Report on the

National Consultation Workshop towards the establishment of a National Framework for Climate Services (NFCS) in the Gambia
26 – 28 June 2018
Kairaba Beach Hotel
Kololi, Kanifing Municipal Council

By

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Section of the High
ESTABLISHMENT OF THE GAMBIA NATIONAL FRAMEWORK FOR CLIMATE SERVICES (NFCS)

1: BACKGROUND

The Global Framework for Climate Services, was endorsed at the Third World Climate Conference (WCC – 3) by Heads of States and Governments, Ministers and Heads of Delegation representing more than 150 countries, 34 United Nations Organizations and 36 Governmental and non-Governmental international organizations, and is envisaged as a set of international arrangements that will coordinate global activities related to climate services. The Framework is intended to provide widespread social, economic and environmental benefits through more effective climate and disaster risk management. In particular, it will support the implementation of climate change adaptation measures, many of which will require climate services that are not currently adequately available. One of the main objectives of the Framework is to bridge the gap between the climate information being developed by scientists and service providers with a view to meet the practical needs of users. This shall be obtained through the introduction of such frameworks at both national and sub-national levels. Thus, for such a Framework for Climate Services to work at the national level, national stakeholders have to drive the process and design it in a manner that addresses national needs and priorities in climate services development, production, provision, and utilization.

The establishment of the Gambia National Framework for Climate Services is led by Department of Water Resources (DWR); a Government Agency under the Ministry of Fisheries and Water Resources and National Assembly Matters (MoFWRNAM). To achieve that a National Consultation Workshop (NCW) was organized from 26th to 28th June 2018 at the Kairaba Beach Hotel, Kololi in The Gambia.

The Nation Stakeholder Consultation Workshop was conducted to meet the following objectives

1. To review the current status of coproduction of Climate Information Services (CIS) at national level and assess the specific needs for climate services in different sectors;
2. To review the current status of interface mechanisms and interactions between climate services providers and users,
3. To identify major areas (and gaps) for improvement of capacities to fulfill the needs of the user community and recommend effective mechanisms and practices to adopt;
4. To articulate the capacity building needs in terms of mandates, infrastructure as well as human resources in coproducing CIS in all the components of the GFCS/NFCS;
5. To discuss and recommend arrangements for improved coproduction, better access and sustainable operations for climate predictions and services to facilitate the flow of climate information from global and regional scales through the national and local scales;
6. To chart out a roadmap for the effective development and application of climate services in
support of agriculture and food security, disaster risk reduction, health, energy, water resources and other key climate sensitive sectors in The Gambia.

7. To propose recommendations for elaboration of the National Action Plan, prioritizing climate risk management actions that could be taken by Decision Makers, (e.g. National Disaster, public health, water resources, energy generation and distribution Managers), Stakeholders’ network and by people at risk in response to plausible climate predictions.

The Stakeholder Workshop has been designed and implemented to deliver the following:

1. Increased awareness and ownership of Climate Information Services
2. Set up the National Steering Committee for the NFCS
3. Established roadmap for the implementation of the NFCS
4. Identified gaps available in the Climate Information Services coproduction, uptake and utilization
5. Identified potential funding sources and funds mobilization
6. Elaborated recommendations and follow–up strategies

2: PROCEEDINGS OF THE NFCS STAKEHOLDER WORKSHOP

The proceedings of the Workshop followed the Programme in Annex I to this Report.

DAY 1: 26th JUNE 2018

2.1: OPENING CEREMONY

The Opening Ceremony consisted of the offer of Opening Prayer, Opening Remarks by the Chairperson of the event, statements delivered by the Director and Permanent Representative of the Gambia to the WMO, the WMO Representative for North, West and Central Africa and the Honourable Minister of Fisheries, Water Resources and National Assembly Matters. Other honourable dignitaries present during the Opening Ceremony include the Hon. Minister of Agriculture and the Hon. Minister of Energy and Petroleum.

**Opening Remarks:** The opening ceremony commenced at 10:27am. The occasion was chaired by Dr. Bamba Banja, the Permanent Secretary, Ministry of Fisheries, Water Resources and National Assembly Matters. In his opening remarks, he recognized the presence of honourable dignitaries on the high table that included, Minister of Fisheries, Water Resources and National Assembly Matters; Minister of Agriculture; Minister of Energy and Petroleum; WMO Representative for North, Central and West Africa; Director of Water Resources Department; GFCS Regional Coordinator for Africa; Climate Change Technical
Adviser for The Gambia and Regional Governors.

He went on to inform the gathering of timely nature of the event and that the presence of the Honourable Ministers was a clear manifestation of the importance of the meeting, and urged the participants to take the task ahead in the next three days with seriousness. According to the Permanent Secretary, Climate is here with us and the best we can do is to plan our activities against it.

**Statement by Mr. Lamin Mai Touray, Director of Water Resources:**
The Director of Water Resources and the Permanent Representative (PR) of The Gambia to WMO took up the floor by thanking the Chair and also gave similar sentiments by welcoming all participants to the Workshop. He further dwelled on a brief history on the establishment of National Framework for Climate Services (NFCS) which emerged from the World Third Climate Conference, and said the framework would be on the five main pillars: Water Resources, Health, Disaster Risk Management, Energy and Agriculture. He outlined the fundamental objective to serve in bridging the gap between producers and consumers of weather and climate related information, from the proceedings of the works he said, a strategic action plan would be developed. The Director concluded his statement by thanking ECOWAS and NEMA Chosso on the financial support rendered for the enhancement of the workshop.

**Statement by Dr. Pascal Yaka, the Regional Coordinator of the Global Framework for Climate Service:**
In delivering his statement, Mr. Yaka extended the warmest greetings from the Director of the Global Framework for Climate Service in Geneva, Dr Filipe LUCIO, who would have wished to be present in person, but has had to attend to some other business.

He stressed his extreme pleasure that The Gambia was launching its collaborative National framework for Climate Services. He provided a brief history of the Global Framework for Climate Services since the Third World Climate Conference (WCC – 3).

The Framework is intended to provide widespread social, economic and environmental benefits through more effective climate and disaster risk management. In particular, the GFCS and by extension the NFCS will support the implementation of climate change adaptation measures, many of which will require climate services that are not currently available. He presented that one of the main objectives of the Framework is to bridge the gap between the climate information being developed by scientists and service providers and the practical needs of users. This Framework will contribute to generate a consensus and awareness amongst stakeholders about the benefits of investment in weather, water and climate services and early warning.
systems to sustain the social and economical development of the Gambia. The GFCS will also contribute to create the platform for governments, regional organizations, donors, private sector, civil society, academia, technical community and gender advocates to discuss and design the future course in terms of provision, communication, utilization of climate information and services in The Gambia.

Dr. Yaka stressed that the development of the National Meteorological and Hydrological Services (NMHS) should make critical contributions in providing early warning systems to help mitigate these disasters, enhance national planning and intimately positively impact the weather dependent economic sectors whilst strengthening the resilience of the local communities. He hoped that this workshop will offer the opportunity for stakeholders to build a National Framework for Climate Services that will be in line with the current and future challenges of The Gambia. He welcomed all the partners, particularly Economical Community of West Africa (ECOWAS), World Meteorological Organization (WMO), Norwegian Capacity (NORCAP), and Swedish Development Cooperation that have support the tenure of this workshop. He expressed his conviction that this partnership with these organizations and others that support The Gambia will be continually strengthened, for economical and social development of our lovely state. In addition, Dr. Yaka assured participants that the regional coordination and the central body of the Global Framework of Climate Services and the World Meteorological Organization will always be close-by to provide all the necessary assistance for the realization and the effective operationalization of the National Framework of Climate Services of The Gambia

**Statement by WMO Representative:** Mr. Bernard Gomez, WMO Representative for North, West and Central Africa extended greetings from the Secretary General of the WMO. He expressed his pleasure that The Gambia was developing the National Framework for Climate Services. He dilated on the extreme effects of weather and climate on the social and economic losses of the country. In his statement he recognized WMO’s support to African states in their strife for economic development. He however challenged the forum to generate consensus on means of self sustenance. In conclusion he thanked the gathering for their presence and making the workshop a success.

**Statement by Minister of Fisheries, Water Resources and National Assembly Matters:** Hon. James Formuse Gomez, Minister of Fisheries, Water Resources and National Assembly Matters, recognized the presence of the honourable guests on the high table. He registered his appreciation to ECOWAS and NEMA Chosso for their financial support for the workshop. He affirmed his Ministry’s dedication to support the institutional reform process of the Water Resources sector that will see the Meteorology Division transform into a financially viable Agency that will provide better climate
services. He assured the meeting that the government is cognizant of climate change impacts on national development and that the government will fully support the establishment of NFCS. On his humble behalf and on behalf of H.E, the president of The Republic of The Gambia, he declared the workshop open.

2.2: SESSION I: Objectives of the Workshop

2.2.1: Logistics and practical arrangements for participants
The Local Organizing Committee informed participants of what is expected of them and the organizers to make the workshop a successful one. Together, all partners agreed to the following simple ground rules that must be followed by all participants.
   1. Respect of Time
   2. Keeping all Mobile Phones in Silence Mode
   3. No participant should be offended when the chair takes you back – it’s only for lack of time!

2.2.2: Brief Presentation of the Global Framework for Climate Services by Dr. Pascal Yaka, GFCS Regional Coordination for Africa
In his presentation, Dr. Pascal Yaka informed participants that the GFCS was established by the Heads of State and Government, Ministers and Heads of Delegations present at the World Climate Conference-3 (WCC-3), in 2009 in Geneva, Switzerland and that the GFCS is a global partnership of governments and United Nations and international agencies that produce and use climate information and services which is designed to guide the development and application of science-based climate information and services in support of decision-making in climate sensitive sectors. He further presented to the participants that the Vision of the GFCS is to enable better management of the risks of climate variability and change and adaptation to climate change, through the development and incorporation of science-based climate information and prediction into planning, policy and practice on the global, regional and national scale.” The objectives of the GFCS include:

• widespread social, economic and environmental benefits through more effective climate and disaster risk management;
• to support the implementation of climate change adaptation measures, many of which will require climate services that are not currently available;
• to bridge the gap between the climate information being developed by scientists and service providers, and the practical needs of users.

Dr. Yaka gave the five priority areas of the GFCS as in Figure 1 below. The four priority areas (Agriculture and Food Security, Disaster Risk Reduction, Health, and Water) present the most immediate opportunities to benefit decision-making at all levels. Climate services in these four
priority areas are most closely linked to the needs and goals addressed by the Millennium Development Goals (and Sustainable Development Goals in the future), the United Nations Framework Convention on Climate Change, the Hyogo Framework for Action, (and any successor framework) and other conventions. The natural evolution of Framework-related activity has seen Energy as another priority area. The energy sector uses climate predictions to estimate demand and to make provision for responding to that demand. Climate information is also used in estimating wind and solar energy potential to meet future energy needs. The energy sector is recognized for its importance in sustainability and in climate adaptation and mitigation.

The GFCS has five main components or pillars (see Figure 2 below) whose implementation is critical to ensure that the entire value chain for the production and application of climate services is effectively addressed.

1. **The User Interface Platform Pillar** provides a structured means for users, climate researchers and climate data and information providers to interact at all levels;
2. **The Climate Services Information System Pillar** is the principal mechanism through which information about climate (past, present and future) is routinely collected, stored and processed to generate products and services that inform decision-making processes;
3. **The Observations and Monitoring Pillar** helps ensure that the climate observations necessary to meet the needs of end-users are made, managed and disseminated, supported by relevant metadata;
4. **The Research, Modelling and Prediction Pillar** fosters research towards continually
improving the scientific quality of climate information, providing an evidence base for determining the impacts of climate change and variability and for evaluating the cost-effectiveness of using climate information;

5. **The Capacity Development Pillar** is an UMBRELA and of cross-cutting nature across the other Pillars. Capacity Development approaches and actions are identified to address the requirements identified in the other pillars as well as, more broadly, the basic requirements for enabling any Framework-related activities to occur sustainably. Many countries lack the infrastructural, technical, human and institutional capacities to provide high-quality climate services. The approach to Capacity Development under the Framework is to help strengthen existing capabilities that are needed to enable all countries to manage climate risk effectively. Areas included are governance, management, human resources development, education and training, leadership, partnership creation, science communication, service delivery, resource mobilization and infrastructure. Some of the foundational capabilities and infrastructure already exist in these areas or are being established in the neediest countries, but they require coordination and a more intense focus on user needs.

The pillars are meant primarily as a conceptual model; in practice there is some overlapping of functions and responsibilities that will require careful coordination.

![Figure 2: Five Main Pillars and the Infrastructure and Capacity Category of the GFCS](image)

**SESSION 2: Icebreaker Activity**

The Icebreaker Activity consisted of oral presentation from two groups of users of weather and climate information from the National Meteorological and Hydrological Services of The Gambia. The GOTG/GEF/UNDP/UNEP climate change early warning project (2011 to 2019)
has successful established partnerships with local communities at 20 Pilot Sites, the Gambia Radio and Television Services (GRTS), Community Radios, Traditional Communicators of information and the National Disaster Management Agency. A representative from the Touba Kuta Pilot Site delivered an Oral Presentation and shared experience on the manner in which the community received information and disseminate to end users. He showed appreciation for the relevance of the information in his community. The following PICTURES (Figure 3) show the process consisting of: (a) building the capacity of the Provider of Climate and Climate Change Early Warning Information

**Figure 3a: Building the Capacities of the Producers of the Climate Information and Services (NMHS, etc)**
UNDp procured the relevant Equipment

**Figure 3b: Capacities of Partners to disseminate the Climate Information to Users are built**
The second Icebreaker presentation was delivered by the President of the Livestock Owners Association. He advocated for their involvement in sharing weather information. According to him, information is equally relevant whole year round for their livestock. By and large, the general perception was that the information produced was very useful.

SESSION 3: Working Group Activities

3.1 Group work on Meteorology, Climatology, Hydrometeorological information for users and decision making.

Following the Opening Ceremony and the declaration of the workshop open, participants were divided into five Working Groups (see Figure 4 below) that included:
1. Daily weather forecast and Seasonal climate prediction
2. Meteorological Network Infrastructure, equipment's and information / communication
3. Agricultural meteorology and Indigenous Knowledge
4. Hydrological information and Rivers Flood Early Warning System
5. Civil Protection and Disaster Risk Reduction Management

The approach of the Group work was that five thematic experts were identified, and each group will nominate a chairperson and a reporter. Each Group was allocated 25 minutes of work that is split into 10 minutes oral presentation to the Group on the theme of expertise, 10 minutes of questions and answers, and 15 minutes general discussions.

At the end of that group work, the Thematic Expert moves to another Group and this process is repeated until all the five themes and groups are covered, thus completing 125 minutes of group work. The Chairperson and Reporter then retire to develop the Group Report as outcome of the Group Work, taking into consideration and synthesizing according to the following key points, amongst others:

- The essential points from the group’s discussions;
- The Gaps, limitations, failures and imperfections;
- The perspectives, propositions, solutions to lift the gaps identified;

3.2: Presentations of the Outcomes of the Group Work
The WMO Regional Representative for North, West and Central Africa, Mr. Bernard Gomez chaired the session. Ten minutes was allocated to each group presentation. Based on the above agreed format of reporting, the Groups developed and delivered in Plenary the five Reports
DAY 2: 27 June 2018

SESSION 4: DEVELOPMENT OF GAMBIA NATIONAL FRAMEWORK CLIMATE SERVICES ROADMAP – PRELIMINARY STAGE

4.1: Re-cap of the Presentation by Dr. Yaka GFCS on the Development of the Gambia National Framework for Climate Services Road Map.
Under Session 2, Dr. Pascal Yaka presented the Global Framework for Climate Services and under this Session, he presented on the process to establish a National Framework for Climate Services, especially on the development of the Road Map. His presentation followed the schematic representation of a National Framework for Climate Services indicated in Figure 5 below.

Figure 5: Schematic Representation of National Framework for Climate Services

Dr. Pascal Yaka also took the participants through the Five Steps to be followed for the design of a National Framework for Climate Services (see Figure 6 below). The process and design of the National Framework for Climate Services should be driven and designed by national stakeholders in a manner that addresses national needs and priorities in climate service...
production, provision and utilization. NMHSs and their partner institutions at national level engaged under the five pillars of the GFCS to establish a National Framework for Climate Services (NFCS). Sitting together the national institutions in charge of the development of climate, weather, hydrological, and related information and key potential end-users (civil protection, agriculture, livestock, health, Energy, disaster risk reduction management, tourism, infrastructure, transport, research etc.) are exchanging ideas to draft out relevant elements, actions, needs, policies and regulations for optimal management of climate risk in all the social and economical sectors.

Based on these steps, it can be concluded that most the requirements of Steps 1 and 2 have been achieved during the first day of this stakeholder workshop. Steps 3 to 5 will be achieved through the continuous work of the same stakeholders and the National Consultant. Under steps 3 and 4 of the process, the operational, strategic and action plan of the National Frameworks for Climate Services aim to coordinate and enable institutions to work together to co-design, co-produce, communicate, deliver and make use of Climate Services for decision-making in climate-sensitive socio-economic sectors. A collaborative operational and strategic action plan will be further developed based on the agreed road map of the National Framework for Climate Service (NFCS) for priority areas (agriculture, health, hydrology, disaster risk reduction, energy) through
meetings, exchange with end-users (farmers, civil societies organizations, farmers, communicators, decision makers, etc.) and hydrometeorological and environmental information producers.

The major outcomes of the process to establish a National Framework for Climate Services include but not limited to:

- Improving the production of weather / climatological information and tailored to meet the needs of end users;
- Building human and technical capacities of Meteorological Services regarding the challenges related to climate change and end users needs;
- Strengthening the capacities of communicators and end users of climate information; and
- Improving inter-ministerial coordination for the enhancement and promotion of hydrometeorological information.

4.2: Group Work to complete a FORM to record the data and information required for the Plan

For the development of Gambia NFCS Roadmap, the participants were split into five thematic sectors. These Sectoral Groups (see Figure 7) included (1) Water Resources, (2) Meteorology, (3) Disaster Risk Management, (4) Energy and (5) Agriculture/Food Security. The task for each sector was to discuss the sector’s (a) institutional framework and policy, (b) dissemination/communication strategies, (c) production of tailored weather or climate information & services and (d) capacity building. The outcome will essentially include weather, climate and environmental information (including data, documents, standards, laws, regulations, strategies, policies, etc.) available, missing, the activities to be undertaken to fill the gaps, technical and financial partners to be mobilized, the schedules and projected deadlines for conducting the activities, etc. The Sectoral Groups were provided with the following Table (Figure 8) in which to record all the relevant information that the Sector would require to be adequately served by the Action Plan for the Gambia National Framework for Climate Services.
Figure 8: Road Map for the NFCS strategic and Action Plan

<table>
<thead>
<tr>
<th>Components</th>
<th>Priorities sectors</th>
<th>Activities to be undertaking</th>
<th>Requested / needs in terms of tailored hyrometeorology and climate information</th>
<th>Implementations agencies / partners</th>
<th>Schedule for implementation</th>
<th>Partners for resources mobilisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Institutional Arrangement/ Policy Framework</td>
<td>Admitted priorities sectors</td>
<td>Main Activities</td>
<td>Existent</td>
<td>No Existent</td>
<td>Main agency</td>
<td>Partners Agencies</td>
</tr>
<tr>
<td>2. Two way Communication strategies</td>
<td>Inter-sectoral Agriculture Meteorology Hydrology Health Energy Disaster Management</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Tailored products/ information</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Capacity Building</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.3: Plenary Presentations of the Outcomes of the Group Work

The following presented for their groups (see Figure 8 for Sectoral Groups).

- Francis Mendy, Farmers Group (Agriculture)
- Pateh Baldeh, Hydrology Group
- Sarjo Fofana, Agrometeorology Group
- Babucarr Fofana, Disaster Risk Management Group
- Musukuta Badjie, Communications Group

The Sectoral Road Maps are contained in Annex B and group discussions of the presentations at plenary are as follows.
A question was asked whether there were any users of weather information present in the room. Responding to the question, a representative from Gambia Civil Aviation Authority (GCAA), emphasized the importance of weather information which they cannot do without. A concern was raised concerning the inadequacy of weather information dissemination forums. In response, the Chief Technical Adviser for the Early Warning System Project said the project could only sponsor 14 pilot sites for information dissemination as at now. He however stated that any institution that is interested can come up to expand the sites, and that the NEMA-Chosso plans to establish additional Pilot Sites.

The following observations and clarifications were made for each thematic sector during the presentations.

**Agriculture and food security**
- It was recommended that land use policy be included in the framework
- It was observed that the institutional framework of the sector was not reflected in the presentation.

**Water Resources**
- Against the issue of financial inadequacy, Mr. Yaya Cham of the Central Bank suggested that the water resources sector should incorporate its activities in the National Development Plan to secure funding.
- Mr. Cham of Central Bank of The Gambia also suggested that there needs to be a joint donor coordinating committee that will always look into financial constraints of sectors.
- Isatou Camara of Ministry of Finance recommended that available capacity be clearly spelt out so that gaps will be adequately assessed.

**Meteorology**
- Mr. Yaya Cham of the Central Bank of The Gambia questioned the availability of a cost recovery program. In response, Mr. Alpha Jallow of DWR clarified that by WMO standards, a plan was in place to effect a cost recovery program.
- Mr. Landing Bojang of DWR wanted to know how cost recovery could be reconciled with free sharing of information sharing that WMO was promoting. Bernard Gomez of WMO and Alpha Jallow noted that processed data may be shared and high frequency data be sold while adding value to data.

**Health**
- Mr. Yaya Cham of Central Bank of The Gambia recommended that the health sector should institute health insurance policy to curtail the high health bills in the country.

**General observations**
- Ensa Bojang representing local communities lamented that several similar workshops have been held in the past yet no actions seem to be taken.
- Mr Bojang also suggested that collaboration be established between local communities
and various sectors. Mr. Tombong Komma of DWR stated that the collaboration process has already started citing the establishment of 14 pilot sites as an example and that not all institutions deal directly with communities.

Major Recommendations

- Develop strategies and strengthen capacities on climate smart agriculture/agro-ecology and resilience to enable mitigation of greenhouse gases, adaptation to climate change impacts, and improvement of land use practices to improve production and productivity through introduction of high yielding, drought tolerant and short duration crop varieties.

- Come up with sector policies (e.g., meteorology) and regulations (e.g., land use) that support the demarcation and maintenance of animal grazing areas, diversification and intensification of livestock production, improvement of pasture management, and updating and mainstreaming climate information in key sectoral policies. These will also facilitate the implementation of the forest policy, and enforcement of related acts and regulations.

- Establish sectoral information systems, outreach and dissemination platforms for awareness raising and training on key sectoral themes such as animal grazing, reforestation, crop production, apiculture, aquaculture, horticulture, understanding climate terminologies and knowledge management, increase access to and promotion of the wider applications of weather/climate information services, and the conduct of national and regional simulation exercises;

- Institutional strengthening (human resources, equipment, mobility and infrastructure) must include upgrading of existing meteorological infrastructure of DWR for better service delivery, allocation of more resources towards disaster risk management, investment on capacity development and enhancement (institutional, human capital, infrastructure, organizational), including a robust human resource strategy to attract, motivate, maintain skilled labour and proper placement of staff as per their competencies, identification and procurement of appropriate and durable equipment to ensure continuous data and information generation;

- Support and strengthen DRR governance and coordination mechanisms including national platform, the Council and DRR committees, enhance institutional collaboration for implementation of DRR and CCA pogrammes;

- DWR, NCC, MoBSE and MoHERST should mainstream water resources and climate information in the education curriculum by September, 2019.

SESSION 5: FOLLOW-UP STRATEGY ON THE DEVELOPMENT OF THE NATIONAL FRAMEWORK FOR CLIMATE SERVICES FOR THE GAMBIA

Mr. Bubu Jallow, the workshop facilitator presented the follow-up strategy on the development of the
NFCS for the Gambia, that includes the following activities.

1. Establish a National Committee for the Implementation of the NFCS in The Gambia (Five Priority and most relevant Sectors);
2. The National Committee supports the Director of Water Resources to finalize the Report of the Meeting and the ROAD MAP;
3. The National Committee supports the Director to develop a Work Plan for the development of the NFCS ACTION PLAN;
4. The National Committee supports the development of the ACTION PLAN;

**DAY 3: 28 June 2018**

**FIELD TRIP TO TWO COMMUNITIES IN KOMBO DISTRICTS**

The workshop wrapped up with a field visit to Kafuta and Toubakuta villages in Kombo East District. The purpose of the field visit was for the participants to have first experience on existing impacts of extreme weather and climate in Kafuta and to get feedback from Toubakuta on the weather and climate information they receive through different communication channels.

![Figure 9: Family Photo of Participants of the Stakeholder Workshop on the establishment of the National Framework for Climate Services of The Gambia](image)
Interaction with Kafuta communities to observe the effects of climate change on the communities

Kafuta village is located in the Kombo East District of West Coast Region of The Gambia with a population estimated to be around 3,000 people and is comprised of nine “kabilos” (Figure 10). The Alkalo or Village Head is Kata Bojang who also leads a Committee of Elders and the Village Development Committee.

The visiting team of workshop participants arrived at Kafuta at about 11:00am. The team was welcomed at the home of the Alkalo (the Village Head). After quickly settling down, the meeting commenced. In his opening remarks, Mr. Tombong Komma of DWR who led the team stated the purpose of the visit as to get first hand information about the impacts the village faces due to extreme weather and climate events. He informed the villagers that the team comprised of representatives from various government and non government institutions.

The villagers welcomed the idea and led the team round the village to assess most affected sites. Figure 11 shows images of the interactions between the Village Elders and the NFCS Workshop participants.

Figure 10: Kafuta and its Kabilos
Salinized Swamps in Kafuta

Soil Erosion and Low water levels are major impacts of climate change in Kafuta

Village Elders welcome the NFCS Workshop Participants

Kafuta Village, Kombo East, West Coast Region, Gambia

Figure 11: Images gathered during Field Visit to Kafuta Village Community
The table below presents the salient information gathered during the field trip in Kafuta.

<table>
<thead>
<tr>
<th>SITE</th>
<th>IMPACTS</th>
<th>SUGGESTIONS / ACTION POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stream</td>
<td>Drying up of stream; high sediment deposits; Low fish catch</td>
<td>Study / research needs to be conducted</td>
</tr>
<tr>
<td>Local dike (local initiative to control runoff)</td>
<td>Not sufficient to control runoff; No proper engineering design</td>
<td>DWR should take lead – invite relevant institutions to a stakeholder meeting; Create a diversion channel towards the stream</td>
</tr>
<tr>
<td>Main road</td>
<td>Construction defects; Runoff repels and floods nearby compounds</td>
<td>Create culvert around new market site to allow water to cross into the downstream</td>
</tr>
<tr>
<td>Source of runoff is the Casamance area</td>
<td></td>
<td>Introduce surface runoff harvesting technology before the village</td>
</tr>
<tr>
<td>Houses</td>
<td>Windstorm blows off rooftops</td>
<td>Introduce wind breakers on the south east direction</td>
</tr>
</tbody>
</table>

**Interaction with communities of Toubakuta to observe reception and dissemination of climate early warning information**

In Toubakuta the team held a meeting with the villagers. Toubakuta is one of the 6 pilot sites under the Early Warning System Project Phase I. The Toubakuata Pilot Site consists of a Radio Listening Group and Kanyaleng Group. To simulate the reception of early warning information from the Central Forecast Office of the National Meteorological Services, assimilation of that information and the subsequent dissemination of the information to communities of Toubakuta and surrounding villages, the Radio Listening Group of Toubakuta presented a short drama (Figure 12) showcasing conservative farmers who won’t accept weather forecasts and others who accept weather forecasts.

![Figure 12: The Drama performed by the Toubakuta Radio Listening Group and their Audiences](image)
During the discussions following the Simulated Drama, Mr. Bernard Gomez of WMO and Dr. Pascal YAKA of NFCS both expressed appreciation to the village and urged them to continue to promote weather forecasts. Dr. Pascal particularly requested that the villagers share their experience with climate service providers to them and also share their knowledge on traditional indigenous weather forecasting.

On behalf of the villagers, Penda Sowe showed appreciation for the climate services they receive. She stressed the relevance of the service and pleaded with all and sundry to accept it. Mr. Fabakary Sanneh representative of village leader shared some indigenous knowledge (table below) he learnt from his grandfather.

<table>
<thead>
<tr>
<th>Table of signs and their interpretation of the Climate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sign</strong></td>
</tr>
<tr>
<td>When mango trees start flowering from bottom towards the top</td>
</tr>
<tr>
<td>Few stars in the sky</td>
</tr>
</tbody>
</table>
## ANNEX A

### 1. Farmers Group

#### List of Group Members

<table>
<thead>
<tr>
<th>Name</th>
<th>Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Demba N.A Trawally</td>
<td>NARI</td>
</tr>
<tr>
<td>Mr Musa Sowe</td>
<td>NACOFAG</td>
</tr>
<tr>
<td>Mr Francis Mendy</td>
<td>MoA</td>
</tr>
<tr>
<td>Mrs Kaddy Camara</td>
<td>Kafuta</td>
</tr>
<tr>
<td>Mr Baboucarr Sanyang</td>
<td>GAF</td>
</tr>
<tr>
<td>Mr Momodou Ceesay</td>
<td>Jissadi</td>
</tr>
<tr>
<td>Mr Hatab Hydara</td>
<td>Kafuta</td>
</tr>
<tr>
<td>Mr Sulayman J. Jabang</td>
<td>GCAA</td>
</tr>
<tr>
<td>Mr Ensa Bojang</td>
<td>Kafuta</td>
</tr>
<tr>
<td>Mr Amadou Njie</td>
<td>NACOFAG</td>
</tr>
<tr>
<td>Mr Lamin Saine</td>
<td>DLS</td>
</tr>
</tbody>
</table>

Meteorological, climatological and hydro-meteorological information for users and making communication on meteorological, climatological, hydrological, environmental information, products and services, weather risk management and early warning system.

<table>
<thead>
<tr>
<th>Activities</th>
<th>Channel of Communication</th>
<th>Constraints</th>
</tr>
</thead>
</table>
| Public Advocacy                   | Champions, Seminars, Whatsapp, Twitter, Facebook, Newspapers, TV, national and community radio stations, posters, leaflets, magazines, videos, bulletins, reports, conferences, meeting phone calls, journals, publications, brochures. | • Lack of funds  
• Inadequate technical skills  
• Inadequate facilities  
• Limited knowledge  
• Political interest |
| Farmers                           | Whatsapp, farmer focal points, talk shows, drama, ‘nkayalleng’, ‘Senela’ (Village-level film showing), village square (bantaba), religious heads, calendar | • Lack of funds  
• Inadequate technical skills  
• Inadequate facilities  
• Limited knowledge  
• Political interest |
| Media Relations                   | Champions, Local and International Media focusing on Africa (newspapers, magazine, TV, radio), websites | • Limited capacity  
• Change of mind-set |
| Community/Stakeholder partnership and engagement | Champions, Whatsapp, Twitter, Facebook, Community Radios, community outreach/field visits, regional directors, campaign, MIS, NASS, VDCs | • Limited funds  
• Limited human resource (quality and quantity)  
• Mobility  
• Motivation  
• Attitude/mentality  
• Limited equipment  
• Weak line MDAs coordination |
| Digital Engagement                | Whatsapp, Twitter, Facebook, Agriculture and environment ministries’ websites, blogs    | • Poor infrastructure  
• Poor access to information |
| Academic Institutions (Primary to University level) | Curriculum, professional/specialised training, farmer field schools | • Inadequate funds  
• Limited personnel  
• Limited capacity (researchers, extension officers, Poor channel of communication) |
## Group 2: Communication and CSO: Using communication to disseminate climate information

<table>
<thead>
<tr>
<th>INSTITUTION</th>
<th>PRODUCTS</th>
<th>APPROACHES/HOW?</th>
<th>CHALLENGES</th>
<th>GAPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>NDMA</td>
<td>Annually received JAS and shared with various stakeholders</td>
<td>This information is shared through: -Face to face meetings -use of media-(radio, newspaper) --Email list serve -Use of regional disaster management committees and structures, VDCs</td>
<td>-Bulletings are sent to individual who might not be proactive to widely share with all relevant stakeholders -Had to reach populace are hardly reach through this medium -key stakeholders left out in the email list serve -lack of a functional coordination mechanism</td>
<td>-Use of Hotline via various GSM operators _use of television -partnerships with universities, MOBSE and higher institution of learning in terms of research -use of giggles -use of social media -email list serve should include all staff and relevant stakeholders</td>
</tr>
<tr>
<td>Water resources</td>
<td>-Seasonal weather forecast</td>
<td>-Weather forecast in effective as it does not reach the hard to reach</td>
<td>Seek partnership with MoHERST (universities and institution of learning), department of information service, directorate of health promotion, MOBSE (Non Formal unit, Environmental Clubs in Schoolsassociation of health journalists, GPA, Gambia maritime administration, GCAA)</td>
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</tr>
<tr>
<td></td>
<td>-Daily weather forecast and bulleting (marine forecast, aviation, for research)</td>
<td>-weather forecast is once in 24hr</td>
<td>-partner with private radio stations, GSM companies</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-10 days agro-metrological bulleting</td>
<td>-weather forecast is only in English</td>
<td>-produce own radio giggle and share with media outlets</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-Production of weather glossary</td>
<td>-email forecast is valid for 72hrs and is also only in English</td>
<td>-Use of music with renowned musicians</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>-Pilot sites are 14</td>
<td>-lack of interest from community members which needs to be built via sensitization for trust and utilization</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>for a population of 1.9m</td>
<td>-more investment on capacity building and recruitment of the needed human resource</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>-interpretation of weather information</td>
<td>-invest and incentivized trained staff</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>-inadequate human capacity</td>
<td>-more investment on capacity building and recruitment of the needed human resource</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>-disseminate of the weather forecast to all the end users in all languages in a simplify languages (MOBSE can be an assets)</td>
<td>-get up to date metrological equipment</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>-produce cabinet paper on seasonal outlook for decision making</td>
<td>Press releases</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>-embark on community sensitization via community radio and outreach television</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>-Mail circulation</td>
<td></td>
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</tr>
</tbody>
</table>

1 Application of metrology on crops calculated in degrees taking daily
# 3 HYDROLOGY GROUP

<table>
<thead>
<tr>
<th>SERVICE</th>
<th>SERVICES PROVIDED</th>
<th>GAPS, LIMITS AND FAILURES</th>
<th>SUGGESTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrological services</td>
<td>Monitor surface and groundwater water quantity and quality Generates and keeps water level measures, discharge, saline front on river, TDS, EC, water temperature Shares information and data upon request Shares seasonal hydrological forecasts Contributes minimally to decadal agro-meteorological forecasts</td>
<td>Technical incapacity to do flood forecasting Inadequate funding to expand monitoring (more discharge monitoring points) Challenge in maintaining hydrometric equipment – topography of country exposes equipment to submersion Lack of real time data for easy forecasting Lack of capacity to adequately manage and develop water resources</td>
<td>Capacity building on flood forecasting Develop groundwater models to process water balance at any given time Develop surface runoff models to predict runoff volumes given any rainfall forecast</td>
</tr>
<tr>
<td>Information and Communications Unit</td>
<td>Disseminate all forecasts produced by DWR Use website, email list, publications, national television, community radios, radio listening groups, traditional communicators, warning flags at fishing centres</td>
<td>Display boards: yet to be handed over, information will only be uploaded manually on daily basis Few pilot sites</td>
<td>Update the daily weather forecasts to hourly forecasts Use posters Share films produced at local communities with national TV Translate forecasts to local languages for illiterate viewers Increase pilot sites for wider coverage</td>
</tr>
<tr>
<td>Disaster and Risk Management</td>
<td>Receive JAS seasonal, marine and daily forecasts and share with stakeholders Develop a contingency plan in case to disaster Advise stakeholders on impending climate induced disasters</td>
<td>Lack of access to all forecasts Few forecasts accessed are not regular Lack of understanding of meteorological terminologies Lack of funding and human resources</td>
<td>Collaborate with Planning Unit to develop climate change friendly land use plan and housing policy.</td>
</tr>
<tr>
<td>Meteorological and Climatologic services</td>
<td>Produce many forecasts and distribute ➢ Public weather forecasts on TV in English ➢ Created community radio partnership ➢ Seasonal forecasts used for food security and early warning ➢ Aeronautical forecasts ➢ 24 hourly marine forecasts</td>
<td>Lack of institutional email addresses to share information Lack of human resources Inadequate financial resources Low access to media (TV) – provincial population Frequency of information dissemination is low</td>
<td></td>
</tr>
<tr>
<td>Agro-meteorology</td>
<td>Produce outlook and decadal forecasts on ➢ Crop performance ➢ Livestock situation ➢ Current market situation</td>
<td>Lack of capacity Lack of equipment to continue the once monitored soil moisture content and crop water requirements</td>
<td></td>
</tr>
</tbody>
</table>
4 AGROMETEOROLOGICAL GROUP

List of Group Members

• Kebba Dukureh DWR
• Alagi Nyan DWR
• Samba Jallow DWR
• Yaya Cham Central Bank
• Lamin F Badjie KMC
• Abdou Sillah Social Sericty
• Isatou Camara Financial
• Momodou Sowe DWR
• Momodou Saidyleigh Dept Of Fisheries
• Dodou Njie DWR
• Sarjo Fofana DWR
• Ismailia Sanyang DWR

The first Thematic Expert to visit the Group was MR. ALPHA JALLOW, Agro-meteorologists who delivered an ORAL presentation to the Group. He stressed that agrometeorology is a branch of meteorology that studies the relationship between climate and agriculture. The Agrometeorology Unit under the Department of Water Resources is responsible for Early Warning food insecurity and prediction of crop yield. To enable the Unit meets its mandate, data are collected from the Network Meteorological Stations every ten days, it processed and the information is used to develop the Decadal Bulletin which also includes the synoptic situation, agro-meteorological situation, Livestock and Marketing from Agricultural Planning Services, and Crop situation from the Department of Agriculture. Also in the bulletin maximum temperatures, minimum temperatures, and relative humidity are include and provide insights into the warmness, coolness and the amount of water vapour in the atmosphere. Agricultural situation and crop performances are observed starting from sowing to the harvesting; market information and situation analysis are also carried out during the period to ensure the prices of certain commodities at daily and weekly public market (lumos) are tracked and disseminated to the general public. Livestock situations are also observed and included in the Bulletin.

Challenges identified and discussed include:

• The unite is lack of human resources
• The unite wanted to do many observation like
• Soil water content but lack of Instruments
• Unlike the past we used to collecting this data through mobile phone with the intervention of Early Warning Project.

Other useful information includes:
The information that what the department is producing is very relevant to the day to day operations of the farming communities and others users can benefit from the information in order to plan their farming operations for the season, from sowing to harvesting.

The information is sent to all relevant stakeholders and other end users.

The second Thematic Expert to visit the Group was Mr. Tijan Bojang, Weather and Climate forecast and prediction. He delivered the following salient points to the Group.

- Daily weather forecast is communicated to media, such as the Gambia Radio and Television Services on daily basic.
- Through the GOTG/GEF/UNDP/UNEP Climate Change Early Warning Project, the Department of Water Resource signed a Memorandum of Understanding (MOU) with the Communities Radios across the country in order to disseminate forecast and other weather and climate information to the users on daily bases.
- 14 pilot sites and radio listening groups were also created and trained by Early Warning Project - Phase II all geared towards disseminating the forecast and other weather and climate information.
- Seasonal forecasts are normally produce before the start of the rainy season and will reach the end users in good time so as to enable farmers prepare for the incoming season on food security and early warning.
- Marine forecasts are also produce on daily bases and the information includes the state of the sea and any forecast of storms inorder to determine safety to navigate all geared towards saving lives and property at sea. He gave an example of the tragedy at sea of the vessel La Jolla was hit by the storm and capsized with a lot of causalities and loss of property.
- Aeronautical service that is information on Aircraft landing and taking off (I.C.A.O) has warn that no Aircraft should taking off or land without meteorological information which is vital in our day to day operation.
- Flight forecast: before the aircraft departs any airport, the Pilot needs to know the weather situation especially the wind speed and direction and other significant weather that will support the determination of the amount of fuel consumption while flying to other destinations;
- Climate services: data collected and information produced by the National Meteorological Services are used by all sectors and services including Construction, Communication and Academia;

The Group discussed and agreed to the following challenges

- Interpretation of weather and climate information to local language.
- Human resource and capacity building.
- More forecaster is need.
- Some time internet is a problem.
The third Thematic Expert to visit the Group was Mr. Landing Bojang – Hydrology and Water Resources. He informed the Group that Hydrology is divided into two components: Surface water level which is measuring salinity, surface water temperature, Total Dissolve solute (T.D.S) and electrical conductivity. Discharge measurements are conducted because of the river is very useful for irrigation purposes and other domestic uses. Discharge can be observed by usage loggers or river profiling. Flood monitoring normally happens in August and September and such a phenomenon is report to provide advice for proper evacuate from the affected areas. Unban flood forecasting –where water converge at a point and block the way before it empties in the stream. With the new intervention of I.W.R.M. and other relevant stakeholder efforts are being made to to arrest the situation.

Challenges identified include:

- The poor drainage system: The system should be cleared of all blockages and properly constructed to allow the flow of large volume of water during storms.
- Capacity of the Hydrology Division at the Department of Water Resources to enable it advice government on water management, water use and also advise agriculture on water uses.
- Ground water aquifer is being salinized as mean sea level is rising due to climate change, thus leading to increasing levels of salinity and total collifou in boreholes and other water points.

Mr. Tombong Komma, Information and Communication Technician, was the fourth Thematic Expert to visit the Group. He presented to the Group that over the years, Daily weather forecast and other weather and climate information were difficult to produce and disseminate to the public. However, today daily weather forecast and other relevant information are published in the electronic and print media such as the Gambia Radio and Television Services, the information can also be accessed by internet and email services. Website is also created for such information.

He continued to brief the Group the Early Warning System Project - Phase I had translated most common meteorological terms into 5 local languages and trained six Pilot Site Team members and traditional communicators (Kanyaleng Groups) between 2011 and 2014, all geared towards improving access to weather forecasts and climate information in various local language. The Early Warning System Project - Phase II trained 14 pilot site across the length and breadth of the country from 2015 to 2017 and each group is equipped with smart phone and soldier phone with SIM card that call other phone of the same function. Drama Groups have also been trained on how to disseminate information through drama.

After the production of the Seasonal Forecast through regional collaboration, the forecast is
disseminated country-wide targeting communities and the community radio stations. During the period question and answer sessions are conducted on the radio and the television. Efforts are underway to produce, publish and disseminate to end users a Climatological Bulletin on a quarterly basis. An Agro-meteorological Bulletin on early warning food insecurity is already in place and the information is produce in every ten days to the public and the end users. The sectors involved are Agriculture, Water Resources, Livestock, Agricultural Planning Services and the NDMA.

The fifth and final Thematic Expert to visit the Group was Mr. Babucarr Fofana on Disaster Management. He presented his institution as the National Disaster Management Agency which is a Agency that receives information from the Department of Water Resources on seasonal forecasts and climate information. The Agency then uses the information received to plan meetings and conduct mass community sensitization depending on the forecast. At the Regional Administrative level, the NDMA holds meetings at Bantaba to discuss issues relating to forecast. The Agency also conducts assessments depending on the disaster events such as windstorms, floods, among others.

5. Weather Forecast Group

- Email recipients will receive the forecast within 72 hours
- Pilot sites identified
- Local radio stations identified
- Training of participants in 14 sites to interprets send the information to the local communities
- Permission taken from OP informer government
- Now we are free to disseminate the information as soon as we have it ready
- Share information with Senegal
- Farmers are major stakeholders and the policy makers
- Two different seasons (rainy and dry)
- Timing of the release of the forecast to the farmers
- Dissemination of information is a challenged
- The frequency of sharing information is not enough compared to other countries
- Communication facilities provided to the project sites for the interpretation of the information
- No feedback mechanism in place to facilitate improvement
- Members of the TAC to be part of the committees to facilitate information sharing
- The MDTFs will also be very useful for processing and sharing information (Community sensitization
- The project also engaged the Non-formal sector
- Some interpretation to local languages have been done
- Political interference has been a major setback during the former government
- Provide services to the GCAA and this is the most important information before landing and take off
- Enroute information from The Gambia to the next destination
- Marine forecast services for the weather in sea
✓ Climate services data on settlements and for research purposes
✓ Provide seasonal disease forecast

**AGROMETEOROLOGY**

✓ Came in 1970
✓ Use the climate information on agriculture to tell farmers how the crops will be faring relating to
✓ Prediction of the harvest
✓ How crops are doing at the end of the rains
✓ Early warning bulletin is produced every 10 days from May-Oct with 18 publication
✓ Describe of what has been happening in the last 10 days about the movement of the wind to
determine the rains
✓ The quantity of rains in the country
✓ Intensity of the rainfall
✓ It gives the people some knowledge about the raining days so that farmers can know when to sow
their crops
✓ Livestock movement
✓ Cereals market prices rive maize vegetables
✓ NDMA to provide information to enrich the bulletin which ther not doing
✓ Printing and distribution of hard copies is a challenged
✓ Emails become means of sharing information but only to the educated
✓ The rainy season is going to be late
✓ Advice farmers to decide the type of crops to sow
✓ Human resource capacity a challenged and therefore delay in information sharing
✓ Equipment are not readily available for data availability to the beneficiaries

**How NDMA get access to information on climate change**

✓ Receive information from water resources
✓ The information is known as July, August and September (JAS)
✓ Work with stakeholders to share information
✓ Recently started receiving daily weather forecast
✓ They also receive marine forecast

**Recommendation**

✓ If JAS information could be shared with Governor offices
✓ Suggested if information could be shared through heads of institutions
✓ It has been queried disaster reports are well comprehensive and detail
✓ It is agreed information could be shared through emails to the focal person and copy heads of
institutions
✓ There should be training for the NDMAs and forecasters

**Hydrology and Water Resources**

✓ Collection of hydrological data across the country
✓ Collect information on parameters such as PH, salinity, etc
✓ All the water that falls goes to the basin
✓ Does the flood forecasting
✓ Should give water use information but not available
✓ Some policy issue such as compact road, tiled compounds and water could not flow well
✓ Felt does not have mandate to communicate information on key environmental issues
✓ Taking information on groundwater depth
✓ Recommendation
  ✓ Advice agriculture on water use activity, water use efficiency
  ✓ To create some funds for
  ✓ There is no data on water use
  ✓ Logistic issues for data collection
  ✓ To make best use of the Sub Committees related to water resources in the National Assembly

Challenges
✓ The NDMA was not privy to the plan of water resources
✓ Financial resource limitation
✓ Scientific terminologies from water resources are complex for understanding of NDMA
✓ People settling on the water ways without approval from physical planning
✓ The governors normally are not aware of land allocation but only participate in land leasing

RECOMMENDATION
  ✓ Include the Regional Health Directorates
  ✓ To include the MDFTs
  ✓ The use traditional communicators to be trained
  ✓ No monitoring mechanism to facilitate feedbacks from the users

Information Communication Technology of DWR
✓ Produce daily weather forecast on GRTS in English
✓ The technical terms and key messages are translated in the various major languages in the country
✓ Through the Early Warning Project, they have different pilot sites using community radios with presenters and traditional communicators trained on the glossaries
✓ MOU with community radios where they have airtimes
✓ Seasonal forecast information shared with partners and community members. It is also posted on their website
✓ Available mailing list which they use to share weather information with individuals and partners
✓ 10 days bulletin produced from May to October
✓ They are working on some billboards that can be used to publicly display key messages
✓ People have been trained to dramatize the key messages as another strategy of disseminating the information
✓ They collaborate with ACU Weather to share weather information
✓ 9 automatic weather stations that generate weather information

Challenges / Gaps
Recommendation
  ✓ Collaborate with GSM operators on how to be sharing the key messages through SMS
  ✓ To target the adult literacy institutions and groups for information dissemination
  ✓ More sensitization activities needed in the communities
# Annex B

## Health Sector

<table>
<thead>
<tr>
<th>Components</th>
<th>Priorities sectors</th>
<th>Requested / needs in terms of tailored hydrometeorology and climate information and services and related matters (policies)</th>
<th>Activities to be undertaking for each priority sector</th>
<th>Implementations agencies / partners</th>
<th>Delay for the implementation</th>
<th>Funds raising/ partnerships strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Components</td>
<td>Admitted priorities sectors</td>
<td>Available</td>
<td>Gaps</td>
<td>-Main Activities to be done reach hydrometeorological information producers and /end-uses needs</td>
<td>Main agency</td>
<td>Partners Agencies</td>
</tr>
</tbody>
</table>

**PRIORITY SECTOR**

Agriculture&Food security, Water Resources, Meteorology, Health, Energy, Disaster Risk Reduction (Inter-sectoral & specifically)

| Institutional framework / Policy | Health | Health | High attrition rate of skilled health workers. Inadequate skilled competent health workers Low staff production from health training institutions Inadequate basic equipment, consumables and other logistics. Sustainability of health management information system (HMIS) Insufficient drugs and other supplies Weak referral systems medica supplies In adequate infrastructure and ICT equipment. | Motivation of health through numeration and improved working condition | |

**Dissemination, communication and telecommunication, sensitization and lobbying (Intersectoriel& specifically)**
<table>
<thead>
<tr>
<th>Components</th>
<th>Priorities sectors</th>
<th>Requested / needs in terms of tailored hyrometeorology and climate information and services and related matters (policies)</th>
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<tbody>
<tr>
<td>Main Components Admitted priorities sectors</td>
<td>Available</td>
<td>Gaps -Main Activities to be done reach hydrometeorological information producers and /end-uses needs</td>
<td></td>
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</tr>
<tr>
<td>Dissemination/communication</td>
<td>Health</td>
<td>Established Focal point for climate change</td>
<td>Inadequate skill and or training on climate change</td>
<td>Establishment of a Communication links for dissemination of climate change issues affecting health of public through (policymakers, including the media, health professionals, and the public), focusing on solutions to health issues</td>
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<tr>
<td>Production of tailored weather – climate information and services</td>
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<td></td>
<td></td>
<td>Review the PHEPRP to include climate change band adaptation issues</td>
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<td></td>
</tr>
<tr>
<td>Production of tailored weather – climate information and services</td>
<td>Bio-climatological information on epidemic prone diseases</td>
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</tbody>
</table>

Production of tailored weather – climate information and services
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</tr>
</thead>
<tbody>
<tr>
<td>Main Components</td>
<td>Admitted priorities sectors</td>
<td>Available</td>
<td>Gaps</td>
<td>Alerts, advisories and predictions of weather and climate events Prediction of sessional occurrences of special disease out breaks, meningitis, measles, Influenza etc.</td>
<td>✓ Training of health workers on interpretation of climate related issues for end user ✓ Training the national and regional rapid response teams. ✓ Develop TORs SOPs and guidelines on Public Health emergencies and response.</td>
<td>Main agency</td>
</tr>
<tr>
<td>CAPACITY BUILDING</td>
<td></td>
<td>Inadequate skilled and competent health workers coupled with low staff production from health training institutions</td>
<td></td>
<td>✓ The provision and retention of skilled and qualified health professionals through numeration and training. Training for public emergency operation center staff on coordination and responsible to emergencies.</td>
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</tbody>
</table>
# Agriculture and food security

<table>
<thead>
<tr>
<th>Components</th>
<th>Priorities sectors</th>
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<td>Available</td>
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<td>-Main Activities to be done reach hydro-meteorological information producers and /end-uses needs</td>
<td>Main agency</td>
<td>Partners Agencies</td>
</tr>
</tbody>
</table>

**PRIORITY SECTOR**

Agriculture & Food security, Water Resources, Meteorology, Health, Energy, Disaster Risk Reduction (Inter-sectoral & specifically)

<table>
<thead>
<tr>
<th>Institutional framework / Policy</th>
<th>Agriculture &amp; Food Security</th>
<th>ANR Policy and NDP</th>
<th>• Inadequate mitigation and adaptation policies within the ANR</th>
<th>• Developing strategies for the formulation of climate smart agriculture technologies for mitigation and adaptation</th>
<th>MoA</th>
<th>DoA, DLS, NACOFAG, NALOA,</th>
<th>July 2018 to June 2019</th>
<th>GLF, Projects</th>
</tr>
</thead>
</table>

**Dissemination, communication and telecommunication, sensitization and lobbying (Inter-sectoral & specifically)**

<p>| Dissemination / Communication | Agriculture | ANR Policy and NDP | Inadequate sectoral information system, outreach and dissemination platforms | Establishment of sectoral information system, outreach and dissemination platforms. Additional community outreach and dissemination platforms | MoA | DoA, DLS, NACOFAG, NALOA, | July 2018 to June 2019 | GLF, Projects |</p>
<table>
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<tr>
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<td>Main agency</td>
<td>Partners Agency</td>
</tr>
<tr>
<td>Production of tailored weather – climate information and services</td>
<td>Agriculture</td>
<td>Inadequate awareness creation and sensitization on animal grazing and crop production</td>
<td>Sensitization of farmers on animal grazing, reforestation and crop production</td>
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</tr>
<tr>
<td>CAPACITY BUILDING</td>
<td>Agriculture</td>
<td>Inadequate practices and technologies and practices on crops and livestock</td>
<td>Improve production and productivity through introduction of high yielding and short duration crop varieties</td>
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<td></td>
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<td></td>
<td>Diversification and intensification of livestock production and improved pasture management</td>
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<td></td>
<td></td>
<td></td>
<td>Selection and breeding practices to improved production and productivity</td>
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<tr>
<td></td>
<td>ANR Policy and NDP</td>
<td>Inadequate capacity and human resource for the extension services to provide adequate services, farmers organisation</td>
<td>Institutional strengthening (human resources, equipment, mobility and infrastructure)</td>
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<td></td>
<td></td>
<td></td>
<td>Conduct training on the effects of climate change on their livelihood</td>
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</tbody>
</table>
Follow-up strategies for the collaborative and joint implementation and operationalization of the national framework for climate services of The Gambia

Major Recommendations

- Develop strategies for the formulation of climate smart agriculture technologies for mitigation and adaptation
- Strengthen the capacities of farmers on good agricultural and land use practices
- Establishment of National Animal grazing areas
- Enforcement of the policy, forest act and regulations on deforestation control
- Establishment of sectoral information system, outreach and dissemination platforms
- Additional community outreach and dissemination platforms
- Sensitization of farmers on animal grazing, reforestation, crop production, apiculture, aquaculture and horticulture
- Improve production and productivity through introduction of high yielding, drought tolerant and short duration crop varieties
- Diversification and intensification of livestock production and improved pasture management
- Select best practices to improved production and productivity (livestock and crops)
- Institutional strengthening (human resources, equipment, mobility and infrastructure)
- Conduct training and awareness creation for farmers’ organization on understanding the technologies, information dissemination and knowledge management on climate matters.

List of Group Members

<table>
<thead>
<tr>
<th>Name</th>
<th>Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Demba N.A Trawally</td>
<td>NARI</td>
</tr>
<tr>
<td>Mr Musa Sowe</td>
<td>NACOFAG</td>
</tr>
<tr>
<td>Mr Francis Mendy</td>
<td>MoA</td>
</tr>
<tr>
<td>Ms Kaddy Camara</td>
<td>Kafuta</td>
</tr>
<tr>
<td>Mr Baboucarr Sanyang</td>
<td>GAF</td>
</tr>
<tr>
<td>Mr Momodou Ceesay</td>
<td>Jissadi</td>
</tr>
<tr>
<td>Mr Hatab Hydara</td>
<td>Kafuta</td>
</tr>
<tr>
<td>Mr Sulayman J. Jabang</td>
<td>GCAA</td>
</tr>
<tr>
<td>Mr Ensa Bojang</td>
<td>Kafuta</td>
</tr>
<tr>
<td>Mr Amadou Njie</td>
<td>NACOFAG</td>
</tr>
<tr>
<td>Mr Lamin Saine</td>
<td>DLS</td>
</tr>
<tr>
<td>Ms Ramatoulie Hydara</td>
<td>DoA</td>
</tr>
<tr>
<td>Mr Alieu Sowe</td>
<td>NACOFAG</td>
</tr>
<tr>
<td>Ms Musukuta Badjie</td>
<td>AAITG</td>
</tr>
<tr>
<td>Ms Mama Kujabi</td>
<td>Touba Kuta</td>
</tr>
</tbody>
</table>
## Disaster Risk Reduction

<table>
<thead>
<tr>
<th>Components</th>
<th>Priorities sectors</th>
<th>Requested / needs in terms of tailored hydrometeorology and climate information and services and related matters (policies)</th>
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<tbody>
<tr>
<td>Main Components</td>
<td>Available</td>
<td>Gaps</td>
<td>-Main Activities to be done reach hydrometeorological information producers and end-uses needs</td>
<td>Main agency</td>
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<tr>
<th><strong>PRIORITY SECTOR</strong></th>
<th><strong>Agriculture &amp; Food security, Water Resources, Meteorology, Health, Energy, Disaster Risk Reduction (Intersectoriel &amp; specifically)</strong></th>
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<tbody>
<tr>
<td><strong>Institutional framework / Policy</strong></td>
<td><strong>DRR</strong></td>
</tr>
<tr>
<td><strong>National Disaster</strong></td>
<td>- National Disaster</td>
</tr>
<tr>
<td><strong>Governing Council (chaired by VP, NDMA as the Secretariat)</strong></td>
<td>- Irregular meeting of the council and structures</td>
</tr>
<tr>
<td><strong>National Platform for DRR/CCA</strong></td>
<td>- The NDMA policy and strategy are outdated</td>
</tr>
<tr>
<td><strong>RDMCs/DDMCs</strong></td>
<td>- Public not well sensitized on the policy</td>
</tr>
<tr>
<td><strong>Disaster Management Act 2008</strong></td>
<td>- Dissemination of limited</td>
</tr>
<tr>
<td><strong>Policy</strong></td>
<td>- Conduct Regular meetings</td>
</tr>
<tr>
<td><strong>strategy</strong></td>
<td>- Review of the institutional Frame Works</td>
</tr>
<tr>
<td><strong>National Development Plan (NDP)</strong></td>
<td>- Sensitization of the public on the institutional Frame Works.</td>
</tr>
<tr>
<td><strong>Catastrophe Plan</strong></td>
<td>- Enforcement of the Framework</td>
</tr>
</tbody>
</table>

| **OVP/NDMA** | **NEA, Forestry, MOA, MOH, Finance, MoBSE, MoHERST, Security, LGA, DCD, Media, UNCT, NGOs, etc.** | **2018** |
| **Ministry of Finance, NEA, MOA, UNCT,NAM, ECOWAS, UNISDR, UNO CHA, JICA and other cooperation agencies.** | **39** |

**Dissemination, communication and telecommunication, sensitization and lobbying (Intersectoriel & specifically)**
<table>
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<tr>
<th>Components</th>
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<td>DRR</td>
<td>Main Components</td>
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</tbody>
</table>

### Production of tailored weather – climate information and services
- **Dissemination/communication**
  - **DRR**
    - TV and Radio panel discussion
    - Disaster Young Ambassadors
  - **Activities**
    - Develop a communication strategy and implementation plan
    - Establish a communication and information unit
    - Reactivate the Disaster Young Ambassadors
  - **Main agency**
    - OVP/NDMA, MoIC, Ministry of Youth and Sport (NYC), Media, UNDP, UNFPA, Traditional Commentators, UNICEF (Environmental Clubs in Schools), Local Government Authorities etc
  - **Partners**
    - UNCT, Ministry of Finance, NEA, MOH, MOA
  - **Funds raising/strategies**
    - WFP, UNICEF, UNDP, UNFPA, UNEP, MOIC, Ministry of Finance, OVP, etc.
  - **Delay**
    - 2018-2019

- **Production of tailored weather – climate information and services**
  - **DRR**
    - Warning
    - Advisories
  - **Activities**
    - Provide Impact base warning
    - Provision of regular and timely warning information to the general public
    - Provision of regular Watches in addition to warning and advisories
  - **Main agency**
    - DWR (MET Office)
    - NDMA, NEA, MOA, MOH, MOF, WR, NAMS etc
  - **Partners**
    - NDMA, NEA, MOA, MOH, MOF, WR, NAMS etc
  - **Funds raising/strategies**
    - UNCT, Ministry of Finance, NEA, MOH, MOA
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</thead>
<tbody>
<tr>
<td>Capacity Building</td>
<td>DRR</td>
<td>Training on reporting under the SENDAI framework Training on vulnerability and risk assessment Training disaster losses and damage assessment. Training on disaster risk financing</td>
<td></td>
<td>Inadequate human, material, and financial resources</td>
<td>-Main Activities to be done reach hydrometeorological information producers and end-uses needs</td>
<td>NDMA</td>
<td>Ministry of Finance, MOA,</td>
<td>2018</td>
</tr>
</tbody>
</table>
Follow-up strategies for the collaborative and joint implementation and operationalization of the national framework for climate services of The Gambia

- Initiate a meeting with the National Platform on how to address the issues raised.
- Conduct regional Disaster committee consultative meeting

Major recommendations

- Government should allocate more Financial resources towards disaster risk reduction
- Improve on human resource and capacity building
- Retention strategies to be put in place
- Proper placement of staff as per their comparative advantaged of their competencies
- There should be regular meetings at policy level
- Enhance collaboration for implementation of DRR and CCA
## Energy

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</table>

### PRIORITY SECTOR

Agriculture & Food security, Water Resources, Meteorology, Health, Energy, Disaster Risk Reduction (Intersectoriel & specifically)

| Institutional framework / Policy | Energy Policy and Strategy 2015-2020 Sustainable Energy Action Plans (Renewable energy and energy efficiency) | The Policy has specific objectives for energy subsectors (electricity, petroleum, renewable energy and domestic energy). There is no explicit objective for climate/climate change. However, the specific objectives under renewable energy are to promote the use of renewable energy resources (solar, wind, biomass etc) to mitigate climate change. There is no existing collaboration between the providers of climate information and the end users. | Provision of periodical meteorological information such as temperature, solar radiation, wind speed and direction, relative humidity, rainfall, lightning etc… | Dept. of Water Resources | Ministry of Petroleum and Energy | 2018 - 2022 | MOFEA MOFWRNAM MOECCNAR |

Dissemination, communication and telecommunication, sensitization and lobbying (Intersectoriel & specifically)
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</tr>
<tr>
<td>Dissemination/communication</td>
<td>ENERGY</td>
<td>National energy communication strategic plan not available</td>
<td>Needed for The Gambia</td>
<td>Develop a national energy communication strategy including weather and climate information</td>
<td>MOPE</td>
<td>DWR</td>
</tr>
<tr>
<td>Production of tailored weather–climate information</td>
<td>ENERGY</td>
<td>Not available</td>
<td>General weather/climate information available at DWR but not tailored specifically to energy.</td>
<td>Foster collaboration between DWR and MOPE for provision of tailored weather/climate information</td>
<td>DWR</td>
<td>MoPE</td>
</tr>
<tr>
<td>CAPACITY BUILDING</td>
<td>ENERGY</td>
<td>Inadequate human and technical capacity</td>
<td>Inadequate capacity to interpret and analyse weather/climate information relating to energy</td>
<td>Train staff to be able to interpret and analyse weather/climate data</td>
<td>MOPE</td>
<td>DWR</td>
</tr>
</tbody>
</table>
Follow – up strategies for the collaborative and joint implementation and operationalization of the national framework for climate services of The Gambia

- Institutionalise a taskforce between DWR and MOPE to coordinate the collaboration efforts.
- Identify existing strategies documents example RE NAMA, SE4ALL to allow the working group to filter out the most important elements relating to weather and climate services.
- Sign an MOU between DWR and MoPE

Major Recommendations

- Support the upgrading of existing meteorological infrastructure of DWR for better service delivery.
- Training and improvement on human resources and to build their capacity.
- Improve on communication/dissemination strategies to increase access and promote wide use of weather/climate information services.
### Water Resources

<table>
<thead>
<tr>
<th>Main components</th>
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<tr>
<td><strong>Institutional framework / Policy</strong></td>
<td></td>
<td></td>
<td></td>
<td>Establish the NWRMA with well-defined roles &amp; responsibilities</td>
<td>DWR, MoFWR &amp; NAM, PMO, OP</td>
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<td>ADB-AWF, EU, UNDP, UNEP, UNICEF, WMO</td>
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<tr>
<td><strong>Dissemination, communication and telecommunication, sensitization and lobbying (Inter-sectoral &amp; specifically)</strong></td>
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<td></td>
<td>Review and update the Gambia National Water Policy and mainstream climate information in the policy. The updated policy should be shared with all relevant stakeholders, partners and agencies</td>
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<tr>
<td>Water Resources</td>
<td>Department of Water Resources with various units</td>
<td>Gambia National Water Policy</td>
<td>Unclear roles and responsibilities of the various units - no unit with clear mandate to manage and develop the water resources of the country. Climate information is not adequately captured in the water resources policy. In fact the water resources is outdated (2006-2016)</td>
<td>Improve data production. Recruit, train and motivate personnel. Mainstream water resources and climate information in the education curriculum. Provide and sustain the needed equipment to carry out the functions</td>
<td>DWR, MOBSE, MOHERTS</td>
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<tr>
<td>Water Resources</td>
<td>Information sharing through multidisciplinary working groups - Early Warning Bulletin for Food Security</td>
<td></td>
<td>inadequate data generation for all the users. Limited human and financial resources - limited instruments and equipment to carry out the functions</td>
<td>Production of tailored weather – climate information and services</td>
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<tr>
<td>Production of tailored weather—climate information and services</td>
<td>Water Resources</td>
<td>Seasonal hydrological and meteorological forecast, urban flood forecasting</td>
<td>Specific location, magnitude and impact is well defined to the users</td>
<td>Improve on the forecast precision (i.e. indicating location, magnitude &amp; impact)</td>
<td>DWR-Meteorology, NDMA, MoH&amp; SW, Forestry, DoA, Fisheries</td>
<td>UNDP, UNEP, WMO, UNFCCC</td>
<td>Urgent</td>
</tr>
<tr>
<td>Capacity building</td>
<td>Water Resources</td>
<td>WMO fellowship</td>
<td>Limited human resources. Limited funding sources for capacity development</td>
<td>Enhance capacity development programmes. Mobilize financial resources for capacity development Promote lifelong learning and knowledge sharing initiatives</td>
<td>DWR, DoA, WMO</td>
<td>UNDP, UNEP, WMO, UNFCCC</td>
<td>Urgent</td>
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</tbody>
</table>

**CAPACITY BUILDING**
Follow – up strategies for the collaborative and joint implementation and operationalization of the national framework for climate services of The Gambia

Major Recommendations

- MoFWRNAM and DWR should immediately finalize on the establishment of the National Water Resources Management Authority
- DWR and NCC should collaborate in updating and mainstreaming Climate information in the water resources policy by August 2018.
- DWR, NCC, MoBSE and MoHERST should mainstream water resources and climate information in the education curriculum by September, 2019.
- DWR, WMO, UNEP, UNDP should strengthen the mobilization of resources for more capacity development by January 2019.
- DWR, WMO, UNEP, UNDP should identify and procure appropriate and durable equipment to ensure continuous data and information generation

Group Members: Water Resources

<table>
<thead>
<tr>
<th>NAME</th>
<th>INSTITUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Chaba Saidyleigh</td>
<td>DWR</td>
</tr>
<tr>
<td>Mr. Momodou Saidyleigh</td>
<td>DoF</td>
</tr>
<tr>
<td>Mr. Landing Bojang</td>
<td>DWR</td>
</tr>
<tr>
<td>Mr. Leese B. Mendy</td>
<td>DWR</td>
</tr>
<tr>
<td>Mr. Abdou Sillah</td>
<td>SSHF</td>
</tr>
<tr>
<td>Mr. Momodou Sowe</td>
<td>DWR</td>
</tr>
<tr>
<td>Mr. Lamin F Badjie</td>
<td>KMC</td>
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</tbody>
</table>