Report of the joint BRACED Zaman Lebidi / AMMA 2050 workshop:

How weather and climate information can support local government decision making

Ouagadougou, 31 January - 2 February 2017

Executive Summary

This is a report of a workshop which brought together the respective expertise and focus of two consortia projects, African Monsoon Multi-disciplinary Analysis 2050 (AMMA2050) and the Christian Aid-led Building Resilience and Adaptation to Climate Extremes and Disasters (BRACED) project, Zeman Lebidi , both of which are seeking to strengthen climate resilience in Burkina Faso.
While BRACED is focused on building resilience within rural communities to current and emerging climate extremes and disasters, AMMA2050 seeks to strengthen resilience to climate changes within the medium-term (5 to 40-year period) across the Sahel, with research in Burkina Faso focused on building resilience to flood risk within the urban context of the capital, Ouagadougou.

The workshop aimed to:
• Build climate information providers' understanding about the weather and climate information which can support local government decision making;
• Strengthen understanding of national climate information services and current scientific understanding of weather, climate variability, extremes and change and their impacts on livelihoods in rural and urban Burkina Faso; and
• Jointly identify and develop concrete opportunities for integrating weather and climate information in local government (commune-level) decision making through strengthening partnerships to tackle collective concerns.

The report outlines the series of steps which workshop participants jointly undertook to develop proposed plans for how climate information could better support commune-level decision making, with both projects undertaking to support concrete follow up aligned with ongoing activities.

Participants encompassed a wide range of expertise from across the technical services of key ministries and regional and international climate science, hydrology and agricultural research institutions together with senior commune-level decision makers and partnering local, national and international non-governmental organisations (NGOs).

The workshop employed the Participatory Impact Pathways Analysis approach, developing problem trees, mapping stakeholders and jointly drafting a plan of how to address the identified problem of project focus. Throughout the workshop, participatory approaches were employed, as much as possible, in order to stimulate the interaction between sectors, disciplines and decision making levels essential to enabling climate information to better support local decision making.

In a closing session, the draft plans to pilot strengthened integration of climate information within two communes (one rural and one urban) were presented to and endorsed by representatives of the Ministries of Devolution, Finance and Agriculture. The event was reported on radio and internet media channels, while AMMA2050 and BRACED will be producing a follow up policy brief synthesising analysis and learning from the forum.

1.0 Introduction

This initiative brought together the wide-ranging partnerships and expertise engaged across the AMMA2050 and Christian Aid-coordinated BRACED consortia to support resilience building efforts in Burkina Faso.

The Christian Aid-led BRACED consortium, Zeman Lebidi, focuses on practical actions to build resilience in rural areas in the immediate future. Across the Sahel region AMMA2050 seeks to build resilience to climate changes within the medium-term (5 to 40-year period) and, in Burkina Faso, is focused on building resilience to flooding in an urban context, namely within the capital, Ouagadougou.

Box1(a): Project actors: BRACED

Building Resilience and Adaptation to Climate Extremes and Disasters (BRACED) is funded by UK DFID. The programme works in 13 countries across the Sahel, East Africa and Asia. There are two BRACED consortia operating in Burkina Faso. The consortium managing this workshop was Zeman Lebidi, a term combining different principal languages used in Burkina Faso, means the 'changing world'. Partners include Christian Aid, which coordinates the consortium, and Action Contre la Faim (ACF), Alliance Technique au Développement (ATAD), Oxfam Intermon, Office de Développement des Églises Évangéligques (ODE), Agence Nationale de la Météorologie (ANAM formerly known as Direction Générale de la Météorlogie (DGM)), the Met Office, King's College London (KCL), InterNews and Radio Télévision du Burkina (RTB).

This workshop specifically aimed to:

- Build climate information providers' understanding about the weather and climate information which can support local government decision making across timeframes (contingency, seasonal, annual, 5 year and longer timeframes) and the constraints and opportunities for using it;
- Share national climate information services together with current international scientific understanding of weather, climate variability, extremes and change and their impacts on livelihoods in rural and urban Burkina Faso; and
- Jointly identify and develop concrete opportunities for integrating weather and climate information in local government (commune-level) decision making through strengthening partnerships to tackle collective concerns.

The workshop, which took place 31 January to 2 February 2017 at the National Archives Centre in Ouagadougou, was attended by more

than 50 participants with representation from across rural and urban communes, the ministries of devolution, urbanism and habitat, agriculture, water, emergency relief and rehabilitation, environment, meteorology, radio and television, the West African Science Service Center on Climate Change and Adapted Land Use (WACAL), and project partners of Zaman Lebidi (including Christian Aid, ODE, ANAM, ATAD, ACF, InterNews) and AMMA2050 (including the Centre for Ecology and Hydrology and the Universities of Leeds and Sussex).

BOX 1(b): Project actors: AMMA 2050

African Monsoon Multi-disciplinary Analysis 2050 (AMMA2050) is funded by the UK Department for International Development (DFID) and Natural Environment Research Council (NERC) Future Climate for Africa (FCFA) programme. Coordinated by the Centre for Ecology and Hydrology, partners include: Institut International d'Ingénierie de l'Eau et de l'Environnement (2iE), Agence Nationale de l'Aviation Civile et de la Météorologie Senegal (ANACIM),Centre de coopération internationale en recherche agronomique pour le développement (CIRAD), CNRS-Groupe d'étude de l'Atmosphère Météorologique (CNRA-GAME), Institut Pierre Simon Laplace - Laboratoire d'océanographie et du climat (IPSL-LOCEAN), Institute de recherche pour le development-DIversité - Adaptation - DEveloppement des plantes (IRD-DIADE), Institut de recherche pour le développement-Laboratoire d'étude des Transferts en Hydrologie et Environnement (IRD-LTHE), Institut Sénégalaise de Recherches Agricoles (ISRA), Met Office UK, Université Cheikh Anta DIOP de Dakar -Ecole Supérieure Polytechnique (UCAD-ESP), University of Cape Coast (UCC), Université Félix Houphouet Boigny (UFHB), the Universities of Leeds and Sussex.

2.0 Workshop approach

Workshop sessions alternated a series of presentations outlining climate services and current scientific understanding of future climate changes and impacts on rural and urban livelihoods, with a range of participatory approaches, designed to promote dialogue across sectors, disciplines and levels of decision making.

The workshop employed the Participatory Impact Pathways Analysis (PIPA) methodology through three inter-linked exercises: problem tree analysis, output planning and stakeholder mapping. The process seeks to empower stakeholders to drive the agenda for change and stimulate their ownership.

In the first of these sessions, participants worked in groups to firstly agree on one or two of the most significant problems which their respective rural- and urban-based projects seek to address. Repeatedly analysing the underlying causes for the problem, participants map out the chain of difficulties which are the root causes of the problem identified. Through this process, participants reach the focus problem, or determinant, which the project seeks to address, for example low use of climate information within local development planning.

In stakeholder mapping, participants identified key actors in relation to the identified focus problem, or determinant, the relations between these actors, and any new, additional actors who could usefully be engaged to address the focus problem. In terms of planning, PIPA was used to understand how AMMA2050 and BRACED could impact on the determinant problems of stakeholders. The process succeeded in facilitating stakeholders to develop plans for how both projects can respectively strengthen effective use of climate information within local government decision making. Summaries of the proposed activities, methods, actors, leads and timing are outlined in Tables 1 and 2 below.

Over 80% of participants found the workshop to be 'very useful' or 'useful', with over 70% indicating that the event was 'effective' or 'very effective' in improving their ability to integrate climate information in decision making. The majority of participants reported that working in groups was by far the most useful aspect of the workshop (see Section 4, Box 9, below).

3.0 Workshop sessions: Key issues

Focused on supporting local government decision making, the initial session outlined the climate information required to support both rural and urban commune-level decision making, across sectors and timeframes. Outlining the climate information needs of a rural commune, ATAD and an advisor to the Mayor's office, outlined the principal decision making processes in the rural commune of Pissila, Sanmatenga Province, where the population of approximately 110,000 people is at risk of droughts, floods and insect infestations. The executive is supported by commissions focused on general affairs, finance, environment and local development, planning and land tenure. Of the commune's 137 advisors, 6 are women. Climate information requirements include: seasonal forecasts for agriculture including planting dates, crop forecasts, warnings of heavy rainfall, migration of pests and extreme temperatures.

ODE presented the situation from the rural commune of La Toden in Passore Province where the population is also largely reliant on rain-fed, subsistence farming. Access to climate information is constrained by limited radio coverage and constraints on women's access to radios, while the establishment of commune-level Early Warning Committees and use of traditional communication channels, including religious establishments and markets, present opportunities to extend the reach of climate services.

Turning to the urban context, 2iE then presented the results of a survey of climate information requirements amongst decision makers in Ouagadougou. Respondents highlighted the need for information at relevant temporal and spatial scales to overcome the current focus on low-resolution, short-term forecasts, as well as weak communication of the probabilistic nature of the information, poor interaction between the providers and users of climate information and the importance of strengthening capacities to interpret and appropriately use climate information.

Box 2: National Meteorological and Climate Services - ANAM (formerly Direction Générale de la Météorologie)

A representative from ANAM outlined the national meteorological and climate information available across different geographic and temporal scales, together with the data sources and communication channels employed. ANAM currently produces national seasonal, weekly and daily forecasts, 10-day agrometorological bulletins and warnings of weather hazards. While ANAM employs a range of communication channels, including the TV and internet, it is recognised that radio and mobile phone are those channels with the most extensive reach to the general public.

Representatives from ANAM then outlined the range of weather and climate products currently available, and the range of channels through which they are communicated. ANAM colleagues also outlined the causes of climate change and the observed climate trends for Burkina Faso, including with regard to total rainfall, number of days with and without rain, changes in rainfall and temperature zones. The evolution in climate modelling capacities was also outlined.

A representative from the University of Leeds then discussed managing climate risks, given the uncertain or probabilistic nature of climate information. There are ways to assess the accuracy and consistency of the forecasts. While forecasts can provide useful information, indicating the mostly likely outcome, it is vital that decision makers understand the uncertainty of future projections and also plan for the range of possible outcomes.

Box 3: Managing climate risks: confidence and reliability in probabilistic climate information (University of Leeds)

Seasonal forecasts are commonly provided in terciles of probability, indicating whether the forthcoming rainy season is predicted to be above, equivalent to or below historical averages. Climate information providers can also provide ensemble forecasts, where many forecasts are combined to provide a spread of the possible outcomes. Forecasts can be assessed for both accuracy – that they match reality more often then they predict the wrong outcome and consistency – that they predict certain outcomes (for example, that it will rain today) as often as that outcome is observed. A perfect forecast does not mean that the forecast always recaptures reality. Perfect forecasts capture the correct observed variability over a long period of time. However, on a year-to-year or event-to-event basis, they may not be correct. There is therefore a difference between trusting a forecast and thinking that the most likely outcome will definitely happen. In managing climate risks, we should be aware of the most likely outcome, but also always bear in mind the potential impact of extreme events, and so plan for the range of possible outcomes.

Participants then engaged in a scenario exercise designed to accustom decision makers to using a range of climate products, support dialogue between decision makers and technical experts, and simulate the difficulties of making appropriate use of climate information within commune-level decision making processes. Participants were presented with fictitious seasonal forecasts and 10-day agrometeorological bulletins in the current ANAM formats, and asked to propose relevant decisions the commune should undertake on the basis of this information. The aim was to experience the challenges of making decisions based on limited information that includes uncertainty of the true outcome.

The second day of the workshop began with

a series of short presentations on the current state of scientific understanding regarding future climate change in the region, the likely impacts on agriculture, water resources and urban contexts, as well as how these impacts are already being felt by rural communities in Burkina Faso.

Box 4: The current state of scientific understanding about climate change in West Africa (2iE)

On the basis of historical and predicted trends of climate change in West Africa and rainfall in the Sahel, key messages include:

- In the last 60 years the Sahel has warmed by approximately 1°C. This trend is highly likely to continue into the future with rises in temperature of 1.5 to 4°C by the mid-century.
- The number of heatwaves (at least 3 days with daily maximum temperature greater than 41°C) are likely to substantially increase by mid-century, especially in the western Sahel.
- There is much uncertainty about future changes in rainfall with current patterns of high variability from year to year and decade to decade likely to continue.
- Most current climate models predict a drying in the Western Sahel, and a wetting in the central and East Sahel. However some equally credible models, do not predict this pattern.
- Generally in the Sahel, rainfall is projected to become less frequent, but when it rains, it will likely be more intense.

Box 5: The rural context and climate change impacts on agriculture: Developing climate change resilient agriculture in Senegal (ISRA)

In the West African region there are likely to be notable reductions and increased variability in agricultural yields. Climate change uncertainties and hazards are taking place alongside a wide range of socio-economic, demographic, land tenure and political developments, including rapid urbanisation. Rainfall trends show a very strong inter-annual variability. Increases in spatial and temporal variability have led to a change in rainfall zones. In 2016 in Senegal, for example, an early end to the rains led to reduced yield and loss of crops.

ISRA has been undertaking research to explore the role of biodiversity and crop diversification in adaptation and climate change resilience. For example, wild millet is adapted to a much larger range of environmental zones than cultivated millet. Since it takes 15 years to develop a new variety, research is focused on using existing diversity to create new varieties with improved resistance to pathogens, water and heat stress and to promote adaptation to new environmental conditions. Further, a number of existing local adaptation measures, such as integrating farming and livestock, promote diversification.

To be successful a programme of crop selection needs to be participatory, engaging key stakeholders, decision makers and impacted communities, in order to define the characteristics which both meet projected future climate variability and people's needs.

Box 6: Hydrological information for making decisions regarding water resources (Centre for Ecology and Hydrology)

Water availability is affected by rainfall and climate variability, as well as the wide range of ways in which water is used, including within households, agriculture and industry. Conflicts over the availability of water resources may, for example, be due to climate change, increases in demand or poor resource management.

Hydrological models seek to capture the range of different factors, including climate, land-use and population, which influence water availability. The aim of AMMA2050 research is to provide information which is useful to support decision making, at relevant spatial and temporal scales and provided through relevant formats and channels. The project partners are seeking to assist in resolving short-term problems in ways which avoid creating problems in the longer-term.

Box 7: Climate change impacts in urban contexts in Burkina Faso 2iE

Projected climate changes are likely to result in impacts to all sectors. Increased heatwaves will, for example, impact infrastructure, including roads, railways and runways, while more frequent and intense floods will impact roads, bridges, water, electricity and communications services and sewage treatment plants. A diverse range of impacts are also likely to be experienced with regard to water resources, soil usage and health.

Box 8: Impacts of climate change in rural communities in Burkina Faso (ACF)

For communities living in Gnagna Province, Eastern Burkina Faso, climate change has brought an increase in drought, with both reduced annual rainfall and a lengthening or repetition of dry to very dry conditions for several years. Noted seasonal changes include a delayed onset to shortening of the rainy season, as well as increases in temperatures, incidents of flooding and growing spatial and temporal variability in rainfall. These changes have direct impacts on people and livelihood assets, including reduced quantity and quality of harvests, less productive cattle due to poor pasture and reduced surface and ground water resources.

In order to stimulate innovative approaches when planning for how to strengthen integration of climate information within local government decision making, workshop participants were then presented with a number of case studies of how climate information can support local government decision making. Groups analysed the strengths and weaknesses of each case study with regard to their relevance and potential transferability to commune-level decision making.

The three case studies presented included:

• An outline of the climate metrics – or characteristics of information on climate change – proposed for development within the AMMA2050 project. The project sought feedback on those metrics which may best support those making decisions regarding planning for the 5-40 year period;
• The development of decentralised climate information services plans, tailored to supporting the needs of key local livelihood groups, from DFID-supported work in Kenya[1];
Providing localised climate information and accompanying livelihood advisories through local radio, an example from the counterpart BRACED project in Ethiopia[2].

4.0 Proposed plans for enabling climate information to support local government decision making

Aligned with ongoing project activities, workshop participants developed plans for a series of specific activities to be undertaken following the workshop within two commune level decision making contexts (one rural where BRACED is operational, one in Ouagadougou where AMMA2050 is undertaking research).

1 http://www.metoffice.gov.uk/binaries/content/assets/mohippo/pdf/international/wiser/guide_developing-a-ccisp.pdf

2 http://www.bbc.co.uk/mediaaction/where-we-work/africa/ethiopia/building-resilience

Table 1: Outline of proposed activities within one Ouagadougou urban commune of AMMA2050 project focus

What?	How?	Who?	When?
Present action plan to mayors	Statutory meetings, special sessions and press conferences	2iE/ AMMA2050 Mayors' offices AMBF ANAM Media Development partners	March 2017
Advocacy for the consideration of climate change in development initiatives	Development of advocacy strategy, engaging in statutory meetings and advocacy sessions	SP/CONASUR Technical services across Ministries Civil society and development partners Media	June-September 2017
Develop a training on integrating climate information within development schemes	Identify facilitators across technical services departments. Workshop to develop training modules.	Partenaires AMMA2050 Technical services across Ministries Media	October
Strengthen the capacities of local authorities to use and integrate climate information	Training session, exchange forums, manual on how to integrate climate information	AMMA-2050 MATDSI AMBF ANAM WASCAL Media	May-June 2018
Develop a publicity programme on the use and integration of climate information in development initiatives	Broadcasts on TV and radio, posters/digital billboards, short information films	ANAM Technical Services across Ministries AMMA2050 Development partners, civil society Media (DG/RTB, etc.)	May 2018

Table 2: Outline of proposed activities within one rural commune of Zeman Lebidi project focus

Problem?	Activities?	Who?	When?	Where?	How?
Insufficient capacity of the municipal authorities' understanding of the CC	Training / sensitization of the municipal councilors, VCD and the designated focal points in the municipalities	ANAM (Agro Meteo Experts)	According to ANAM's activity plan	13 municipalities	Collaboration with technical services (agriculture, environment, water, health, etc.)
EWS (multi sectoral) not functioning at the communal level and no link with the EWC at Village level (including the lack of recognition of these EWC)	Designate focal points on CC and DRR issues at the municipal level Ensure the recognition of EWCs by defining and institutionalizing their roles and responsibilities. Presentation of the EWC to the Technical Services , communal focal points and Prefect, to lay the foundations for collaboration	Mayor Mayor Mayor	Next Board Session (March 2017) March 2017 March 2017	13 municipalities	Appointment after consultation of the Environment Committee of the Commune Deliberation at the municipal council Note: ideally have a double focal point both from the Environment Committee and EWC. Formalize this through correspondence with the High Commissioner
Non-integration of CC and CI issues in existing consultation frameworks at municipal level	Integrate CC and CI issues into the Municipal Consultation Frameworks and / or during the sessions of the council at the choice of the Mayor who will ensure the link with Provincial and / or Regional Consultative Framework	CC focal points	Next Board Session (March 2017)	13 municipalities	
CC and DRR issues not addressed in CPD / AIP	Support municipalities in contingency plans development + Integrate this contingency plans into the CPD + Integrate the guidance of the CPD into the AIPs by ensuring the allocation of resources	BRACED Zaman Lebidi consortium Mayor Mayor	March 2017	13 municipalities	Technical support from CONASUR

5.0 Conclusion and next steps: Endorsement of the proposed project plans for integrating climate information within commune-level decision making processes

On the final afternoon, the BRACED and AMMA2050 groups presented their respective plans to representatives of the Ministers of Agriculture, Finance and Devolution. The representatives commended the initiative and pledged their commitment to support implementation.

Over 80% of participants found the workshop to be 'very useful' or 'useful', and its content 'very relevant' or 'relevant'. Over 70% indicated that the event was 'effective' or 'very effective' in improving their ability to integrate climate information in decision making. The majority of participants reported that working in groups was by far the most useful aspect of the workshop. Group work improved understanding of decision making processes and also allowed sharing of personal experiences and expertise regarding meteorological information and climate change adaptation. Many participants also found the development of action plans a very useful aspect of the workshop.

Coverage of the event included interviews on RTB and reports on Ouaga.com and lefaso.net, while BRACED and AMMA2050 will, over the coming months, be producing a policy brief synthesising key learning from the forum.

Box 9: Key findings from the workshop evaluation forms and feedback from participants on the value of the workshop

This meeting was a real pleasure, an opportunity for sharing experiences. Thank you and together we will overcome! (cette rencontre a été un réel plaisir, un moment d'échanges d'expériences. Merci à vous! Ensemble nous vaincrons!)

It was a training for us and we learnt a lot (c'était une formation pour nous et nous avons appris beaucoup de choses).

Feedback from participating representatives of Government Ministries and Departments

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Annex 2: List of Acronyms

2IE	INSTITUT INTERNATIONAL D'INGENIERIE DE L'EAU ET DE L'ENVIRONNEMENT
ACF	ACTION CONTRE LA FAIM
AMBF	ASSOCIATION DES MUNICIPALITES DU BURKINA FASO
AMMA 2050	AFRICAN MONSOON MULTI-DISCIPLINARY ANALYSIS 2050
ANACIM	AGENCE NATIONALE DE L'AVIATION CIVILE ET DE LA METEOROLOGIE (SENEGAL)
ANAM (EX DGM)	AGENCE NATIONALE DE LA METEOROLOGIE (BURKINA FASO) (EX DIRECTION GENERALE DE LA METEOROLOGIE)
ATAD	ALLIANCE TECHNIQUE AU DEVELOPPEMENT
BRACED	BUILDING RESILIENCE AND ADAPTATION TO CLIMATE EXTREMES AND DISASTERS
CAID	CHRISTIAN AID
CAP	COMITE ALERTE PRECOSE
CEH	CENTRE FOR ECOLOGY AND HYDROLOGY
CIRAD	CENTRE DE COOPERATION INTERNATIONALE EN RECHERCHE AGRONOMIQUE POUR LE DEVELOPPEMENT
CNRA - GAME	CENTRE NATIONAL DE LA RECHERCHE AGRONOMIQUE - GROUPE D'ETUDE DE L'ATMOSPHERE METEOROLOGIQUE
CNRS	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE
CONASUR	CONSEIL NATIONAL DE SECOURS D'URGENCE ET DE REHABILITATION, MINISTERE DE L'ACTION SOCIALE ET DE LA SOLIDARITE NATIONALE
DFID	DEPARTMENT FOR INTERNATIONAL DEVELOPMENT
DG	DIRECTION GENERALE
EWC	EARLY WARNING COMMITTEE
EWEA	EARLY WARNING EARLY ACTION
IPSL - LOCEAN	INSTITUT PIERRE SIMON LAPLACE - LABORATOIRE D'OCEANOGRAPHIE ET DU CLIMAT
IRD - DIADE	INSTITUT DE RECHERCHE POUR LE DEVELOPPEMENT - DIVERSITE ADAPTATION DEVELOPPEMENT DES PLANTES
ISRA	INSTITUT SENEGALAIS DE RECHERCHES AGRICOLES
KCL	KING'S COLLEGE LONDON
MATDSI	MINISTERE DE L'ADMINISTRATION TERRITORIALE, DE LA DECENTRALISATION ET DE LA SECURITE INTERIEURE
ODE	OFFICE DE DEVELOPPEMENT DES EGLISES EVANGELIQUES
PIPA	PARTICIPATORY IMPACT PATHWAY ANALYSIS
RTB	RADIO TELEVISION DU BURKINA
ST	SERVICE TECHNIQUE
UCAD - ESP	UNIVERSITE CHEICK ANTA DIOP DE DAKAR - ECOLE SUPERIEURE POLYTECHNIQUE
UCC	UNIVERSITY OF CAPE COAST
UFHB	UNIVERSITE FELIX HOUPHOUET BOIGNY
UK MET	UNITED KINGDOM METEOROLOGICAL OFFICE
VCD	VILLAGE COUNCIL FOR DEVELOPMENT
WASCAL	WEST AFRICAN SCIENCE SERVICE CENTRE ON CLIMATE CHANGE AND ADAPTED LAND USE

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