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Summary of Events: Workshop on Creating Value Added Weather and Climate Services through Innovative Public Partnerships

Kampala, Uganda
3-5 March, 2015

3 March, 2015

The workshop opening was led by Bonizella Biagini, CIRDA Programme Manager; Almaz Gebru, UNDP Uganda Country Director; Mary Power, Director of Resource Mobilization for WMO; H.E. Ephraim Kamuntu, Minister of Water and Environment for the Government of Uganda; and Hon. Hillary Onek, Minister of Relief and Disaster Preparedness for the Government of Uganda. Mary Power expressed WMO's support of the CIRDA Programme and its willingness to work together to meet the Programme's goals. Bonizella Biagini provided a brief overview of the CIRDA Programme and its 2015 Work Plan. H.E. Ephraim Kamuntu stressed the vulnerability of Uganda to climate change as well as the importance of enacting adaptation measures that will protect development and growth. He welcomed the CIRDA Programme, particularly its innovative approach on reaching out to the private sector to assure the sustainability and impact of met services. Hon. Hillary Onek mentioned the challenges of reaching out to local populations to provide early warnings to extreme climate events and stressed the importance of this aspect of CIRDA's work.

Project Managers from the 11 CIRDA partner countries were invited to present the progress, challenges and sustainability plans of the climate information/ early warning system projects currently being implemented in their countries.

- **Benin:** Has been having problems in reaching and alerting small scale fishermen. The project is working to improve hydromet networks. They foresee that EWS will enable them to strengthen weather forecasting and in resilient development and adaptation. The EWS envisions 2 platforms one for early alerts (hydrology and met) while the second network will focus on actionable measures. Both networks will be headed by Disaster Preparedness Department. The project has recruited personnel and has identified partners at a government level. A baseline study has also recently been undertaken.
- **Burkina Faso:** Has planned the procurement of equipment by 2015 and in 2016 they plan to increase the number of Met and Hydromet stations to assure adequate national coverage. The development of PPPs is highly relevant to their project particularly for the collection and dissemination of data. As a result they have begun to work with Telecel Faso.
- **Ethiopia:** Has developed a met-stations' master plan that takes into consideration their existing stations (1,200 stations and more than 100 AWS) currently reporting to their national server as well as new sites that have already been identified. Partnerships with the Ethiopian Agricultural Agency as well as with insurance companies have been contemplated and they are already working with the civil aviation authority. A team to



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study cost recovery and financial sustainability has also been established. Through these initiatives they hope to expand on their current dissemination methods (web, email and radio).

- **The Gambia:** Gambia recently joined the CIRDA Programme, however its national climate information project began in 2011. The main focus so far has been focused on repairing existing infrastructure and installing synoptic met stations to increase coverage of remote areas. Limited skills and human capacity have been a key challenge and thus through the project several training sessions have been promoted. Looking forward, an important priority will be the integration of climate change considerations into policy making processes and particularly into the development of a national climate policy. Key obstacles have been: limited political will to achieve targeted outcomes, lack of coordination among relevant actors, and the inability to communicate effectively to local communities.
- **Liberia:** The establishment of PPPs is considered strategic particularly in assuring financial sustainability as well as for message dissemination. Stressed the desire of working more in collaboration with CIRDA Partner Country teams
- **Malawi:** Has enhanced its climate monitoring capacity through the procurement of equipment such as 10 AWS as well as by promoting training on equipment maintenance. Local ownership has been a focus of the project via the organization of meetings with communities. An assessment of its early warning system has also been conducted with a focus on improving the dissemination of messages. A user need analysis is currently being conducted. PPPs have been initiated with hosting technologies (Globe Internet) as well as with telecoms. PPPs have also been developed for hosting met stations under data sharing agreements.
- **Sao Tome and Principe:** 2015 will be focused on procuring equipment as well as in installing AWS stations to increase country coverage as well as in promoting trainings with the collaboration of international universities. A major challenge has been the limited amount of technical and human resources.
- **Sierra Leone:** Currently the Met Department is a government department and thus is not able to capitalize on its service, however there is an effort to become an agency thus facilitating its possibility to develop PPPs and gain financial sustainability. Through the project, training has been enhanced and with the help of WMO forecast have been reshaped from text to map based. A large focus of the project will be the communication of local and national forecasts. Collaboration with other agencies has been developed to install rain gauges as well as with telecoms for data collection. In country training has been difficult particularly in their efforts to strengthen capacity to respond to extreme events.
- **Tanzania:** During 2015, the project was able to initiate the procurement of equipment although the time frame for procuring has been longer than anticipated. A working group for the dissemination of data has been launched through the project. A partnership with telecoms for the transmission of data has also been developed.



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- **Uganda:** The project has advanced in repairing and installing new weather stations. A cost-benefit analysis has also been commissioned to move forward on the topic of sustainability. Currently the Met Agency's main client is the civil aviation authority. An effort to reach out to telecoms has also been established and some collaboration platforms have been created with other government agencies. A main concern for the Met Agency is assuring the quality of climate and weather products
- **Zambia:** The project team was assembled late last year and since then have led awareness and training sessions. Capacity is still limited as although they have 39 met stations, data is still being submitted in paper form. Amongst the challenges that they have experienced includes: limited procurement due to the specialized nature of the equipment, a lack of manpower, internet access, transport infrastructure, and limited dissemination networks. Moving forward they hope to complete the procurement and rehabilitation of existing stations as well as create educational programs. Have developed partnerships with an index-based insurance company (Microinsure) as well with other government agencies. In regards to funding sustainability, the legal framework of the Met Department limits the sources of funding available to them.

Alan Miller presented the various benefits to Met agencies in identifying and engaging in PPP partnerships, these include access to financial resources and latest technologies. For the private sector benefits include access to new profitable markets as well as innovative product development.

Jeremy Usher presented a brief overview of the 3 main types of PPPs that can be developed by Met Agencies: (1) weather vendors that can provide support for data collection, analysis, computation and dissemination; (2) telecoms and local phone companies who can play multiple roles: host, critical agent for emergency warnings, product and service-provider; and (3) end users such as the agriculture, mining, shipping, transportation, tourism sectors, etc.

Michael Nkalubo, Acting Executive Director of Uganda's National Meteorological Authority (UMA), presented the experience of the UNMA in recently transforming itself from a government department into a government authority, thus providing the opportunity to receive commercialization income. This transformation allowed it to meet its mandate to provide efficient met services to safeguard life and property. Currently its main source of cost recovery is aviation although are working to increase partnerships particularly with telecoms, energy sector, financial institutions, and agricultural services. UNMA's biggest challenge has been working with users who are reluctant to pay full costs of weather forecasting or who do not understand the relevance of met information to their operations. Mr. Nkalubo stressed the importance of stakeholder engagement as well as garnering the support of relevant government agencies. He recommends other countries looking to embark on this path to consider that it is a lengthy process and can come associated with hidden costs.



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Ziyanda Majokweni, General Manager for Corporate Affairs of the South African Weather Service (SAWS) spoke on its experience on commercialization of its weather services. SAWS transformed itself into a parastatal agency in 2001 to better fulfill its mandate and to assure financial sustainability. The successful transition was a result of three simultaneous processes: agentization, commercialization and transformation. This led to institutional change, a focus on customer marketing and cost recovery as well as increased efforts for capacity building. She stated that the greatest initial challenge that SAWS faced was finding a balance between meeting public goods and commercial demands, however she noted that this can be solved by clearly defining the agency's focus and mandate. She stated that private revenue has increased by 32% a year as a result of commercial partners. Currently its income is 48% sourced from private funding (mostly aviation) while the remaining 52% is government grant. She concluded by stating that if embarking on commercialization it is important to know and understand your market as well as to be proactive about the user's needs by proposing solutions and new products.

Menno Bom, Director InfoPlaza, former Sales and Former Marketing Director for KNMI, presented the lessons learned from the Dutch weather market on commercialization of weather services. He stated that since the privatization of the national weather company, weather information has become extremely marketable and currently generates much consumer interest. The market has developed to the point that land based activities have become as popular as aviation with media and consumer sectors gaining even more traction. Moving forward he recommends Met Agencies who are interested in commercialization to begin focusing initially on acquiring a solid infrastructure base followed by developing quality local forecast models. Mr. Bom stated that partnering with the private sector can help Met agencies understand and meet market needs and develop new products. KNMI while privatized still has a central role in meteorology in the Netherlands and the revenue has allowed it to invest in research and local development. More significantly, it has created a commercial weather market that relies on climate and weather information to meet various development needs.

Questions from the participants centered on identifying how to establish relevant partnerships particularly with telecom operators. Discussions also centered on cost recovery from the private sector wondering if it would be sufficient to assure financial sustainability. On this last topic Ms. Majokweni, stated that SAWS has seen private funding increase at a steady pace and hope that in time this percentage will allow for a less dependence on government income as was shown through the experience in KNMI. Mr. Nakalubo stated that currently the UNMA is not financially independent however, much has to do with the fact that the funds coming from the aviation sector are not all directed to the UNMA. Mary Power, summarized the speakers experience by stating that a certain amount of readiness needs to be there as well as a clear political will.



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Sebastian Glink, Business Unit Manager of Meteogroup, presented the experience of the Weather Philippines Foundation that was created as a new public weather services for the Philippines in partnership with members of the Philippines civil society and Meteogroup. Weather Philippines is privately funded by local enterprises who provide financial and hosting support for the installation of weather stations throughout the various islands. With this model they have managed to install 700 AWS throughout the country, mostly in cell phone sites. Weather information is disseminated in the form of a continuous public weather portal, TV broadcasting as well as early warning alerts, among others. The capacity to expand their network so quickly and effectively is credited to the use of affordable and high quality AWS as well as to the use of dissemination methods that are locally appropriate such as twitter.

Ari Davidov, Director of International Business Development of Earth Networks, presented the various examples of PPPs among these are the Lake Victoria Early Warning System Pilot Programme, the EWS Network in Mozambique as well as the Guinea Demonstration Project.

The session led to a discussion on new technologies that are making weather and climate monitoring more accessible. Sebastian Glink commented that the AWS stations employed by Weather Philippines had a cost of USD3000 and have provided high quality information. He stated that the collaboration with local enterprise in the hosting of AWS as well as the use of cell towers as sites had assured the security of the equipment.

Anthony Mills, President of C4 Eco Solutions, presented a brief introduction of the possibilities of catalyzing private sector information into weather information while focusing on weather index insurance and mobile platforms. He highlighted that the accuracy of forecasts is essential to build a client base. In regards to weather index insurance he stressed the importance of scale as well as the access to historical weather data. Insurance primes will depend on the availability of at least 3-5 years of data and scale to large phenomena can bring down costs. He presented models for partnerships for both insurance and mobile providers while stressing the importance of linkages and ownership by the private sector. He concluded by stating the intent of CIRDA to finance a market study on the commercialization of weather services that will take into account partner country specifics.

4 March, 2015

Moumouni Sawadogo, Transmission Engineer for Telécel Faso, introduced his company as a telecom provider in Burkina Faso expanding to 78% of national coverage. It has recently launched a partnership with the National Met Department for the collection of rainfall data through its telephone network via microwave data processing. This information will allow the creation of local and national rain maps with the collaboration of the Met Department. Mr. Sawadogo concluded by stating that PPPs have resulted in a win-win partnership that they hope to expand.



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Patrick Mwesigwa, Director Technology and Licensing for the Uganda Communications Commission, introduced the UCC by stating its regulatory role in telecommunications and broadcasting. Uganda currently has 6 active mobile network operators in a fully liberalized telecom market. It is currently hoping to work with UNMA in supporting its efforts to partner with telecoms for dissemination of information via texting services.

David Kuguru, Global Account Manager of Vodafone, stated his company's interest in Africa as it is the fastest mobile market in the world mostly driven by a young population. He presented Vodafone's Global Enterprise as a relationship manager to meet development and national needs. As such they have established a diverse range of PPPs with partners such as Coca Cola and Bill and Melinda Gates Foundation to promote development goals. Vodafone also offers cloud computing and satellite services as well tower share possibilities to interested partners within the region.

Discussions centered on engaging with telecom companies concluding to the key for any PPP is in identifying the win-win situation for each stakeholder in which it can offer and develop its area of expertise. The most common mistake in approaching telecom is in not communicating the benefit that the private sector will take out of a potential collaboration.

David McAfee, Director Human Network International (HNI), introduced his organization as an information and technology corporation that provides on demand information via voice services. The public service information is prepared by development or government organizations and is accessed free of charge via dial in ssd services through telecom providers such as Airtel. The service acts as a basic search engine accessed by simple cellular phones without the use of data. The success of this service is due to the partnerships created with telecom providers who have seen that users of the 3-2-1 networks become a more loyal customer base while increasing their mobile phone usage leading companies like Airtel to begin to cover the full costs of this service. David McAfee stressed the importance of assuring free dissemination of data.

Patrick Kibaya, Project Officer of Uganda Charter Net, presented his experience with innovative products and services to enhance the adaptive capacity of Ugandan rural communities. They offer information on weather, droughts, floods, water harvesting, markets, diseases and pests. The information is both collected and communicated via mobile devices as well as through radio, e-mail, voice calls and print. The information provided is locally relevant and relies on linking up with communities and local institutions. Among the key lessons they have learned is that when information adds value to economic activity, people are willing to pay for it (no free rides). Cost of the information is calculated on the use of various dissemination channels.

David Kuguru, presented examples of partnerships created with governments and development organizations to reach communities with innovative services. Among these includes a cash transfer program in Somalia, a fertilizer subsidy program, and a project directed at providing information to farmers. Vodafone has created solutions not only in communicating but also for data input and



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verification and mobile payment. It has recently acquired the company Mezzanine- an integration platform and can collect data from any source.

Zachary Dunn, East Africa Field Director for TAHMO presented its organization's goals to increase the number of synoptic stations in Sub Saharan Africa to enhance adaptive capacity at a local level. AWS stations provided are affordable and installed in school yards. They are maintained through a sister school programme where local schools have ownership of the stations and are taught maintenance and data collection. The data is shared to the schools for teaching possibilities. Cost recovery is created through the selling of data for commercial purposes.

Participants stated their interest and appreciation of the above examples to provide innovative solutions via PPPs. The example of 3-2-1 service drew much attention due to its capacity to reach non literate populations. TAHMO was considered as an innovative solution to enhance capacity building and reduce observation costs.

The **aviation panel** included presentations from **ASECNA**, an airspace management organization of francophone Africa; **BPS**, a consultancy that has created cost benefit analysis for the provision of aviation met services; and from **South African Airways Operation Control Center**. ASECNA stated that bad climatic conditions represent the main cause of accidents in the ASECNA region. These could be reduced through the supply of climate information to them, thus presenting Met services with an opportunity to market weather services for aviation. ASECNA has already developed partnerships with Earth Networks and NCAR. BPS, reinforced this assertion while presenting its cost and profitability models to calculate the revenue of Met services to aviation in South Africa. It stated that the largest challenges are often defining a service catalogue as well as defining a tariff methodology for non-regulatory services. Willie Saayman representative of South Africa Airways highlighted climate information as crucial for aviation. New technologies allow for flight deck crew to have minute by minute uplinks to weather reports in flight thus generating a greater need for agreements between airlines and weather service providers. Main information needs are: icing, fog and lighting.

Representatives from the **insurance and the financial sector** presented partnership opportunities for climate and weather services. **Katharine Thoday** from Climate Wise presented the challenges of creating agriculture insurance products in many countries due to lack of weather data and its consistency. **Mwamba Musambo**, Head of Agriculture Banking at Stanbic Bank Zambia, stated that index based insurance is limited in Zambia however as long as weather continues to be stable banks are able to provide loans while proposing adaptive mitigation measures such as irrigation. Hail, fire and storms have a large capacity to impact production of staple crops. Currently these are only covered by general insurance however there is a market for more specialized products.

The day ended with a brainstorm session among country representatives who were tasked to consider the possible public private partnerships that could be created to promote weather



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services. Three main topic of interest were identified: partnerships with telecom services; agriculture and services; and partnerships to promote long term financial sustainability.

March 5, 2014

Moderated work tables were organized along three themes for discussion: telecom, agriculture and finance and economic sustainability. These tables provided a space to brainstorm possibilities and analyze regional and country specific challenges.

Telecom Group Discussion (Led by Jessica Heinzelman, Manager, ICT Strategic Initiatives, DAI)

Discussion were centered on three potential partnerships with telecoms: 1) Dissemination of data; 2) Data collection; and 3) Co-location of met equipment.

Country representatives were challenged to consider the objective and target audience for the transmission of weather information these factors will in turn influence the system design. When discussion co-location of equipment, moderators encouraged participants to first asses MET service data requirements, secondly to analyze the additional value to the mobile operator and finally negotiate a rental agreement to assure clarity for all parties.

- **Zambia:** Stated that among its prime objective is to reach farmers and provide seasonal, weekly and daily forecasts. Currently they are working with the Ministry of Agriculture in an attempt to tailor information so that it is relevant. Reaching stakeholders at every level will be an important task as well as budgeting the resources that may be needed at each stage. As there is no direct connection between farmers and Met Agency, linkages with telecom companies, extension agents, and productive associations need to be created. In regards to co-locating equipment, there is concern that obstruction of sensors by the towers may occur thus compromising data quality.
- **Uganda:** Reaching farmers is a primary concern for Uganda to ensure agriculture production, as is the protection of life through early warnings. Currently they are providing seasonal forecast although there is a limited capacity to provide the daily or weekly forecasts. Dissemination is conducted via radio, TV and, in some regions, SMS text.
- **Malawi:** Reaching farmers is also a key objective, particularly in providing them with daily forecasts. Their main concern is not with data collection however in packaging the data that is collected in an appropriate manner. They have considered outsourcing this task to NGOs or VAS providers so as to be better prepared to approach telecom providers for dissemination. Malawi has been working with telecom providers on the use of cell phone towers for the location of AWS when appropriate and when the data collected is used for local networks.
- **Tanzania:** Stated that use of cell phone communication could also serve as an advocacy tool to promote the relevance of weather information and thus provide more resources to the Met Agency. In regards to co-location they would first need to determine the data needed and analyze if it overlaps with mobile towers as well as take into consideration the equipment required.



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- **Sao Tome and Principe:** Main targets of communication were fisherman and farmers along with the general population. To reach them they are currently using radio, toll free telephony, and SMS messaging. In packaging information, partnerships with other government ministries as well as NGOs and other stakeholders would be useful.
- **Sierra Leone:** Main targets of communication are the general public and national disaster areas. They are currently communicating via website, use of town criers, some social media, TV and USSD messaging. However, the use of a service like 3-2-1 would be ideal. Information is currently being packaged by a VAS provider.
- **Liberia:** While the collection of data can be provided through Met Agency enacting partnerships to disseminate and package information would assure that information becomes relevant and reaches end users. Partnerships with telecom companies is vital.
- **Benin:** Partnerships to communicate and collect information are important but they would like to also partner with telecoms to create a feedback mechanism to from the target audience. Use of mobile methods for survey taking and the creation of user maps would be particularly useful.

In general, country teams stated a strong interest in using microwave technology as presented by Telecel Faso and in installing monitoring equipment on telecom towers for the purpose of collecting data. The group recommended CIRDA to further work with country teams in identifying what data is needed as well as the equipment necessary to collect it. With respect to dissemination, some countries are interested in complex packages and to do so they need to collaborate with interested ministries. CIRDA can help by illustrating the win-win aspect of the collaboration between met agencies and other entities. All participants are keen to introduce the telecom sector into their fields and requested CIRDA support in product design.

Sustainability Group Discussion (Led by Jeremy Usher and Alan Miller)

Three questions were posed to the group:

- (1) What is the legal authority of the met agency in terms of commercialization? Can you actually do that? If not, do you want to? If so, how would you go about it?
 - (2) Execution Plan – Do you have a plan for commercializing your weather- and climate-related services? Do you have a particular market sector that you believe has the biggest potential to do that? Ranking? Within those market segments are there particular entities?
 - (3) In-house development and/or public-private partnerships?
- **Uganda:** The Uganda National Met Authority (UMA) has the legal capacity to commercialize due to a recent change in legislation. However, there is a question on when should a line be drawn between public and private goods. While some met services should remain a public good private goods that allow for commercialization should also be prioritized in order to assure financial sustainability. Support on commercialization is required to help guide UMA's transformation.



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- **Tanzania:** In 1999, the met department became an agency with a capacity for commercialization. Tanzania's main source of cost recovery comes from the aviation industry with only a small amount coming in from fees. To execute further commercialization, they have commissioned a study for 2015. There is also a plan to expand the Met Agency beyond marketing and public relations to include product development, sales and customer service. This along with ISO Certification will allow the Agency to become more competitive and customer oriented.
- **Benin:** There is a directive for commercialization exists however it is not well understood nor followed. Regulations need to be updated to include non-aviation sectors. Until now, the costs of the met department have been mainly covered by income receipts from ASECNA and government subsidies.
- **Burkina Faso:** Commercialization is regulated through a Decree enacted in 1995. This decree will be strengthened through a bill to transform itself to national authority that is currently being penned. The bill envisions providing free information for government and development agencies while charging data access for private purposes. Expert support for this endeavor is required. ASECNA and government subsidies are the main sources of financing however are looking forward to establishing partnerships to enhance infrastructure and human capacity.
- **Liberia:** The Met Agency does not have the legal capacity to commercialize, they have however prepared a bill to enable product commercialization. The national CI EWS project implementation can provide a case for this bill's relevance.
- **Sierra Leone:** Currently the Met Agency cannot commercialize, however, there is bill at the parliament stage that will open the way for the commercialization of weather product. There is a national debate on the benefits of this transformation for national development. Support to understand market forces and cost structures is required.
- **Sao Tome and Principe:** The Met Agency has the authority commercialize however the majority of its products are provided free of cost. Efforts are being made to grant it even more independent. Most of their activities are linked to the aviation sector, which is a prime source of funding. Capacity is required to enhance climatology, agro and marine sectors.
- **Ethiopia:** While they are not able to commercialize they have the capacity to enact cost recovery through fees against services. Commercialization is not seen as a solution to the Met Agency as there is not client base for it.
- **Gambia:** Would like to enact an internal execution of commercialization rather than relying on external support. For this a market study has been commissioned that has indicated a need to upgrade services.
- **Malawi:** While currently practicing cost recovery, revenue enters consolidated ministerial budgets and then is redistributed to other agencies including the met department. A market study to identify user needs, products, understand costing and pricing is required. Would like to enter into linkages with the private sector to package information for end users. Question whether the Met Department should diversify the skills of its staff to include ICT and marketing.



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- **Zambia:** Zambia has no cost recovery and no commercialization stipulations however a draft bill dealing with the governance of the department has recently been approved by the Ministry. References to commercialization have been included but they are under discussion. Zambia conducted a study with the IFC on linking mobile and insurance as they would like to partner on issues related to this sector.

In terms of commercialization planning, most countries have recognized its need although only a few countries have actually begun. There was a clear recommendation for CIRDA to provide support through the conducting of a market study to provide countries with informational inputs. This study should include the promotion of best practices to establish a common template for further national studies. While the majority of the participants believed that establishing PPPs was beneficial, most were concerned that the low quality of existing data could limit this possibility.

Agriculture and Financial Services Group Discussion (Led by Anthony Mills and Katharine Thoday)

Country groups were advised to enact a national study that could provide information on the market conditions for the creation of agriculture insurance. Consistency, accuracy, and transparency of data was also highlighted as key enabler of agriculture insurance.

Teams analyzed two principle ways that they could promote access to agriculture insurance:

1. Advocacy to establish partnerships and create the opportunities needed for innovation
 2. Priorization of a client base (by aggregating groups or targeting those most vulnerable)
- **Benin:** Agriculture insurance (though not index insurance) for cotton is available. Expansion to other product has been hampered by a lack of available data. There is a concern regarding the current cost of premiums which are out of reach for most farmers thus creating a space for government intervention through subsidies. The met department recognizes that advocacy at both a government and community level must be realized. There is concern that farmers have a limited adapted capacity as agromet bulletins with vital information arrive too late for most farmers who may risk catastrophic loss due to changes in climate.
 - **Liberia:** Liberia suffers from the highest rainfall in Africa making it prone to flooding. There are limited met products available to agriculture sector and fisheries. Credit and insurance is also not readily available unless they have concessions. Suggests working on two different pricing schemes: one subsidies for small scale farmers and one without subsidy for concession farming/fishing.
 - **Sierra Leone:** Catastrophic loss due to weather phenomena is a problem particularly as it depletes income for future replanting. Insurance would be a solution to ensure food security. To enhance adaptive capacity of farmers, the government has launched a programme with IFAD for the purchasing of AWS in agricultural areas. The main problem they face is the Met Department's limited capacity to create forecasting models and package incoming data into relevant products.



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- **Sao Tome and Principe:** Agriculture insurance is rare as weather is very variable. The Met Department does provide a weather summary to farmers but only with 30 day forecasts. Advocacy is a key issue that needs to be addressed to promote insurance companies to develop products and work with Met Department. They hope to address this by mobilizing farmers.
- **Burkina Faso:** Weather based insurance is available for the cotton industry however the ministry of agriculture is financing a study to extend coverage to other staple crops. The Africa Risk Group is also enacting a study on the use of historical met images to see correlations that could be used for risk calculation for insurers. This information will be complemented by rainfall data supplied with the help of another NGO. AWS data collected in the future will be needed to ensure accuracy. Advocacy has been ongoing through round table discussions with various stakeholders at both a local and government level.
- **Zambia:** Has a microinsurance product in the Eastern Province that is currently undergoing legislation. However a main challenge the Met Department is facing has been generating baseline information that will create a demand and expectation of further information. This has limited commercialization of their services. Advocacy needs to be stepped up to engage users.
- **Ethiopia:** Their main challenge has been trying to enact legislation that would make the national Met service the sole provider of weather related information. They are currently not involved in with the two insurance initiatives (for risk transfer adaptation and for livestock insurance). While there are two commercial insurance in the country that provide index insurance there are currently no reinsurers. This is an initiative that they would need to engage with the Agricultural Ministry.
- **Malawi:** A weather index insurance scheme was piloted by the World Bank and Agricultural Ministry that indirectly involved the Met Department. This pilot ran across several problems upon implementation. They are working with Africa Risk Capacity Facility however their over reliance on satellite data has proved to be a challenge.
- **Gambia:** Their main concern is related to fishing activities that are heavily affected by storms. Are recently considering developing seasonal forecasts for farmers. Have yet to consider insurance.
- **Tanzania:** Has yet to consider insurance, but are providing agromet information to Ministry of Agriculture. A main current concern is on packaging this service. They do provide an SMS package directed at farmers that could be scaled up.
- **Uganda:** Participated in discussions to engage with Africa Risk Capacity Facility but the Finance Ministry decided it was better to invest in risk reduction. Representatives from the Insurance Regulatory Authority emphasized the challenges related to pricing mostly due to a need for long term data. He indicated that a pilot study was carried out for index insurance, however farmers became disillusioned as a lack of unpredictable weather resulted in no immediate payout. A Study on risk management for banks has recently been carried out by the Disaster Management Committee. However consumer education and awareness needs to be created.



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There is an overwhelming interest in weather index-based insurance. In terms of next steps efforts need to be made around developing a market study and in building up advocacy. The very first step in getting an insurance product is getting the right data. Studies can help identify the areas where the observation network is underdeveloped. Advocacy on the other hand is needed to boost weather index-based insurance and establish partnerships with the many stakeholders. Government buy in is especially important.

The brain storming sessions concluded with the drafting of country action plans that will guide Met Services and Project Managers in the future.

Follow up was agreed with the following route in mind:

- Firstly, countries and the Project Managers need to determine what data are required based on who will be using the resulting information, how the data will be converted into the required tailored information, how that information data will be applied in local decision making, and what the ultimate objective of disseminating the information will be.
- Secondly, once it is clear what data are required, countries and Project Manager should determine what equipment and technology is required to obtain the data, to analyse the data and convert it to decision-support information, package information in language comprehensible to the end user, and finally to disseminate it.
- Thirdly, countries and Project Managers need to develop a plan for integrating the chosen equipment and technology into the existing systems being used by the meteorological agencies and private sector entities such as mobile phone companies, banks, and insurance companies.
- Finally, countries and Project Manager need to establish how the new services they will be providing can generate revenue streams for the long-term maintenance of the new as well as existing meteorological equipment and technology.

It was agreed that action plans be included in the implementation of the national climate information early warning projects that are being developed.

At the closing event the organizers congratulated participants for their hard work on what proved to be intense sessions of discussion and brainstorming. Appreciation was shown to the UMA who provided the needed support to assure the successful conclusion of this event. The CIRDA Project Manager announced that the next training workshop will be conducted in Lusaka, Zambia in the late fall and will be focused on application development for the communication of weather and climate information.