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December 2, 2016

CIRDA Progress on 2016 AWP

General

- CIRDA's annual work plan envisioned a target of USD 896,320 for 2016
- The budget contemplated a large scale regional training in Zambia which was organized in parallel with a hackathon event aimed at developing innovative last mile services; in country support missions to the majority of our partner countries (in some cases more than once); the conclusion of a multi country market study that analyzed the potential for developing weather and climate services our partner countries; a publication that was successfully launched in Marrakech during the COP22 Meeting; the development of an LTA for hydrology technologies and services; a hands on digitization support mission to provide support to the Gambia, Malawi and Zambia; an extensive training on data assimilation in Tanzania, and increased engagement with partner countries and donors through the Programme's communication strategy, donor outreach through participation in UNFCCC's major events (SBI Meeting, NAP Expo, COP23) and the development of an EWS communication toolkit.
- Country support missions for 2016 have been focused on supporting partner countries conclude the procurement and installation of EWS technologies and services. Uganda, Sierra Leone, Liberia, Burkina Faso and the Gambia have concluded successful procurement process with the remote and in person support of the CIRDA experts.

Technology and Innovation (LTA Support)

During the first months of the year two Long Term Agreements became operational with two providers of hydrological and meteorological equipment- Ubimet and Earth Networks. The LTAs provide for a comprehensive array of installation, training, operations, and maintenance services to bolster national capacities in collecting and delivering climate and weather information for early warning services. Throughout the year CIRDA Experts worked with Uganda, the Gambia Malawi, Liberia and Sierra Leone and Burkina Faso in finding how to best adapt these technologies and services to expand their current early warning and communication capacities. As a result, Uganda, Liberia and Sierra Leone have concluded procuring and installing an end to EWS to allow the communication of tailored forecasting and access to real time data. In the case of Sierra Leone and Liberia, service contracts are in negotiation to provide support in expanding national operational capacities.

In response to the high demand of hydrological expert support, the CIRDA Experts concluded an RFP for the acquisition of hydrological observation systems for their climate information and early warning systems. The RFP will lead to the establishment of an LTA that will facilitate partner countries' access to hydrology tools and services to enhance national early warning systems. The system foreseen through the hydrology LTA will manage data flows from a wide variety of existing and new observation systems, and allow for the generation of relevant information products. In addition to in-situ hydrological data, the system uses data from meteorological services, satellite data, and national and international weather forecasts. By including these additional data sources, full use is made of the existing hydromet



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observation infrastructure, maintenance costs are reduced, and lead times for early warnings can be optimized. Furthermore, through a dedicated visualization module, information products and early warnings can be presented in a clear way, thus reaching users beyond the NMHS expert community. The LTA is projected to be operational by the end of the year.

Country Support Missions

The Programme provides on the ground support to partner countries to assist and provide guidance on the implementation of the national climate information early warning projects.

- Country support specialists have been deployed to Benin (July), Burkina Faso (April, June, October), the Gambia (February, May), Liberia (October), Malawi (February, August, October), Sierra Leone (September), Tanzania (April, August), Uganda (May, June) Zambia (March). During those missions and remote follow up the following specified support was provided.
 - **Benin:** Provided support training on forecasting, assisted in the analysis for the purchase and correct installation of hydromet equipment including full EWS system and central servers.
 - **Burkina Faso:** Technical specifications of hydromet equipment and review of their correct installation. Integration of real-time data into the forecasts and Early Warning Development of a unified SOP Outreach to mobile phone providers.
 - **The Gambia:** Support in the drafting of technical specifications and the procurement process of EWS hydro met equipment and pilotsonde system.
 - **Liberia:** Support in entering into an operations contract with a service provider-lightning based EWS leverages off of the neighboring sensors in West Africa to improve the overall system performance. Support in acquiring and installing an end to end EWS using innovative and cost effective technologies
 - **Malawi:** Review of meteorological and hydrological installations to adapt technical specifications for purchase of new hydromet equipment, support and training in forecasting and adapting COSMO model, outreach to enable partnership with last mile service.
 - **Sao Tome and Principe:** Evaluation of current EWS capacities including outreach to vulnerable communities, aid in integrating new equipment into an EWS and in the purchase and installation of satellite distribution system (SADIS support), support in advancing the installation of a national hydrology service.
 - **Sierra Leone:** Support in entering into an operations contract with a service provider-lightning based EWS, support in acquiring and installing an end to end EWS using innovative and cost effective technologies, facilitated outreach to the private sector for possible cost recovery.
 - **Uganda:** Support on PPPs and product development, design and support in the installation of an integrated network of synoptic stations, AWS and lightning sensors, including the facilitation of discussions between telephone network operators, developed a training plan to ensure effective skills transfer for equipment maintenance.



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- **Tanzania:** Support in the integration of real-time data into the forecasts; aid in the quality checking of installation of new hydromet equipment; Support in the transition from an analogue to a digital workflow at the MoW and the Basin Boards; facilitated the automated exchange of data and information at an institutional level, specialized 2 week training in the assimilation of real-time hydromet data for its inclusion in forecasts;
- **Zambia:** Evaluation of current hydrology EWS capacity, support in the expansion of the AWS network and integration of data, support in ensuring the use of automatic water level gauge data in integrated water resources management; facilitated the exchange of data between agencies.

Private Sector Strategy.

The private sector strategy is an essential component in the Programme in that it complements the emergence of new technology by identifying additional revenue and business support to the NHMSs via the development and marketing of tailored weather information services of high value to weather sensitive businesses such as agriculture, insurance, shipping, and mining.

- Key objectives in the past year have been to socialize the results of a regional market study commissioned by the project to provide information regarding the need and market for climate and weather service products. The market study concluded that while there is an important demand current capacities in NHMS's are not able to meet them. It provided possible partnerships that can be enacted to provide quality information in a manner that may be attractive to various industries. It also advised on the opportunities to engage with private sector weather companies. The results from the study were presented at the Zambia Regional CIRDA Workshop. <http://adaptation-undp.org/resources/knowledge-products/climate-and-weather-services-market-assessment-revenue-generating>
- Various country partners, Sierra Leone and Uganda among them, have been commissioned. Uganda led a multi stakeholder discussion inviting many key private sector actors. The programme was able to provide support for this effort that led to the establishment of various MoUs for last mile services. The Gambia entered into an MoU with the aviation sector and important step in being able to have access to cost recovery funds.
- **Outreach to the private sector** has also been ongoing. Missions to partner countries have included private sector outreach particularly to mobile phone providers. Valuable contacts have been made with the GSMA (global mobile phone service association), IBM, representatives from the insurance sector and private weather companies.

Digitization

Climate data in a digital format allows practical climate analyses and reduces the time required for NMHS to provide information and services. During the Programme's Inception Workshop, the lack of



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access to digitized data was highlighted by NHMSs as a key obstacle in their efforts to develop decision-relevant products and communicate climate information to end users.

- In 2014, CIRDA sent all partner countries an initial survey to assess national interest and needs to for digitization support. Uganda, Tanzania, the Gambia, Sierra Leone, Malawi, Zambia demonstrated the most interest.
- IN 2015, Two experts were commissioned by CIRDA to travel this year to Uganda, Tanzania, the Gambia, Sierra Leone, Malawi, Zambia to discuss digitization needs with key ministries and agencies in each country. The experts provided a detailed assessment of needs and an estimated budget. The visit demonstrated a desire by most NHMSs to digitize information relevant to agriculture, fishing and flood management (rainfall, temperature, salinity, wind speed etc.)
- In 2016, CIRDA hired IEDRO that has been leading a global effort to support climate and weather data rescue. IEDRO led a 3 person team to travel to the Gambia, Malawi and Zambia to provide support in rescuing key historical existing data and acquiring the equipment that would be needed (all low cost and suitable for the field based on IEDRO's experience and national capacities). The workshop was focused on developing national capacities for data rescue with the aim of being able to use the data into the development of weather and climate applications. The final evaluations will be delivered early next year.

Communications

Integrated communications are an essential component of the CIRDA Programme to allow for improved collaboration and knowledge sharing between the projects as well as for the scaling up and replication of the innovative approaches supported through the Programme.

- A **publication** on private engagement and the potential for establish public private partnerships to provide life- saving climate information was prepared and presented during the COP 22 Meetings. The publication relied on information from the field with contributions from our country partners. The publication also received contributions from key weather experts and practitioners and went through an extensive peer review process. The publication has generated much interest as has been identified through the increased numbers of downloads and shares on social media.
<http://adaptation-undp.org/resources/communications-products/new-vision-weather-and-climate-services-africa>
- A communications toolkit was prepared and presented during the Zambia Regional Workshop. The toolkit was designed to support country efforts in communicating climate information to end users.
<http://adaptation-undp.org/resources/training-tools/climate-information-and-early-warning-systems-communications-toolkit>
- The monthly CIRDA newsletter was prepared and distributed to over 800 subscribers. The open-rate for the August newsletter was 39.3 percent (non-profit industry average is 23.2 percent), click rate was 6.8 percent (industry average 2.5%). The newsletter was phased into UNDP's adaptation newsletter with continuous contributions from the CIRDA Expert team



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- The Programme's **blog** was also updated for user-interface, style, creation of tagging. Viewership and contributions from outside authors was increased leading to more in depth articles with a focus on last mile services

Trainings

- In 2016, CIRDA organized a regional training event focused on enhancing national capacities for the implementation of the CI/EWS projects: Reaching the last mile (March, Livingstone Zambia). Over 110 participants assisted among these 4 representatives from our country partners, and 20 young programmers that attended the Climate Action Hackathon to communicate climate information through new technologies.
- A Climate Action Hackathon was hosted with the support of Columbia's University's IRI and Brown Institute of Media Innovation. The Climate Action Hackathon was focused on engaging the young programming community, most African based, to enable the communication of climate information through innovative technologies appropriate for the African end user community. Mobile and online applications were developed to assist extension workers, farmers and migrant cattle ranchers.
- A two-week training on data assimilation capacities and software for enhancing forecasting was prepared for Tanzania. The TMA requested specific support on this topic and a curricula was developed based country needs and capabilities. The curricula was prepared in a manner that could be easily adapted to other partner countries who may require similar support.