

Decentralising Climate Funds (DCF)



Tools for resilience assessments and climate-sensitive local planning

Near East Foundation consortium under the Building Resilience and Adaptation to Climate Extremes and Disasters (BRACED) programme



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Glossary

ANACIM	National Agency for Civil Aviation and Meteorology (Senegal)
CLOCSAD	Local Committee Responsible for Steering, Coordinating and Monitoring Development Actions (Mali)
COMRECC	Regional Climate Change Committee (Senegal)
CRM	Climate Risk Management
DCF	Decentralising Climate Funds
EWS	Early Warning System
FEWSNET	Famine Early Warning System Network
IED Afrique	Innovation, Environnement et Développement en Afrique
IIED	International Institute for Environment and Development
ISM	Institut du Sahel au Mali
ISRA	Institut Sénégalais de Recherches Agricoles
NEF	Near East Foundation
SDADL	Departmental Support Service for Local Development (Senegal)
TAMD	Tracking Adaptation and Measuring Development

1. Introduction

In Sahelian drylands, which are characterised by increasing climate variability and extreme events, risk management demands real-time adaptation to unpredictable and uncontrollable events. The goal is to avoid the damaging impacts of variability, while capitalizing on the opportunities that it can create. In practice, such flexible adaptation strategies require local government planning systems that engage both local authorities and representative community organizations and that integrate into their decisionmaking reliable data on climate risks and potential environmental, social, and economic impacts. The Adaptation Consortium in Kenya has found that when communities and local authorities act together, they seem better able to provide appropriate and timely responses to climate change that benefit the most vulnerable. They are also often more accountable to citizens and more likely to help create peace as they contribute to consensual decision making (Tari *et al.*, 2015).

The decentralisation processes in Mali and Senegal provides an appropriate institutional framework for this kind of climate adaptation planning. Local governments are formally responsible for planning, territorial development, environmental regulation, providing public services, coordinating different sectors and stakeholders, and financing public good investments that strengthen local livelihoods and economies. They have a pivotal role to play in building community resilience. Their local presence should enable them to put in place tailored climate adaptation responses that consider the diversity and complexity of local economies and ecosystems and the different needs and priorities of local communities.

However, few local governments in Mali and Senegal have the institutional capacity to integrate the variability and unpredictability of the Sahelian climate or short- and long-term climate change into their planning systems. And although local government planning is supposed to be participatory, it does not sufficiently involve local communities in decisions that aim to address local priorities, or draw on the adaptation strategies used in local production systems. If climate adaptation measures are to help build resilience, formal local government planning systems need to pay much more attention to local knowledge and views, which generally take account of variability and climate change (Krätli, 2015; Hesse *et al.*, 2013).



The Near East Foundation (NEF) consortium is working to improve local government planning systems in Mali and Senegal to enable them to tackle climate change more effectively. In 2016, it piloted new methodological approaches to resilience assessments through the Decentralising Climate Funds (DCF) project, with the dual objective of helping local people use their adaptation knowledge and priorities to inform the planning process, and enabling local governments to assess their institutional capacity to define and implement longer-term climate adaptation programmes.

The evaluation methods and tools are still a work in progress, and are being developed through a participatory action-research process. This paper aims to share the lessons learned about the methodological approaches developed in Mali and Senegal and evaluate the extent to which they can respond to the challenges of resilience-focused planning, be integrated into local government planning systems and ensure that the priorities of vulnerable groups are more equitably represented. It starts by considering the limited institutional capacity to integrate climate change into local government planning and the disconnection between local government and community systems. It then describes the methodological approaches and analyses, their relevance and the lessons learned during their development and application.



2. Challenges in local planning

Despite the favorable framework provided by decentralization, local governments often lack capacity to perform their functions. In Mali and Senegal, a lack of resources constrains the ability of local and regional planning systems to support resilience-building among populations that are vulnerable to climate change and extreme events.

2.1 Local government knowledge and institutional capacities

In 2016 the DCF project conducted institutional analyses in three *cercles* in the Mopti region of Mali and a sample of eight communes in the Kaffrine region of Senegal,¹ using the institutional evaluation tool known as the dashboard (see section 3.1 below). The aim of the exercise was to determine how much local authorities know about climate change and their capacity to integrate this issue into their planning. Its findings are summarised here (Fisher *et al.*, 2016).²

Local government planning systems in Mali and Senegal are characterised by:

- **Poor integration of climate change.** Local governments still have relatively little capacity to integrate climate change into their planning. None of the three *cercles* in Mali have a plan that includes climate change, and they do not seem to have identified and financed any adaptation actions. The situation is not much better in the Kaffrine region in Senegal, as only one commune has included climate-related problems in its plans and none have identified or financed any adaptation actions. Only one *cercle* in Mali and one commune in Senegal take account of traditional knowledge and adaptation practices, even though stone lines and mulching are widespread in both areas.



¹ *Départements* are a new level of local government in Senegal. The *Département* councils in the region of Kaffrine had not had time to prepare planning documents. The study therefore covered eight sample communes, using the 'dashboard' tool (see Section 3) in two communes from each of four participating *Départements*.

² In Mali, the evaluation covered the *cercles* of Douentza, Mopti and Koro.

- **Little use of climate information.** There are several mechanisms for gathering, analysing and disseminating climate information in Mali and Senegal. National weather agencies (the Agence Nationale de l'Aviation Civile et de la Météorologie in Senegal, and Mali-Météo) collect, analyse and disseminate information about climate predictions via radio, mobile phone, weather forecasts and meetings held every 10 days. Other organisations, such as the AGRHYMET regional centre, the Senegalese Agricultural Research Institute (ISRA), the Institut du Sahel au Mali (ISM) and the Famine Early Warning System Network in Mali (FEWSNET-Mali) produce and disseminate agricultural forecasts and updates and information about climate risks (Cornforth, 2014). Despite the available information, local governments have very limited capacities to interpret and use climate information to guide their planning decisions. This situation has been ascribed to the lack of products adapted to local contexts, delays in disseminating information, lack of clearly defined roles and responsibilities for the different actors concerned and lack of resources (Fisher et al., 2016; Cornforth, 2014).
- **Poor institutional coordination.** The designated structures for coordinating and planning actions on climate change in Senegal are regional climate change committees (COMRECC). Mali has local committees responsible for steering, coordinating and monitoring development actions (CLOCSAD) and an early warning system (EWS) that operates under the auspices of the prefecture, but no specific structure for coordinating climate adaptation actions. These institutions are generally weak, primarily due to the lack of specific, sustained budget support for their function. Instead, they receive financial support from projects and programs that are active in the area. It appears that there are systems for information exchange and contact among the decentralised services that are concerned with the issue of climate change.
- **Insufficient financial resources.** Local government budgeting capacities are generally weak, partly because of their limited financial resources and lack of knowledge about procedures for identifying, prioritising and setting up climate change-related projects. There is no dedicated funding for integrating climate change into local policies and plans – this seems to be done by individual NGOs that provide occasional support – and budget lines for emergency situations are sometimes planned but rarely funded.



- **Little account taken of vulnerable groups.** Insufficient account is taken of the priorities of women and children, who are worst affected by the negative impacts of climate change. Although women are involved in planning local development actions, they are poorly represented in this respect and are mainly found in the education, health and administrative services.

2.2 Lack of connection between communities and local government planning

Communities in the Sahel have lived with climatic variability for a long time. Adaptability is an integral part of their production systems and institutions (Krätli, 2015; Hesse *et al.*, 2013; Seck *et al.*, 2009), with strategies that help maximise the productivity of activities during periods of ‘abundance’ and strengthen resilience in times of ‘scarcity’. This flexible response to climate variation has enabled societies to live in the Sahel for centuries. Adaptation policies and practices in development today could usefully draw lessons from the strategies communities used to adapt to changing rainfall patterns in the Sahel between very wet (1950–1960) and very dry (1970–1990) periods.

Since the 1980s, development support to help local people achieve their objective of increasing productivity while reducing the risks associated with climatic variation has included creating cereal banks, introducing soil and water conservation measures, supporting local agreements on natural resource management, promoting pastoral mobility and disseminating short-duration crops. Yet local government planning still takes little account of endogenous strategies that best reflect and suit the local context.

This disconnect between communities and local government planning reflects to the lack of a mechanism for popular participation in planning decisions and processes. Local people are consulted and encouraged to identify their local development priorities, and locally elected officials on communal councils approve annual development budgets, but apart from that they have little input into local government planning.

Another factor is the persistent rhetoric of ‘desertification’, which emphasises the scarcity and degradation caused by variable rainfall and frequent droughts and claims that they are aggravated by ‘unsustainable’ traditional production systems (Behnke and Mortimore, 2016; Krätli, 2013; Hesse, 2011). As a consequence, even when local communities are consulted by local authorities about their development priorities, too great an emphasis is placed on short-term socio-economic needs, rather than the identification of ways to support and strengthen adaptation strategies that exploit or reduce the risks associated with variability. This rhetoric continues to feed the premise that Sahelian communities are dependent and justify interventions to ‘stabilise’ conditions, often through investments in high-maintenance technologies and infrastructures that cannot be sustained without external support. Such interventions disregard the ways that local knowledge, experience and ingenuity exploit the heterogeneity and variability of the environment or adapt to it during periods of stress. Planning in this way compromises resilience in the short term, and misses opportunities to exploit potential responses to more radical changes in the region’s climate in the near future.

2.3 Building local government capacities to plan for resilience

The Decentralising Climate Funds project has piloted participatory approaches to address these challenges in Senegal (Kaffrine region) and Mali (Mopti region). Activities strengthen local governments' institutional capacity to integrate climate change into planning systems and bring local authorities and communities together to evaluate resilience and identify public investments in adaptation.

The design of the approach and tools is driven by two fundamental principles:

- Their ability to enable local people (differentiated by gender, age, production systems and resources) to explain to external actors their adaptive strategies for coping with variability and climate change. The tools aim to provide a platform for local authorities and communities to describe how their livelihoods function and interact, identify factors that undermine their resilience to the consequences of climate change, and propose practical ways of strengthening adaptation capacities and resilience in the longer term. This understanding should provide a basis for local governments to create the institutional conditions to strengthen community-led planning and adaptation.
- Ensuring that the method and tools are relevant, accessible and inexpensive so that they can be integrated into current local government planning systems. This is essential in order to institutionalise local people's views, knowledge and priorities in local government planning and decision making.



3. Approach and methodology

The approach has two components:

- One uses the 'dashboard' tool to assess the institutional capacity of local governments to integrate climate change into their planning policies and systems.
- The other uses several tools, collectively known as 'resilience assessments,' to determine local government capacities to better understand and analyse the factors that strengthen local people's resilience and their different strategies for anticipation, absorption and adaptation.

3.1 The dashboard

The dashboard is a diagnostic tool for measuring institutional capacity to adapt to climate change. It was developed by the International Institute for Environment and Development (IIED) as part of a framework for *Tracking Adaptation and Measuring Development* (TAMD) (Karani *et al.*, 2015; Brooks *et al.*, 2011), using nine indicators to evaluate the quality of climate risk management by local governments and other public institutions (see Box 1).

This tool is used to gather information from local authorities that intervene in climate governance, to determine their level of knowledge and how national and sectoral climate policies are coordinated and translated into concrete actions on the ground. It also covers climate-sensitive budgeting, the extent to which gender issues are taken into account, and the self-evaluation systems that territorial authorities have put in place to better understand and improve climate adaptation actions.

Box 1: Indicators for the TAMD framework

1. Integration of climate change into planning
2. Institutional coordination for integration
3. Budgeting and finance
4. Institutional knowledge and capacities
5. Use of climate information
6. Planning in an uncertain context
7. Participation
8. Raising stakeholder awareness
9. Existence and scope of local climate risk management processes (GRC)

Source : Karani *et al.*, 2015; Brooks *et al.*, 2011.



The dashboard provides a detailed institutional and organisational assessment that can be used to identify areas of weakness that need improvement and potential strengths that could provide leverage for better climate governance.

The project adapted the dashboard for the DCF project, modifying or adding elements to ensure relevance to the project context. In Mali, the project interviewed Cercle-level actors representing the sectors most affected by climate change (water, infrastructures, environment, etc.). In Senegal, the dashboard was used at the communal level, as the Departmental councils in Kaffrine region had not yet prepared any planning documents for their new role in local governance. Data on institutional capacity to integrate climate change were collected on two sample communes from each of the four departments covered by the project.

3.2 Resilience assessments

IIED used existing participatory research tools and methods to develop the approach used in the resilience assessments. Table 1 below shows the key stages and elements of the process. This process was implemented in Mali; Senegal opted for a lighter approach using two other tools, the 'Vulnerability matrix' and the 'Participatory diagnostic table' (see Box 2).

In 2015, six participatory resilience assessments were undertaken in the Mopti region of Mali (two in each of the three zones). They took the form of five-day workshops attended by representatives of local actors and socio-professional groups from each agro-ecological zone (agriculture, livestock, fishing), women's groups (to ensure that gender issues were taken into account), an elected representative from

Box 2: Participatory research tools and methods

Vulnerability matrix. This tool enables local people and technical structures to identify their resources and livelihood, measure their sensitivity and exposure to climate risks (using justified scores that are then weighted to give an average value), and to determine the indicators of impact and exposure.

Participatory diagnostic table. This participatory tool can be used to identify existing sectors of activity in each agro-ecological zone, potential resources that can be exploited, factors of vulnerability, and proposed solutions that will be translated into priority intervention themes.

each commune, and four representatives from the technical services and chamber of agriculture in the cercle.

These workshops were supplemented with household surveys in six villages in three different agro-ecological zones: wetlands in the central delta of the River Niger, drylands characterised by vast grasslands and large tracts of forest, and the semi-humid zone straddling the drylands and wetlands, which is composed of an extensive network of rivers.

Table 1 below summarises the tools used in each stage of the resilience assessment.

Table 1: Objectives and techniques used at each stage

Stage/Tools	Objectives	Techniques
Tool 1a and 1b Analysis of wellbeing and livelihood systems	To understand wellbeing criteria and categories, changes in levels of wellbeing and types of livelihoods.	Plenary session, brainstorming and questions and answers to help define terms, describe wellbeing and understand social dynamics and changes in wellbeing.
Tool 2 Construct livelihood systems	Understand and define livelihoods as systems. Identify the key elements of different systems and main factors of vulnerability/resilience.	Plenary session to explain the exercise, group work to identify elements of the system, build the system, identify interdependency and relations between key elements of the system, feedback to plenary session.
Tool 3 Seasonal calendar	Describe the characteristics of different seasons and their impacts on livelihoods in normal periods and during droughts. Explore the nature, logic and effectiveness of different strategies/actions to anticipate, absorb and adapt to seasonal dynamics and climate extremes. Help actors understand how vulnerability is incorporated into community planning.	Plenary session to explain the exercise, group work to identify different seasons and their characteristics, explain their impact on livelihood systems and describe local production strategies (tables used: Seasonal variability, Climate extremes). Plenary feedback session followed by questions, answers and comments.
Tool 4 Resilience scale	Evaluate where wellbeing groups feature on the resilience scale and identify key features required for resilience.	Plenary session, brainstorming and question and answers to help define resilience and describe attributes that characterise resilience. Group work to identify factors that enable livelihood systems to improve their resilience. Plenary feedback session followed by questions, answers and comments.
Tool 5 Theory of change	Help understand how resilience can be strengthened and which processes would help make a household more resilient. Identify 3 or 4 possible inputs to strengthen resilience and indicators that will show improvements.	Plenary session to explain the exercise, group work to identify 3 or 4 priority actions; diagram showing outcomes that will be generated by the actions, the effects generated by the outcomes, and the impact generated by the effects. Identify criteria to show how outcomes and effects have been generated. Plenary feedback session followed by questions, answers and comments.
Tool 6 Identify interventions	Identify interventions that will address constraints that weaken livelihood strategies and help improve resilience.	
Tool 7 Prioritisation	Understand which interventions are prioritised by the community and produce a ranking that could be useful for planning.	

4. Results and lessons learned

The resilience assessment tools used in the DCF project context were useful in several respects. Apart from helping better target resilience-building investments financed by the project, the exercise tested the effectiveness of the approach and tools in enabling local people to explain their adaptation strategies, and showed whether they can be incorporated into formal local government planning processes.

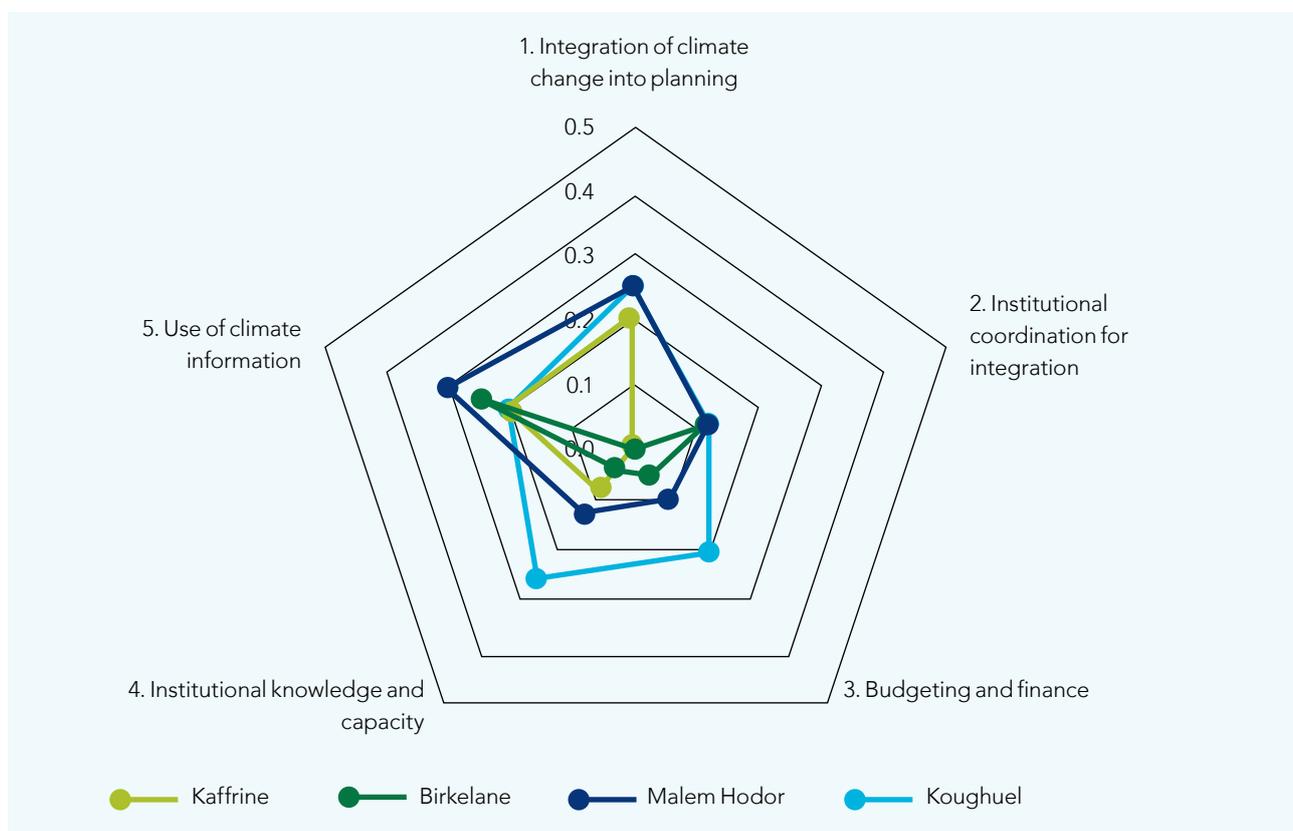
4.1 The dashboard

Experiences with the dashboard in Mali and Senegal confirmed that it provides a simple, easily operated framework for detailed institutional and organisational diagnostics, producing a relatively rapid visual assessment of the institutional

capacity of local governments to manage issues relating to climate change in an integrated manner. Various indicators are used to enable local governments to evaluate their climate risk management (see Figure 1 below), with each indicator subdivided by several criteria and ranked using a score of zero (criterion not met), one (criterion partially met) and two (criterion completely met).

This scoring system helps identify weaknesses that need to be addressed and potential strengths that could act as levers to improve climate governance. It is a simple method of monitoring changes in local government institutional capacities, and it is relatively easy to adapt the dashboard indicators to different local contexts and insert additional indicators to reflect local needs.

Figure 1: Dashboard for four departments in the region of Kaffrine



The dashboard is a simple, inexpensive and reasonably rapid tool that covers all aspects of territorial climate governance (finance, planning, monitoring and evaluation, etc.). It can be used to supplement local planning guides, look at the institutional environment and identify the capacities that local actors need to influence climate adaptation planning processes. These are important functions, given that local adaptation planning is now seen as pivotal in addressing the challenges that climate change and variability present for the implementation of national development plans and policies.

Efforts to strengthen local governments' climate adaptation planning systems will only be effective if authorities' capacities are understood – hence

the need to assess territorial climate governance, finance, planning, monitoring and evaluation. However, existing local government planning systems take no account of the authorities' capacity to play their designated role effectively. The dashboard can help fill this gap and, when used in combination with the resilience tools for community analysis, can provide the information governments need to plan effectively for climate change.

The dashboard has certain limitations as it does not cover local livelihoods or local adaptation strategies. This is where complementary tools are useful, such as the vulnerability matrix and participatory diagnostic table used in Senegal and the resilience assessments undertaken in Mali.



4.2 Resilience assessments

The approach and tools used during the seven stages of the resilience assessment in Mali were technically relevant. This exercise enabled community representatives at the workshops to better explain the logic behind their livelihood strategies and responses to climate variability and shocks, and to identify and prioritise interventions to strengthen their resilience. The tools described below (wellbeing evaluation, theory of change, characterising livelihood systems and seasonal calendar) were particularly useful in this respect.

Wellbeing and theory of change

Exercises to evaluate wellbeing and discuss the theory of change helped participants better understand the link between household wellbeing and improvements in resilience due to priority investments (tools 1a, 1b and 5). The tool for evaluating wellbeing enabled people to define their own criteria for wellbeing, which vary according to the context and culture (see Box 2), while the theory of change was used to evaluate the causal connection between a particular intervention (an investment made by the DCF project) and changes in the production system.

The descriptions of wellbeing given during the resilience assessments help build a picture of the current situation, while wellbeing indicators track the impact that investments have on local people's resilience. The theory of change identifies how well-chosen investments can strengthen livelihood systems and build resilience to climate change. Resilience assessments can be used to learn more about these systems and help identify the most appropriate investment strategies.

Box 3: Local perceptions of wellbeing

Although wellbeing is often associated with material wealth, the criteria local people suggested to describe wellbeing show a more nuanced understanding that focuses on environmental and especially social aspects, as well as economic considerations:

- **Social** – being married, socially respected, in good health and educated; having peace of mind, good relations with neighbours and social stability
- **Environmental** – good housing and a healthy environment.
- **Economic** – food security, good purchasing power

Other criteria for wellbeing vary according to gender and age. For example, women placed great emphasis on not being subject to sexual violence or sexually transmitted diseases, having a harmonious marriage and being able to pay for their daughters' wedding as important criteria for wellbeing; while young fishermen in the region of Mopti listed a large motorbike and sound system as important factors in their wellbeing.

Livelihood systems and seasonal calendar

Developing a picture of local livelihood systems is an important step in understanding the complex 'systemic' conditions and factors of resilience, and their heterogeneous and interdependent elements. These elements influence each other in non-linear ways, and need to be harmonious and balanced for a system to be functional and resilient (see Box 4).

Box 4: Using a systemic approach to better understand factors of resilience

Key environmental factors for agriculture (land and rain) facilitate agricultural production and influence economic factors (seeds, equipment). They can help the economy when conditions are favourable, or destroy it with floods, drought, etc.; while the economy can also harm the environment (pesticides). Key economic elements for herders are more livestock-based, and their main environmental factors are pastures and water reserves. Social factors are also important in agricultural and livestock systems, as both need labour and their organisation is based on social links (women sell milk, while men tend to the fields or livestock).

Systems in the DCF project zone are organised according to seasonal variability and the risk of climate shocks. Resource users develop different strategies for anticipation, absorption and adaptation to deal with unpredictability, seasonal variations and increasingly intense climate extremes.

The '3As' table is a particularly effective tool for detailed analyses of these different strategies (see Table 2 below).



Table 2: Examples of strategies for anticipation, absorption and adaptation

Domain	Anticipation	Absorption	Adaptation
Agriculture	<p>Using seed with different cycles according to the type of soil and aspect of the field, coupled with judicious use of organic manure.</p> <p>Selling animals in order to establish cereal stocks.</p> <p>Investing in cereal and seed banks.</p> <p>Sowing before the first rain ('Farru').</p>	<p>Selling fattened animals.</p> <p>Gathering, processing and selling bush products (wild harvesting).</p> <p>Using credit and micro-credit institutions.</p> <p>Exodus (particularly in drought years).</p>	<p>Investing in a 'portfolio' (range) of fields in different locations and with different characteristics (soil, aspect), coupled with soil and water conservation measures and use of organic manure.</p> <p>Fattening cattle and sheep, saving harvest residues and buying livestock feed.</p>
Livestock rearing	<p>Transhumance, in conjunction with vaccination, pest control, selecting animals for transhumance and using livestock feed (especially for non-transhumant animals).</p> <p>Selective sales of animals (especially non-reproductive adult males and old heifers) to buy grain and animal feed.</p>	<p>Selling weak or sick animals, buying veterinary supplies, livestock feed and/or fodder and/or taking part of the herd to better areas (possibly in other countries).</p> <p>Gathering, processing and selling wild produce.</p> <p>Using credit and micro-credit institutions.</p>	<p>Developing pastoral resources – deepening pools, establishing livestock routes and securing local agreements and/or personal arrangements to ensure peaceful access to resources.</p> <p>Selective breeding and sales to diversify the herd (species, breed, age, sex) so it is better able to exploit variability and resist climate extremes.</p>
Specific support for women (in agricultural systems)	<p>Creating irrigated areas, market gardens and fishponds.</p> <p>Fattening cattle and sheep.</p> <p>Obtaining credit for income-generating activities.</p> <p>Capacity-building in production techniques.</p> <p>Using tontines.</p>	<p>Using money from income-generating activities.</p> <p>Selling fattened animals.</p> <p>Gathering, processing and selling timber and non-timber forest products.</p> <p>Using micro-finance institutions.</p> <p>Exodus (domestic work in towns).</p>	<p>Capacity building in preserving and processing techniques.</p> <p>Accessing credit to set up operations to process and preserve produce.</p> <p>Creating irrigated areas, market gardens and fishponds.</p> <p>Fattening cattle and sheep.</p> <p>Establishing groups (IGA, GPF, etc.).</p> <p>Using improved stoves.</p>

Analysis of the strategies for anticipation, absorption and adaptation in different production systems in different agro-ecological zones revealed that:

- Some strategies work with the climatic variability and unpredictability and highly diverse resources that characterise these parts of the Sahel. Agricultural strategies in drylands aim to have a 'portfolio' (range) of spatially dispersed fields with different characteristics (soils, aspect), and sometimes use soil and water conservation measures and apply micro-doses of manure. This reflects the highly localised nature of rains, with unpredictable timing and distribution. Having this portfolio enables farmers to manage risks better and increase their chances of a harvest if rain is scarce and dispersed or too hard and concentrated. Herders do the same through selective breeding and sales and physical and social investments (livestock routes and local agreements) to facilitate mobility and gain intermittent access to the pastoral resources they need, which vary according to conditions during the rainy season. This flexibility enables them to seize opportunities and avoid the most negative effects of climate variability.
- Other strategies aim to 'control' or eliminate the impacts of climatic variability and unpredictability

as far as possible. Two examples of this are the development of fishponds and irrigated rice fields, where water is controlled to maximise production in various conditions of floodwater or rainfall. Most of these strategies require fairly substantial financial investments and advanced technical skills, which are limiting factors for many families (see below).

The relevance and effectiveness of these approaches should be assessed according to their costs and benefits and their accessibility to different groups, particularly the most vulnerable. It is also important to assess their relevance in a context of more pronounced and severe climate change. Currently local people's strategies mainly respond to current climate variability and extremes. They do not take account of potential future changes in the climate and the possible impact these changes may have on their adaptive capacities.

Resilience scale

This tool is very simple to use and easy to understand. Participants at the workshops used it to rank their resilience on a scale of 1 to 10, where 1 is very low resilience and 10 is high resilience (see Table 3 below). Levels of resilience were generally estimated as being fairly low, between 2 and 3.5.

Table 3: Estimated levels of resilience in production systems in three zones in the 5th region of Mali

Cercle/Zone	Agriculture	Livestock rearing	Fisheries
Douentza (dry and semi-humid)	2	2	2
Koro (dry)	3	2	-
Mopti (humid)	2,5	3,5	2

During the resilience ranking exercises, participants had more detailed discussions about why they thought they had low levels of resilience. The main reason they cited was the numerous constraints to local adaptation strategies, namely:

- Lack of financial resources to invest in developments, establish stocks, buy animals for fattening, build up working capital, etc. This is exacerbated by the difficulty of obtaining credit.
- Inadequate support from the technical services in setting up natural resource governance institutions, learning agricultural or fish-farming techniques, managing cooperatives or self-help associations, etc.
- Difficulty obtaining inputs such as good quality seed (early maturing varieties), appropriate farm equipment, pesticides, labour at key moments, veterinary products, etc.
- Difficulty in obtaining accurate and timely information about the price of livestock, cereals and other market commodities, predicted levels and types of rainfall, banking systems, etc.
- Lack of compliance with established agreements over the management of resources such as livestock routes, use of unregulated fishing equipment, etc.

The impact of these constraints on local people, and thus on their level of resilience, varies according to a number of factors, such as levels of household and individual wellbeing, the opportunities and constraints in different agro-ecological zones, the capacity of different

production strategies to integrate variability and unpredictability with few resources or techniques and little specialised knowledge, the proximity of large urban areas, and the existence of roads or telecommunications networks.

In its current form (seven stages of consultation workshops), the approach is too long, cumbersome and expensive to implement and easily integrate into existing local government planning systems outside a project context. The main limitations of the design are summarised below:

- **Time allocated for the process:** Getting the most out of each tool entails setting aside enough time to gather as much information as possible. The whole process should last more than 5 days and its different stages should overlap to ensure that it is as iterative and productive as possible.
- **Facilitating and running workshops.** Facilitators need a thorough understanding of resilience concepts, and excellent abilities to facilitate participatory processes and use these tools effectively in workshops. This is not only essential in enabling community representatives – especially those of frequently marginalised groups such as women and youth – to express themselves without other participants imposing their visions and analyses, but also to facilitate joint analysis of the advisability of possible investment strategies to build resilience. Local governments and the technical services that support them have little knowledge of resilience concepts and facilitation, and limited ability to share what they do know.

- **Quality of participation:** The people who are invited to administer and respond to these tools need to have a good understanding of the different production systems and practices in their area, so that the information generated by the tools provides an accurate profile of each zone. This requires awareness raising and preparation before the tools are put to use.
- **Linguistic considerations:** These tools need to be translated into local languages to harmonise participants' understanding of the concepts and accommodate literacy levels in the rural areas where they are deployed.
- **Format of the tools.** Tools such as the theory of change are very technical, which means that many participants don't engage with them. The technical team of moderators finalising this tool should ensure that local people understand the logic behind different actions and investments. Communities could then use the tool to monitor and evaluate support programmes.



5. Conclusion

The methodological approaches to the resilience assessments piloted by the DCF project in Mali and Senegal seek to strengthen the way that local governments plan local development in a context of climate change, while taking account of decentralisation and existing planning systems.

On a technical level, the proposed tools and approaches have real added value as they can complement local planning guides, integrate climate change into planning processes, contribute to a more participatory approach than the local consultations previously favoured by local elected officials, and thereby lead to citizen control of public action. The set of tools discussed in this paper also have real added value for territorial climate governance, by contributing to more effective local adaptation planning and climate-

sensitive budgeting while taking account of gender issues and monitoring resilience at the community level. Using these tools will require radical changes in the way that territorial authorities plan and finance climate adaptation, as the process of identifying and selecting investments will prioritise bottom-up and participatory approaches rather than being the sole prerogative of public decision-makers.

This high level of participation should ensure that all actors at different levels are involved in the process. While local knowledge is a vital element of effective interventions to address climate change, scientific and technical input are also essential for informed and appropriate choices, hence the close involvement of the technical structures that support local development. Combining scientific,



traditional, local and indigenous knowledge can help actors grasp, interpret and understand an issue such as climate change in a more objective manner. As each source of information has its own strengths and weaknesses, blending them can generate more balanced and effective plans that will benefit local populations (Mercer *et al.* 2009; Tibby *et al.* 2007). Therefore, the participatory approach should include different types of knowledge and diverse actors at different levels, so that informed choices can be made about matters relating to climate change.

In its current form, the set of tools described above does not do enough to address the different levels of resilience within communities and their constituent groups (farmers, herders, women, youth, etc.). Levels of exposure and vulnerability to the same climate risk will vary among households and units within each group. Therefore, it is essential to identify the levels and thresholds of vulnerability within different social groups so that their most vulnerable members can be identified and fairly treated. Gender is a key consideration in such studies.

Developing an appropriate approach to participatory surveys that can be integrated into formal planning systems and institutionalised is a considerable challenge – not least because most local authorities have fairly limited budgets and will find it hard to invest the time and money required for this kind of process. The Green Climate Fund offers local and national planning institutions direct access to climate funds, and could therefore help integrate the most relevant tools into formal planning system and thereby institutionalise them.



References

- Karani, I., Brooks, N., and Fisher, S. 2015. Tracking Adaptation and Measuring Development: a manual for local planning. IIED, London. <http://pubs.iied.org/10133FIIED/?k=tracking+adaptation+and+measuring+development>
- Brooks, N., Anderson, S., Ayers, J. Burton, I. and Tellam, I. 2011. Tracking adaptation and measuring development. IIED, London. <http://pubs.iied.org/10031IIED/>
- Cornforth, R. 2014. Climate Information Services in the Sahel: Mali and Senegal. Report prepared for the Near East Foundation, International Institute for Environment and Development and Innovations, Environnement, Développement-Afrique consortium, Building Resilience and Adaptation to Climate Extremes and Disasters.
- Fisher, S., Koulibaly, P., Keita, A., Denis, L., Hesse, C. and McPeak, J. 2016. Baseline report. Decentralising Climate Funds, Near East Foundation, Building Resilience and Adaptation to Climate Extremes and Disasters (BRACED) programme.
- Hesse, C., Anderson, S., Cotula, L., Skinner, J. and Toulmin, C. 2013. Managing the boom and bust: supporting climate resilient livelihoods in the Sahel. IIED Issue Paper, IIED, London. <http://pubs.iied.org/11504IIED/>
- Krätli, S. 2015. Valuing variability: New perspectives on climate resilient drylands development. IIED, London. <http://pubs.iied.org/10128IIED/>
- Mercer J., I. Kelman, S. Suchet-Pearson, K. Lloyd, 2009. Integrating indigenous and scientific knowledge bases for disaster risk reduction in Papua New Guinea. *Geografiska Annaler: Series B, Human Geography*, 91 (2), pp. 157–183.
- Seck, M., Fall, M., Diop, S., Tounkara, A., 2009. Les conventions locales au Sénégal, Mbédap: à l'épreuve du temps. http://www.iedafrique.org/IMG/pdf/CL_no5_mai_2009.pdf
- Tari, D., King-Okumu, C. and Jarso, I. 2015. Strengthening local customary institutions: a case study in Isiolo county, northern Kenya. Adaptation Consortium, National Drought Management Authority, Nairobi. http://www.adaconsortium.org/images/publications/Rapid_Assessment_-_Web_Update.pdf
- Tibby, J., M.B. Lane and P.A. Gell, 2007. Local knowledge and environmental management: a cautionary tale from Lake Ainsworth, New South Wales, Australia. *Environmental Conservation*, 34 (4), pp. 334–341.

Organisations



Near East Foundation (NEF)

For over 30 years, NEF has developed sustainable, community-based approaches to manage forests, fisheries, rangelands, and agricultural lands in Mali. Operating out of a principal office in Sévaré, the NEF team of approximately 40 development professionals works to implement programs that are consistently community-based, participatory, and multi-sectoral.

NEF also coordinates a national-level working group on climate adaptation and assists Mali's government in climate policy – including participating in Mali's official delegation to international climate negotiations. NEF's headquarters in Syracuse, United States, provides overall project management and governance oversight to the consortium.



Innovation, Environnement, Développement (IED Afrique)

IED Afrique is an independent not-for-profit organisation based in Senegal. The organisation builds on fifteen years of experience in francophone West Africa and works on issues related to sustainable development and citizenship in Africa by prioritising methodological and participatory innovations.



International Institute for Environment and Development (IIED)

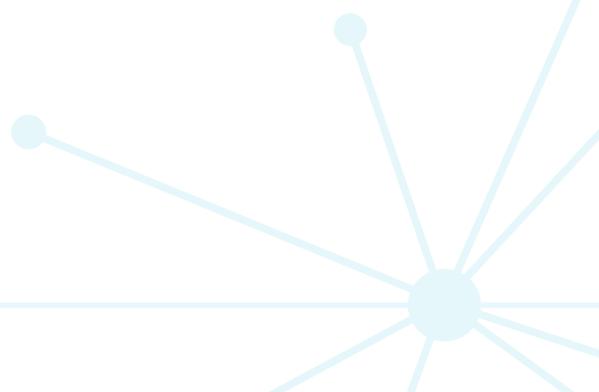
IIED is a policy and action research organisation. We promote sustainable development to improve livelihoods and protect the environments on which these livelihoods are built. We specialise in linking local priorities to global challenges. IIED is based in London and works in Africa, Asia, Latin America, the Middle East and the Pacific, with some of the world's most vulnerable people. We work with them to strengthen their voice in the decision-making arenas that affect them – from village councils to international conventions.

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Decentralising Climate Funds (DCF)

Decentralising Climate Funds (DCF) is an action-research and advocacy project supporting communities in Senegal and Mali to become more resilient to climate change through access to locally-controlled adaptation funds. It is part of the UK government-funded BRACED programme and is implemented by the Near East Foundation (NEF) with Innovation, Environnement et Développement en Afrique (IED Afrique) and the International Institute for Environment and Development (IIED).

To find out more:

We will be sharing lessons and experiences from this project through a variety of different publications which will be made available online:

www.neareast.org/braced

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Further reading:

Accessing resilience: reconciling community knowledge with government planning – Policy Brief
www.neareast.org/download/materials_center/DCF_Policy_Brief_En.pdf

Decentralisation of climate adaptation funds in Mali – Fact Sheet
www.neareast.org/download/materials_center/Decentralisation-Mali.pdf

Decentralisation of climate adaptation funds in Senegal – Fact Sheet
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Climate adaptation funds – Backgrounder
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Managing the boom and bust: supporting climate resilient livelihoods in the Sahel – Issue Paper
<http://pubs.iied.org/11503IIED/>

Tracking Adaptation and Measuring Development: a step-by-step guide – Toolkit
<http://pubs.iied.org/10100IIED/>

For all DCF project publications visit: www.neareast.org/resources/#braced

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