

### **STANDARD PROGRESS REPORT**

### **Reporting Unit:** Energy Environment & Natural Resources Management

### **Country:** Sierra Leone

### **No. and title:** Project # 00086856 / Award # 00074442(Climate Information and Early Warning

### Systems Project)

### **Reporting period:** 2017

### **I. PURPOSE**

Despite substantial progress made, Sierra Leone remains vulnerable to the increasing frequency and severity of droughts, floods and severe storms. Their impacts on key development sectors cannot be overemphasized. Such climate-related hazards are having increasingly adverse effects on the country and future climate change is likely to further exacerbate the situation. Low capacity of the Sierra Leone population to adapt to climate change remains a huge challenge. Rural population continues to face the brunt of climate change impacts because of their high dependence on rain-fed agriculture and natural resource based livelihoods. Nonetheless, severe torrential rains and floods that affected Sierra Leone in September 2015, and the drought which affected the Freetown water supplies in mind 2016 proves that even the urban areas of the country are not completely immune from disaster risks. These occurrences justify the need to strengthen Sierra Leone’s capacity to adapt to climate-related hazard, and to limit the negative impacts of climate change and address the country’s socio-economic and developmental challenges in a n efficient manner.

This LDCF financed project, implemented by the Ministry of Transport and Aviation, has three focus areas namely i) establish a functional network of meteorological and hydrological monitoring stations and associated infrastructure to better understand climatic changes; ii) develop and disseminate tailored weather and climate information (including colour-coded alerts and advisories, watches and warnings for flood, drought, severe weather and agricultural stresses, integrated cost-benefit analyses and sector-specific risk and vulnerability maps) to decision makers in government, private sector, civil society, development partners and local communities in Bumbuna watershed, Guma Valley watershed and drought prone Eastern districts of Kono, Koinadugu, Kailahun and Kenema; and iii) integrate weather and climate information into national policies, annual work plans and local development including the National Policy for Disaster Preparedness and Management, and district and sub-county development plans in priority districts in the Freetown, Bombali, Tonkolili and Koinadugu sub-regions and Kono, Kailahun and Kenema District areas. The project is expected to be completed by 2017.

### **II. RESOURCES**

Core resources provided in 2017 was 1,044,639 USD

### **III. RESULTS**

**Outcome 1 Result: Capacities of National Hydro-Meteorological (NHMS) and Environmental Institutions Enhanced to Monitor Extreme Weather and Climate Change**

**Output 1.1: Hydrological Equipment installed to complement watershed management networks of Guma Valley, Bumbuna Watershed and the Ministry of Water Resources**

* + 1. Six staff of the Water Directorate, MWR, attended trainings in operational watershed monitoring and hydrological modeling from the 10th – 30th September, 2017, in Accra, Ghana. These will serve as trainers to replicate and/or transfer knowledge to their colleagues.
    2. Thirty Water Quality Technicians of the Ministry of Water Resources were trained on the practices and methodologies of proper water sampling techniques and quality assessment procedures. It provided training on the scientific theories and concepts relating to sample collection, handling, storage and techniques for water quality assessment procedures. It is obvious that understanding the underlying scientific principles to the various techniques employed in water quality assessment will improve the performance of the technicians in achieving one of the core mandates of the Ministry of Water Resources which providing safe water to the people of Sierra Leone and also manage the country’s water resources. The field activities were designed to first assess the level of knowledge acquired in the training and the impact of the training on the overall performance of the technicians on the job. It also served as a platform for experience sharing and apprenticeship among the technicians. The training also offered basic management skills in running field offices, planning for various activities involved in water quality assessment and technical report writing. The training program is found on Annex A of this report.

**Output 1.2: Meteorological Equipment installed and supporting the establishment of an integrated weather monitoring network**

* + 1. 1071 Dedicated Server in Cloud (IaaS)[[1]](#footnote-1) – a virtualized server to host the Climate Information, Disaster Management and Early Warning Systems (CIDMEWS) Web Server, and application Server and Data Server in the Cloud; HP Z1 G2 All-in-One Workstation (**Hardware**) with an ArcGIS for Desktop Advanced Concurrent Use License2; **Software/Hadrware;** ArcGIS for Server Enterprise Advanced[[2]](#footnote-2) (up to four cores) 365-Day Term License – to publish, serve and consume GIS resources as services for the CIDMEWS GIS Web Mapping Application; and ArcGIS Online Level 3 Plan[[3]](#footnote-3) (Includes up to 100 Named Users and 17,500 Credits) - collaborative cloud-based Web mapping platform to use, create, share maps, scenes, apps, layers, analytics, and data for the CIDMEWS GIS Web Mapping Application, and related soft and hardwares being procured to develop communications, early warning, and forecasting products on the CIEWS Project, by INTEGEMS

* 1. A synoptic weather station was procured for the Lungi international airport so that all weather stations are in tune with latest technologies particularly because of the importance the airport commands.
  2. A number of capacity building in terms of equipment’s have been provided to radio stations in Dodo and Bumbuna to enable them transmit early warning information to the people in those high risk communities.

**Output 1.3: Forecasting meteorological tools, soft wares, infrastructure facilities and specialized training available and running SYNERGIE, SADIS & AMESD Systems, and Capacity of the Sierra Leone Meteorological Department Strengthened to Produce Improved and Sector Tailored Weather Forecasts**

**Output 1.4: Capacity of the SLMA Enhanced to Support Early Warning System Data Handling and Forecasting Operations**

* + 1. On-the-job capacity development programme for Meteorological Technicians developed by the Meteological regional center in Lagos in alignment with GoSL investment plan for SLMA develop. Rolling out of developed plan to be done as soon funding is available.
    2. Six (6) staff of the SLMD Technicians trained at WMO Regional Meteorological Centers in Lagos for WMO Class 11 Trainings in Observation and Forecasting; It is planned that these staffs will be assigned to the various districts to perform these tasks.
    3. SLMD premises at Gloucester street, Freetown and the Lungi international airport were both refurbished. Once refurbished in the first quarter of 2017, it will accommodate new forecasting equipment and provide facilities in support of broadcasting climate and early warning information to end-users.

**Output 1.5: Communications Network Established for the SLMA and Disaster Management Department (DMD), Office of National Security (ONS) to Support Early Warning Systems Warning and Dissemination Mechanism**

* + 1. The need for the strengthening of outer Meteorological Stations Communications facilities for data collection and transmission, including the provision of SSB/VHF radios, mobile phone sets, etc re-assessed by INTEGEMS, as a component of the consultancy to develop communications, early warning, and forecasting products on the CIEWS Project,
    2. Initial consultations with the aim of establishing formal partnerships with the Sierra Leone National Telecommunication Commission (NATCOM), DMD-ONS, towards the sustainable utilization of mobile communication and internet signal for EWS dissemination/response network held in 2016. This has been formalized with the signing of a memorandum of understanding between the SLMA, SLBC, ONS and NATCOM for the relay of early warnings to the people of Sierra Leone in cases of anticipated disasters.
    3. A Climate Information, Disaster Management, Early Warning Systems (CIDMEWS), an online one-stop shop web portal to facilitate access to real-time and reliable climate information is being finalized. Data for provincial head quarter locations can be found on: See <http://www.cidmews.solutions/index.php> This has strengthened the capacity of the SLMA & ONS to provide improved climate information, and to support early warning systems in Sierra Leone.

**Output 2.4: Existing Dissemination/response system strengthened to support and Early Warning System at the Disaster Management Department - Office of National Security:**

* + 1. Communication and awareness raising strategy, pilot application and implementation local level responses i.e. relating to flood early warning in particularly for vulnerable communities in river valleys with strong participation of women farmers associations developed by INTEGEMS, as a component of the consultancy to develop communications, early warning, and forecasting products on the CIEWS Project,
    2. Non-Governmental Organizations (NGOs) and Community-Based Organizations (CBOs) in most-vulnerable pilot communities in the Northern, Eastern and Southern Provinces in Sierra Leone engaged on the
    3. Climate-induced hazards for selected disaster-prone communities in pilot demonstrations and other most vulnerable communities have been determined. Partnership with NGO’s, CBO’s, local mobile phone provider and other institutions to develop community based warning dissemination systems, including toll-free text and pictorial “sms” is planned for 2017.
  1. Review of Sierra Leone’s hazard profile is currently on-going. This study will identify disaster risks that may occur in Sierra Leone and map out all disaster-prone areas in Sierra Leone, as well as recommend strategies for managing them.

**Output 2.6: Community Based Early Warning Systems (CBEWS) Network Established in 3 Pilot Sites to**

**Enhance and Test its Impacts on Risk Reduction in Sectors and Population**

2.6. 1 Community Based Early Warning Systems established at Bumbuna Watershed through capacity building, establishment of structures for managing climate-induced risks, community-based small-scale adaptation activities for flood and drought resilience under a “Cash-for-Work” schemes by the Bumbuna Watershed Management Authority in the Ministry of Energy;

2.6.2 Infrastructure and technical capacity of community radios (Radio Numbara in Bumbuna, Northern Province , Kamboi Radio in Kenema District, and Radio Wanje, Pujehun Districts) assessed for strengthening for warning dissemination in areas of pilot demonstration sites;

2.6.3 Women, girls and youths key participants in the community consultations for the development of community-based communication and information sharing tool using local languages (community media: TV, radio and newspaper) for climate and hazards predictions in 3 pilot demonstrations sites in Bumbuna, Dodo and Guma.

* + 1. Support to NGO’s and Community Base Organizations engaged on raising awareness on community disaster-risks and issues raising awareness for local communities targeting in particular women and youth associations, to assess and address local risk levels and provide Early Warnings on extreme weather events. Support to NGOs & CBOs planned for 2017.
    2. National drills involving meteorological and disaster management stakeholder institutions and disaster prone community representatives, in particular women and youth associations were conducted in Bumbuna. This was to test the effectiveness and readiness of EWS for vulnerable communities downstream of the Bumbuna Dam.

**IV. CHALLENGES AND LESSONS LEARNT**

* The departure of both the team Leader and the Programme Specialist in the beginning of the year created a huge gap in the cluster which delayed implementation of project activities.
* Due to lack of expertise within the country considerable delays were experienced in the procurement of equipment’s abroad.
* Timely initiation of procurement proceedings and constant follow-up to ensure timely delivery is a major lesson learnt.

### **V. FUTURE WORK PLAN**

* Terminal evaluation of the CIEWS project.

### **VI. FINANCIAL IMPLEMENTATION**

In 2017, a delivery of 95% was achieved of the USD 1,044,639 that was provided to the project as part of the core resource allocation. USD 988,837 has been expended in full.

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| --- | --- | --- | --- | --- | --- |
|  | Total allocation (USD) | Total Expenditure (USD) | Balance (USD) | % delivery |  |
| GEF | 1,044,639 | 988,837 | 55,802 | 95% |  |

Note: Official figures as at 27 December 2017.

1. [↑](#footnote-ref-1)
2. [↑](#footnote-ref-2)
3. [↑](#footnote-ref-3)