



**REPORT OF THE
FIRST MEETING OF THE “CLIMATE SERVICES FOR
INCREASED RESILIENCE IN THE SAHEL” PROJECT
TEAM**

Dakar, Senegal, 16-17 August 2016

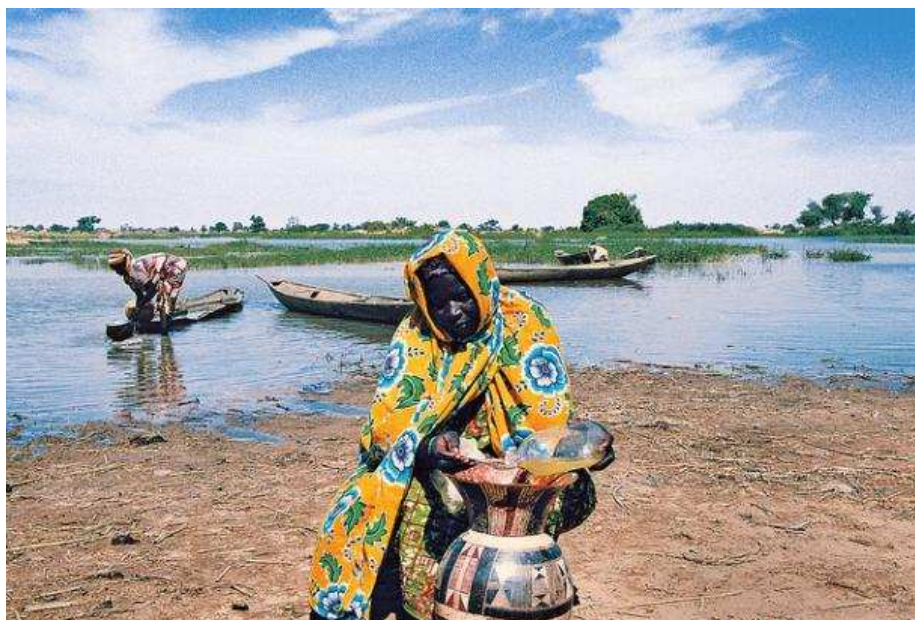


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Introduction

The “Climate Services for Increased Resilience in the Sahel” project, funded by the United States Agency for International Development (USAID), is aimed at enabling countries in the Sahel to mitigate the risks and take advantage of the opportunities brought about by climate variability and change. The project kicked off with a two-day meeting in Dakar (16-17 August, 2016) bringing together representatives from Niger, Senegal and the African Centre of Meteorological Applications for Development (ACMAD), and experts from the World Meteorological Organization (WMO) and the National Oceanic and Atmospheric Administration (NOAA). The group discussed the way forward for the project, which will develop the capabilities of ACMAD as a Regional Climate Center to better support Meteorological Services in the Sahel, and enhance capacities in Burkina Faso, Niger and Senegal to maximize the use of, and benefits from, weather and climate products delivered by ACMAD and other centres. The report of the meeting provides a summary of the discussions.

Session 1- Opening of the meeting

The meeting was opened by Dr Oumou Ly (USAID representative in Senegal) and Mr David Patrick (Food and Agriculture Organization of the UN (FAO) Regional Office in Dakar) who welcomed the participants to the meeting. Both representatives emphasized the importance of collaborated efforts at national and regional levels to improve climate services for an increased resilience in Africa.

On behalf of the World Meteorological Organization (WMO), Mr Filipe Lúcio thanked the FAO colleagues for hosting the meeting of the project team and the USAID for providing funding to the project. Mr Lúcio reminded the participants that the main objectives of the meeting were the development of detailed activities, workplan and budget. Mr Filipe explained that capacity assessments were performed in the past months both at regional and national level to provide key information to guide the design of the project. The first sessions would provide an overview of the results of these capacity assessment exercises as well as experiences at regional and national levels. The sessions 4 and 5 would consist in group-work discussions for the design of detailed activities, workplan and budget.

Session 2 – Regional Component of the Sahel Project

The Session 2 was opened by Rupa Kumar Kolli with a presentation on **WMO Regional Climate Centers (RCCs) and Regional Climate Outlook forums**. WMO RCCs are centres of excellence that create regional products including long-range forecasts that support regional and national activities and thereby strengthen capacity of National Meteorological and Hydrological Services (NMHSs) in a given region to deliver the best climate services to national users. RCC functionalities could be performed by a network of centres responsible for climate-related activities that collectively fulfil all the required functions of an RCC. A WMO RCC-Network Node is a centre in a designated WMO RCC-Network and will perform, for the region or sub-region defined by the Regional Association, one or several of the mandatory RCC activities (e.g. long-range forecasting (LRF), climate monitoring, climate data services, training).

The recipients of RCC products and services (RCC Users) are NMHSs, other RCCs and international institutions recognized by the Regional Association. The RCC support the work of NMHSs and do not overlap with services and functions of NMHSs.

WMO RCCs or WMO RCC-Networks might be established, by request of the Members of the Regional Associations concerned, for climate-sensitive areas whose boundaries extend beyond or are outside those of a single Regional Association. In order for a centre or a group

of centres in a cooperative effort to be designated as an RCC or RCC-Network, it shall perform the minimum set of functions, criteria and products. Additional requirements for RCC functions may vary in detail from Region to Region. Mandatory functions of RCC include: operational activities for long range forecasting and climate monitoring, operational data services, to support operational LRF and climate monitoring, training in the use of operational RCC products and services. Highly recommended functions are climate prediction and projection, non-operational data services (such as metadata, archiving and homogenization of data series), coordination function, training and capacity building and research and development. Currently, in Africa there are 6 potential RCCs:

- Eastern Africa (RCC-IGAD-Intergovernmental Authority on Development)
- Southern Africa (RCC-SADC-Southern African Development Community)
- Central Africa(RCC-ECCAS-Economic Community of Central African States)
- Western Africa (RCC-Network-ECOWAS-Economic Community Of West African States)
- Northern Africa (RCC-Network-North-Africa)
- RCC-Africa-ACMAD.

ACMAD was designated as RCC-Africa in 2015. The demonstration phase was completed for two potential RCCs (RCC-IGAD at ICPAC and RCC-Network- North-Africa coordinated by Morocco) and designation process was initiated.

Regional Climate outlook forums (RCOFs) provide platforms for climate experts and climate information users to discuss current climate issues, exchange views on scientific developments in climate prediction, develop consensus-based regional climate outlooks and engage in user-provider dialogue. An important aspect of RCOFs is to bring together experts in various fields, operational climate providers and end users in an environment that encourages interaction and learning. Products are developed based on regional needs.

Mr Issa Lele, consultant at WMO and AMCOMET, provided an overview of the **preliminary results of ACMAD's capacity assessment** which was performed as part of an assignment by the Norwegian Refugee Council (NRC) and the Weather and Climate Information Services for Africa initiative (WISER). ACMAD provides weather and climate information for the promotion of sustainable development in Africa and is an appropriate host the continental RCC. The goal of the ACMAD assessment was to provide an analysis of the current state of ACMAD, identify key products vis a vis user needs, identify capacity needs and recommend the ways in which ACMAD can increase its delivery climate services.

The major gaps identified:

- Governance: ACMAD's governance structure is unchanged since 1987. Withdrawal of UN Economic Commission for Africa (UNECA) sponsorship in 2000 left ACMAD without any umbrella institution and without a legal process for updating the institution's status. No update to ACMAD's strategic plan and thus no element, discussing its role as an RCC. Recommendation: ACMAD should engage a sponsor, e.g. UNECA, WMO, African Union. The lack of a sponsor leads to financial stress for the institution. Also, establish a Regional board for climate services (ACMAD-RCC as the steering committee).
- Human capacity: Poor service delivery is a result of poor institutional and human capacity. At the time of the assessment, there was only 1 permanent staff (chief of climate and environment department), whereas the department ideally needs 10 staff members. All other staff is project-funded. ACMAD's

lack in human resources in climate related products leaves human capacity to provide analysis of climate information and tailor information to produce sector specific climate services. Key gaps are in: Food security analysis, communication of climate information, provision of different climate services to DRR, water, energy and so forth. Recommendation: For the sustainability of ACMAD, there is an urgent need for investment in human resources. Salary offers should be attractive for young graduated, motivated personnel. ACMAD needs at least the following experts: 2 experts on climate monitoring/modelling, 3 experts on Long Range Climate Forecasting; 2 experts on data services; 2 experts for training on data and 1 team leader.

- Infrastructure: Main challenges are: unstable power supply, weak internet bandwidth, limited computer processing capability and inadequate software packages. Other challenges include: lack of a good communication platform to disseminate information, lack of knowledge on how to package information, no guidance for the user on how to use the products, no dedicated link to any regional WIGOS/WIS network (current reliance on RETIM- ACMAD staff don't have all the data they need. Also, ACMAD doesn't receive any data from member countries). Recommendation: Secure a good server, power supply and internet connection, as well as high performance computing systems. ACMAD also needs to develop a good communication strategy, including an outreach and communication unit to provide intensive outreach services to member countries and other stakeholders (with partnership with the media) and also ensuring a better engagement of Anglophone countries. Finally, ACMAD needs to secure a link to relevant regional WIGOS/WIS network.
- Financial: over reliance on member state contributions, which is not enough to cover the basic funds needed to run the centre.
- User needs: Need to increase lead time (e.g. the seasonal forecast comes only with a few weeks lead time) and there is also a need for intra-seasonal forecasts). Need for unrestricted access to data and forecast verification. Recommendation: Improve user engagement for better understanding of user needs.

In conclusion ACMAD RCC is an important center required to meet demands by providing continental scale services for African nations, however it is recommended that ACMAD be equipped, financed and organized in such a way for it to perform as a WMO RCC.

Mr Jose Camacho, WMO, provided an overview of **METAGRI projects on agricultural meteorology and food security in Western Africa**. The METAGRI projects target smallholder farmer decision making and enhance institutional capabilities on climate/weather services delivery at country level. With funding from Spain, the METAGRI project started in 2008, targeting 14 Western Africa countries and was mainly focused on roving seminars. 159 seminars were conducted to improve quality of NHMSs' products and their use in decision making processes. 7300 farmers were trained and 3000 rain gauges were distributed. With funding from Norway, the METAGRI OPERATIONAL project (2012-2015) targeted 17 countries in West Africa. 269 roving seminars were held in the 17 countries. About 11 000 farmers from 4500 villages were trained. Training sessions on the use of satellite data and products on agricultural meteorology and drought monitoring were held in several countries. Several seminars on media and communications were also organized.

Mr Wassila Thiaw, National Oceanic and Atmospheric Administration (NOAA), presented **NOAA's climate information for decision support system**. Mr Thiaw provided an overview of NOAA's International Desk Website which provides real time weather and climate products and services. In particular, the Africa Desk Webpage makes available information which is specific to the region in particular by providing: expert assessments (assessments, forecasts and summaries), model derived products (Climate and weather forecasts), model analyses and satellite rainfall estimates. Key products include:

- Monthly global seasonal and monthly forecast updates
- Weekly sub-seasonal forecast updates
- Daily weather forecast Day1-5
- Weekly Monsoon monitoring updates
- Weekly ENSO updates
- Regional food security hazards outlooks
- Model and satellite derived climate information

The products are mainly targeting the agricultural and water resource management sectors.

Session 3 – National Component of the Sahel project

Ms Arame Tall, GFCS made a presentation on the **status of implementation of national frameworks for climate services in Niger, Senegal and Burkina Faso**. Ms Tall provided an overview of the GFCS's five step approach for national frameworks for climate services (NFCS):

1. Capacity assessment
2. Consultation on Climate Services
3. Development of a National Action Plan
4. Validation of the National Action Plan
5. Implementation of the National Action Plan

Niger was the first country to endorse the National Action Plan in 2015, with the official launch planned by the end of 2016. In Burkina Faso, the national action plan was endorsed in April 2015, and has a strong support from the UN system. Senegal's national action plan was validated in May 2016, with the official launch planned by the end of 2016. The GFCS is currently working on the development of a guidebook for establishing a NFCS which should be launched by the end of the year. The guideline highlights the importance of the user interface platform, the strong leadership of the NMHSs, coordination across all levels and the establishment of a regional framework for climate services.

Daouda Yahaya, Aissatou Ndiaye and Cheikh Ba, Norwegian Refugee Council (NRC), presented the preliminary results of the **capacity assessments performed in Senegal, Burkina Faso and Niger**. The objective of the capacity assessments was to: analyze the national framework for climate services, evaluate the state of climate services being provided, identify gaps and provide recommendations for improvement. 20 indicators were analyzed for the capacity assessment, namely:

1. National legislation
2. Strategy, policy and planning
3. NFCS
4. Coordination mechanisms

5. Early warning systems
6. User Interface Platforms
7. The role of research
8. Resources available
9. The budget
10. Existing initiatives
11. Flow of climate information
12. Co-production of climate service
13. Adaptability / Co-production
14. Communication channels and delivery of climate services
15. Communication capability
16. Gender and social equality
17. Generating capacity, management and verification of climate data
18. Human resources
19. Education
20. Resources for climate research and training

The preliminary findings were presented and discussed. The capacity assessments would be then finalized and presented in the form of a report as one of the first deliverables of the project. The assessments are available [here](#).

Mr Peer Hechler, WMO, provided an **overview of the status of climate data management in project countries**. Mr Hechler presented the experiences from a project implemented in Burkina-Faso, Mali and Niger (2014-2016) aimed at improving data management which consisted of different phases:

1. Expert assessment of status of archives and data rescue and recommendation of approaches for implementation
2. Preparation of the implementation by hiring manpower and procure equipment
3. Execution and
4. Basic climate products development.

Collaboration between ACMAD and AGRHYMET was strengthened.

Mr Lars Peter Riishojgaard, WMO, presented the **WMO Integrated Global Observing System (WIGOS) and its relation to “Climate Services for increased Resilience in the Sahel”**. WIGOS is a framework for integrating all WMO observing systems and WMO contributions to co-sponsored observing systems under a common regulatory and management framework.

WIGOS components are:

- Global Observing System (WWW/GOS)
- Observing component of Global Atmospheric Watch (GAW)
- WMO Hydrological Observations (including WHYCOS)
- Observing component of Global Cryosphere Watch (GCW)

In the WIGOS pre-operational phase (2016 – 2019), there are five main priority areas;

- WIGOS Regulatory Material, supplemented with necessary guidance material

- WIGOS Information Resource, including the Observing Systems Capabilities analysis and Review tool (OSCAR), especially OSCAR/Surface
- WIGOS Data Quality Monitoring System (WDQMS)
- Regional Structure: Regional WIGOS Centers
- National WIGOS Implementation, coordination and governance mechanisms

The rolling review of requirements (RRR) is the process used by WMO to collect, vet and record user requirements for all WMO application areas and match them against observational capabilities. 14 application areas are listed in the RRR and it is supported by three key databases of the Observation Systems Capabilities and Review tool (OSCAR).

- OSCAR/Requirements, in which requirements are provided for each application area, expressed in units of geophysical variables
- OSCAR/Space, listing the capabilities of all satellite sensors, whether historical, operational or planned
- OSCAR/Surface, listing surface-based capabilities (in beta-testing).

The database provides the possibility to use OSCAR/Surface as a national database for observing systems although it is mandatory to register in OSCAR/Surface those stations for which data is exchanged internationally. The WIGOS data quality monitoring system (WDQMS) is a real time monitoring of performance of all WIGOS components and describes how well the WIGOS is functioning. It is also a useful tool to provide an overview of the state of the network and its performance. For example, the WDQMS indicates that the density of observation stations is low in the Sahel area, especially in Niger.

Ms Oumy Ndiaye made a presentation on **developing communication strategies for climate services in the target countries**. Ms Ndiaye shared the lessons from the METAGRI communication activities and the GFCS national action plan exercise which clearly highlight the importance of communication among all stakeholders. There is a need for inter-institutional communication and a participatory approach with end users. In general meteorologists lack the basic knowledge of effective communication and communication specialists and media have limited knowledge of the basics of meteorology and the meaning of technical terms.

There is a general perception that climate information is not easily available, and that there is often limited access to information. There is the need to facilitate access to information and climate service, through for example a web site and social media.

There is a need to elaborate a comprehensive communication strategy for the provision of climate services, especially focusing on available channels and local languages (glossary). The strategy should include:

- Mapping of the different categories of users of the climate services
- Identification of their communication needs
- Identification of the communicational assets of the geographical zones of implementation of the projects
- Identification of capacity building needs – organization of training sessions
- Identification of most cost effective communication channels – negotiation of broadcast/dissemination and collection of feedback contracts
- Tailoring of messages relevant to the different categories of end users
- Monitoring and evaluation tools, and document the importance of communication.

Mr Rupa Kumar Kolli presented the **concepts and examples of National Climate Outlook Forums (NCOFs) and National Climate Forums**. National Climate Outlook Forums (NCOFs) are envisioned as an essential mechanism for promoting inter-agency coordination and regular multi-stakeholder dialogue between information provider and users at the national level, which will support national level implementation of both the Climate Services Information System (CSIS) and the User Interface Pillar (UIP) of the GFCS. NCOFs facilitate provision of standardized climate products based on high quality climate information from Global Producing Centers (GPCs), RCCs and relevant RCOFs at user-relevant scales.

As already articulated in the GFCS Implementation Plan (within the Annex on Climate Services Information System), there is a need to formulate national forums in ways that allows for more flexibility and dialogue for the design of tailored climate information. This includes data, monitoring, prediction and projection, and even the overarching climate knowledge. Therefore, the NCOF concept could be generalized to go beyond the “climate outlook” context, i.e., to develop and establish “National Climate Forums” (NCFs).

A comprehensive WMO NCOF guidance document is under preparation.

Mr Ousmane Ndiaye, Senegal NMHS (ANACIM), presented the concept of the **local and national Multi-disciplinary working groups (GTPs) and the example of the Kaffrine’s GTP**. Created in 1984, the GTP is a group which is composed of national ministries working on issues related to water and agriculture (fishery, livestock, agriculture, water, environment, media, and health). The GTP meets every ten days during the rainy season with the objective to monitor the rainy season and its potential impacts by issuing bulletins to inform decision makers (state, NGOs, users). The GTP releases agro-meteorological bulletins (ten day): actual rainfall and anomalies and 10 days forecast, status of agricultural and pest disease, vegetation monitoring, river flows, market prices and special field reports (mid and end of the season).

A local extension of the GTP has been established in the Kaffrine region in Senegal. The group, established by the local government, consists of national level partners such as ANACIM, Ministry of Agriculture and other national departments together with local agricultural extension workers and NGOs, farmer organizations, local communities and rural radios. The bulletins developed by the GTP integrate indigenous knowledge and meteorological data. The approach builds on the farmers’ decision system to provide the information needed throughout the decision cycle. In this sense the local GTP follows the farmers throughout the rainy season. The main communication channels are rural radio, text messaging, social gatherings and bulletins.

Lessons learnt from the Kaffrine experience:

- Building trust (social dimension: using indigenous knowledge)
- Giving useful and useable forecasts (tailored for specific user needs in local language)
- Building long term and multi-stakeholders’ partnerships
- Communicating the forecast in easy to use format (easy to understand, actionable and with measurable impacts)
- Developing a dynamic process: need to better understand farmers’ decision system

Mr Bernard Gomez, WMO, made a presentation on **inspiring NMHSs to achieve transformational change through the GFCS**. There is a growing awareness among the

general public and decision-makers of the influence of weather, climate and water on the sustainable development of society and the demand for accessible and accurate meteorological data will continue to grow in the coming years. There is a need to define tangible ways of meeting users' needs for weather and climate services and demonstrate the relevance of NMHS at national level. In particular, there is the need for tailored products/services to address the needs of various users. Mr Bernard Gomez provided some recommendations to achieve transformational change:

- Make GFCS the flagship programme of NMHS and ensure that all NMHS personnel are aware of GFCS and can trace their contribution to it
- Through GFCS, sensitize NMHSs personnel on the contribution of weather and climate services to global, regional and national development initiatives
- NMHSs need to be 'good listeners' in order to effectively implement GFCS
- Need to seek innovative ways for mobilizing resources for implementation of GFCS (donor support, climate tax, etc.), other than Government budgetary allocation
- Additional expertise other than weather and climate science may be required for effective implementation of GFCS
- Sharing best practices will advance implementation of GFCS in the region.

Session 4 and 5 – Sahel Project: Definition of activities, budget and implementation plan

The participants were divided into three groups (Senegal, Niger, and Regional) to develop sub-activities, based on the activities included in the concept note approved by USAID, prepare a project implementation plan and prepare a proposed budget. The results will be the basis for the development of the project document.

Annex 1 – Programme



FIRST MEETING OF THE “CLIMATE SERVICES FOR INCREASED RESILIENCE IN THE SAHEL” PROJECT TEAM

Dakar, Senegal, 16-17 August 2016

DAY ONE, 16 August 2016

SESSION 1: OPENING OF THE MEETING

09:00-09:05 Welcome

Permanent Representative of Senegal

09:05-09:10 Welcome from FAO/GFCS Regional Office

Patrick David, FAO and Arame Tall, GFCS

09:10-09:30 Address: “Climate Services for Increased Resilience in the Sahel” project overview and objectives

Filipe Lúcio, WMO

Director, GFCS Office, WMO

09:30-09:40 Questions and Answers

SESSION 2: Regional component of the Sahel Project

(Chair: Rupa Kumar Kolli, Rapporteur: Daouda Yahaya)

Description: Provide relevant information and examples to guide the design of the regional component of the Sahel project.

09:40-10:00 WMO Regional Climate Centers (RCCs) and Regional Climate Outlook Forums (RCOFs): Overview and African Context

Rupa Kumar Kolli, WMO

10:00-10:20 ACMAD capacity assessments (by NRC, WISER)

Issa Lele, Consultant

10:20-10:30 METAGRI projects on agricultural meteorology and food security in Western Africa

Jose Camacho, WMO (remote)

10:30-10:40 Coffee/Tea Break

10:40-11:00 Experiences in the provision of climate services of direct relevance to the region

Wassila Thiaw, NOAA

11:00-11:30 Discussion

SESSION 3: National component of the Sahel Project

(Chair: Filipe Lúcio, Rapporteur: Arame Tall)

Description: Provide relevant information and examples to guide the design of the national component of the Sahel project.

11:30-11:50 National frameworks for climate services, status of implementation: Niger, Senegal, Burkina Faso

Arame Tall, Regional GFCS Coordinator

11:50-12:20 Results of capacity assessments performed in Senegal, Burkina Faso, Niger

Daouda Yahaya (Niger), Aissatou Ndiaye & Cheikh Ba (Senegal),

Arame Tall (Burkina)

12:20-12:40 Overview of climate data management and observation networks in the project countries

Peer Hechler, Lars Peter Riishojgaard, WMO (remote)

12:40-13:00 Discussion

13:00-14:00 Lunch

14:00-14:20 Developing communication strategies for climate services in the target countries: needs and opportunities

Oumy Ndiaye, Consultant

14:20-14:40 National Climate Outlook Forums and National Climate Forums: Concept and examples

Rupa Kumar Kolli, WMO

14:40-15:00 Local and National Multi-disciplinary Working Groups (GTPs): Concept and example of Kaffrine's GTP.

Ousmane Ndiaye, ANACIM

15:00-15:10 Inspiring NHMSs to Achieve Transformational Change through the GFCS

Bernard Gomez, WMO Regional Representative

15:10-15:30 Discussion

15:10-15:30 Coffee/Tea Break (during discussion)

SESSION 4: Sahel Project: Definition of activities

(Chair: Filipe Lúcio, Rapporteur: Wassila Thiaw)

Description: Detailed activities for project components 1 (Regional Level), 2 (National Level) and 3 (Knowledge Sharing and Capacity Development at Regional Level) based on the concept note approved by the donor will be formulated through break-out group discussions. Guidelines for group work are separately provided.

15:30-17:00 Breakout groups: drafting teams to detail project activities (Project's components 1, 2 and 3)

(Coffee/Tea Break at the convenience of groups)

Group I: Senegal (component 2)

Group II: Burkina Faso (component 2)

Group III: Niger (component 2)

Group IV: Regional (component 1 and 3)

DAY TWO, 17 August

SESSION 4 (contd.): Sahel Project: Definition of activities

(Chair: Filipe Lúcio, Rapporteur: Wassila Thiaw)

Description: Detail activities for project component 1, 2 and 3 based on the concept note approved by the donor.

09:00-10:30 Breakout groups: drafting teams to detail project activities (Project's components 1, 2 and 3) – continued from day one

(Coffee/Tea Break at leisure of groups)

Group I: Senegal (component 2)

Group II: Burkina Faso (component 2)

Group III: Niger (component 2)

Group IV: Regional (component 1 and 3)

10:30-11:30 Report and summary from discussion groups (15 min each group)

11:30-13:00 Discussion and consolidation of activities for project component 1, 2 and 3

13:00-14:00 Lunch

SESSION 5: Sahel Project: Work-plan and Budget

(Chair: Filipe Lúcio, Rapporteur: Arame Tall)

Description: Define work-plan and budget for project components 1, 2 and 3 based on the concept note and initial budget approved by the donor.

14:00-16:00 Breakout groups: drafting teams to define work-plan and budget (Project's components 1, 2 and 3)

(Coffee/Tea Break at the convenience of groups)

Group I: Senegal (component 2)

Group II: Burkina Faso (component 2)

Group III: Niger (component 2)

Group IV: Regional (component 1 and 3)

16:00-17:00 Report and summary from discussion groups (15 min each group)

17:00-17:30 Discussion

17:30-17:45 Summary and Workshop Closure

17:45-18:30 Closed meeting (consolidation of Project's components and definition of next steps)

Annex 2 – List of participants

First meeting of the Climate Services for Increased Resilience in the Sahel project team List of participants			
Name	Title	Institution	Email
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