PROJECT STATUS REPORT AS OF SEPTEMBER 2014

3 SEPTEMBER 2014

1.0 INTRODUCTION

This brief report provides a quick updates on the status of the CREW project implementation as of September 2014. This report also seeks to serve as a briefing note to the Royal Embassy of Norway in Ghana, as they intend to embark on a field visit to at least one of the CREW pilot districts in the Country. The report also contains a summary of what the team is expected to see in the field and a summary of the project outputs expected to be achieved at the end of 2014.

1.1 Brief Background of the project

Disaster Risk Reduction (DRR) is an urgent and significant development issue in Ghana. Recognizing the importance of strengthening DRR capacities in achieving sustainable development and poverty reduction in Ghana, this project aims to build capacities within the country to reduce disaster risk by putting in place an integrated early warning system that is both scientific and people-centered. The project is designed in a way that it aligns with the Hyogo Framework of Action and the Ghana Plan of Action for DRR and CCA, and leads to tangible results in both the national and community levels. Through the implementation of hazard mapping, early warning, and vulnerability assessment and reduction, the project aims to achieve the following goals:

1) A reduction of economic and human losses and damages from priority disasters, and
2) Establishment of effective early warning and communication for priority hazards to reduce disaster risks in the 10 pilot sites by 2015.

The project has the following three main outcomes which are aimed at achieving the above project goals:

1) Hazard risks understood
2) Capacity for EWS for priority hazards enhanced
3) Urban and rural vulnerabilities to disasters reduced

In order to achieve these broad outcomes, the following 22 outputs are expected to be achieved by the end of 2016:

1. Updated and improved hazard maps at the national level and in 10 pilot sites
2. Capacities built and lessons learned to better understand hazard risks
3. Hazard risks information communicated to various stakeholders
4. Hazard risk activities monitored, reported, and re-evaluated based on challenges and opportunities on the ground
5. Quality of hazard risk activities assured to meet international standards and best practices
6. Mechanisms to update and sustain hazard risk monitoring established
7. Existing status, challenges, and opportunities for EWS in Ghana identified and assessed
8. EWS Master Plan developed for priority hazards
9. A functioning EWS for priority hazards designed and established through a participatory process in the 10 pilot sites
10. Capacities built and lessons learned to establish, improve, and sustain an effective EWS in Ghana
11. EWS information communicated effectively to relevant stakeholders
12. EWS activities monitored, reported, and re-evaluated based on challenges and opportunities on the ground
13. Quality of EWS activities assured to meet international standards, best practices, and local context relevance
14. Mechanisms to update and sustain EWS are in place
15. Updated and improved vulnerability maps at the national level and in 10 pilot sites
16. Causes of disaster vulnerabilities, and measures to reduce vulnerabilities explored and understood
17. Measures to reduce vulnerabilities tested and implemented in the pilot sites
18. Capacities built and lessons learned to reduce disaster vulnerabilities in Ghana
19. Good practices on reducing disaster vulnerabilities communicated effectively to relevant stakeholders
20. Vulnerability reduction activities monitored, reported, and re-evaluated based on challenges and opportunities on the ground
21. Quality of vulnerability reduction activities assured to meet international best practices and standards
22. Mechanisms to scale DRR efforts in urban and rural districts are identified

2.0 HAZARD MAPPING METHODOLOGY DEVELOPMENT

The development of methodology for a comprehensive mapping at the national and the pilot districts is one of the key activities of the project. This activity contributes to output 1 of the project (updated and improved hazard maps at the national level and in 10 pilot sites). The project has developed and evaluated a number of methodologies for both flood and drought Hazard mapping and assessment. In order to ensure that the methodology meets international standards, the project has created an inventory of flood and drought hazard assessment methodologies. These methodologies have also been evaluated to assess their suitability for use in Ghana. The objective of this assessment was to identify the most appropriate methodology for the CREW project, keeping in mind that the hazard maps will be an important tool for the definition and prioritization of appropriate disaster risk reduction strategies for Ghana in the light of short and long term development planning.

2.1 **Flood Hazard Mapping**

Floods are dominated by two aspects: the presence of excessive water and the topographical characteristics of the area. For example, water is collected in low lying areas, flat surfaces close to a river flood easily and rainstorms in urban areas can cause sudden floods (flash flood). It is possible to develop 1 or 2-dimensional hydraulic models for all catchments in Ghana and calculate all kinds of flood scenarios with them, resulting in flood hazard maps. However, this is estimated to be very costly both in terms of the data collection process as well as in model building work. Moreover, the purpose of a flood hazard map on national level is mainly to get a general idea of which areas are more prone to flooding than others. In this connection, the project adopted a much simpler and appropriate method to present similar characteristic areas called the HAND-methodology. The HAND method describes the relative height of a certain pixel to its drainage network. To demonstrate that the HAND method is suitable for the purpose of national flood hazard mapping, the project validated the method on several typical flood areas. Figure 1, Figure 2 and Figure 3 present results of validation runs in the floodplains of the White Volta, Lake Volta at high water level and for the area around the Odaw drain (Greater Accra). The validation runs have shown that the hazard levels are strongly dependent on the quality of the measured elevation and the raster size.

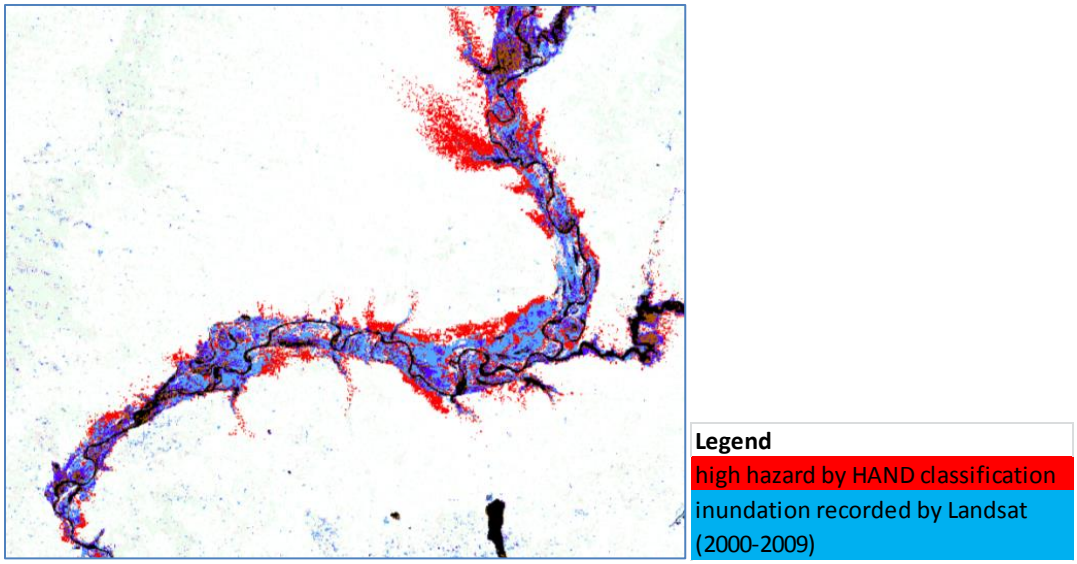


Figure 1, Validation of the HAND-hazard for the White Volta

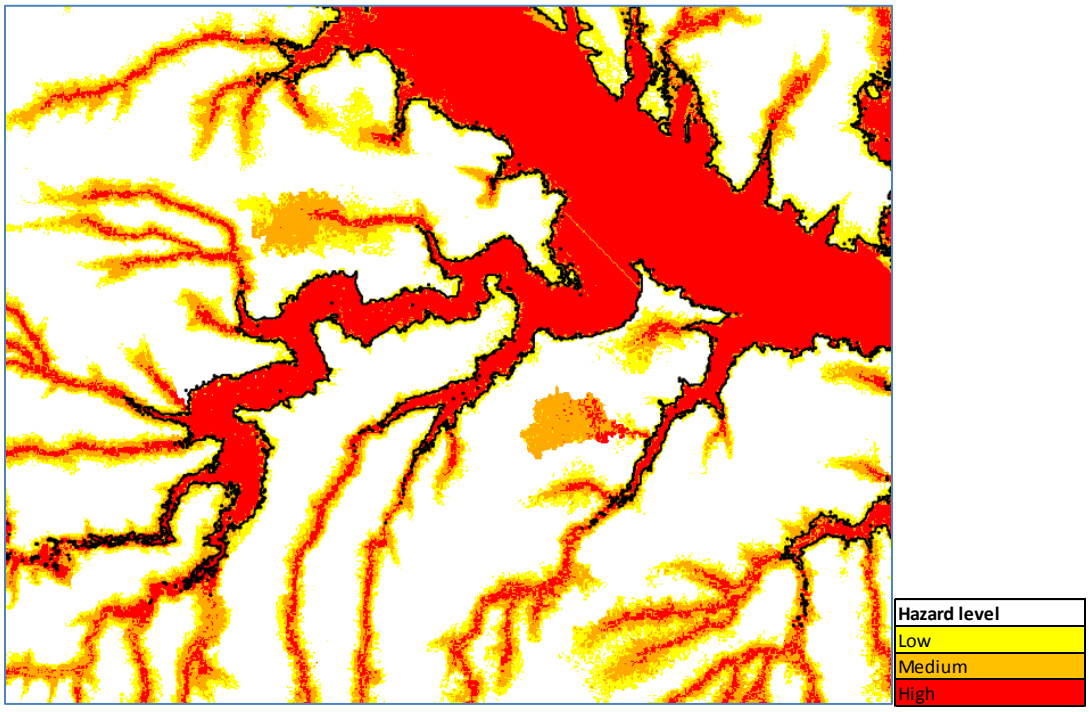


Figure 2, Validation of the high hazard zone of take Volta with the 84m elevation contour line

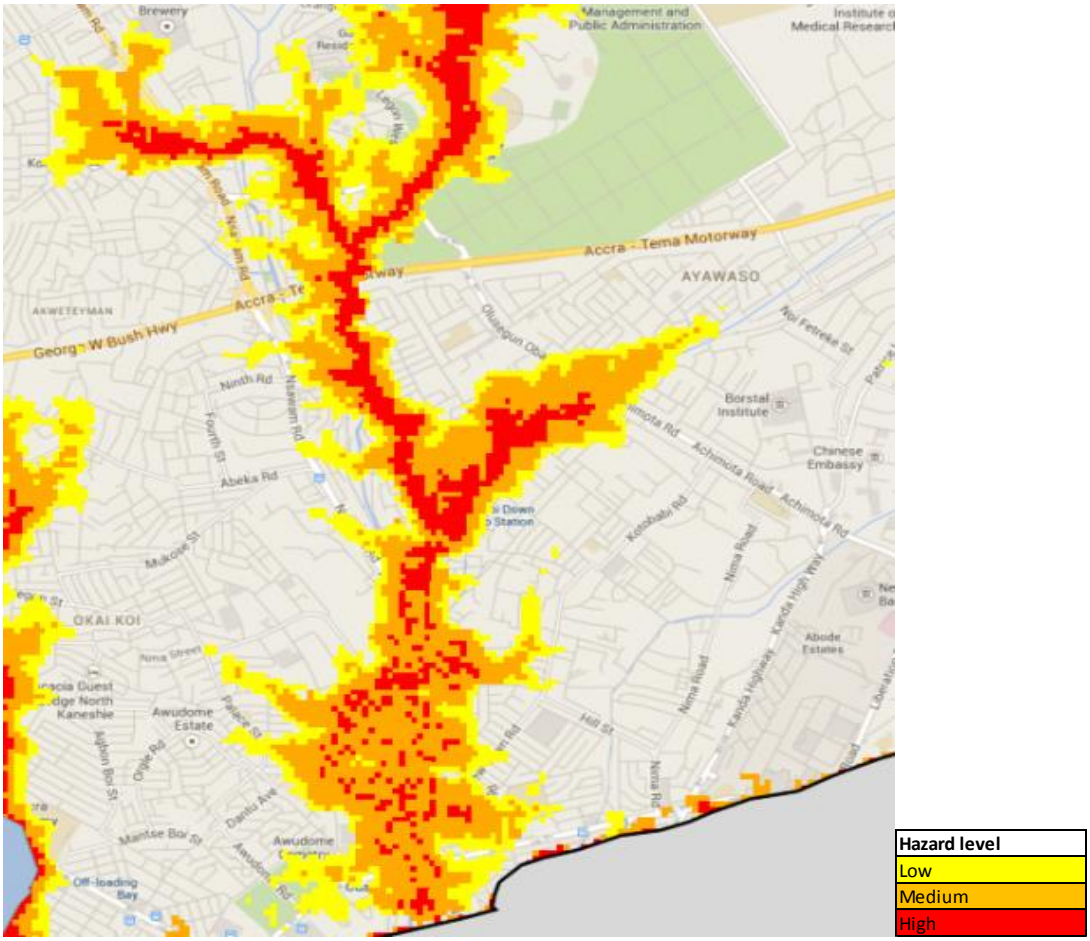


Figure 3, Validation for the Odaw drain

2.2 Drought Hazard Mapping:

In contrast with flooding, drought is a slow process. Drought is dominantly influenced by meteorological circumstances, especially rainfall and evapotranspiration. Whether areas suffer from drought depends on one hand on the spatial variability of these meteorological variables but also on the physical properties of the land surface. For example areas which have deep phreatic groundwater levels are more vulnerable than areas where groundwater can be accessed by the roots. The same applies to areas where access to surface water bodies for irrigation is available. For the hazard mapping of drought on the national scale the project is concerned with the meteorological drought. This way the interpretation of the maps is unambiguous. Moreover the effect of climate change (e.g. the primary variables like rainfall and temperature) can be incorporated more easily. The method that the project has adopted is

based on the idea that the cumulative rainfall deficit is the most important combined variable (evapotranspiration minus rainfall). As both the absolute value of the cumulative rainfall deficit as well as the duration of certain rainfall deficit is of importance. A preliminary result of the drought hazard maps, with data aggregated to district level is presented in figure 5. When averaged to district level, the project is able to validate the hazards with an existing disaster database from which the pilot districts were selected. The disaster database which was developed last year by the CREW project mainly describes the historical disasters on districts level.

Disaster Database from January 1987 to June 2013

Figure 4: Data Base

The majority of the historical drought events are situated in the Southern part of Ghana. Overall the majority of the points are situated in areas that are classified as 'medium and high' in the drought hazard map which shows that the methodology presented provides a good representation of drought hazard in Ghana.

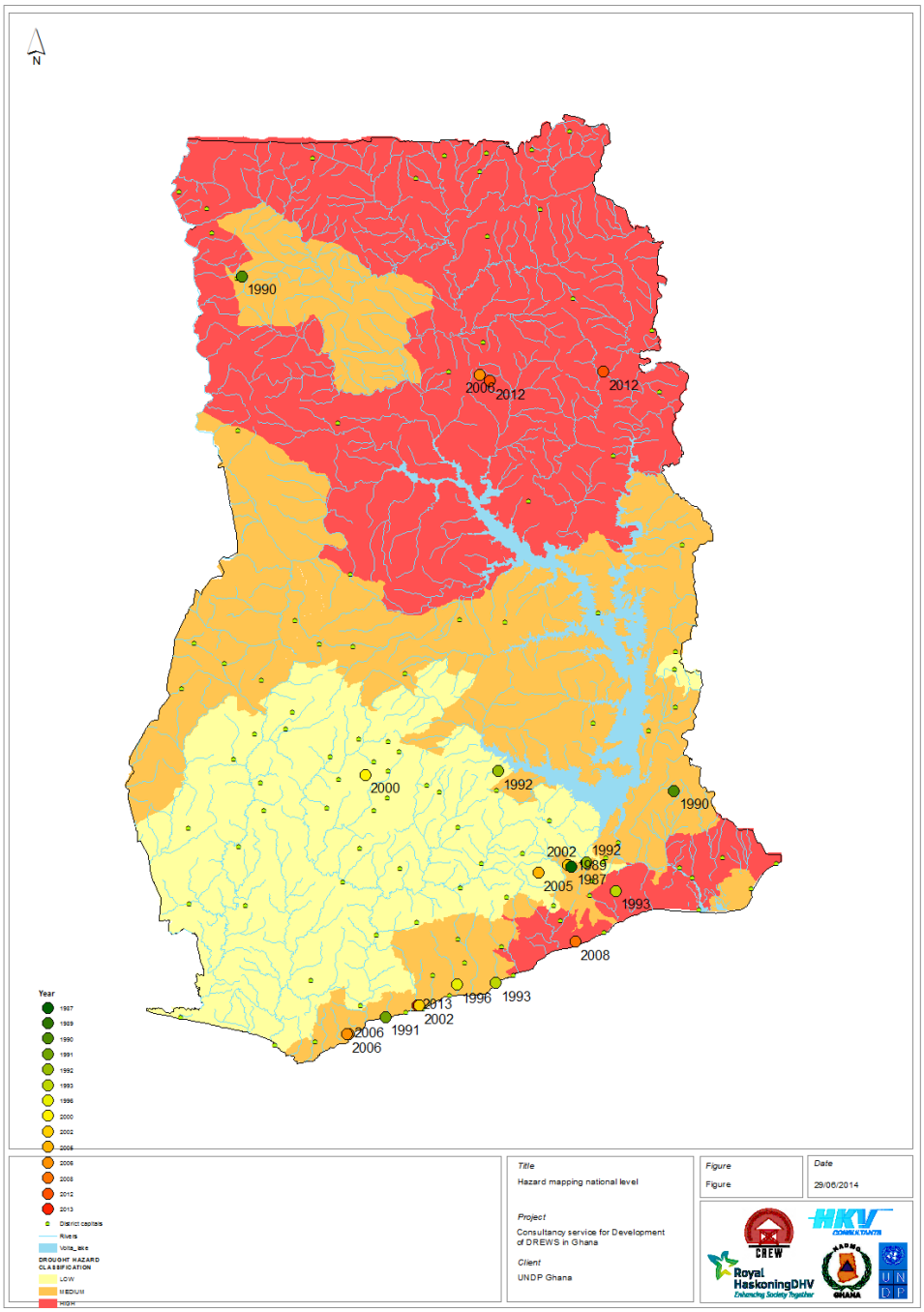


Figure 5 Drought Hazards from the Historical Disaster Database

Figure 5, Locations of drought hazards from the historical disaster database. Colours indicate the year of the disaster (red = recent, green = older).

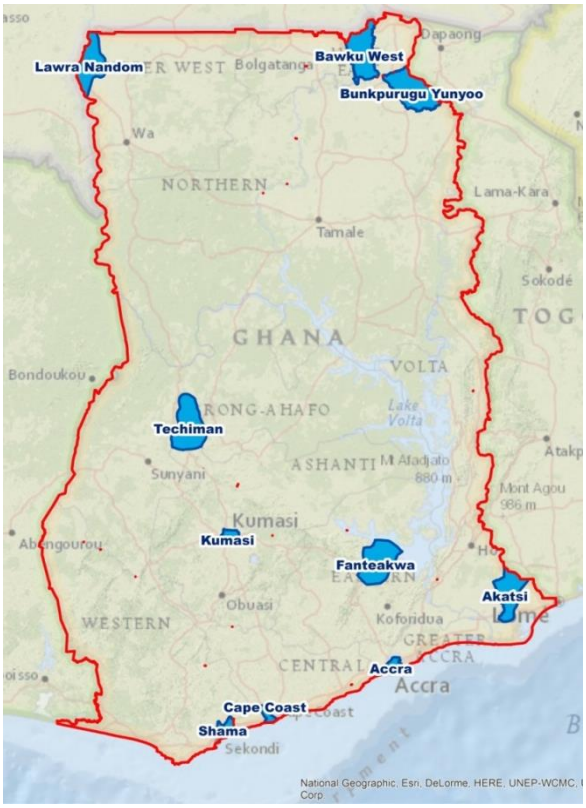
3.0 VULNERABILITY MAPPING METHODOLOGY AND EARLY WARNING COMMUNICATION

Outcome 3 of the project seeks to ensure that Urban and Rural Vulnerabilities to floods and droughts Disasters are reduced. In order to achieve this, the project would seek to update and improve vulnerability maps at the national level and in 10 pilot sites, understand the causes of disaster vulnerabilities through focus group discussions and household questionnaire administration, implement measures to reduce vulnerabilities, and put in place a Web-based Emergency Operation Centre (WEBEOC) for effective disaster Early Warning communication in the 10 pilot districts. This section provides the methods adopted by the project to map floods and drought vulnerabilities at the national level and 10 pilot districts.

Figure 6: Focus Group Discussion on the Causes of Socio-Economic Vulnerability at Galaka in the Upper East Region

3.1 Floods Vulnerability Mapping Methodology:

Flood vulnerability is assessed in terms of economic damage and mortality or affected people. The economic damage caused by floods depends on the land use of the areas under consideration. The mortality or number of persons affected by floods is linked to the population density in the ten (10) pilot districts.



UPPER WEST	**LAWRA – DIKPE/GBERI**
UPPER EAST	**BAWKU WEST - GALAKA**
NORTHERN	**BUNKPURUGU YUNYOO** **BINDI/NAJONG 1**
ASHANTI	**KUMASI METRO – ASUOYEBOA**
BRONG AHAFO	**TECHIMAN – NEW ONYINASE**
CENTRAL	**CAPE COAST - KWAPROH**
WESTERN	**SHAMA -BOSOMDO**
EASTERN	**FANTEAKWA – BOSOSO/ZONGO**
GREATER ACCRA	**ACCRA METRO – OLD FADAMA**
VOLTA	**AKATSI - TORVE**

Figure 7: Ten (10) Pilot Sites

The project has also collected some land use datasets. This land use dataset presents the following land use types at the national and 10 pilot districts:

- Land use types
- Grass and herb with or without scattered trees
- Open Cultivated Savannah Woodland

- Closed Savannah Woodland
- Widely Open Cultivated Savannah Woodland
- Settlement
- Open Savannah Woodland
- Closed Cultivated Savannah Woodland
- Riverine Savannah Vegetation
- Grassland with or without scattered trees and shrubs
- Unclassified/Bushfire
- Reservoir
- Unclassified/Cloud
- Rock
- Closed Forest
- Moderately Dense Herb and Bush with Scattered Trees
- Moderately Closed Tree Canopy with Herb and Bush
- Riverine Forest Vegetation
- Open Forest
- Planted Cover

For the national level vulnerability mapping the projects has clustered these land use types into the following four groups:

1. Agriculture
2. Build up areas
3. Industries
4. Other land use types (not vulnerable to floods)

The land use clusters will be divided into more land use types during the pilot level implementation where more detailed information is available and useful. A look at the available land use or land cover map shows that certain areas do not show realistic land use classes, such as large urban areas and industrial areas. This can be seen in Figure 5. The project intends to correct this map for large urban areas based on available information.

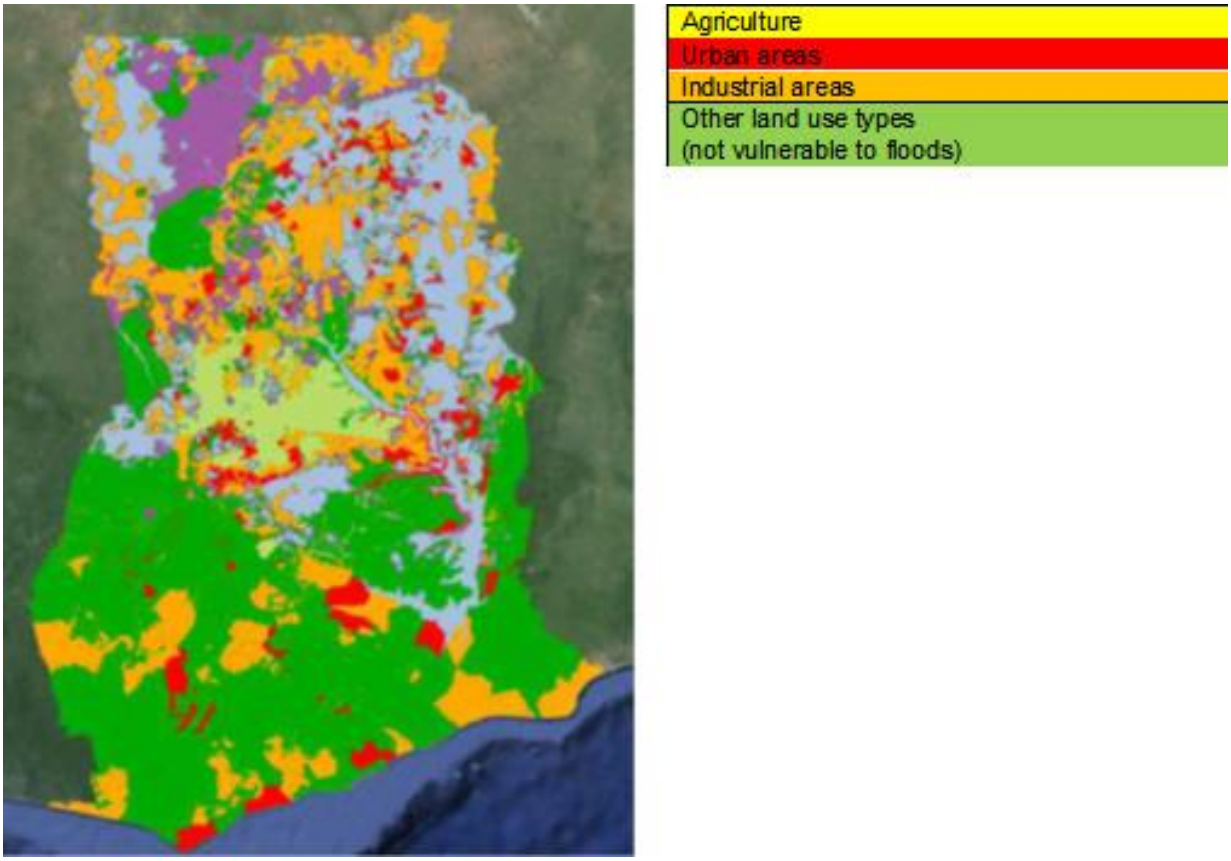


Figure 5 Land use map

3.2 Drought Vulnerability Mapping Methodology:

The vulnerability mapping for droughts follows a similar approach as described above for floods. Land use is the main aspect that plays a role in the vulnerability to droughts where agricultural land use suffers most. In the light of the definition of drought: *drought is a protracted period of deficient precipitation resulting in extensive damage to crops, resulting in loss of yield*" it is evident that the agricultural sector is the one that is affected by drought. The land use grouping used to define the vulnerability to droughts will differ from the grouping used for the flood vulnerability in that there will be only two groups at the national level: Agricultural and Non-agricultural. At the pilot districts, a more detailed insight into the drought hazard is targeted; several crop groups will be defined to represent the different sensitivities to drought of the crops that are grown in each pilot area.

4.0 COMMUNITY AND DISTRICT LEVEL ENGAGEMENT

Based on lessons learned on a number of projects being implemented by UNDP, an intensive community level and wider stakeholder engagement was initiated and implemented within the first quarter of this year. The key stakeholders engaged included; Some Regional Ministers, District and Municipal Chief executives, District Disaster Management Committee, traditional leaders and vulnerable groups. Through these engagements, traditional leaders and local government authorities have shown their commitment to supporting the successful implementation of the project. One of the traditional leaders in the Northern Part of Ghana and also a member of the Council of State **Vo-Naa M. B. Bawa**h had to this say about the CREW project:

"…*going to contribute significantly to efforts being made to reduce climate change effects on the ecology*" He also indicated that "*the idea of the usage of scientific and local knowledge in the project's implementation was laudable, adding that "it will help reduce floods and droughts".*

The link below explains it further:

http://www.ghana.gov.gh/index.php/2012-02-08-08-32-47/general-news/4092-nadmo-undp-work-to-address-floods-and-droughts

Figure 8; Member of the Council of State Vo-Naa M. B. Bawah (Middle) in a Group Photo with Participants at CREW Stakeholder Workshop in the Northern Region-Tamale

5.0 CAUSES OF FLOODS AND DROUGHT DISASTER VULNERABILITIES IN CREW PILOT DISTRICTS

As indicated earlier, In order to reduce the vulnerabilities of the pilot districts to floods and drought disasters, the project conducted a study on the causes of household floods and drought disasters vulnerabilities in five pilot district of the northern sector of Ghana. A total of about 750 households were interviewed to understand the causes of their vulnerabilities to floods and droughts disasters, disaster typologies, coping strategies and mechanisms that households adopt when disaster occurs in the northern sector (The project is planning to start with the southern sector in the second week of September). Figure 6 shows how farm lands are inundated with flood waters during raining seasons.

Figure 6. Farm Lands submerged in floods water in Dikpe, a community in the Lawra District

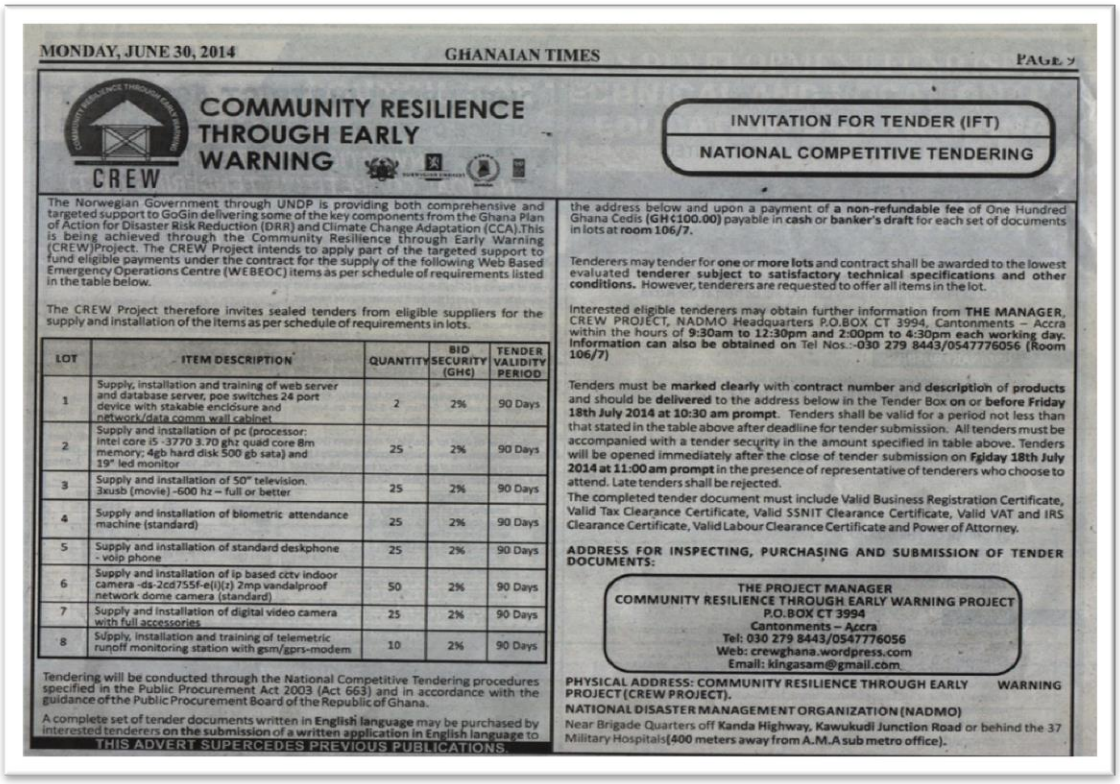
The study also sought to identify appropriate DRR measures. The data for the study is being analysed. The next stage after the findings of the study would be to validate the findings with the communities involved and design appropriate DRR measures to be implemented in the fourth quarter of 2014.

The project has committed about USD 1,000, 000 for the implementation of the DRR measures in the 10 pilot districts. This activity when fully implemented would contribute to realization of the outcome 3 of the CREW project.

6.0 PROCUREMENT AND INSTALLATION OF AUTOMATIC WEATHER STATIONS (AWS) AND WEB EOC.

One of the key outputs under outcome 2 of the project is a functioning EWS for priority hazards designed and established through a participatory process in the 10 pilot sites. To achieve this output, the project seeks to design and implement appropriate EWS communication system. This communication system would require up to date and accurate data on climatic conditions and a functioning Web Emergency Operation Centre (WEBEOC) to disseminate and communicate early warning information to targeted stakeholder at the national levels and CREW pilot districts.

The project has successfully procured the services of a reputable International company to supply and install the AWS at Seven CREW pilot districts. The installation is expected to be completed in fourth week of November. The project has also successfully completed a national competitive bidding process for the procurement and installation of the WEB EOC equipment. It is expected that these equipment would be installed in early November.



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CREW

COMMUNITY RESILIENCE THROUGH EARLY WARNING

INVITATION FOR TENDER (IFT)
NATIONAL COMPETITIVE TENDERING

The Norwegian Government through UNDP is providing both comprehensive and targeted support to GoGin delivering some of the key components from the Ghana Plan of Action for Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA).This is being achieved through the Community Resilience through Early Warning (CREW)Project. The CREW Project intends to apply part of the targeted support to fund eligible payments under the contract for the supply of the following Web Based Emergency Operations Centre (WEBEOC) items as per schedule of requirements listed in the table below.

The CREW Project therefore invites sealed tenders from eligible suppliers for the supply and installation of the items as per schedule of requirements in lots.

LOT	ITEM DESCRIPTION	QUANTITY	BID SECURITY (GH¢)	TENDER VALIDITY PERIOD
1	Supply, installation and training of web server and database server, poe switches 24 port device with stakable enclosure and network/data comm wall cabinet	2	2%	90 Days
2	Supply and installation of pc (processor: intel core i5 -3770 3.70 ghz quad core 8m memory; 4gb hard disk 500 gb sata) and 19" led monitor	25	2%	90 Days
3	Supply and installation of 50" television 3xusb (movie) -600 hz – full or better	25	2%	90 Days
4	Supply and installation of biometric attendance machine (standard)	25	2%	90 Days
5	Supply and installation of standard deskphone - voip phone	25	2%	90 Days
6	Supply and installation of ip based cctv indoor camera -ds-2cd755f-e(i)(z) 2mp vandalproof network dome camera (standard)	50	2%	90 Days
7	Supply and installation of digital video camera with full accessories	25	2%	90 Days
8	Supply, installation and training of telemetric runoff monitoring station with gsm/gprs-modem	10	2%	90 Days

Tendering will be conducted through the National Competitive Tendering procedures specified in the Public Procurement Act 2003 (Act 663) and in accordance with the guidance of the Public Procurement Board of the Republic of Ghana.

A complete set of tender documents written in **English language** may be purchased by interested tenderers **on the submission of a written application in English language to** the address below and upon a payment of **a non-refundable fee** of One Hundred Ghana Cedis **(GH¢100.00)** payable in **cash** or **banker's draft** for each set of documents in lots at **room 106/7.**

Tenderers may tender for **one** or **more lots** and contract shall be awarded to the lowest evaluated **tenderer subject to satisfactory technical specifications and other conditions.** However, tenderers are requested to offer all items in the lot.

Interested eligible tenderers may obtain further information from **THE MANAGER,** CREW PROJECT, NADMO Headquarters P.O.BOX CT 3994, Cantonments – Accra within the hours of **9:30am to 12:30pm and 2:00pm to 4:30pm each working day. Information can also be obtained on** Tel Nos.:-**030 279 8443/0547776056 (Room 106/7)**

Tenders must be **marked clearly** with **contract number** and **description** of **products** and should be **delivered** to the address below in the Tender Box **on** or **before Friday 18th July 2014 at 10:30 am prompt**. Tenders shall be valid for a period not less than that stated in the table above after deadline for tender submission. All tenders must be accompanied with a tender security in the amount specified in table above. Tenders will be opened immediately after the close of tender submission on **Fgiday 18th July 2014 at 11:00 am prompt** in the presence of representative of tenderers who choose to attend. Late tenders shall be rejected.

The completed tender document must include Valid Business Registration Certificate, Valid Tax Clearance Certificate, Valid SSNIT Clearance Certificate, Valid VAT and IRS Clearance Certificate, Valid Labour Clearance Certificate and Power of Attorney.

ADDRESS FOR INSPECTING, PURCHASING AND SUBMISSION OF TENDER DOCUMENTS:

THE PROJECT MANAGER
COMMUNITY RESILIENCE THROUGH EARLY WARNING PROJECT
P.O.BOX CT 3994
Cantonments – Accra
Tel: 030 279 8443/0547776056
Web: crewghana.wordpress.com
Email: kingasam@gmail.com

PHYSICAL ADDRESS: COMMUNITY RESILIENCE THROUGH EARLY WARNING PROJECT (CREW PROJECT).
NATIONAL DISASTER MANAGEMENT ORGANIZATION (NADMO)
Near Brigade Quarters off **Kanda Highway, Kawukudi Junction Road** or behind the 37 Military Hospitals**(400 meters away from A.M.A sub metro office).**

THIS ADVERT SUPERCEDES PREVIOUS PUBLICATIONS.

Figure 9: Figure 7: National Competitive Bidding IFT Advert for the Supply and Installation of WEBEOC Communication Equipment

Figure 10: Mr Kofi Portuphy (Top Right), NADMO National Coordinator, Opens CREW IFT

7.0 CURRENT SATE OF CREW INTERVENTION IN PILOT DISTRICTS AND THE EXPECTATTION OF THE MISSION TEAM- NORWEGIAN EMBASSY.

As indicated in the CREW project document, the Government of Norway has committed US$ 5,162,667 for the implementation of the CREW project. The donor has shown enough commitment to seeing the realization of tangible results of the project. It is against this backdrop that, the donor would like to embark on a two day mission to at least one of the project sites to familiarize themselves with the current flood disaster situation in the pilot district and the suitability of the proposed DRR measures aimed at reducing the vulnerabilities of the residents to floods and drought disaster in the district. From the above updates and according to the 2014 Annual work plan of the project, the project seeks to produce robust knowledge products and accurate data which would inform the nature of physical assets and interventions to be installed and implemented respectively in the pilot districts. **In this regard, and at this stage of implementation, the field visit mission would only afford the donor the opportunity to interact with the project intended beneficiaries and key stakeholders, and visit the hot spots within the districts bearing in mind that the implementation of the proposed DRR interventions would begin in the fourth quarter of 2014.**

8. EXPECTED OUTPUT BY THE END OF DECEMBER 2014.

The project has started earnestly some activities aimed at achieving the following outputs by the end of the year:

1. Updated and improved Hazard and vulnerability maps at the national level and in 10 pilot sites
2. Causes of disaster vulnerabilities, and measures to reduce vulnerabilities explored and understood
3. Measures to reduce vulnerabilities tested and implemented in the pilot sites
4. Quality of vulnerability reduction activities assured to meet international best practices and standards
5. Mechanisms to scale DRR efforts in urban and rural districts are identified:
6. Capacities built and lessons learned to establish, improve, and sustain an effective EWS in Ghana.