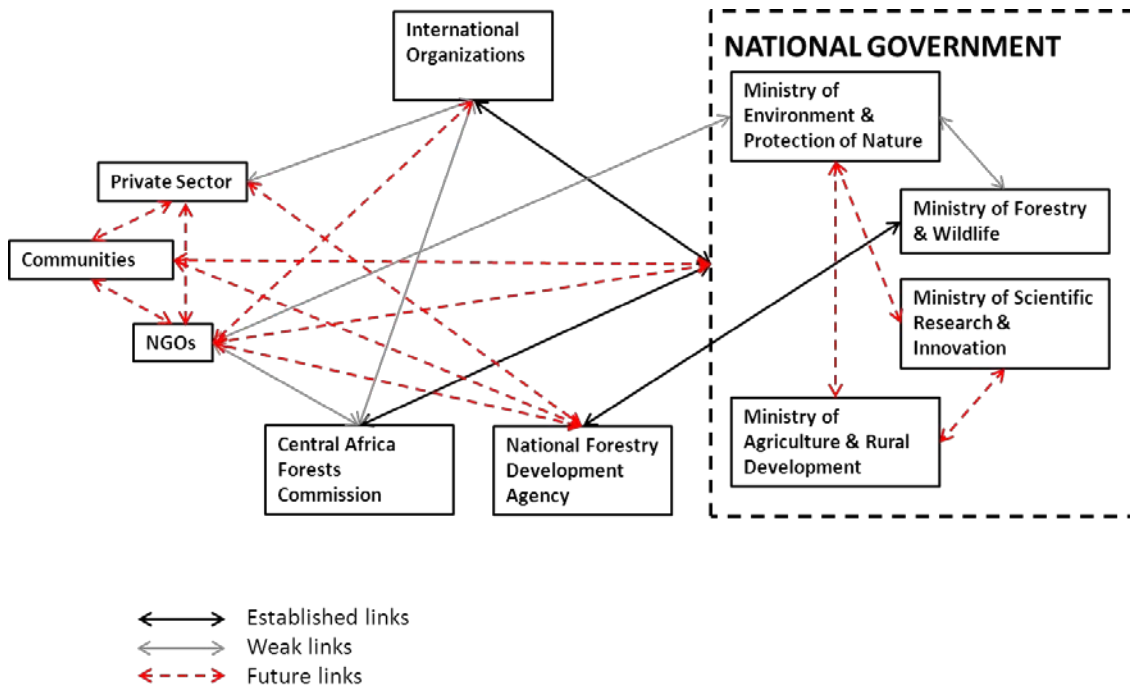


Figure 3: Current and future inter-institutional linkages on climate change in Cameroon (Brown et al. 2010)

6. The most successful institutional landscape is a plural one

The third overarching lesson is that *different institutions (national, local, formal and informal) should all perform complementary functions, and thus there is a place for all of them in a well-coordinated institutional landscape*. Climate change is a complex problem and thus a number of different actors specialising in different areas is required to effectively address it. As some of the observations below will show, the absence or incomplete operation of certain institutions may lead to others filling the gaps – for example, individuals acting in the place of informal institutions at local level, or NGOs acting in the place of government at local level.

Despite the coordination challenge it involves, institutional plurality allows local communities to take advantage of the different opportunities for interaction and partnership to access resources, information and knowledge. It also provides local populations with the opportunity to benefit from the complementarities between different institutions. For example, while traditional organizations often prove to be most effective in mobilising social networks for collective action or setting norms for the management of

natural resources, they tend to be less effective in designing appropriate systems to engage with external actors for the mobilisation of financial resources. Indeed, this type of interaction relies on governance structures and accountability mechanisms that may require new organizational forms. At the local level, coexistence of different organizations in the same social space, such as cooperatives, producers groups, women's associations, etc., usually tapping into the same membership base, may be observed. This constitutes a strategy, consciously designed by local communities, to have at their disposal a set of organizational and institutional arrangements and tools to deal with any external opportunity (to access funds, information, knowledge, etc.). However, it is often apparent that the capacity for coordination and harmonisation of competing institutions is beyond the scope of local institutions without a strong backing from state sponsored, formal organizations.

The Role of NGOs

Due to financial and technical challenges in the African context, many functions typically performed by formal governance structures are undertaken by NGOs. In Ghana, a number of church-based NGOs, such as the Catholic Relief Agency (CRA) and the Adventist Relief Agency (ADRA), provide agricultural support services to smallholder farmers through provision of credit, inputs and extension services to improve their livelihoods. This is particularly the case for high-value exports such as pineapple, palm oil, rubber and animal husbandry. NGOs are also often embedded within communities, allowing them to build relationships of trust and develop the ability to understand or even share communities' concerns. In many cases, they have mastered how to work effectively with communities, and can often anticipate the needs that lie ahead. They commonly use advocacy methods and communication approaches that ensure community participation in development activities. NGOs can contribute positively to the local ownership of results and their replication. NGOs therefore play the role of mediating between the local and national/regional institutions in the scaling up of adaptation actions.

While NGOs can work well at the local level, they may also erode capacity for communities to adapt in the long term. When external support is provided through local institutions, their activities are often driven by the agenda of the supporting organizations (NGOs, donor-funded programs, etc.) that provide financial resources, technical knowledge or information. These organizations may impose new governance rules and norms on local institutions that do not always have the appropriate organizational infrastructure to absorb them. In many cases, this situation contributes to the weakening of local institutions overall, and particularly after the end of the intervention, because by that point the institutions have modified their purpose, values and functions significantly from pre-existing norms. Alternatively, local institutions might proactively modify their mission and goals in order to better position themselves to seek external support. This may ultimately affect their legitimacy.

Many local institutions are faced with this dilemma, and the challenge is to ensure coherence, coordination and complementarities between the two spheres – one institution should not predominate. As mentioned previously, local institutions tend to mirror local power relations and can be exclusionary to certain groups of people, for example women, whereas external NGOs are more likely to take a gender-sensitive approach. The key is therefore to ensure complementarity, allowing each institution to perform to its strengths, as opposed to the absorption of any one in another.

7. Forging partnerships among existing institutions requires strong leadership

The fourth overarching lesson is that ***forging partnerships among key institutions, which are necessary to ensure coordination in plural institutional environments, requires good leadership.*** With so many relevant institutions operating at different levels, bringing together the correct parties and establishing horizontal and vertical communication channels is unlikely to happen by chance – instead it requires active leadership. In fact, even when mandates and cross-cutting policy frameworks require cooperation and collaboration, in reality this involves many obstacles. The PAR approach taken in the CCAA program allowed many of the projects to broker this role, leaving behind well-functioning and -coordinated institutional landscapes centered on climate change adaptation.

Overcoming resistance to collaboration

As communities were engaged in the PAR process in Ethiopia, it emerged that tensions existed between national and local institutions, specifically between research institutions and development institutions. This research-development tension was a major factor hindering progress; overcoming the tension was a prerequisite for the effective implementation of adaptation strategies. It was first necessary to mobilise and engage communities to undertake management activities that would improve the integrity of the natural resources. Participants were provided with farm tools to participate in project activities. However, this initiative was negatively perceived by some organizations who regarded these activities as “development activities” – problematic because of tightly defined “turfs”, or spheres of influence. A lack of harmonisation with other institutions like the Melkasa Agricultural Research Centre (MARC) and Bureau of Agriculture (BoA) meant bringing development actors into the arena of collective action during the implementation of planned actions was challenging. This made it difficult for development agents to participate in key PAR joint learning meetings, as well as during establishment and participatory evaluation of trials. One way of addressing this problem was to mainstream PAR into research-for-development projects and programs (Habtamu, Bekele, et al. 2010).

In Madagascar, the CCAA program successfully built the first cross-sectoral platform at national level for responding to climate change within the agriculture sector. In general, national stakeholders were enthusiastic in building partnerships that would effectively increase capacity for national and local adaptation. However, formalising those partnerships remains an important challenge, due to multiple economic, methodological, and strategic issues. The limited availability and, more importantly, origin of weather information, are examples of such issues. The lack of weather stations is one of major obstacles in Madagascar, and the creation of new weather stations is defined as a national priority in the NAPA (2007). The Directorate of Meteorology (DGM) helped to set up local weather stations in the four intervention regions, in compliance with recognised standards, but it could not officially endorse data that was collected from stations over which it had no control. Therefore the DGM was unable to endorse those stations that the CCAA project helped to install in its intervention area – namely a new station in southwest Madagascar, where the only official meteorological station in a radius of 150 km has not functioned since 2005.

Realistic expectations of partnerships

CCAA projects demonstrated that forging effective partnerships requires time and patience. In Tanzania and Malawi, successful multi-institutional coordination fora were established to enable agricultural innovations at the local level, but the process did not always run smoothly. Farmers in 16 learning villages (eight each in Malawi and Tanzania) collectively conceptualized an agricultural innovation system—and the various inputs from different actors that they would require within this system (e.g. training, input supply, post-harvest processing, marketing and business advice)—at the local level, and subsequent workshops were held with relevant stakeholders in attendance. Some difficulties that hindered effective linkages among institutions and organizations were encountered. At the beginning of the study, the roles and positions of some institutions were not clearly understood. For example, some local institutions dropped out from the study because their expectations of benefiting materially from the process were not fulfilled. This was also the case for some private sector organizations. Other institutions and organizations were found to have several development objectives, as well as responsibility for covering a wide geographical area, both of which reduced their capacity to participate effectively in the learning process. Other difficulties included the expiration of the mandates of political leaders who had initially mobilised different local institutions, particularly at district level. New leaders arrived to the emerging process with different goals and expectations. At the end, however, significant changes in institutional (and individual farmers’) behaviour towards adaptation were observed, and communities were able to access information and products from collaborating institutions.

8. Conclusion

The paper has outlined the major findings of the CCAA program relating to the role of institutions in adaptation, drawing from empirical information from CCAA case studies. Four headline messages emerged, each supported by a number of sub-messages. The first emphasizes the critical, overlooked role of local institutions in responses to climate change. It is currently common in the African context to find a disconnect between national and local level institutions. When attempting to support adaptation from the outside, it is critical to assess what local institutions already exist and their function in the relevant context(s), and either build on them or create new ones as appropriate to the context. The role of institutions in adaptation to climate change is supported by the finding that, in the absence of collective norms governing adaptation, short-term coping strategies tend to predominate over longer term, and more sustainable, adaptive strategies.

Coordination between institutions is also essential, and can take place at a variety of levels and between a range of institution types. National level horizontal coordination is required between formal governance structures (e.g. government departments) and other national level institutions, such as NGOs. Horizontal coordination is required at the local level between informal institutions, and between informal institutions and more formal institutions, such as NGOs. There is also evidence of a number of local level institutions “scaling out” and coordinating with other local level institutions to expand their sphere of influence; this is particularly important in addressing “big picture” issues such as climate change. In promoting good vertical coordination, both top-down (from national to local) and bottom-up (from local to national) communication is essential. A number of case studies were presented where this has greatly improved access to, and use of, weather and climate information for adaptation.

The most successful institutional landscape is indeed a plural one, where institutions co-exist, coordinate and collaborate to fulfill their various roles and responsibilities effectively. In the African context, particularly at the local level where capacity constraints can impede the functioning of formal governance structures, NGOs often fill the gaps. This can be very effective, but there is a danger of inadvertently crowding out existing local institutions if coordination is not proactive. There should be no need for any one institution to have priority or prominence over another if coordination is effective.

Last, but not least, the process of enabling coordination within a plural institutional landscape typically involves strong leadership. Building common ground can take some time as different institutions come to understand their various roles and coordination potential, overcome skepticism and initial resistance, and take on ownership of the process. Such a process cannot be left to chance, but must be mediated, organised and facilitated. A number of case studies demonstrated that, with the requisite leadership, coordinated and plural institutional landscapes can successfully support adaptation, particularly at the local scale.

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Adaptation

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