Building resilience to climate shocks and stresses: addressing the knowledge gap

Learning paper #1 June 2015

Piloting the BRAPA methodology during the project-development phase in Yabelo, Ethiopia 2014.

Key terms related to climate information

Climate information services (CIS): the development and delivery, with key stakeholders, of accessible, timely, relevant weather and climate information, which can support decision-making across timeframes, sectors and livelihoods.

Climate information: information produced on the climate. This can be based on science and/or local experience and knowledge. This includes information about the weather (the condition of the atmosphere at a specific time and place – in terms of temperature, wind, cloud cover, rainfall, and humidity) and the climate (the statistics of atmospheric conditions and weather events over months, decadal periods and periods of decades or longer.)

Communication: communication involves a two-way process in which the flow of information goes in both directions from person/group A to B and from B to A.

Dissemination: dissemination involves a one-way flow of information from person/group A to B.

Climate change is having significant impact on climate extremes in East and West Africa. It is increasing the frequency and intensity of droughts, and threatening already vulnerable livelihoods and the existence of some remote rural villages. It is also undermining the traditional indicators (such as insect behaviour) that farmers in these regions have used to predict the weather and seasonal climate.[1] In rural Ethiopia and Burkina Faso, these challenges are made worse by the limited access to externally generated weather and climate information, and the low capacity of local actors to respond to climate extremes. Addressing these difficulties and building the resilience of vulnerable people to climate shocks and stresses is an immediate priority and the aim of the Christian Aid-led Building Resilience and Adaptation to Climate Extremes and Disasters (BRACED) projects.

This challenge is further complicated by a knowledge gap in how to build resilience to climate shocks and stresses. This paper sets out a research and learning component that will support the two BRACED projects and further the understanding of how to build resilience. This component responds to the Sendai Framework for Disaster Risk Reduction, international frameworks on sustainable development and the World Meteorological Organisation's Global Framework for Climate Services – both in addressing the knowledge gap and by increasing the understanding of disaster risk through integrated multi-disciplinary research.

The BRACED project:

In 2014, DFID approved funding for two BRACED projects led by Christian Aid (CA) in Ethiopia and Burkina Faso. The Ethiopia project was granted £4m and will benefit more than 700,000 people in 12 *woredas* (districts). The Burkina Faso project was granted £7m and will benefit more than 1.3 million people in four provinces.

Partners, stakeholders and beneficiaries collaboratively designed the two CA participatory development projects during a six-month project development phase (PDP), from February to August 2014. The projects seek to build the resilience of vulnerable people to climate shocks and stresses through strengthening climate information services, risk communication, behavioural change and the sharing of skills and technology. The consortia are comprised of development practitioners, meteorological partners, communication experts and researchers. Figure 1 details the partners in each consortium.

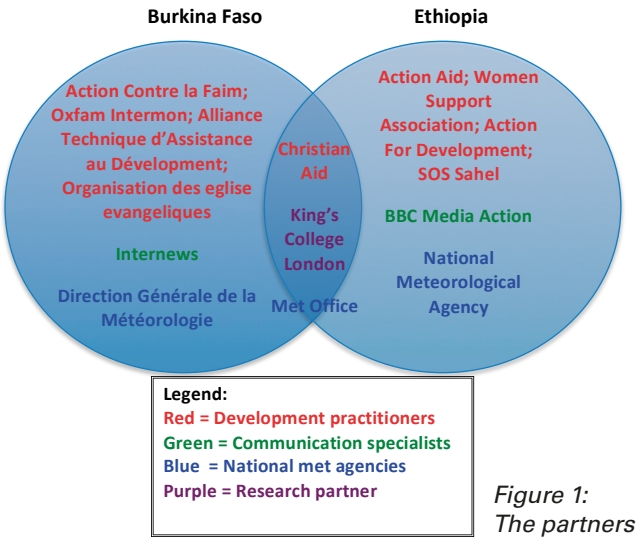

Figure 1: The partners

This structure and the project concept enable a multi-disciplinary and cross-scalar approach to building resilience to climate shocks and stresses, which is integrated and innovative.

The research and learning component

Part of the problem that the CA projects (and resilience projects more widely) face is the poor evidence base for good practice in resilience building. Within BRACED, this is partly addressed through a research and learning component led by King's College London (KCL), which seeks to improve the knowledge and evidence base for building resilience. This first learning paper provides a statement of intent for the research and learning component of the BRACED projects.

The research and learning component has been designed to be collective, cross-disciplinary and reflexive, and is underpinned by the following set of principles, which were shaped during the PDP:

Principles of research and learning (R&L)

1. Integration: R&L will be integrated into the project cycle and will inform programme design and policies.

2. Rigour: R&L will uphold high standards of analytical rigour throughout and will abide by the Bond principles of quality evidence.

3. Co-production of knowledge: R&L will take an integrated, collaborative and multi-disciplinary approach.

4. Reflexivity: space will be made for critical self-assessment and reflection across the R&L components.

5. Recognition and respect for each others' knowledge and value systems and differing partner interests: R&L will respect and seek to learn from all partners' and stakeholders' knowledge, value systems and areas of expertise (while maintaining a research agenda that is coherent and that also responds to leading academic research on resilience and risk communication).

6. Work to develop a shared understanding: R&L will endeavour to establish a shared understanding of key concepts.

7. Support a community of practice around the project: R&L will seek to develop a community of practice around the project, across key themes such as transformation and gender.

Research will seek to develop findings that are of direct interest to at-risk groups, governmental and non-governmental organisations, development and risk management agencies, practitioners, policymakers and academic researchers. Meanwhile, the learning framework (LF) will support the translation of research and project findings into practical policy recommendations and learning processes by creating spaces to discuss and promote the uptake of findings, through technical workshops, an advisory board, open forums and policy briefs. It will also nurture continuous two-way communication across partners and users of climate information. The main components of this learning framework are captured in figure 2.

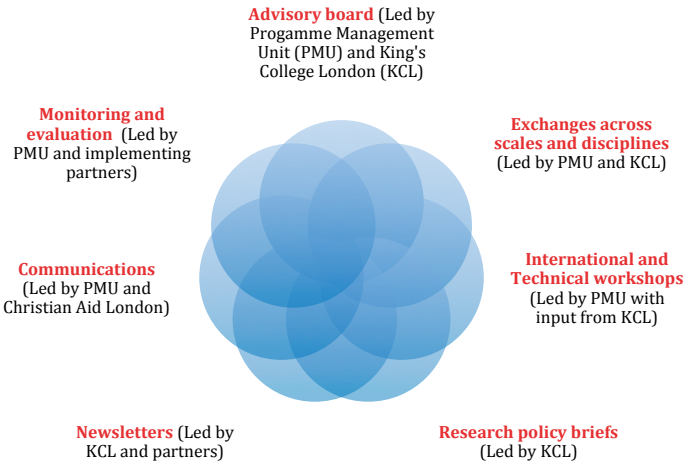

Figure 2: The components of the learning framework

A functional, cutting-edge research agenda

A review and analysis of: (1) the project concept and its theory of change, (2) the partners' priorities, (3) learning from the PDP, (4) the socio-economic context of the project locations and (5) the key literature have identified knowledge gaps and have informed the KCL-led research and learning component.

(1) The project concept and its theory of change (ToC) place resilience processes and climate information services at the centre of the project and emphasise working with women and girls. Resilience, the production and consumption of climate information, and gender, are therefore key for understanding change within the project and this has informed the research approach.

(2) At in-country inception workshops in February and March 2015, **the partners** identified a set of research priorities for each focus country:

Research questions identified by the partners in Burkina Faso

1. How do individual and community resilience interact and influence each other? **(Resilience)**

2. How is access to climate information shaped? (**Risk communication)**

3. Which systems and processes enable resilience and transformation? And with regard to those that are already underway in the villages – how do you identify them to build on them? **(Resilience)**

4. How do climate information and gender interact? **(Risk communication and Gender)**

5. How does the context shape climate information and resilience interventions? **(Risk communication and Resilience**)

6. Which combination of resilience activities work best for building resilience? And how do you quantify the impact of project activities? **(Resilience)**

7. At the community level, how is climate information used? Does it engender behaviour change? **(Risk communication and Resilience)**

8. How do communities understand resilience? **(Resilience)**

9. Do communities and development partners understand each other? **(Risk communication)**

10. How do interactions between partners affect resilience? **(Resilience)**

Research priorities identified by the partners in Ethiopia

1. Feasible and context-specific, climate-smart agricultural technologies and practices. **(Resilience)**

2. Assess effectiveness of collaboration among resilience actors and the factors affecting their integration, in terms of policy coherence and the alignment of methodologies and approaches. **(Resilience)**

3. Sustainability of resilience and development interventions in different livelihood systems, and factors affecting sustainability such as community capacity and attitude, and other structural factors. **(Resilience)**

4. Identification and characterisation of indigenous knowledge on climate, and how to integrate scientific and indigenous knowledge for forecast, dissemination, and use of weather and climate information. **(Risk communication)**

5. Collaborative research on efficacy of climate information on resilience building and gender equity. **(Risk communication, Resilience and Gender)**

The central theme of each priority has been noted in parentheses. These highlight a focus on resilience, risk communication and gender. The partners' priorities provide useful entry topics into these themes and have also informed the proposed research framework.

(3) Key learning from the PDP provides contextual information about climate-information production and consumption in each country and highlights similarities across the projects in terms of the climate-information needs at village level as well as the climate risks faced. The box below gives a snapshot of the wealth of knowledge that was co-produced during the PDP. It also draws attention to key differences between the two consortia.

Key findings from the PDP

Key partner differences: Internews does not have a long-established presence in Burkina Faso unlike its counterpart, BBC Media Action, in Ethiopia. The Met Office has more relevant experience in East Africa than West Africa. There are different cultures, individuals and dynamics in each consortium.

Climate information products and services: the NMA (Ethiopia) is larger than the DGM (Burkina Faso) and they have different structures. The mandates of the NMA and the DGM differ, particularly in relation to the communication of climate information.

Climate information channels: local radio stations are well adapted for communicating climate information to the target communities in both Burkina Faso and Ethiopia. Mobile phones were also found to be a valuable medium.

Climate risks: both locations face similar climate trends with increasing drought, more erratic and intense rains and flooding. These risks affect agricultural production, food security and (because of a rise in new diseases) the health of crops, livestock and humans.

Climate information needs at the village level: the following priority needs were identified in both Burkina Faso and Ethiopia: timely and accessible seasonal rainfall information; more information about farming practices – including responding to drought and water shortages; information on caring for livestock and preventing disease; information on seed varieties and irrigation.

This learning has provided a context for the design of the research component and the statement of intent.

(4) The socio-economic contexts reveal variations in demographics, livelihoods, market access, cultural norms and traditions across the two countries and project locations. These nuanced differences highlight the value of a two-year, in-depth investigation across the two projects and draw attention to how the socio-economic context, the political infrastructure and partner dynamics shape resilience processes.

Informed from the above, **(5) a review of the key literature** on the following topics has been carried out: resilience,[2] risk communication and climate information,[3] gender,[4] the co-production of knowledge,[5] and social science analysis and the concept of institutional bricolage.[6]

More key terms:

Resilience: Resilience is a process that enables a system to absorb, adapt or transform in the face of shocks or stresses.

Absorptive capacity: 'The various (coping) strategies by which individuals and/or households moderate or buffer the impacts of shocks on their livelihoods and basic needs.'[7]

Adaptive capacity: 'The ability of a system to adjust to climate change (including climate variability and extremes) to moderate potential damages, to take advantage of opportunities, or to cope with the consequences.'[8]

Transformative capacity: The 'capacity to create a fundamentally new system when ecological, economic or social structures make the existing system untenable.'[9]

Institutions: Institutions are understood to be the 'rules of the game', including formal regulations, legislation and professional guidelines, as well as informal cultural norms often expressed through routinised behaviour or embodied in organisational forms.

Institutional architecture: The aggregate of interacting formal and informal rules that shape social structures and human agency within a system.

The co-production of knowledge: This is the bringing together of different knowledge sources and experiences from across different disciplines, sectors and actors to jointly develop new and combined knowledge.

The research framework

The following research approach and statement of intent is proposed, drawing from the five initial analytical reviews detailed above. This approach is presented step by step, following a logical pathway. It is a flexible outline of KCL's research intentions and will be informed by the participatory community vulnerability and capacity assessments (BRAPAs) and the needs of the project as they evolve.

Step 1: The Thriving Resilient Livelihoods (TRL) framework developed by CA[10] (see figure 1, overleaf) provides a tool for understanding resilience within the project and for monitoring and evaluation. It is therefore also used as the starting point for this research, allowing for complementarity and a more integrated research approach.

Figure 3: The TRL framework.

Step 2: A review of the literature identified absorptive, adaptive and transformative capacities as the three key components of resilience.[11] (See figure 4 and *More key terms* for their definitions.) This provides a conceptual framework for understanding changes and resilience processes within each livelihood component of the TRL.

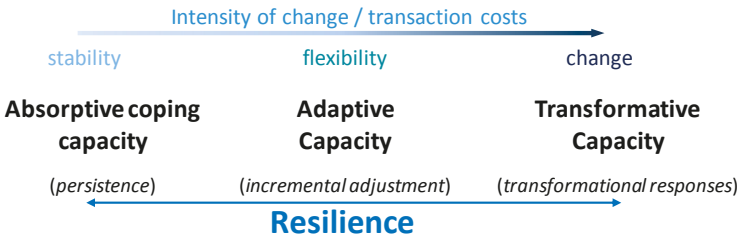

Figure 4: The 3D resilience framework.
(Bene, 2012, p21.)

Step 3: Transformation is at the forefront of the literature on resilience. This is propelled, in part, by an increasingly critical approach to adaptation and the growing evidence of its limitations.[12] However, there are gaps in the knowledge and evidence base for understanding how transformation is fostered or constrained and its relationship to adaptive and absorptive capacities.[13] The dynamic between adaptation, absorption and transformation is of particular interest to contemporary debates on resilience and is one of the two main analytical lenses for this research. The other dominant analytical lens is gender. Gender is central to the project ToC and needs to be mainstreamed into resilience programming. However, gaps remain in the understanding of the dynamic between gender, vulnerability, disaster risk and risk communication, calling for further research.[14]

Steps 1 to 3 provide a conceptual framework for understanding resilience and the analytical areas that are of particular interest to the research component. This is now transposed onto the project's ToC, context and activities:

Step 4: Within the project there are three key actors: the project partners, the target beneficiaries and the government (from the local to the national level). However the target beneficiaries, at the village and household level, are the main focus for the project and research.

Step 5: These actors are both producers and consumers of climate information and shape the climate information services that lie at the centre of the project and its ToC.

This step-by-step process provides a framework for investigating how the three actors influence climate information and services and how this in turn affects absorptive, adaptive and transformative capacities and gender equity at the village and household level. Two research questions have been developed, emanating from the analytical lenses of gender and transformation.

How does BRACED shape changes in local and national government, the village-level institutional architecture, and among project partners with outcomes at the village and household level, measured through:

1. change in the balance between the absorptive, adaptive and transformative capacities?
2. the building of gender equity?

To respond to these research questions, a two-year mixed-methods study will be employed. Across the two years, in-depth semi-structured interviews, focus groups and qualitative methods of data collection will be carried out at the village and household level and triangulated with findings from monitoring and evaluation (M&E) and other relevant research and reports. Meanwhile, interviews, observation and analysis of policy documents will investigate the project partners and their activities on the one hand and the government policies and decision-making on the other to gain a comprehensive and holistic picture of change and resilience processes throughout the project and across the three main actors. A series of policy briefs will be produced across the three years, and the final six months of the project will be reserved for the final write-up of an academic paper. However, before data collection starts, the proposed research questions will be broken down, an in-depth literature review carried

out, and the methodology will be refined. During this development period, indicators will also be defined across the TRL components and resilience capacities to capture the status of resilience and resilience processes. These indicators will be key for guiding the research and for mapping change.

Research and learning

Figure 5 pulls together research, the project and the learning framework. It highlights the learning journey and the sharing of research and project findings with project partners and the academic and policy spheres related to risk communication, CIS and resilience building.

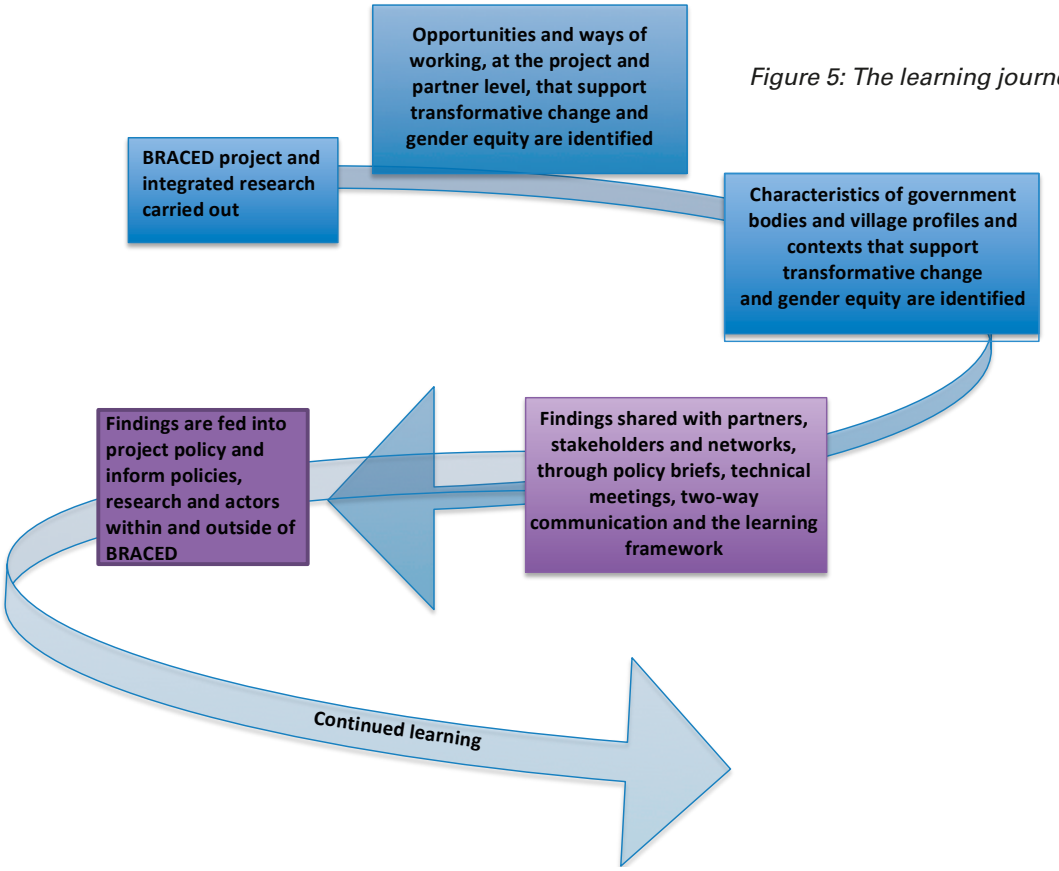

Figure 5: The learning journey

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