NATIONAL TRAINING WORKSHOP ON UPTAKE AND USE OF CIS IN DEVELOPMENT AND PLANNING

Report

21ST-22ND June 2018

Ngong Hills Hotel

Nairobi, Kenya

EXECUTIVE SUMMARY.

Climate Change is by far the greatest challenge facing the 21st century and threatening to deny the next generation a future. While the past 23 years have seen substantial milestones toward understanding the whole agenda of Climate Change, adapting and mitigating to it, there is still need to exploit the opportunities within Climate Change for the benefit of the most vulnerable group to Climate Change which is the developing and the least developed worlds.

The key to exploiting the opportunities within the sphere of Climate Change lies in understanding the information that has been gathered and is being gathered in order to enable developing countries such as Kenya to be climate resilient enough to have room to think of innovative ways to exploit the opportunities that accompany Climate Change.

It is for this reason that PACJA (Pan Africa Climate Justice Alliance) in partnership with UNECA (United Nations Economic Commission for Africa) and WISER (Weather and Climate Information Services for Africa) took up the initiative to train 84 young people from across the country from different CSOs inclusive but not limited to youth movements, Environmental movements, among other groups with the aim of trying to pass climate technology in terms of climate information down to the relevant groups who will help disseminate the information to the grass-root levels.

The two-day national workshop that was held on the 20th and 21st of June 2018 at the Ngong Hills Hotel, sought to relate the issues of climate change and climate information with the current happenings in the country related to weather and Climate. There was, therefore, need to involve the Kenya Meteorological Department (KMD) in reference to the recent floods, heavy rains, and landslides that the country had been experiencing. They became crucial to shed light on the processes of Climate Information as a practical example was readily available. They would also give the gaps that they had identified in the process of climate change dissemination so as to enable the participants to to identify opportunities for them exploit.

1Ann Kobia explaining the technical aspects of climate information

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1.0. INTRODUCTION.

1.1. ACRONYMS

ACMAD	African Center of Meteorological Application for Development
AMCOMET	African Ministerial Conference on Meteorology
CI	Climate Information
CIDPS	County Integrated Development Plans
CIS	Climate Information Services
CSO	Civil Society Organizations
ECC	Electrochemical Concentration Cell
EMF	Electro-Magnetic Force
GAW	Global Atmospheric Watch
GFCS	Global Framework for Climate Services
ICPAC	International Climate Prediction & Applications Centre
KMD	Kenya Meteorological Department
KARI	Kenya Agricultural Research Institution
NEMA	National Environmental Management Authority
NGO	Non-Governmental Organizations
PACJA	Pan African Climate Justice Alliance
UNCEA	United Nations Commission for Africa
UNFCCC	United Nations Framework Convention on Climate Change
WISER	Weather Information Services for East African Region
WMO	World Meteorological Organization

1.2. BACKGROUND

Continuous adaptation to risks, uncertainty, opportunities and impacts posed by climate variability and change is fundamental to resilient livelihoods and development. The ability to make good adaptation decisions and enhance resilience depends on, among other factors, improved access to, understanding and use of context-specific and actionable climate data and information. Climate information is increasingly being recognized as a valuable resource for adaptation, climate resilience, and risk-informed decision making. Credible information about the past climate, recent trends and changes, likely future trajectories, and associated impacts is key to climate risk management.

Planning and implementation of development projects mostly rest in the hands of the county government who are the people on the ground. However, when they plan during the county assemblies, climate information is not available to inform the discussion they are making. The media has not been very proactive in providing the correct information and in time for discussion making. Once involved and their capacity built the media will be the backbone for disseminating climate information in a way that the lay people (decision makers) will understand. Youth are the leaders of today and tomorrow and they have to generate a habit of including climate information in development planning.

For a country to benefit from improvements in the quality, quantity, and range of climate data, products and information, users need to know how to access the services, how to interpret the data/products/information (limitations in terms of accuracy and applicability, temporal and spatial

domains, how the data has been quality controlled, how it has been produced) and who to contact for further information

This training workshop was enriched by Field trip to Kenya Metrological Department (KMD) to learn and see practically how CI is packaged and disseminated to various users, processing of climate data into information with a focus on the needs of the climate service users.

The training workshop was designed to help CSO and other non-state actors strengthen their ability to provide user-oriented meteorological and climate products and also enhance user's ability to access meteorological and climate data to make their use in decision making at national, county and local levels

1.3. OBJECTIVES OF THE TRAINING.

Main objective

The main objective of the training was to build the capacity of the National Government and development stakeholders in the uptake and use of CIS building on concrete cases and experiences of utilization of CIS in development planning, policy and practice in Kenya

Specific objectives

• Build capacity of CSO, county governments and other stakeholders in the uptake of CIS

• To pursue strategies to improve the involvement of women in Climate Information Service in order to achieve efficient interventions.

• To identify practical options for enhancing uptake and use of CIS

• To explore ways of strengthening the enabling environment for CIS uptake.

1.4. METHODOLOGY.

The methods that were employed were:

- Power-point presentations.
- Group discussions and presentations.
- Field trip and practical.

1.5. OUTCOMES OF THE TRAINING.

• Enhanced Capacity of CSO, County government and other stakeholders on the uptake of CIS

• Strategies to improve the involvement of women in CIS uptake pursued to enhance their climate change adaptation efforts

• Interventions practical options for enhancing uptake and use of CIS identified ways of strengthening the enabling environment for CIS uptake explored 4.0 Participants

• The workshop will bring together 60 Participants drawn from Climate Scientists, Gender Experts, Civil Society Organization, Media, Academia, youth and women

2.0. OVERVIEW OF CLIMATE INFORMATION SERVICES

2.1. INTRODUCTION REMARKS.

Kuria (PACJA Senior Programme Manager) welcoming participants to the workshop

The meeting began by welcoming the members present to the workshop which was done by Madam Hellen Njeri from PACJA. She took the members through a round of introduction where each stated their names, affiliate organizations and their understanding of what Climate Information was and their expectations from the training. Key expectations that were mentioned were some participants expecting to learn how to integrate the political world into climate information dissemination to reach the grassroots level. Others wanted a clear understanding on indigenous people as players of climate information dissemination.

2.2. INTRODUCTION TO CIS TRAINING

Madam Ann Kobia from PACJA and Mr. Charles from UNECA took the floor to introduce the participants to Climate Information and Climate information services. The common key outcome of both introductions that came out was the importance of training towards enabling better management of risks to help better maneuver around Climate Change in terms of adaptation and mitigation measures, incorporation into development plans on a line with international, regional, national and even local goals.

Ann Kobia from PACJA giving the introduction about climate information service to the participants

2.3. GROUP DISCUSSIONS.

The participants were then led out to group discussions, moderated by Madam Kobia in five different groups. Here they were to discuss on the:

- The role of CI/CIS for effective development planning and policy in; development planning, agriculture and food security, Disaster Risk Reduction and Infrastructure and

construction.

- The types of CI/CIS.
- The providers and interpreters of CI/CIS information.

2.4. GROUP DISCUSSIONS PRESENTATIONS.

Each group had an opportunity to present their discussions which had the overall overview as follows:

Q1: **Role of CIS**

A. Development Planning

- Helps climate-proof development plans
- With the relevant Knowledge and information, it will highly influence decisions made as regards to development. Financial/time/AMOUNT.
- Integrating Climate Change into the Curriculum– architecture - agriculture

B. Agriculture and food security

- Enhances climate-smart Agriculture (what crop to plant where and when)
- Influences Policymaking - Policies around Agriculture and food security should be in place and incorporated within the CIDPSs –irrigation/ rain
- Climate proofing Agriculture through Insurance schemes – how careful/ resistant

C. Disaster Risk Reduction

- Early warning systems – evacuation plans, processes to follow in case of a disaster.
- Mapping out of areas that are prone to climate change risks such as Murang'a and landslides and putting appropriate measures beforehand-e.g. allocating funds, having disaster management team on standby...
- Influence the determination of compensation-acts as a guideline e.g. Warsaw Loss and Damage
- Enhances effective response- enables better preparedness of the disaster management team to enable pre-disaster-response rather than post-disaster-response.
- Mitigation measures
- Factor in Climate infrastructure/house construction or roads will determine how disaster affects you.
- Building Community resilience- empowering the community to be able to maneuver around climate change without being dependent.

D. Infrastructure and Construction

- Helps to map out disaster-prone areas in relation infrastructure

- How and what to build – DESIGNS /LOCATIONS/MATERIALS/SITE
- Climate-proof buildings that already exist in order to enable them better weather effects of climate change.
- Integrating climate change in the field of architecture and engineering as a means of providing them with regularly updated information relevant to their fields.
- Informs on the scheduling of work to enable head-on collisions with climate change.

Q2: Types of CI

- Basic.
- Intermediate
- Advanced

Q3: Providers of CIS

Relevant local, national and international agencies such as:

- Kenya Meteorological Department.
- Climate Change Directorate
- NEMA.
- NGOS/CSO
- UN agencies - UNFCCC
- Academia such as universities, polytechnics.
- Indigenous institutions.
- Rainmakers and traditional forecasters.
- Media such as TV stations and radio stations
- Research institutions such as KARI.

Communication of CIS is done through the media vessels

CIS interpretations.

- Intermediaries – KARI
- rainmakers – traditional forecasters
- Extension service providers
- RELEVANT MINISTRIES`

3.0. CLIMATE INFORMATION FOR DEVELOPMENT

3.1. CHARACTERISTICS OF CLIMATE INFORMATION SYSTEMS.

Madam Hellen from PACJA then took the participants through the characteristics of Climate information systems which were highlighted as follows:

- **Resolution** - The resolution of climate information products greatly affects how they can be understood and interpreted. Resolution of climate information products is identified by the temporal and spatial scales used. Spatial scales many range from global to local. Temporal scales may range from monthly, to seasonal to geological.
- **Accuracy** - The accuracy of weather forecasts has improved over time and people can rely on a reasonably accurate forecast of the weather in a particular location for up to 7 days in advance. Climate predictions are much more probabilistic and complex to produce. Climate simulations, models and scenarios are simplified representations of the future climate and provide information on possible climate impacts

3.2. PROVIDERS OF CLIMATE INFORMATION.

Madam Hellen passed the ball to Madam Rosemary Barasa from the University of Nairobi, Institute of Climate Change to make a presentation on the providers of Climate Information. What came out clearly was that the providers of climate information and services collect, analyze and package climate and weather data. Climate information was produced at national, regional and international levels by the National Hydro-Meteorological Services (NHMS) NHMS who are mandated to continuously generate and disseminate weather and climate data from across a country's territory and develop and issue forecasts and warnings. They often manage the physical weather observation infrastructure in addition to human capacities and networks necessary to collect and analyze data, generate and spread climate information products to the public.

3.3. CLIMATE INFORMATION FOR DEVELOPMENT.

Madam Rosemary would then take the participants through climate information for development where the key thighs highlighted were:

- **The need to enhance Policy Change on Natural Resource Management and Climate Change**. Non-state actors needed to Supports communities and local government to use seasonal climate forecasts and information on climatic uncertainty for decision making an aspect of Community Based Adaptation.
- **Participatory Scenario Planning** was needed to create a multi- stakeholder forum to encourage communities and Government to exchange information and encourage the uptake of climate information.
- **Stakeholders in Participatory Scenario Planning (PSP)** Include: Local Government, Traditional Forecasters, Kenya Meteorological Department, National Drought Management Authority, National Disaster Risk Management Commission, County Health Office, Agriculture Sector Development, Support Programme Media.

- Once the plans are concluded they are disseminated to specific users like: Pastoralists, farmers, health officers, Disaster risk managers.

4.0. CIS AND THE KENYA METEOROLOGICAL DEPARTMENT

4.1. CIS THROUGH THE LENS OF KMD.

The second day begun with a presentation from Mr. Samuel Mwangi from the Kenya Meteorological Department who took the participants through how the department tackles the issues of Climate Change. He introduced the term Climate risk as climate induced hazards such as extreme and severe weather events, droughts, floods, heat waves that may be liked to climate variability and affects livelihoods in terms of agriculture and fishing.

He highlighted the role of KMD as implementation and dissemination if CIS through outreach and extension services to reach the community. He reiterated that the services were cross-cutting inclusive of national and county governments, NGOs, CBOs and FBOs.

He pointed out areas of Isiolo, Kitui, Garissa and Siaya as counties that were already using CIS from KMD.

He highlighted some of the challenges they faced were:

- Inadequate resources to implement CIS plans across the counties
- Gaps in use/application of Climate Information.
- Insufficient partnership and collaboration with key stakeholders.

4.2. GROUP DISCUSSION.

Madam Hellen took the participants through group discussion on how decision makers can strengthen CI/CIS and their use. The key outcome of this discussions were as follows:

- **Maintenance of an efficient telecommunications system** for rapid collection and dissemination of meteorological information required for national and international use in accordance with the World Meteorological Organization (WMO) and the International Civil Aviation Organization (ICAO) procedures;
- **Co-ordination of research in meteorology and climatology** including co-operation with other authorities in all aspects of applied meteorological research, and the maintenance of the National Meteorological Library;
- **Evolvement of suitable training programmes** in all fields of meteorology and other related scientific subjects which are relevant to the development of Kenya and other

countries that participate in the Department's training activities.

- **Provision of meteorological services** to military aviation for the safety of the Kenya Air Force aircraft for national defense;
- **Organization and administration of surface and upper** air meteorological observations within its area of responsibility and the publication of climatological data

4.3. TRIP TO THE KENYA METEOROLOGICAL DEPARTMENT.

The Global Atmospheric Watch (GAW)is a subsection of the World Meteorological Department which came to be in 1989 after the 1972 Agenda 21 summit in Stockholm that triggered attention towards how anthropogenic activities were affecting the environment. Its main work was to measure air pollution and the status of the ozone in the atmosphere to enable environmental scientists to better manage the environment.

The Kenyan (GAW) was set up in 1996 at Dagoretti Corner under the Kenya Meteorological station that with other branches being in places like Mount Kenya. This station helps to monitor the health of the environment on hourly, daily, weekly, monthly and annual basis, the data collected from this station is sent to various departments locally such as The Jomo Kenyatta International Airport to help them in the landing, taking off and flight in general. Complex data that cannot be dissected is sent to the international head offices to for further interpretation.

How to measure the vertical profile of the ozone.

For this, a two-part equipment called the ozonesonde is used. It consists of a balloon and the electrochemical concentration cell (ECC).

The device has both the cathode and anode compartment. Before the start of the process, these compartments are emptied and cleaned with the help of separate syringes and potassium iodide (KI). They are then both filled with potassium iodine solutions which are at different concentrations. This difference in concentration forms the background for the operation of this device. An EMF is generated. Iodine is then formed in the cathode half-cell when the sensors enter the ozone. The iodine is then converted to the iodide and in this process, the electron flow together with the rate at which the ozone enters the cell per unit time is derived. The two parameters can be used to calculate the ozone concentration. The derivation and the calculation are done on the computer with an application called ECC-ASAP. This cell is to be attached to a box called the ozonesonde, which will be attached to the balloon filled with hydrogen that will then be hoisted up in the air. The balloon is to travel up to a distance of about 30-35 km from the ground and is to stay in the air for a period of up to two hours then it should burst.

Filling up of the balloon with hydrogen to measure the vertical profile of the ozone

The Observatory.

The station consists of the temperature house that has the hot and dry thermometers and the maximum and minimum thermometers.

The maximum and minimum thermometer readings are to be taken twice in a day. Early in the morning at 9 am every day and at 5 pm every day.

The dry and wet thermometer readings are to be taken on an hourly basis in each and every day for all days of the week.

The weather station also has the rain gauge section. This section consists of both the automatic and manual thermometers. The readings from the manual are to be taken at the mediate and intermediate times of the day. The mediate times are 0000hrs, 0600 hrs, 1200hrs, and 1800hrs. The intermediate times are in between the times like at 0300 hrs, 0900hrs, and 1500hrs. The readings are then recorded in a record sheet.

The solar section consists of an instrument that will measure the sun rays that comes directly from the sun and the sun rays that have been reflected back from the ground. This data is also collected on a daily basis

The wind section consists of an automated wind speed measuring device that measures the wind speed in relation to the amount of water that evaporates and is therefore attached to a basin of water that is renewed on a daily basis.

Participants being taken through measurements of weather

The readings are taken back to the office and the radiosonde is set up.

The device is registered on the computer through the software called Digicora. It is then taken outside to be attached to a hydrogen-filled balloon similar to the balloon for the ozonesonde only that this balloon is smaller in size. The balloon is then hoisted up in the air and is expected to stay in the air for a period of up to 2 hours traveling up to 30 km after which it will burst.

Participants being taken through the process of weather recording

Device used to disseminate radio waves

During the two hours, it will be able to transmit weather data to the computer software that will confirm the weather conditions taken from the readings at the weather station. This data is then to be transmitted to the relevant institutions such as the airports. The data can be availed to the public on demand at a substantial fee.

The process of disseminating weather information to the public especially on tv stations

5.0 RECOMMENDATIONS

5.1. REVIEW OF OBJECTIVES.

It was clear that all the objectives of the training had been met and the training had fulfilled its intended purpose.

More such workshops are to be organized at the county levels which should feed into the national workshops.The trainings should be held on an annual basis.

5.2. KEY LEARNINGS.

Climate information needs to be service-orientated and integrated into decision making from national through to the community level.

- The success of resilience programmes will depend on their ability to create opportunities to strengthen climate services in the country. Additional support is needed to (i) strengthen the capacity of information providers, so they are able to produce more localized, timely and accurate climate information; and (ii) institutionalize two-way communication, between producers and end-users, so those who need it can continue to use information over time to build resilience.
- The generation and communication of climate information to build resilience needs to be linked to development processes through its insertion in sectoral plans and decisions on basic service delivery. Participatory approach scenarios are key to achieving this development plans. Participants insisted on the need to develop a concrete strategic communication plan to make people understand CIS at grassroots level.
- The participants also expressed their interest for future capacity development especially in data management and accessibility tools and also increase support to the efforts of climate data rescue for their country. Participants suggested the need to have ICT centers at county and local level for CIS dissemination.
- Concerns were raised that WISER should collaborate with PACJA, UNCEA and KMD to provide training that would enable use and generation of weather and climate forecast

  and most so especially at the sub-national levels.
- Additionally, others suggested: (i) There is need to Come up with opportunities for creating job for youths on CIS across Kenya (ii) Take advantage of curriculum review and incorporate CIS (iii) Building continuous Persistence of everybody in climate Information discourse and issues on Indigenous Knowledge (iv) KMD needs to cut down the cost of climate data for students doing research and academia to enable easier dissemination of CIS.
- Recognizing that drought is a natural hazard that is quite distinct from other natural hazards in terms of its slow onset, spatial extent, and nonstructural impacts, the participants of the meeting recommend that Kenya develop national drought policies and preparedness plans that address the unique features of drought based on information from KMD.
- A vulnerability profile should be completed to capture the socioeconomic conditions of diverse

population groups especially indigenous knowledge

6.0. CONCLUSION

Timely provision of high quality climate data, information, products and services in support of decision-making in climate sensitive sectors will significantly reduce the negative impacts of climate variability and change.

The key outcome of the workshop was climate services capacity enhancement of CSO's, Youths, and Marginalized groups. One of the recommendations was the need for continuous capacity development of CSO, County government, Youths, Pastoralist and other users from climate sensitive sectors in Kenya on effective use of climate services.

The Kenya Meteorological Department (KMD) and WISER serve as useful source to climate information and have become one of the most effective mechanisms for developing user-driven products and services and communicating those to users at national, County and local scales. Thus, KMD are recognized as one of the key elements in the implementation of the national Framework for Climate Services. A drought preparedness and mitigation plan should be integrative and proactive, and should incorporate the following elements:

• Drought monitoring and early warning system;

• Drought risk and impact assessment; and

• Institutional arrangements, including mitigation and response actions and programs. The training workshop created an enabling environment for better access, use and application of weather and climate information.