

Project Portfolio Status Reports

July 2018 – November 2018

The objective of the CREWS initiative is to significantly increase the capacity to generate and communicate effective impact-based, multi-hazard, gender-informed, early warnings and risk information to protect lives, livelihoods, and assets in Least Developed Countries (LDCs) and small island developing States (SIDS).

CREWS Members



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Switzerland

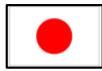
CREWS Observers



Canada



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Japan



Mexico



New Zealand



Norway



UNDP
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Development Policy



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ACP

CREWS Implementing Partners



Project Portfolio Status Reports

July 2018 – November 2018

1. The following document comprises the project status reports submitted by the World Meteorological Organization (WMO) and the World Bank through the Global Facility for Disaster Risk Reduction and Recovery (GFDRR), for the period July 2018 through November 2018¹.
2. Project status reports are made publicly available, following the Steering Committee meetings, on the CREWS website.
3. Results, drawn from the outcomes and outputs for the CREWS projects, in accordance with the CREWS results management framework, are presented in the CREWS Annual Report, which is made available by the end of March each year.
4. In future such Project Portfolio Status Reports, the CREWS Secretariat will include a simple project performance status table (see CREWS/SC.7/workdoc.4).

Highlights from the Project Reports

5. To date the CREWS Steering Committee has approved ten investment initiatives. These include five national initiatives; in Burkina Faso, the Democratic Republic of the Congo, Mali, Niger and Papua New Guinea; three regional projects in the Caribbean, in the Pacific and in West Africa; support to the participation of experts from LDCs and SIDS to the global multi-hazard early warning conference held in Cancun, Mexico, in 2017; and, a post-disaster early warning assessment of the Caribbean 2017 hurricane season.
6. As of November 2018, two projects have been completed or are in the process of completion. These are the support to the participation of experts from LDCs and SIDS to the global multi-hazard early warning conference (complete) and the post-disaster early warning assessment of the Caribbean 2017 hurricane season (process of completion).
7. In **Burkina Faso** two Letters of Agreement (LOAs) were signed during this reporting period. The first LoA was signed with the Barcelona Supercomputing Centre (BSC) in July for the provision of Warning advisories for Sand and Dust Storm. The '[Warning advisory System for Sand and Dust Storm in Burkina Faso](#)' was launched in Oct 2018. The second LoA was signed with AGRHYMET in October 2018 for provision of training on operational use of CIRAD SARRA models in support of agricultural meteorology.

¹ In accordance with the *CREWS Operational Procedures Note N 2: Monitoring and Evaluation*, Implementing Partners are responsible for reporting on project implementation semi-annually and annually.

8. Terms of Reference for an integrated assessment of the hydrological service`s capacity in relation to flood forecasting were finalized. This assessment is expected to start during the next reporting period.
9. Two series of Roving Seminars were held with agro-meteorologists, radio operators, extension agents, local authorities and farmers at the pilot municipalities of Niangoloko, Tenado and Titao in August and October 2018, to take stock of the dynamics of the rainy season and analyse the value-added of agromet services provided.
10. There were two expert advisory missions to Burkina Faso from 19 to 21 July and 19-21 November with Agriculture Meteorology (AgM), Climate Prediction and Adaptation (CLPA), Hydrology and Water Resources (HWR), WMO`s Data Management and Application programme and the WMO Integrated Global Observing System (WIGOS). The missions were coordinated with teams from the World Bank.
11. A training on the use of the crop monitoring model developed by the Center for Agricultural Research for Development (CIRAD SARRA-H) in support of agricultural meteorology, both at the plot level and at national scale using remote sensing techniques; took place in Ouagadougou from 12 to 23 Nov 2018 with participants from Burkina Faso, Mali, Niger and Senegal.
12. WMO has made a modification to the project timeline. It is suggested to change the implementation period to accommodate:
 - (i) the actual start of the project (initiation updated from Jan 2017 to Jul 2017)
 - (ii) the need to demonstrate the operational use of the climate watch and monitoring tool under development by Météo-France and the Weather Agency in Burkina Faso (ANAM) during the May-Sept 2020 rainy season (closing date updated from Dec 2019 to Dec 2020).
13. In the **Democratic Republic of the Congo** the development of flood exposure maps has commenced in a selected area of Kinshasa. This exercise was supported with 71 individuals being trained on the flood exposure mapping platform. There has been the recruitment of a firm for flood risk modelling in the selected area of Kinshasa.
14. Several workshops have been held including training on Quality Management Systems (QMS) for aviation meteorology and an institutional workshop with hydromet information users. At the community level three focus group workshops on flood risk in the selected area of Kinshasa have been held.
15. Technical support to project implementation has been provided through select international advisors. Technical support has been provided to advance Mettelsat development strategy and action plan, as well as for the design and installation of real-time monitoring system in the N`Djili watershed

16. Since the last reporting period, the project in **Mali** has initiated training and sensitization of women in early warning and disaster risk management. A national consultant has been identified and recruited to support this activity. The terms of reference for this activity have been elaborated.
17. Training has been identified for two staff from Mali- Meteo and General Directorate for Civil Protection (DGPC) in climate related risk and climatic and weather forecasting.
18. The Terms of Reference for recruitment of a firm to facilitate alert information coordination and dissemination through Internet connection of the DGPC has been prepared and the recruitment process is on-going. In terms of knowledge exchange, representatives from the DGPC have participated in the European Commission (EC) and the Africa, Caribbean and Pacific (ACP) meeting in Brussels in November.
19. Progress of project implementation continues in **Niger** with the elaboration and adoption of a national early alert code by Presidential Decree N°2018-538/PRN/MISP/D/ACR of July 25, 2018. The elaboration of four applied decrees of the national Alert code is under preparation with support being provided by an international consultant who supported the development of the national Alert code.
20. The Terms of Reference to secure an expert(s) to support the Alert information coordination and dissemination through Internet connection of General Directorate for Water Resources (DGRE), Directorate of National Meteorology (DMN) and DGPC have been developed.
21. Improved collection of hydromet data have started in six regions – Dosso, Diffa, Maradi, Tahoua, Tillabéry and Zinder – and in the District of Niamey. This activity will continue up until end of December 2019. Observers of meteorological and hydrological stations have been trained on the collection and transmission of meteorological and hydrological data and information.
22. The elaboration and dissemination of a bimonthly alert bulletin on extreme hydrometeorological events such as heat waves and water levels of the Niger River continues.
23. In **Papua New Guinea** A Letter of Agreement has been signed between WMO and the PNG National Weather Service (NWS), and another one is in preparation with the Bureau of Meteorology (BOM) of Australia. The process was delayed due to of a lack of procurement and financial management capacity at PNG NWS and support needed to be secured from the line ministry. A mission was held 22 to 24 November 2018 to identify solutions. During the reporting period, the project supported a PNG representative participation in the Fourth Pacific Island Climate Outlook Forum (PICOF-4) and the Training Session on Social Media and Communication on 10-15 October 2018, Nadi, Fiji. The next step will be the launch workshop, with all relevant stakeholders, tentatively scheduled for Q1 2019. The project work plan will also be refined at this workshop.

24. The timelines for the Papua New Guinea project has been modified to reflect the date of the launch of the project. The proposed revised timeline is: Start of the project April 2018; end of the project March 2021.
25. In the **Pacific**, the project Steering Committee, held in October 2018, reviewed progress to date and approved next year's annual implementation plan along with a request for additional development of strategic plans for additional countries (now: *Fiji, Federated States of Micronesia, Kiribati, Nauru, Palau, Republic of Marshall Islands, Tokelau, Tonga and Tuvalu*). There was also a request to reallocate funds initially earmarked for an Automatic Weather Station (AWS) in Tokelau to supporting emergency communication.
26. The Pacific Island Climate Outlook Forum (PICOF) held in Fiji in October was co-financed by CREWS.
27. In July, the roadmap for the implementation of high-resolution numerical weather prediction was finalised along with an initial introduction to impact-based forecasting during the Tropical Cyclone Committee in Noumea, New Caledonia. In the same month, there was also support provided to the Severe Weather Forecasting and Disaster Risk Reduction Demonstration Project's Regional subproject management team meeting.
28. The two Regional Projects, for which funding was approved in 2018, have commenced.
29. The **West Africa project Seamless Operational Forecast Systems and Technical Assistance for Capacity Building** was launched on 20 September 2018 at the Economic Community of West African States (ECOWAS) Hydromet Forum, held in Abidjan, Côte d'Ivoire. Participants at this forum represented meteorology, hydrology, food security and civil protection services in West Africa. A Community of Practice was established during the forum and a short video was produced along with a news release of the launch which can be accessed on the CREWS website.
30. The **Caribbean (CARICOM) project Strengthening Hydro-Meteorological and Early Warning Services in the Caribbean** was launched on 20 November 2018 at the Climate Outlook Forum held in Bridgetown, Barbados. Participants at this forum represented meteorology, national disaster offices, priority sectors and experts.
31. The first CREWS project to be completed supported the participation of experts from LDCs and SIDS at the global multi-hazard early warning conference held in Cancun, Mexico in May 2017. The Conference defined an approach to establish national baselines on early warning systems (EWS) to be used by government agencies to report on advances in early warning efforts on a periodic basis as contemplated in the Sendai Framework also referenced in the 2030 Sustainable Development Agenda and the Paris Agreement on Climate Change. A main goal was therefore to take stock of the current level of development of single and multi-hazard EWS, i.e. their effectiveness, related actors and partnerships, coordination mechanisms, partnerships and gaps.

32. The conference resulted in a revised multi-hazard early warning checklist for operationalizing Impact-Based MHEWS that was launched on World Meteorological Day in March 2018 (accessible online via <https://public.wmo.int/en/resources/world-meteorological-day/wmd-2018/multi-hazard>).
33. Other outcomes of the Conference include:
- i. Draft Guidelines for Measuring Early Warning Access and Effectiveness
 - ii. Promotion of practice and innovation in early warning systems through learning, exchange and good practice compilation using the posters provided for the poster session²
 - iii. The Conference proceedings.
34. CREWS facilitated the post-disaster early warning systems assessment for the Caribbean 2017 hurricane season that has resulted in the development of a comprehensive report highlighting the multiple stakeholders involved in identifying priority areas for investment opportunities. The initiative also highlighted the importance of integrating gender considerations into early warnings as this was treated as a separate but interrelated component within the assessment.
35. The assessment process was applied to at least three of the most impacted states. It utilised a triangulated approach that incorporated a number of desk reviews of reports on actions taken during and after the impact of the hurricanes, and consultations with focus groups at the regional, national and community level to verify procedural actions and gaps.
36. For validation of findings and recommendations a regional validation workshop was held, in May 2018, bringing together over 50 people who represented hydrometeorology, disaster risk reduction and Gender Bureaus from 15 islands. They were supported by representatives from 12 international and regional organisations.

² It is planned to make the posters of the MHEWC-I and MHEWC-II available on the website (<http://www.wmo.int/earlywarnings2019>) and synthesize the information for inclusion in the Guidelines for Measuring Early Warning Access and Effectiveness and/or the next version of the MHEWS Checklist.

BURKINA FASO Project Status Report		
1	Project Title	Strengthening national capacities for EWS Service Delivery in Burkina Faso
2	Project Reference	CREWS/CProj/03/Burkina
3	Reporting Period	July - November 2018
4	Reporting Focal Point	Jean-Baptiste Migraine (jbmigraine@wmo.int)
5	Project Status Overview	<p>Before the reporting period (since July 2017):</p> <ul style="list-style-type: none"> - A Letter of Agreement has been signed between WMO and Burkina Faso Meteorological Service (ANAM), for an amount of US\$482,000. The first payment was transferred in October 2017; - A GIS software was procured to enhance ANAM capacity in relation with statistics and basic tools for climate services; - A license was purchased providing access to products from the European Centre for Medium-Range Weather Forecasts (ECMWF); - An assessment of the observing network took place, organized by WMO/WIGOS. The draft report is available; - A visit to the hydrological service took place as well as a workshop for "Project Preparation for the Implementation of Integrated Flood Management in the Volta River Basin" in Ouagadougou, Burkina Faso, from 20 to 24 November 2017, co-organized by WMO and the Global Water Partnership; - Assessments of user requirements with regards to agrometeorological services was developed for the pilot municipalities of Niangoloko, Tenado and Titao in Dec 2017. - A Letter of Agreement has been signed between WMO and Météo-France, for an amount of US\$310,000 to support (i) use of seasonal and sub-seasonal forecasts in agrometeorological services; (ii) use of remote sensing (including Land Data Assimilation Systems - LDAS) in agrometeorological services and (iii) strategic planning within ANAM, signed on 24 May 2018; - A training on sand and dust storm was provided to one ANAM forecaster (Cairo, 10-12 February 2018); - A training on numerical weather prediction was provided to two ANAM forecasters (Langen, 12-16 March 2018); - Two series of Roving Seminars involving local radio communicators and agricultural extension agents with regards to agrometeorological services were held for the farmers at the pilot municipalities of Niangoloko, Tenado and

		<p>Titao in April-May and then in June 2018.</p> <ul style="list-style-type: none"> - Two technicians were supported to reinforce the seasonal prediction team (from usually 2 to 4) to take part in 2018 Seasonal Forecast Forum for Agro-hydro-climatic characteristics in the Sudano-Sahelian zone (PRESASS 2018), Abidjan from 30 April to 05 May, 2018. This team is working with Meteo France on the sub-seasonal component. <p>During the reporting period:</p> <ul style="list-style-type: none"> - A LoA was signed with Barcelona Supercomputing Center (BSC) in July 2018, for provision of Warning advisories for Sand and Dust Storm in Burkina Faso; the 'Warning advisory System for Sand and Dust Storm in Burkina Faso' was launched in Oct 2018; - A WMO supervision mission was held on 19-21 July with AgM, CLPA, HWR, DMA and WIGOS. The mission was coordinated with World Bank teams; - Two series of Roving Seminars were held with the agro-meteorologists, radio operators, extension agents, local authorities and farmers at the pilot municipalities of Niangoloko, Tenado and Titao in August and October 2018, to take stock of the dynamics of the rainy season and analyse the value-added of agromet services provided; reports are available; - Burkina-Faso participated in the ECOWAS Hydromet Forum (Abidjan, 19-21 Sept 2018), specifically in sessions related to the development of a CREWS Community of practice in West Africa and to the CREWS West Africa project; - A LoA with AGRHYMET was signed in Oct 2018 for provision of training on operational use of CIRAD SARRA models in support of agricultural meteorology; the training took place in Ouagadougou from 12 to 23 Nov 2018; - ToRs were finalized for an integrated assessment of the hydrological service's capacity in relation with flood forecasting; the assessment will start during the next reporting period. 		
6	Project Activities Contributing to CREWS Outputs			
	CREWS Output 1: Assessments of capacities, user needs, alignment with other programmes and socio-economic benefits			
	Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2018	Progress by Nov 2018
	<i>1.1. Assessment of the observing network as an update of the SAP-IC midterm review report (2017) and recommendations towards integration of the national hydro-meteorological observing systems in OSCAR/surface. Mission 17-19 October 2017, including discussions and visit to central facilities and to</i>	Q4 2017- Q4 2018	80%	90%

some meteorological stations. The WIGOS report is available as draft.			
<i>1.2. Assessment of the hydrological service's national capabilities as an update of Serge Pieyns' reports (2014; 2016; 2017; 2018) with specific focus on end-to-end flood forecasting and early warning and recommendations towards modernization with CREWS and GCF/IDA resources. As a follow-up to a missions in Nov 2017 and July 2018, terms of reference have been prepared in Nov 2018, in consultation with experts and national services. The report is expected to be finalized in May 2019.</i>	Q4 2017- Q2 2019	40%	50%
<i>1.3. Assessment of agro-meteorological users' requirements with regards to climate warnings in 3 pilot areas (Niangoloko, Tenado, Titao) and detailed work plan for the CREWS agro-meteorological component. A first mission to evaluate requirements was held on 17-22 December 2017. A detailed list of requirements will be updated based upon lessons learned during the 2018 cropping season, by the end of 2018.</i>	Q4 2017- Q4 2018	80%	80%
CREWS Output 2: Access and use of hazard and risk information			
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2018	Progress by Nov 2018
<i>2.1. Licence to access products and forecasts from the European Centre for Medium-Range Weather Forecasts (ECMWF). Licence procured on 31 October 2017 covering 100Go of daily downloads from November 2017 until October 2019. Next step: training (see Output 7).</i>	Q4 2017- Q4 2018	100%	100%
<i>2.2. Data concentration at ANAM and integration of the hydro-meteorological observing systems in OSCAR/surface. Equipment for data concentration from synoptic stations was procured by WMO and has been configured by ANAM (see 5.2). In addition, meteorological and hydrological stations' metadata has been systematically organized (completed by meteorology, still in progress for hydrology) - see 1.1 and 1.2. A training of climate data management systems (CDMS) was provided to ANAM staff on 5-9 November 2018.</i>	Q3 2018- Q4 2019	10%	30%

2.3. <i>Development of a Burkina-Faso specific interface as part of the West Africa Severe Weather Demonstration Project (SWFDP-West Africa).</i> RSMC Dakar Website enhancement in progress. NWP products including EPSgrams from most of the contributing global NWP centres (e.g. Environment Canada, NOAA/NCEP, UKMO etc.) are available for benefitting NMHSs including ANAM Burkina Faso through RSMC Dakar web portal.	Q3 2018- Q4 2019	25%	75%
2.4. <i>Identification of flood prone areas and flood causes in a GIS portal.</i> Flood drivers have been identified as a combination of lack of land use management, insufficient urban drainage systems (or lack of its maintenance), and lack of integrated management of dams and reservoirs. The next step is to develop terms of reference for this deliverable.	Q3 2018- Q4 2019	0%	0%
2.5. <i>Calibration of a crop model (SARRA-H) for the agro-meteorological pilot zones and (SARRA-O) for national monitoring, and training of staff</i> - A training workshop on CIRAD models SARRA-H and SARRA-O is organized by AGRHYMET from 12 to 23 November 2018 with participants from Burkina Faso, Niger, Mali and Senegal. An analysis on the use of SARRA-H and SARRA-O by ANAM will be reported by the end of 2019.	Q1 2018- Q4 2019	10%	50%
2.6. <i>Development of priority agromet indices based on Land Data Assimilation Systems (LDAS).</i> Météo-France is developing pilot indices and testing them in Burkina Faso in close coordination with ANAM. A workshop will take place on 12-13 february 2019 on LDAS organized by Météo France in Ouagadougou.	Q1 2018- Q4 2019	10%	25%
2.7. <i>Support to operational use of remote sensing techniques for rainfall monitoring.</i> This activity will be implemented in close coordination with CREWS West Africa, Raincell project by IRD and PADRE project by The World Bank. A specific workshop to take stock and develop recommendations would be planned in WMO early 2020.	Q3 2018- Q4 2020	0%	5%
CREWS Output 3: Improvement of NMHSs service delivery			
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2018	Progress by Nov 2018
3.1. <i>Development of an agro-meteorological production suite taking into account seasonal and sub-seasonal forecasting.</i> The twinning arrangement (LoA) with Météo-France was signed in May 2018 and 2 missions and workshops (June and Oct 2018) were organized to ensure requirements from end-users are best reflected in the design.	Q2 2018- Q4 2019	10%	15%

<p><i>3.2 Development of numerical weather prediction capacities.</i> Forecasters from ANAM have access to products from ECMWF (ecCharts) under a specific licence with ECMWF, and from UKMO and NOAA/NCEP under SWFDP-West Africa. A licence agreement was signed between ANAM and DWD (Deutscher Wetterdienst) for the right to use the COSMO model software, and one ANAM staff started the Master in High Performance Computing in Sept 2018 in Trieste (Italy). Two staff from ANAM (a forecaster and a public weather service expert) will participate in a regional training workshop in Lomé, Togo on 20-30 Nov 2018. An in-country training on use of global NWP products/data and on developing value-added products is planned in Ouagadougou for Q1 2019. In consultation with ANAM, two trainees from ANAM will be sent for COSMO NWP LAM training at DWD (Germany) in Q2 2019.</p>	Q2 2018- Q4 2019	20%	40%
<p><i>3.3. Development of a Flood Forecasting System for meteorology, hydrology and civil protection.</i> ToRs for the development of an action plan have been finalized in Nov 2018. Implementation is expected to start in Q3 2019.</p>	Q3 2019- Q4 2020	0%	5%
<p><i>3.4. Development of a GIS-based service delivery tool for meteorological, agro-meteorological and hydrological outputs.</i> ANAM and DEIE agreed to start with exchanging rainfall information in the format of rain maps. The terms of reference for the product design and implementation need to be developed.</p>	Q4 2018- Q4 2019	0%	5%
<p><i>3.5. Sand and dust storm forecasting.</i> Training on sand and dust storm forecasting provided to one ANAM forecaster in Cairo, 10-12 February 2018. A LoA with the Barcelona Supercomputing Center was signed in July 2018 to support the development of a Warning Advisory System for Sand and Dust Storm in Burkina Faso. The BF-SDS-WAS was launched in Oct 2018 and provides daily information to ANAM forecasters.</p>	Q1 2018- Q2 2019	30%	80%
<p><i>3.6. Training on limited area modeling (LAM) numerical weather prediction (NWP).</i> Provided to two ANAM forecasters in Langen, 12-16 March 2018.</p>	Q1 2018- Q1 2018	100%	100%
<p><i>3.7. Training on the use of ECMWF eccharts, a web-based application providing easy access to medium-range forecasts in a graphical format and in their native resolution.</i> First training provided through video-conference. A follow-up training will be provided as part of in-country training planned in Q2 2019.</p>	Q1 2018- Q3 2019	25%	25%
<p><i>3.8. Training on basic hydrological processes.</i> The detailed assessment of hydrological services' capacities, expected Q2 2019, will provide guidance on training needs.</p>	Q3 2018- Q3 2018	0%	0%

3.9. Training of ANAM agro-meteorological staff on the use of ARCGIS software for data analysis and production of services.	Q2 2019- Q2 2019	0%	0%
3.10. Training of ANAM staff on the use of sub-seasonal and seasonal outlooks in agro-meteorological advisories.	Q2 2020- Q2 2020	0%	0%
3.11. Joint training of ANAM and DGRE staff on standard operation procedures (SOP) for warning production, dissemination, response and return on experience.	Q2 2019- Q3 2020	0%	0%
CREWS Output 4: Development of long-term service delivery strategies and development plans for NMHS			
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2018	Progress by Nov 2018
4.1. Strategic plan for ANAM, as an update to the KPMG Modernization Plan (2014) and National Framework for Climate Services (2016) . Météo-France has hired a consultant for this task, which is expected to start in Nov 2018.	Q3 2018- Q4 2019	10%	20%
4.2. Strategic plan for national hydrological service (DGRE/DEIE). The detailed assessment of hydrological services' capacities, expected Q2 2019, will provide guidance on specific needs with regards to the strategic plan.	Q3 2018- Q4 2019	0%	0%
4.3. Development of CREWS Community of Practice. WMO and WB organized together two sessions during the ECOWAS Hydromet Forum on CREWS in West Africa. Participants confirmed the need to develop a CREWS Community of Practice, also inviting other francophone countries benefiting from large hydromet investments such as Madagascar and Côte d'Ivoire. They also recommended close coordination between national and regional projects to ensure more optimal use of funding available for severe weather (CREWS, CDSF, GCF), climate (ACP-EU, CREWS), civil protection and food security. Two reports outline the forward looking plans: CREWS Community of practice and CREWS West Africa	Q3 2018- Q4 2019	0%	20%
CREWS Output 5: Procurement and installation of high priority observation and information and communications technology (ICT) equipment			
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2018	Progress by Nov 2018

5.1. Procurement of ESRI ARCGIS software to enhance ANAM capacity in relation with statistics and basic tools for climate services. The software was procured in Nov 2017.	Q3 2017- Q4 2017	100%	100%
5.2. Setup of a data concentration and data management system. 12 PCs, 2 laptops, 1 server, 13 external disks and ten mobile broadband devices have been procured and received at ANAM. The Climsoft software is now customized and stable and will be installed on 10 PCs for the 10 synoptical stations. A training took place 5-9 November 2018 before delivery of the equipment to the stations and subscription for Internet connectivity for 30 months.	Q3 2017- Q2 2019	10%	80%
5.3. Procurement and installation of soil moisture sensors in pilot sites. Specifications have been identified. Procurement process is ongoing in WMO.	Q3 2018- Q2 2019	0%	10%
CREWS Output 6: Preparedness for response plans with operational procedures for dissemination, readiness to act with regular simulation exercises			
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2018	Progress by Nov 2018
6.1. Proposal for standard operating procedures (SOP) for warning production, dissemination, response and return on experience in line with the national disaster risk reduction law (2014) . Terms of reference are being drafted.	Q3 2018- Q4 2019	0%	5%
6.2. Proposal for data exchange agreement between entities involved in the SOP. In July 2018, ANAM agreed to exchange rain maps with DEIE to allow for potential use of national rainfall estimates in runoff and other hydrological models. The automatic process for exchange of rainfall information in near-real-time remains to be designed and implemented.	Q3 2018- Q4 2019	0%	5%
CREWS Output 7: Targeted education and public awareness programmes available for warning systems and related public action			
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2018	Progress by Nov 2018
7.1. Roving seminars - Seminars involving local radio communicators and agricultural extension agents	Q1 2018-	90%	100%

with regards to agrometeorological services were held at the pilot municipalities of Niangoloko, Tenado and Titao in April-May 2018; 1,101 farmers (501 women and 600 men) and 56 agricultural extension agent and communicators were trained.	Q2 2018		
<i>7.2. Training on use of agromet products</i> - From 25 to 26 June 2018, a workshop was held on the pilot sites (Titao, Tenado and Niangoloko) to disseminate the 2018 Seasonal forecast. Each pilot site has around 13 village and each village has sent 5 representatives to get the information and communicate it back to their community. Agricultural extension agent, local authorities and representatives of local radios have taken part. 195 farmers (59 women and 136 men) and 30 agricultural extension agent and communicators were trained.	Q2 2018- Q4 2020	30%	50%
<i>7.3. Training on dissemination of agrometeorological information</i> - From 27 to 30 August 2018 on the pilot sites, village representatives, intermediary agents, farmers, breeders and radio broadcasters were visited to assess how seasonal forecast information was restituted. 470 farmers (188 women and 282 men) and 10 agricultural extension agent and communicators were trained.	Q3 2018- Q4 2020	0%	50%
CREWS Output 8: Activities promoting gender equality in all aspects of early warning systems			
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2018	Progress by Nov 2018
<i>8.1. Identification of specific women requirements during user consultations in rural agro-meteorological pilot zones.</i> - The mission in Dec 2017 identified requirements from village representatives, intermediary agents, farmers, breeders and radio broadcasters, with a specific focus on discriminating women requirements. A specific report will be developed based upon lessons learned during the roving seminars and the socio-economic analysis.	Q3 2017- Q4 2019	40%	40%
<i>8.2. Delivery of specific agro-meteorological products targeted to women taking into account their specific roles in rural communities</i> - Specific products are yet to be identified.	Q3 2018- Q4 2019	0%	0%
<i>8.3. Gender-informed socio-economic analysis</i> - Terms of reference are being drafted.	Q1 2018- Q4 2019	10%	10%

	<i>8.4. Gender component in the ANAM and DGRE strategic plans to be developed with a</i>	Q4 2018- Q4 2020	0%	0%
7	Funding Spent	CHF 641,515 out of which CHF 339,515 during the current reporting period		
8	Changes in Organization and Operating Procedures, Project Viability and Sustainability	<p>The project time frame is updated to July 2017 – June 2021 in line with CREWS West Africa Project.</p> <p>The LoA with ANAM will need to be updated to reflect (i) this updated time frame as well as (ii) the support to DEIE through ANAM.</p>		
9	Lessons Learned	<p>The assessments conducted to date revealed that</p> <ul style="list-style-type: none"> - previous UNDP CIRDA project provided equipment without a proper maintenance plan nor a data management framework. Meteorological and hydrological data is currently collected (automatically and manually) through about 5 different networks and not concentrated in a single server nor assimilated into any forecast; CREWS is supporting the management and assimilation of data provided by the SAP-IC project equipment in national and global numerical weather forecasting; - the World Bank approved 2 investments. The US\$33 million Strengthening Climate Resilience in Burkina Faso supports ANAM, DGRE, food security (SAP), civil protection (DGPC) and disaster risk reduction (CONASUR), as a direct continuation and expansion of the CREWS project; while the Water Supply and Sanitation (US\$365 million) will also continue to support hydrological services with about US\$6 million. - While the meteorological service (ANAM) is operating with a reasonable context regarding premises, operation, maintenance, investment and salaries (with staff salaries similar to ASECNA), the hydrological service (DGRE/DEIE) is under-funded, cannot perform its basic mandate, despite availability of some equipment from the UNDP SAP-IC project most hydrological stations are not properly gauged, do not report automatically to headquarters; user requirements are not systematically organized and salaries are insufficient to attract and retain skills on the long term. - The institutional framework, data sharing practices and definition of warning are adequate for institutional collaboration in relation with anticipating impacts of drought and locust infestation; and still inadequate for 		

		warning in relation with rapid-onset events. In relation with data sharing, ANAM will propose a technical solution to exchange precipitation data with hydrologists in near real time (exchange of rain maps). A joint mechanism with ANAM, DGRE and DGPC needs to be established for rapid-onset warning, and more specifically for sand and dust storm and flooding warnings (in relation with 2014 Law on Disaster Risk Management)
10	Documents and links	<ul style="list-style-type: none"> - Project proposal approved by CREWS Steering Committee (Feb 2017) - pdf - Report of the WA-SWFDP technical planning meeting (Sept 2017) - doc - Assessment of observing networks (Oct 2017) - to be validated - Agro-meteorological requirements, Titao pilot site (Dec 2017) - pdf - Agro-meteorological requirements, Tenado pilot site (Dec 2017) - doc - Agro-meteorological requirements, Niangoloko pilot site (Dec 2017) - pdf - Report from the COSMO training (March 2018) - doc - Report from the Sand and Dust Storm Training in Cairo (March 2018) - doc - ANAM LoA First Report (March 2018) - pdf - Report from the agromet roving seminars (April 2018) - Niangoloko, Tenado, Titao, summary - Report from the West Africa Climate Outlook Forum PRESASS (May 2018) - doc - Minutes of the first technical workshop ANAM-Meteo France (June 2018) - pdf - Report from Seasonal forecast dissemination (June 2018) - Niangoloko, Tenado, Titao - Report from follow up agrometeorological mission (August 2018) - Niangoloko, Tenado, Titao - Report from Abidjan meeting on setting-up a Community of practice (Sept 2018) - gDoc - ANAM LoA Second Report (Sept 2018) - pdf - Report from follow up agrometeorological mission (Oct 2018) - Niangoloko, Tenado, Titao - Minutes from the second technical workshop ANAM-Meteo France (Oct 2018) - doc - Report on setting-up the Warning advisory System for Sand and Dust Storm in Burkina Faso (Oct 2018) - pdf

CARIBBEAN LESSONS LEARNT CREWS Project Status Report

1	Project Title	<i>Lessons Learnt on Early Warning Systems Following the 2017 Hurricane Season</i>
2	Project Reference	<i>CREWS/RProj/05/Lessons Learnt Caribbean</i>
3	Reporting Period	July 2018 to November 2018
4	Reporting Focal Point	<i>Lina Sjaavik Isjaavik@wmo.int</i>
5	Project Status Overview	<p><i>Before the reporting period</i></p> <ul style="list-style-type: none"> - Three consultants were recruited from the Caribbean to work alongside CIMH and CDEMA to facilitate the post-disaster assessment of early warning systems in the region - A gender webinar was hosted in June to facilitate a discussion with the virtual community on the consultant's findings from the assessment - A regional workshop was held also in June to validate the findings and recommendations from the consultants. This workshop brought together more than 48 representatives from the National Meteorological and Hydrological Services and the National Disaster Offices along with representatives from the Gender Bureaus. They were joined by participants from CREWS Implementing Partners and from the wider partnership network in the region to include International Telecommunications Union, UNDP, International Federation of Red Cross and Red Crescent. - The findings and recommendations were presented at the UNISDR's Regional Disaster Risk Reduction Platform for the Americas in Colombia in June. The session was opened by the French diplomat based in Colombia. <p><i>During the reporting period</i></p> <ul style="list-style-type: none"> - The final publication was designed and published - Support was provided to the French for an official launch of the report (launch should take place at a high level event at COP24)
7	Funding Spent	<i>USD 256,400</i>

CARICOM CARIBBEAN Regional CREWS Project Status Report		
1	Project Title	Strengthening Hydro-Meteorological and Early Warning Services in the Caribbean
2	Project Reference	CREWS/RProj/09/CARICOM
3	Reporting Period	July - December 2018
4	Reporting Focal Point	Melanie Kappes, mkappes@worldbank.org
5	Project Status Overview	<p>During the June 2018 Steering Committee Meeting the funding allocation of US\$ 5.5 million for this previously approved project was confirmed.</p> <p>Subsequently, and in parallel to the transfer of funds, the three implementing partners developed implementation approaches and started initial coordination through several calls. The implementing partners are also in contact and coordinating with the regional partners Caribbean Institute of Meteorology and Hydrology (CIMH), Caribbean Disaster Emergency Management Agency (CDEMA).</p> <p>A launch event with all the implementing partners is planned for the 20th of November in Barbados, on the margins of the Caribbean Climate Outlook Forum (CariCOF) meeting with participation of CIMH and CDEMA as well as national hydromet and Disaster Risk Management (DRM) representation.</p> <p>Key activities identified and initiated by all the development partners:</p> <p>World Bank (core implementation team already contracted and international advisors identified):</p> <ul style="list-style-type: none"> - Development of a regional Hydromet and EWS Diagnostic and Strategy - Identification of opportunities of strengthening EWS through Social Sciences - Development of a RADAR Network Diagnostic and Strategy - Development of a Business Continuity Diagnostic and Strategy

		<p>WMO</p> <ul style="list-style-type: none"> - Institutional strengthening through the development of strategic planning documents for National Meteorological and Hydrological Services (NMHS) - Support for bi-annual CariCOF - South-south cooperation between CREWS Pacific SIDS and CREWS Caribbean - Training under the Caribbean Severe Weather Forecasting Demonstration Project (SWFDP) - Impact-based forecasting, including coastal inundation - Community Based Early Warning System <p>UNISDR</p> <ul style="list-style-type: none"> - Organization of two regional events (year 1 and 3) to enhance the coordination between national and regional Hydro-Meteorological and Disaster Management Offices by defining roles and responsibilities related to the four elements of EWS. - Integration of gender considerations into the regional strategy and ensure that needs of vulnerable groups are reflected in the design of the regional strategy for early warning systems (starting from a review of existing recommendations). - Promotion and dissemination of recommendations from the WMO report on lessons learned from the 2017 hurricane season focusing on gender through the UNISDR global network. - Dissemination of project products and outcomes at the global and regional level.
7	Funding Spent	Total amount spent through November 2018: US\$ 0

8	Changes in Organization and Operating Procedures, Project Viability and Sustainability	NA
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DRC CREWS Project Status Report

1	Project Title	DRC Strengthening Hydro-Meteorological and Early Warning Services
2	Project Reference	CREWS/CProj/01/DRC
3	Reporting Period	June 2018 - November 2018
4	Reporting Focal Point	Lorenzo Carrera, Disaster Risk Management Specialist, The World Bank, lcarrera@worldbank.org , +1 202 813 5847
5	Project Status Overview	<p>CREWS is contributing to the improvement of hydro-meteorological and early warning services in the Democratic Republic of Congo by providing:</p> <ul style="list-style-type: none"> – improved weather forecasts disseminated through different media, including television, radio and internet; – agrometeorological information services; – extreme weather warnings (mostly in urban areas and along fluvial navigation channels), and; – support to aviation services. <p>The activities as presented in the Investment Plan are reflected below:</p> <ul style="list-style-type: none"> - Component A. Institutional and regulatory strengthening, capacity building and implementation support (cost US\$0.95M): (i) strengthening the partnerships between MettelSat, civil protection, RVF and RVA relevant to early warning systems (severe weather, flash flooding); (ii) institutional strengthening; (iii) capacity building; - Component B. Improvement of hydromet information service delivery (cost US\$2.14M): In line with the global framework for climate services, this component will support (i) identification of requirements by decision-makers

		<p>and the population at-risk; and (ii) support the design and production of more accurate, timely and relevant warnings and information. The component will strengthen the capacity of specific users for optimal use of products and services relevant to early warning systems (severe weather, flash flooding).</p> <p>More specifically, CREWS is leveraging on the World Bank Strengthening Hydro-Meteorological and Climate Services (P159217) investment project to deliver new early warning systems and improved hydromet services. CREWS supports and builds on the implementation of the investment project in MettelSat and other partners.</p> <p>CREWS funds have been received by the World Bank and the creation of a specific trust fund has been completed in December 2017. The investment project Strengthening Hydro-Meteorological and Climate Services (P159217) became effective in February 2018. CREWS and the investment project are implemented in close synergy.</p> <p>On January 3-4, 2018, flood events in Kinshasa caused 51 fatalities, affecting around 16,000 people and causing damages and losses for around US\$76 million. A rapid Post-Disaster Assessment carried out by the Government of DRC and Kinshasa Municipality, with the support of GFDRR and the World Bank, highlighted the lack of early warning systems as a major cause of impacts, particularly on the loss of human lives and people affected. In agreement with MettelSat and other governmental counterparts, CREWS will start focusing its activities by supporting the design and installation of a flood early warning systems in a pilot vulnerable area of Kinshasa, leveraging from the World Bank Strengthening Hydro-Meteorological and Climate Services Project and in synergy with other initiatives, including the Agence Francaise de Development (AFD) Project on Urban Development in Kinshasa (around US\$20M) and the Kinshasa Multisectoral Urban Resilience Project (around US\$150M funded by IDA).</p> <p><u>The section below describes major activities that have been carried out during the reporting period:</u></p> <ul style="list-style-type: none"> • Starting of flood exposure mapping in selected area of Kinshasa • Training (71 individuals) on flood exposure mapping in selected area of Kinshasa • 3 Community Focus Groups (workshops) on flood risk in in selected area of Kinshasa • Workshop and training on QMS for aviation meteorology (1) • Institutional workshop with hydromet information users (1) • Recruitment of technical support firm • Technical support to project implementation through international advisors • Technical support to Mettel sat development strategy and action plan • Recruitment of firm for flood risk modelling in in selected area of Kinshasa (flood EWS) • Technical support for the design and installation of real-time monitoring system in N’Djili watershed
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6	Project Activities Contributing to CREWS Outputs			
	CREWS Output 1: Assessments of NMHSs capacities, user needs, alignment with other programmes socio-economic benefits			
	Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2018	Progress by Nov 2018
	Assessment of capacity for early warning of drought, heavy precipitation, river flooding, flash flooding, wind storm and recommendations for improvement (carried out by an international firm plus international advisors)	Q1 2018-Q4 2019	5%	20%
	Assessment of user needs (3 stakeholders/users workshops organized)	Q2 2018-Q2 2021	-	20%
	Development and/or review of memorandums of understanding (MoUs) with users	Q2 2018-Q2 2020	-	10%
	CREWS Output 2: Access and use of hazard and risk information			
	Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2018	Progress by Nov 2018
	Development of a national risk geoportal and development of hazard, exposure and vulnerability information for flood risk assessment and impact forecasting	Q2 2018-Q2 2020	5%	5%
	Design of a flood EWS in a pilot urban watershed of <i>Kinshasa</i> (N'Djili watershed):	Q2 2018-Q2 2020		
<p><i>a. Identification and mapping of exposed assets and population to flood risk (first phase)</i></p> <p>The activity is on-going with OSFAC (Observatoire Satellital des Forêts d'Afrique Centrale) and University of Kinshasa, in collaboration with the GFDRR OpenCity Africa Initiative. Community flood/erosion exposure mapping is carried out in collaboration with relevant stakeholders (e.g. Mettelsat, City-Province of Kinshasa, Ministry of Urbanism, Civil Protection, Agency for Architecture Studies, etc.) in selected neighborhood of the N'Djili watershed (i.e. Matete and Kisenso for the first phase).</p>		30%	67%	

	Exposure mapping will inform flood risk assessments, which are necessary to develop impact-based forecasting models. Moreover, community flood risk mapping are carried out, through community workshops (3 focus groups have already been completed).			
	<i>b. Flood risk modelling</i> An international firm has been selected for flood risk modelling and flood risk mitigation studies. Expected start is December 2018.		-	10%
	<i>c. Preliminary design of the EWS in the pilot area:</i> The project has supported (through the provision of technical expertise) the development of the preliminary design for a real-time monitoring system in the pilot watershed. The Technical Assistance Firm (recruited in October 2018) advises on the design of the system, which will be implemented leveraging on the DRC Hydromet investment project.		30%	35%
CREWS Output 3: Improvement of NMHSs service delivery				
	Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2018	Progress by Nov 2018
	The project is supporting MettelSat and RVA with the elaboration of Quality Management Systems for air navigation meteorological services. The activity is on-going with the support of ASECNA (Aerial Navigation Safety in Africa and Madagascar) and international experts. A first workshop has been carried out in December 2017, the second in June 2018 and the third in November 2018. Training to Mettelsat on aviation meteorology is provided during the workshops. A guideline and methodology to estimate the re-distribution of air navigation revenues for meteorological services has also been developed for cost-recovery.	Q1 2018- Q4 2020	20%	30%
	The project is supporting capacity building of MettelSat by providing technical and operation training. The activity is carried out with the support of international experts and learning visits.	Q1 2018- Q2 2022	15%	15%
	The elaboration of a ToR for the selection of a Technical Assistance Firm for the implementation of hydromet activities has been completed with the support of international experts and in collaboration with Mettelsat. The Firm has been recruited and activities are on-going.	Q2 2018- Q3 2018	80%	100%

<p>Improve weather forecast capacity including extreme weather event:</p> <ul style="list-style-type: none"> a. Specifications of the central weather forecast system and central production system; b. Integration of local mesoscale and descent scale models (twinning); c. Update of (location-specific) numerical weather forecasting capacities to better track extreme events 	Q1 2019- Q2 2022	0%	0%
Development of the management, operation and maintenance procedures of the operational observation network	Q1 2019- Q2 2022	0%	0%
CREWS Output 4: Development of long-term service delivery strategies and development plans for NMHS			
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2018	Progress by Nov 2018
<p>Development of the Mettel Sat Strategy, Action Plan and Business Plan</p> <p>The strategy for Mettel Sat is under preparation. A first workshop has been organized in December 2017, a second stakeholder workshop in June 18-22, 2018 and a third in November 5-9, 2018. Well recognized international experts are supporting Mettel Sat in the preparation of the workshops and the elaboration of the analysis and the strategy.</p>	Q1 2018- Q2 2019	20%	35%
CREWS Output 5: Procurement and installation of high priority observation and information and communications technology (ICT) equipment			
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2018	Progress by Nov 2018
NA			
CREWS Output 6: Preparedness for response plans with operational procedures for dissemination, readiness to act with regular simulation exercises			
Project Outputs and Estimated Progress to Date	Output Start &	Progress by June	Progress by Nov 2018

	End Date	2018	
Strengthening the legal and regulatory framework for EWS at territorial level and definition and implementation of a Quality Management System for municipal and territorial warning systems	Q1 2018- Q4 2020	0%	0%
Specifications of decision-making tools for warning based upon forecasts and location-specific risk information and contribution to its operating costs		0%	0%
Specifications of the severe weather forecast production tool for river and lake navigation		0%	0%
Specifications of the crisis center of the civil protection and contribution to its operating costs		5%	5%
Risk mapping and emergency response plans for municipalities including training of operational and decision-making civil servants (77 individuals trained on exposure mapping)		10%	20%
CREWS Output 7: Targeted education and public awareness programmes available for warning systems and related public action			
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2018	Progress by Nov 2018
The Faculty of Science, University of Kinshasa has co-organized an event with MettelSat, Civil Protection and the World Bank in April 2018 at the University of Kinshasa on Disaster Risk Management in DRC and Kinshasa. The event showed large participation from academics, researchers and students. MettelSat and the Civil Protection had the opportunity to present the activities of the project and discuss its importance in urban contexts	Q1 2018- Q2 2018	100%	100%
Training for regional and local food security and disaster management committees	Q1 2018- Q4 2020	0%	0%
Study tour for the 4 institutions contributing to early warning (MettelSat, DPC, RVF, CVM)	Q1 2018- Q4 2020	0%	0%
Individuals (Open Street Map community, students, local communities, etc.) trained on exposure mapping (77) – phase one (neighborhoods of Kisenso and Matete)	Q1 2018- Q2 2019	0%	67%
Community focus groups for flood risk mapping and awareness (3 focus groups organized in the areas of Matete and Kisenso)	Q1 2018- Q4 2020	0%	30%

CREWS Output 8: Activities promoting gender equality in all aspects of early warning systems				
Project Outputs and Estimated Progress to Date		Output Start & End Date	Progress by June 2018	Progress by Nov 2018
CREWS will support to develop indicators to monitor the number of people with improved HydroMet services access and in particular, number of females with improved HydroMet access, the percentage of female beneficiaries from the project or proportion of female population satisfied with improved HydroMet services, the number of women involved of Hydromet activities, the numbers/percentages of representation of women, including in leadership roles and the percentage of women in Hydromet-related employment, such as in a utility company or a selected Ministry.		Q1 2018- Q4 2022	10%	10%
Woman trained on exposure mapping (17 individuals amongst Open Street Map community, students, local communities, etc.) – phase one (neighborhoods of Kisenso and Matete)		Q1 2018- Q4 2020	0%	30%
7	Funding Spent	Disbursed: US\$220,00 Committed: US\$428,000 Total disbursed and committed: US\$648,000 (A previous technical assistance (firm) contract was not assigned because of lack of suitable candidates and re-opened with revised scope and amount)		
8	Changes in Organization and Operating Procedures, Project Viability and Sustainability	No changes		
9	Lessons Learned	Significant technical support is required to MettelSat for the implementation of project's activities. CREWS is implementing in close synergy with the DRC Hydromet investment project, hence following similar challenges and timing. Activities carried out during the last reporting period have been focusing on reinforcing MettelSat capacity to implement the project.		

	Moreover, flood risk mapping and modelling activities in targeted areas of Kinshasa are running in parallel involving several stakeholders (such as the City-Province of Kinshasa, Mettelsat, Civil Protection, etc), the University of Kinshasa and local communities.
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MALI CREWS Project Status Report		
1	Project Title	Mali Hydrological and Meteorological Services Modernization Project
2	Project Reference	CREWS/CProj/02/Mali
3	Reporting Period	June 2018-November 2018
4	Reporting Focal Point	Koffi Hounkpe, Senior Disaster Risk Management Specialist, World Bank; Email: khounkpe@worldbank.org , +22890021696
5	Project Status Overview	<p>Since CREWS official launch on April 30, 2018, the main activities initiated are the support to the National Meteorological Service (MALI-METEO), National Hydrological Service (DNH), Food Security Early Warning System (CSA/SAP) and Civil Protection Directorate (DGPC), the four agencies contributing to CREWS implementation, through the participating to capacity building such as workshops, support for the Mali component of the West Africa Hydrological and Meteorological Services Modernization Project (West Africa regional project); the integration of gender aspects into CREWS activities as well as in the West Africa regional project.</p> <p>CREWS resources are supporting capacity development for stakeholders involved in early warning (meteorology, hydrology, civil protection, food security monitoring, selected Municipal Councils, population in areas prone to flash-floods).</p> <p>Some completed and/or ongoing activities during the current reporting period:</p> <ul style="list-style-type: none"> • Support to the preparation of West Africa Hydromet project, component Mali: Training of five people on project procurement strategy in Togo, September 2018; • Training and sensitization of women on early warning and disaster risk management: A National consultant (woman already recruited to support the activity), TDR for activity elaborated;

	<ul style="list-style-type: none"> Alert information coordination and dissemination through Internet connection of General Directorate for Civil Protection (DGPC): ToR prepared, and firm recruited process ongoing; Participation of DGPC at the European Commission (EC) and the Africa, Caribbean and Pacific (ACP) meeting in Brussels in November 2018; Two staff from Mali-Meteo and DGPC will be participating at a training on climate related risk and climatic and meteo forecasting in Israel in December 2018 <p>CREWS provides support to enhance the ability to generate and communicate effective alerts and risk information related to hydro-meteorological and climate events to protect lives, livelihoods and assets.</p> <p>Some activities planned are as follow</p> <ul style="list-style-type: none"> Recruit a firm to provide support to the activities during the CREWS implementation; Monitoring and forecasting hydrometeorological events by Mali-Meteo and DNH; Diagnosis of Meteo and hydro measuring networks for the investment project purchasing; Technical specifications of the computer center and the calibration laboratory, Diagnosis of databases (integration of radar data, manual, automatic, raincell, etc); Training of Mali Meteo staff for risk management, numerical forecasting, database management, production and dissemination of services; Diagnosis of users' needs for the comprehension and the diffusion of early warning alert messages; Dissemination of information and alert messages to decision makers and users; Information and sensitization of governors, prefects, mayors, to the dissemination of alerts in the regions including Bamako 			
6	Project Activities Contributing to CREWS Outputs			
	CREWS Output 1: Assessments of NMHSs capacities, user needs, alignment with other programs socio-economic benefits			
	Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2018	Progress by Nov. 2018

Assessment of capacity for early warning of drought, locust, heavy precipitation, river flooding, flash flooding, wind storm and sand storm, within National Meteorological Service (MALI-METEO), National Hydrological Service (DNH), Food Security Early Warning System (CSA/SAP) and Civil Protection Directorate (DGPC) and recommendations for improvement	Q3 2017-Q4 2019	10%	20%
Monitoring and forecasting by the National Meteorological and Hydrological Services		10	20%
Cartography and assessment of the users' needs to adapt hydrometeorological information to their need and the diffusion of the messages of alerts		10	20%
Needs assessment in University of Bamako towards development of a disaster risk management curriculum with focus on early warning		10%	20%
CREWS Output 2: Access and use of hazard and risk information			
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2018	Progress by Nov. 2018
CREWS will support Risk and climate information embedded in alert messages (depending on location) to enhance the ability to generate and communicate effective alerts and risk information related to hydro-meteorological and climate events.	Q1 2018-Q2 2020	10%	20%
Communication networks to disseminate information and alerts in a timely manner and messages to decision makers and users.		5%	20%
CREWS Output 3: Improvement of NMHSs service delivery			
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2017	Progress by June 2018
Development of operational procedures to convert extreme weather forecasts (rains, floods, winds, heat waves) in potential impacts.	Q1 2018-Q4 2020	10%	20%
Diagnosis of measuring networks of Mali-Meteo and Directorate for water resources and integration of numerical forecasts		10%	15%

Technical specifications of Mali Meteo computer center and the calibration laboratory and developments of operational procedures		10%	15%
Support to the design of production tools (climatology, immediate forecast, ...),		10%	15%
Operational rainfall estimates based upon cellphone signal attenuation		10%	25%
CREWS Output 4: Development of long-term service delivery strategies and development plans for NMHS			
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2018	Progress by Nov. 2018
Mali adopts procedures and tools for rapid warning, which will complement existing early warning arrangements. The country is particularly working on hazards such as floods, sandstorms and bushfires. The management of these risks requires concerted action between the institutions responsible for monitoring and forecasting, for coordinating the response, local authorities and citizens.	Q1 2018- Q4 2020	20%	30%
CREWS is supporting improvement within National Meteorological Service (MALI-METEO), National Hydrological Service (DNH), Food Security Early Warning System (CSA/SAP) and Civil Protection Directorate (DGPC) for improved early warning of drought, locust, heavy precipitation, river flooding, flash flooding, wind storm and sand storm.		20%	30%
CREWS Output 5: Procurement and installation of high priority observation and information and communications technology (ICT) equipment			
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2017	Progress by Nov. 2018
No procurement of equipment planned	Q1 2018- Q4 2020		
CREWS Output 6: Preparedness for response plans with operational procedures for dissemination, readiness to act with regular simulation exercises			

Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2017	Progress by Nov. 2018
The ministry of security and civil protection has recently recruited more than 300 staff of which more than 80% are for fire guard people for the General directorate for civil protection (DGPC). CREWS is developing training program for capacity development for better disaster preparedness and field intervention	Q1 2018- Q4 2020	15%	25%
Development of standard operational procedures within each of the 4 institutions and overall among the 4 institutions for warning activation and warning dissemination.		10%	20%
Emergency response plans for 5 municipalities		10%	10%
CREWS Output 7: Targeted education and public awareness programs available for warning systems and related public action			
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2018	Progress by Nov. 2018
Development of a training program for regional and local food security and disaster management committees.	Q1 2018- Q4 2020	10%	20%
Training of mayors on the integration of meteorological and climatological data and information in the development of Communal Development Plans (PDC).		10%	15%
Training of rural producers on the integration of agrometeorological data and information for decision-making in the framework of the planning of agricultural and pastoral activities		10%	10%
CREWS Output 8: Activities promoting gender equality in all aspects of early warning systems			
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2018	Progress by Nov. 2018
CREWS will support to develop indicators to monitor the number of people with improved Hydromet services access and in particular, number of females with improved Hydromet access, the percentage of female beneficiaries from the project or proportion of female population satisfied with improved	Q1 2018- Q4 2020	10%	25%

	Hydromet services, the number of women involved in Hydromet activities, the numbers/percentages of representation of women, including in leadership roles and the percentage of women in Hydromet-related employment, such as in a utility company or a selected ministry.			
	A senior local consultant (woman) was recruited to ensure gender aspects was effectively taking into account in CREWS activities as well as in the Hydromet project. Term of references are being developed to carry out training and awareness of women on the Hydromet information using in flood and food security early warning.		10%	25%
7	Funding Spent	Disbursed: \$275891 Committed: \$85449 Total disbursed and committed: \$361340		
8	Changes in Organization and Operating Procedures, Project Viability and Sustainability	<i>No change</i>		
9	Lessons Learned	Until now, there is lack in information sharing between the four main agencies implementing and preparing Hydromet project. The Hydromet investment project will provide suitable equipment for improving data collection and dissemination and CREWS will support in capacity development for more coordination and information sharing.		
10	Documents	Training and sensitization of women on early warning and disaster risk management – training materials Alert information coordination and dissemination through Internet connection of General Directorate for Civil Protection (DGPC) – ToR		

Multi-Hazard Early Warning Conference CREWS Project Status Report

1	Project Title	International Early Warning Conference ³
2	Project Reference	CREWS/GlobalProj/05/Early Warning Conf
3	Reporting Period	July 2018 to December 2018
4	Reporting Focal Point	Jochen Luther, Scientific Officer, Multi-Hazard Early Warning Services (SO/MHEWS) Division, jluther@wmo.int Weather and Disaster Risk Reduction Services (WDS) Department, WMO Secretariat
5	Project Status Overview	<p>The First Multi-Hazard Early Warning Conference (MHEWC-I) took place from 22-23 May 2017, Cancún, Mexico in conjunction with the Fifth Session of the Global Platform for Disaster Risk Reduction (DRR). It was organized by the International Network for Multi-Hazard Early Warning Systems (IN-MHEWS, consisting of key international agencies with a role and stake in early warning) and aimed to demonstrate to countries how they can improve the availability of, and their communities' access to, multi-hazard early warnings and risk information and assessments, in line with Target G of the Sendai Framework for DRR 2015-2030. The Conference highlighted strategies and actions required to build, promote and strengthen MHEWS, especially how to address key gaps such as faster and broader dissemination of warnings and the quality of the information provided to those at risk at the "last mile", through capacity development, operational support and improved coordination and governance.</p> <p>The Conference defined an approach to establish national baselines on early warning systems (EWS) to be used by government agencies to report on advances in early warning efforts on a periodic basis as contemplated in the Sendai Framework also referenced in the 2030 Sustainable Development Agenda and the Paris Agreement on Climate Change. A main goal was therefore to take stock of the current level of development of single and multi-hazard EWS, i.e. their effectiveness, related actors and partnerships, coordination mechanisms, partnerships and gaps. The Conference:</p> <ol style="list-style-type: none"> 1. Advocated the broadening of the scope of early warning, risk information and assessment to address multiple hazards and risks; 2. Leveraged progress in the development of observation and monitoring systems, the use of Big Data and the

³ Participation of Least Developed Country (LDCs) and Small Island Developing States (SIDS) experts in the First Multi-Hazard Early Warning Conference (MHEWC-I), 22-23 May 2017, Cancún, Mexico

		<p>strengthening of capacities to use modern information and communication technology, particularly for Least Developed Country (LDC), Small Island Developing States (SIDS) & Land-locked Developing Countries (LLDC);</p> <ol style="list-style-type: none"> 3. Promoted good practices for warnings to reach the people in need for timely action, including especially the Common Alerting Protocol (CAP) standard for all hazards alerting across all kinds of media; 4. Identified the requirements of MHEWS to comply with end-to-end systems and interoperability at local, national and regional scales through the development of a Checklist for MHEWS; and, 5. Examined trans-boundary and regional issues in developing, disseminating and responding to early warnings and alerts of multiple hazards. <p>The Project, including through co-funding from WMO (USD 72,500), USAID (USD 72,000) and Spain (USD 18,200) allowed 393 experts from 95 countries to participate in the Conference and the subsequent Global Platform on DRR. 45 Participants from National Meteorological and Hydrological Services (NMHSs) participated, including 19 Permanent Representatives of WMO Members. 16 funded participants were women. It should also be noted that 41% of the speakers and facilitators at the Conference were women. Overall, 450 practitioners from a variety of institutional and technical backgrounds participated for two days in the Conference. 82 posters on good and innovative practices from around the world on MHEWS were presented.</p> <p>Specific outcomes of the Conference include (see Document list at the end of the Report):</p> <ol style="list-style-type: none"> 1. Draft Guidelines for Measuring Early Warning Access and Effectiveness 2. A Checklist for Operationalizing Impact-Based MHEWS 3. Promotion of practice and innovation in early warnings systems through learning, exchange and good practice compilation using the posters provided for the poster session⁴ 4. The Conference proceedings. <p>The funds were mainly used to assist representatives from relevant institutions (in particular NMHSs, civil protection and emergency management agencies, etc.) in from LDC, SIDS and LLDCs to attend the Conference. Other cost categories included interpretation, translation, publication and logistical costs and the implementing partner fees (overhead/project support costs).</p>
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⁴ It is planned to make the posters of the MHEWC-I and MHEWC-II available on the website (<http://www.wmo.int/earlywarnings2019>) and synthesize the information for inclusion in the Guidelines for Measuring Early Warning Access and Effectiveness and/or the next version of the MHEWS Checklist.

		<p>An amount of ca. USD 42,000 remained after the Conference had taken place and the outcome documents had been published, following a 6 month extension of the lifetime of the Project (until August 2018). These funds were used to for activities specifically related to the follow-up of the Conference, namely:</p> <ul style="list-style-type: none"> • Support the joint review of the Severe Weather Forecasting Demonstration Project (SWFDP), Flash Flood Guidance System (FFGS) and Coastal Inundation Forecasting Demonstration Project (CIFDP), as these three demonstration projects are core components of a number of CREWS projects and lessons learnt from their joint review are expected to greatly benefit the further implementation and sustainability of these CREWS projects; • Co-fund the preparations for (in particular the website) for the MHEWC-II which will take place on 13 and 14 May 2019 in Geneva, again in conjunction with the then Sixth Session of the Global Platform for DRR, from 13-17 May. This follow-up Conference is a good indicator for and contributes to the sustainability of the Project.
6	Project Activities Contributing to CREWS Outputs	NA
7	Funding Spent	Total amount spent through November 2018: USD 318,617.89 (of USD 320,000.00), equivalent to CHF 321,320.00 (of CHF 322,710.00)
8	Changes in Organization and Operating Procedures, Project Viability and Sustainability	The Project is now finalized. Sustainability is provided by the active use – within CREWS projects and beyond – of the MHEWC Checklist and by preparing the MHEWC-II in 2019. The experts that have contributed to the Conference under the umbrella of the IN-MHEWS have remained committed and active to move the early warning agenda forward and will again contribute to the MHEWC-II and eventually to the 2019 Global Platform for DRR. Key results and lessons learnt from CREWS projects may be presented at both events, providing good platforms for outreach, feedback and review.
9	Lessons Learned	<p>The Conference was a great success with NMHS representatives from 45 different countries attending, in many cases, accompanied by staff from their civil protection and other agencies.</p> <p>Despite a number of letters and announcements about the Conference to WMO Members, it was very difficult to gain the attention of many of the target NMHS countries to inform them of the assistance available to attend the Conference until close to the event itself. As a result, many of the travel arrangements were undertaken at the “last minute” and</p>

		<p>some (because of visa issues – see above) missed the event entirely. It is recommended that the next Conference is held with less time between such Conferences than before (i.e. <11 years, e.g. two or four years) so that those who attended the event in Cancún will quickly recognize it as an event that is worthwhile and that assistance to representatives from LDCs, SIDS, and LLDCs to attend can be provided.</p> <p>To publicize the event, it is recommended to promote it also through the WMO Regional Offices and urge their staff to follow up on invitations and announcements with key target countries well in advance of the next event to avoid some of the delays mentioned above.</p>
10	Documents	<ul style="list-style-type: none"> • Draft Guidelines for Measuring Early Warning Access and Effectiveness⁵ • A Checklist for Operationalizing Impact-Based MHEWS⁶ • The Conference proceedings⁷, including the WMO Communiqué⁸ • The 2017 Global Platform for DRR – Chair's summary: From Commitment to Action⁹ • Reports of the Joint Reviews¹⁰ of the SWFDP, FFGS and CIFDP

NIGER CREWS Project Status Report

1	Project Title	Niger Strengthening Early Warning Services
2	Project Reference	CREWS/CProj/07/Niger
3	Reporting Period	June 2018-November 2018
4	Reporting Focal	Koffi Hounkpe, Senior Disaster Risk Management Specialist, World Bank; Email: khounkpe@worldbank.org , +22890021696

⁵ Available at: https://www.wmo.int/pages/prog/drr/documents/mhews-ref/CREWS%20Consultation%20Document%20on%20Measuring%20EWS_Draft%2017%20May.pdf

⁶ Available at: https://library.wmo.int/index.php?lvl=notice_display&id=20228#.W-6qvK6nGHt

⁷ Available at: Will be available in December 2018 at: <http://www.wmo.int/earlywarnings2019/>

⁸ Available at: <http://www.wmo.int/earlywarnings2017/sites/default/files/Communique%20of%20the%20WMO%20to%20EW%20Conference%20Cancun.pdf>

⁹ Available at: https://www.preventionweb.net/files/53989_chairsummaryofthe2017globalplatfor.pdf

¹⁰ Will be available in early 2019 on the websites of the DPFS, HFWR and MMO programmes of WMO.

	Point	
5	Project Status Overview	<p>CREWS is effectively supporting flood early warning system operations in Niger, focusing on putting in place the system itself and developing capacity of the involved stakeholders.</p> <p>Building on Disaster Risk Management and Urban Development Project (P145268) investment project equipment, CREWS Niger supports:</p> <ul style="list-style-type: none"> • Operationalizing the National Alert Code adopted by the Presidential Decree N°2018-538/PRN/MISP/D/ACR of July 25, 2018; • Daily weather forecasts preparation by the National Meteorological Directorate (DNM), disseminated mainly through hard paper distribution and internet. The National Alert Code provided for weather forecasts dissemination through public and private medias, discussions are underway for formal agreement between DNM and medias. • Five applied decrees to implement the Code are under preparation with support of two International Consultants. • A national consultant (woman) is under recruitment to support training and sensitization of 500 women on early warning and disaster risk management in Niger. <p>Some completed and/or ongoing activities during the reporting period</p> <ul style="list-style-type: none"> • Hydromet data collection in the country's six regions (Tillabéry, Dosso, Tahoua, Maradi, Zinder, Diffa) and the District of Niamey (this activity will continue until December 2019); • Elaboration and dissemination of a bimonthly alert bulletin on extreme hydrometeorological events such as heat waves, low water levels of the Niger River; • Training observers of meteorological and hydrological stations on the collection and transmission of meteorological and hydrological data and information; • Alert information coordination and dissemination through Internet connection of General Directorate for Water Resources (DGRE), Directorate of National Meteorology (DMN) and DGPC. The ToR of this activity are developed; • Elaboration and adoption of national early warning Alert Code by Presidential Decree N°2018-538/PRN/MISP/D/ACR of July 25, 2018, with the support of a consultant; • Elaboration of four applied decrees of the national Alert code under preparation with support of an international Consultant who supported the development the national Alert code;

	<p>Some activities planned are as follow;</p> <ul style="list-style-type: none"> • Training of governors, prefects, mayors in the dissemination of alerts in 4 regions; • Training on the elaboration and dissemination of vigilance bulletins and warning of heavy rainfall at short time and weekly intervals; • Capacity building in hydrological modeling; • Training of departmental cells for disaster risk assessment • Recruitment of a firm to support CREWS. 			
6	Project Activities Contributing to CREWS Outputs			
	CREWS Output 1: Assessments of NMHSs capacities, user needs, alignment with other programs socio-economic benefits			
	Evaluation of capacities for the collection, concentration, processing and archiving for meteorological, climatological and hydrological data and information, and development of decision support products for hydro-meteorological hazards warning. Carried out during the joint World Bank-WMO, which took place from March 24 to April 4, 2018.		90%	90%
	This mission, which met the various stakeholders involved, identified the priority needs to strengthen the capacity to produce and disseminate hydro-meteorological hazard warnings. These needs were validated by the CREWS launch and work-planning workshop for the period 2018-2020 held from 03 to 04 April 2018 in Niamey. Currently, about 85 persons in the regions of Tillabéry, Dosso, Tahoua, Maradi, Zinder, Diffa, and district of Niamey are regularly collecting collecting Hydromet data along the country. These data are centralized in Hydro and Meteo headquarters for early warning purpose. These people collecting data from installed equipment in the field were trained on using these equipment			
Niger Disaster Risk Management and Urban Development Project (P145268) provided equipment to Hydrology and civil protection services to improve disaster risk prevention, preparedness and management. The project and CREWS are complementary and are reinforcing each other. While the investment project has provided important equipment to participating agencies, CREWS is focusing on capacity building of these agencies through national and international technical assistance, trainings, awareness, study trip.				

CREWS Output 2: Access and use of hazard and risk information			
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2018	Progress by Nov. 2018
Elaboration and dissemination of a bimonthly alert bulletin on extreme hydrometeorological events such as heat waves, low water levels of the Niger River. This activity was initiated in April 2018 by the Ministry of Humanitarian Action and Disaster Management (MAH/GC). This bulletin will focus on the risks of floods and droughts at the beginning of the rainy season. Based on satellite data, Meteo office also elaborates a daily bulletin which is disseminated through the Internet		40%	55%
CREWS supported Development of a georeferenced database of people and infrastructures at risk as well as disaster risk mapping in Niamey and Niger risk platform	Q1 2018- Q4 2020	20%	50%
Surveys with GeoOdk, OpenStreetMap (geographical coordinates, type of buildings, number of people in the household, type of cultivated area); 12,300 ha river mapping with high resolution		30%	60%
Open sources data available on www.risques-niger.org		40%	40%
CREWS Output 3: Improvement of NMHSs service delivery			
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2018	Progress by Nov. 2018
Short-term training on short and medium-range weather forecasts (24H to 72H) in collaboration with WMO.		25%	40%
Training observers of meteorological and hydrological stations on the collection and transmission of meteorological and hydrological data and information.			40%
CREWS Output 4: Development of long-term service delivery strategies and development plans for NMHS			
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2018	Progress by Nov. 2018

CREWS is supporting National Meteorological Directorate (DNM) and General Directorate of Water Resources (DGRE) in developing and reinforcing Hydromet data collection in the country's six regions (Tillabéry, Dosso, Tahoua, Maradi, Zinder, Diffa) and the District of Niamey.	Q1 2018- Q4 2020	10%	40%
Support for the coordination of flood early warning service initiatives in Niger. Niger is implementing the WMO Global Framework for Climate Services Action Plan (WCMC) through its National Framework for Climate Services (CNCS) set up in 2012 and officially launched in 2017. In this context, four (4) thematic working groups were set up: (i) Climate-Agriculture/Food Security Working Group; (ii) Climate Working Group - Disaster Risk Reduction; (iii) Climate-Water Resources Working Group and (iv) Climate-Health Working Group.		30%	50%
CREWS is supporting coordination between these initiatives and involved agencies for providing effective flood early warnings service to Niger.		10%	40%
CREWS Output 5: Procurement and installation of high priority observation and information and communications technology (ICT) equipment			
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2018	Progress by Nov. 2018
Internet connection of General Directorate for Water Resources (DGRE) and Directorate of National Meteorology (DMN). The ToR of this activity are developed.		25%	25%
CREWS Output 6: Preparedness for response plans with operational procedures for dissemination, readiness to act with regular simulation exercises			
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2018	Progress by Nov. 2018
CREWS supported the operationalization of the country national early warning system. Adoption of national early warning Alert Code by Presidential Decree N°2018-538/PRN/MISP/D/ACR of July 25, 2018.	Q1 2018- Q4 2020	10%	40%
Training of regional directors of civil protection on national and district managements plans by the General Directorate of Civil Protection (DGPC).		10%	20%
Implementation of civil society groups for food security monitoring and early warning system in areas at		10%	20%

risk of flood.			
Training of governors, prefects, mayors in the dissemination of alerts in 4 regions and the district of Niamey.		10%	20%
CREWS Output 7: Targeted education and public awareness program available for warning systems and related public action			
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2018	Progress by Nov. 2018
Training of villager's observers on the collection and transmission of daily rainfall data by the DMN.	Q1 2018- Q4 2020	25%	30%
Agreement with public medias for alert dissemination and Media training to broadcast the alert.		10%	20%
Training on the elaboration and dissemination of vigilance bulletins and warning of heavy rainfall at the daily and weekly intervals.		10%	10%
Exchange and sharing mission on a hydrological forecast model developed in Togo		10%	10%
Study tour in an African county for the 5 institutions contributing to early warning (National Meteorological Directorate (DMN); the General Directorate of Water Resources (DGRE); the Coordination Cell of the Early Warning and Disaster Prevention System (CCSA/PC); the General Directorate of Civil Protection (DGPC) and the Ministry of Humanitarian Action and Disaster Management (MAH/GC) to complement with that done in January 2018 in France (TOR prepared).		10%	10%
CREWS Output 8: Activities promoting gender equality in all aspects of early warning systems			
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2018	Progress by Nov. 2018
With CREWS support, a national consultant (woman) is under recruitment to support training and sensitization of 500 women on early warning and disaster risk management in Niger.	Q1 2018- Q4 2020		20%

	In the city of Niamey, training and awareness will be made in neighbourhoods that are vulnerable to disasters (flood) such as commune five, Goudel and Lossougoungou, Saga, Kabgoura. So, in the city of Niamey about 400 women will be trained and sensitized in the management and disaster prevention and 100 in Dosso and Tillabery so a total of 500 women will be direct beneficiaries.			20%
7	Funding Spent	Disbursed: \$436,429.44 Committed: \$87,689 Total disbursed and committed: \$524,118 Many activities planned for the upcoming two months will increase the disbursement.		
8	Changes in Organization and Operating Procedures, Project Viability and Sustainability	No change		
9	Lessons Learned	CREWS capacity development activities are greatly based on Niger Disaster Risk Management and Urban Development Project (P145268) by capitalizing on the project equipment provided to the General Directorate of Water Resources (DGRE); the Coordination Cell of the Early Warning and Disaster Prevention System (CCSA/PC); the General Directorate of Civil Protection (DGPC) and the Ministry of Humanitarian Action and Disaster Management (MAH/GC). The sustainability on Hydromet data collection and transmission is crucial for an effective early warning in the country.		
10	Documents	National Alert Code adopted by the presidential Decree N°2018-538/PRN/MISP/D/ACR of July 25, 2018 .		

PACIFIC CREWS Project Status Report

1	Project Title	Strengthening Hydro-Meteorological and Early Warning Systems in the Pacific (CREWS Pacific)
2	Project Reference	CREWS/RegProj/04/Pacific
3	Reporting Period	June - November 2018
4	Reporting Focal Point	Lina Sjaavik (lsjaavik@wmo.int)
5	Project Status Overview	<p>Progress since last report:</p> <ul style="list-style-type: none"> - Pacific SIDS Project Steering Committee took place in Tonga 11 October 2018; - The meeting approved the annual implementation plan, and requested additional development of strategic plans for additional countries (now: Fiji, Federated States of Micronesia, Kiribati, Nauru, Palau, Republic of Marshall Islands, Tokelau, Tonga and Tuvalu); - The meeting requested that the funds originally allocated to an Automatic Weather Station (AWS) in Tokelau would be redirected to emergency communication; - The roadmap for the implementation of high-resolution numerical weather prediction was finalized in July 2018; - The project co-funded the Pacific Island Climate Outlook Forum (PICOF) in Fiji in October 2018; - Support to the Severe Weather Forecasting and Disaster Risk Reduction Demonstration Project's Regional Subproject Management Team Meeting in Noumea, New Caledonia in July 2018; - Initial introduction to impact-based forecasting during the Tropical Cyclone Committee in Noumea, New Caledonia in July 2018; - The Tuvalu drought policy is being finalized (Oct 2018) <p>Several important activities are scheduled to take place in November 2018, including:</p> <ul style="list-style-type: none"> - The initial planning meeting of Fiji FFGS - Initial collaboration visit for the inclusion of radar data into Fiji FFGS - Training in Numerical Weather Prediction (NWP) (Fiji Meteorological Service)

6	Project Activities Contributing to CREWS Outputs			
CREWS Output 1: Assessments of NMHSs capacities, user needs, alignment with other programmes socio-economic benefits				
Project Outputs and Estimated Progress to Date		Output Start & End Date	Progress by June 2018	Progress by Nov 2018
2.1: Implementation of a high-resolution NWP mesoscale model in Fiji <ul style="list-style-type: none"> - Expert mission to Fiji in May 2018 to assess capacities and capabilities of RSMC Nadi - The development of a roadmap for a high-resolution NWP mesoscale in Fiji was completed in July 2018 - Both BMKG (Indonesia) and BOM (Australia) are working to make high-resolution NWPLAM data from their models available to FMS - Initial training on NWP global data planned for RSMC Nadi staff during 26-30 November 2018 		Q3 2018- Q4 2020	10%	15%
2.2: Access for FMS and RSMC Nadi to high-quality NWP products and relevant support tools <ul style="list-style-type: none"> - WMO, ECMWF and FMS finalizing tripartite 3 year agreement for FMS access to ECMWF ecchart tool 		Q1 2019-Q4 2020	0%	15%
2.3: RSMC Nadi website and portal upgraded <ul style="list-style-type: none"> - Activity planned for 2019 		Q4 2019- Q4 2020	0%	0%
2.4: Implementation of Fiji FFGS <ul style="list-style-type: none"> - The agreement with HRC for procurement and delivery of FFGS was signed in April 2018. - The first step towards implementing the NWP mesoscale model took place with the expert mission to Fiji in May 2018. - The Initial Planning Meeting for Fiji FFGS will take place in Nadi, Fiji 12-14 November 2018, and radar ingestion will take place the following week. 		Q1 2019- Q4 2020	5%	15%

<p>2.5: Impact-based coastal inundation forecasting in Tuvalu and Kiribati</p> <ul style="list-style-type: none"> - <i>Terms of reference developed with the Pacific Community (SPC).</i> - <i>The initiation of project implementation under this output is pending the closure of Fiji Coastal Inundation Forecasting Demonstration Project.</i> 	Q2 2018- Q1 2021	5%	5%
<p>2.6 Nowcasting products and system (develop and apply models) as agreed by participating NMHSs, global and regional centres</p> <ul style="list-style-type: none"> - <i>Activity planned to commence in 2019</i> 	Q3 2019- Q4 2020	0%	0%
<p>2.7 CAP Jumpstart workshops</p> <ul style="list-style-type: none"> - <i>Workshops took place in Niue, Palau, Tuvalu, Fiji, Federated States of Micronesia, Nauru and Papua New Guinea in July 2017</i> 	Q 2017	100%	100%
<p>2.8 Regional Climate Outlook Fora</p> <ul style="list-style-type: none"> - <i>Co-funding Pacific Island Climate Outlook Forum in Fiji October 2018</i> 	Q3 2018- Q3 2020	0%	10%
<p>2.9 National Climate Outlook Forums</p> <ul style="list-style-type: none"> - <i>Support to Fiji NCOF (Feb 2018)</i> - <i>Further NCOFs will be supported based on country requests</i> 	Q1 2018- Q4 2020	10%	10%
<p>2.10 National drought consultations</p> <ul style="list-style-type: none"> - <i>National drought consultations took place in Kiribati and Tuvalu in December 2017. Drought policies are being finalized in November 2018.</i> 	Q4 2017- Q4 2018	70%	90%
CREWS Output 2: Access and use of hazard and risk information			
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2018	Progress by Nov 2018
<p>2.1: Implementation of a high-resolution NWP mesoscale model in Fiji</p> <ul style="list-style-type: none"> - <i>Expert mission to Fiji in May 2018 to assess capacities and capabilities of RSMC Nadi</i> - <i>The development of a roadmap for a high-resolution NWP mesoscale in Fiji was completed in July</i> 	Q3 2018- Q4 2020	10%	15%

<p>2018</p> <ul style="list-style-type: none"> - Both BMKG (Indonesia) and BOM(Australia)are working to make high-resolution NWPLAM data from their models available to FMS - Initial training on NWP global data planned for RSMC Nadi staff during 26-30 November 2018 			
<p>2.2: Access for FMS and RSMC Nadi to high-quality NWP products and relevant support tools</p> <ul style="list-style-type: none"> - WMO, ECMWF and FMS finalizing tripartite 3 year agreement for FMS access to ECMWF ecchart tool 	Q1 2019- Q4 2020	0%	15%
<p>2.3: RSMC Nadi website and portal upgraded</p> <ul style="list-style-type: none"> - Activity planned for 2019 	Q4 2019 Q4 2020	0%	0%
<p>2.4: Implementation of Fiji FFGS</p> <ul style="list-style-type: none"> - The agreement with HRC for procurement and delivery of FFGS was signed in April 2018. - The first step towards implementing the NWP mesoscale model took place with the expert mission to Fiji in May 2018. - The Initial Planning Meeting for Fiji FFGS will take place in Nadi, Fiji 12-14 November 2018, and radar ingestion will take place the following week. 	Q1 2019- Q4 2020	5%	15%
<p>2.5: Impact-based coastal inundation forecasting in Tuvalu and Kiribati</p> <ul style="list-style-type: none"> - Terms of reference developed with the Pacific Community (SPC). - The initiation of project implementation under this output is pending the closure of Fiji Coastal Inundation Forecasting Demonstration Project. 	Q2 2018- Q1 2021	5%	5%
<p>2.6 Nowcasting products and system (develop and apply models) as agreed by participating NMHSs, global and regional centres</p> <ul style="list-style-type: none"> - Activity planned to commence in 2019 	Q3 2019- Q4 2020	0%	0%
<p>2.7 CAP Jumpstart workshops</p> <ul style="list-style-type: none"> - Workshops took place in Niue, Palau, Tuvalu, Fiji, Federated States of Micronesia, Nauru and Papua New Guinea in July 2017 	Q 2017	100%	100%
<p>2.8 Regional Climate Outlook Fora</p> <ul style="list-style-type: none"> - Co-funding Pacific Island Climate Outlook Forum in Fiji October 2018 	Q3 2018- Q3 2020	0%	10%

2.9 National Climate Outlook Forums - Support to Fiji NCOF (Feb 2018) - Further NCOFs will be supported based on country requests	Q1 2018- Q4 2020	10%	10%
2.10 National drought consultations - National drought consultations took place in Kiribati and Tuvalu in December 2017. Drought policies are being finalized in November 2018.	Q4 2017- Q4 2018	70%	90%
CREWS Output 3: Improvement of NMHSs service delivery			
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2018	Progress by Nov 2018
3.1 In-country training workshops on forecasting and warning services for severe weather - Activity is delayed as no trainer has been available to carry out the training. Communication is on-going with NZ Met Service to identify trainers	Q4 2018- Q4 2019	0%	0%
3.2 Other capacity building initiatives for NMHS - Fellowship for two staff members from RSMC Nadi	Q2 2018- Q2 2020	0%	25%
3.3 Regional workshops to initiate impact-based forecasting with relevant stakeholders and implement the WMO Strategy for Service Delivery - Initial presentation took place during the Severe Weather and Disaster Risk Reduction Demonstration Project (SWFDDP) regional subproject management team - Regional workshop was originally planned to take place in Solomon Islands 18-22 February, but will be rescheduled due to forecasters availability during tropical cyclone season.	Q3 2017- Q4 2020	5%	5%
3.4: National workshops to initiate impact-based forecasting - To follow the regional workshop	Q2 2019- Q4 2020	0%	0%
3.5: Capacities of the Regional Centres/NMHSs targeted by the Project to deliver data, products and services and incorporate feedback are developed.	Q4 2018- Q4 2020	0%	0%

<p>3.6 In-country workshops on the identification of best information dissemination pathways for various end users and enhancement of communication channels at national level (TV, mobile phone apps, websites, social media) following identified gaps</p> <ul style="list-style-type: none"> - Fiji TV Weather presenter workshop took place in October 2017 	Q3 2017- Q4 2020	20%	20%
<p>3.8 Community-based mechanisms and activities to prepare and respond to impact-based forecasts and risk-informed warnings are in place</p> <ul style="list-style-type: none"> - Activity will commence in early 2019. 	Q1 2019- Q4 2020	0%	0%
CRWS Output 4: Development of long-term service delivery strategies and development plans for NMHS			
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2018	Progress by Nov 2018
<p>4.1: Development of long-term strategic plan for FMS/RSMC Nadi</p> <ul style="list-style-type: none"> - Final draft of strategic plan for Fiji submitted to WMO in January 2018. Following discussions with FMS, the validation workshop has been postponed to Q1 2019 	Q1 2017- Q4 2018	90%	90%
<p>4.2: Development of long-term strategic plans for targeted NMHS</p> <ul style="list-style-type: none"> - The ToRs are developed for the strategic plans Kiribati, Tuvalu, Tonga, Republic of Marshall Islands (RMI). WMO is currently processing the consultancy agreements for the consultants to develop the plans; - Consultancies for Kiribati and Tuvalu are scheduled to commence in November 2018; - Tonga and FMS are still in discussion with the NMHS - Following the Project Steering Committee in October 2018 Federated States of Micronesia, Nauru, Samoa, Palau and Tokelau are also included in the pipeline for strategic planning documents 	Q1 2017-Q4 2018	10%	15%
<p>4.3: Development of Meteorological Bills for targeted NMHS</p> <ul style="list-style-type: none"> - The ToRs are developed WMO is currently processing the consultancy agreements for the consultants to develop the bills. 	Q1 2017-Q4 2018	10%	10%

CREWS Output 5: Procurement and installation of high priority observation and information and communications technology (ICT) equipment			
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2018	Progress by Nov 2018
<p>5.1 Procurement and installation of HPC for implementation of NWP LAM in Fiji Meteorological Service/RSMC Nadi</p> <ul style="list-style-type: none"> - The expert mission to Fiji to identify the needs and capacities for installation of HPC took place in May 2018. 	Q1 2018- Q4 2020	10%	10%
<p>5.2 Assessment and upgrading of communication system between RSMC Nadi and the NMHSs (under the SWFDDP).</p> <ul style="list-style-type: none"> - The needs of the NMHS have been preliminary identified, and the procurement process started in November 2018 - The project supported the WIGOS/GCOS workshop that took place in Fiji in October 2017, and further identified regional observation needs. 	Q3 2018-Q4 2020	0%	5%
CREWS Output 6: Preparedness for response plans with operational procedures for dissemination, readiness to act with regular simulation exercises			
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2018	Progress by Nov 2018
<p>6.1 Community mechanisms and activities to prepare and respond to impact-based forecasts and warnings are in place</p> <ul style="list-style-type: none"> - Agreement prepared for signature in November 2018 - Activity to commence in early 2019 	Q1 2019- Q4 2020	0%	0%

CREWS Output 8: Activities promoting gender equality in all aspects of early warning systems				
Project Outputs and Estimated Progress to Date		Output Start & End Date	Progress by June 2018	Progress by Nov 2018
8.1 Targeted NMHS assess their capabilities to include gender equality in EWS - ToRs developed for the assessment of gender inclusions in EWS		Q1 2018- Q4 2020	10%	20%
8.2 Female staff in targeted NMHS have been trained on women in leadership - Training rescheduled for 2019		Q3 2018	0%	0%
6.1 REGIONAL OUTPUTS				
CREWS Regional Output A: Assessments of institutional capacities of regional centers to meet NMHSs' needs, alignment with other programmes socio-economic benefits				
Project Outputs and Estimated Progress to Date		Output Start & End Date	Progress by June 2018	Progress by Nov 2018
Project output a.1: Assessment of Capacities and Needs of FMS/RSMC Nadi - An expert mission to Fiji took place in May 2018. The Expert Mission assessed the current capacity and capabilities of FMS and RSMC Nadi to provide services to Fiji and other countries served by RSMC Nadi.		Q1 2018- Q4 2020	80%	
7	Funding Spent	USD 279,000 (CREWS Trust Fund) USD 419,310 (Canada CREWS)		
8	Changes in Organization and Operating Procedures, Project Viability and Sustainability	The project outputs have been slightly updated since June 2018 to better reflect the planned activities under the project. The project has further strengthened its collaboration with other relevant projects for hydro-meteorological development, demonstrated by the co-organization of the Project Steering Committee the UNDP Disaster in Pacific Small Island States (RESPAC) project, and coordination with the Australian Climate and Oceans Support Programme in the Pacific (COSPACC).		

9	Lessons Learned	<i>PSC-2 requested further investments in the region, highlighting that several of the activities planned for Fiji, Kiribati and Tuvalu including coastal inundation forecasting, and flash flood guidance system could be replicated in other countries and territories across the Pacific region.</i>
10	Documents	<i>Fiji Mission Report including Roadmap for Implementation of Mesoscale NWP in Fiji</i>

PAPUA NEW GUINEA CREWS Project Status Report			
1	Project Title	Weather and Climate Early Warning System for Papua New Guinea	
2	Project Reference	CREWS/CProj/08/Papua New Guinea	
3	Reporting Period	July - November 2018	
4	Reporting Focal Point	Robert Stefanski (rstefanski@wmo.int)	
5	Project Status Overview	Letters of Agreement are under review by the PNG National Weather Service (NWS) and Bureau of Meteorology (BOM) of Australia. The process was delayed because of lack of procurement and financial management capacity at PNG NWS to handle a partnership agreement. A mission was held 22 to 24 November 2018 to identify solutions. During the reporting period, the project supported a PNG representative participation in the Fourth Pacific Island Climate Outlook Forum (PICO-4) and the Training Session on Social Media and Communication on 10-15 October 2018, Nadi, Fiji. The next step will be the launch workshop, with all relevant stakeholders, tentatively scheduled for Q1 2019. The project work plan will also be refined at this workshop.	
6	Project Activities Contributing to CREWS Outputs –National Projects		
	CREWS Output 1: Assessments of capacities, user needs, alignment with other programmes and socio-economic benefits		
		Output	Progress
		Progress by	

Project Outputs and Estimated Progress to Date	Start & End Date	by June 2018	Nov 2018
1.1. Detailed assessment of user needs including PNG NWS and other stakeholders (6 stakeholders' workshops)	Q3 2018 – Q4 2020	0%	0%
1.2. Assessment of observation systems for early warning systems. Recommendations on improvements	Q4 2018- Q3 2019	0%	0%
1.3. Assessment of national capabilities on drought forecasts	Q4 2018 – Q3 2019	0%	0%
1.4. Assessment of Climate and Hydrological Database Management Systems	Q4 2018 – Q1 2019	0%	0%
1.5. Assessment of Climate data rescue needs	Q1 2019 – Q2 2019	0%	0%
1.6. Assessment of national capabilities on flood / flash flood forecast for urban or near-by areas, some to be addressed by South Eastern Asia Oceanic FFG (SAOFFG)	Q2 2020 – Q1 2021	0%	0%
CREWS Output 2: Access and use of hazard and risk information			
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2018	Progress by Nov 2018
2.1. Adapt and implement Australian Climate and Weather Extremes Monitoring System to PNG for basic monitoring of drought, heavy rainfall and frost events	Q4 2018- Q2 2019	0%	0%
2.2. Develop NWP products from Global NWP centres including BOM for use in short-range forecasting	Q4 2018- Q2 2019	0%	0%
2.3. Guidance documentation about how to use Sub-Seasonal to seasonal forecasts (1 week to 3 months) from Global Centers	Q1 2020- Q3 2020	0%	0%
2.4. Catalog of maps of flood prone areas and flood causes, some to be addressed by South Eastern	Q4 2019 –	0%	0%

Asia Oceanic FFG (SAOFFG)	Q2 2020		
2.5. Introducing impact-based drought forecasts and risk-informed warnings for improved decision making by the users	Q1 2021- Q2 2021	0%	0%
2.6. Develop on operational climate early warning system for drought	Q3 2019 - Q2 2020	0%	0%
2.7. Development of tailored products (e.g. drought monitoring and prediction).	Q1 2020 - Q42020	0%	0%
CREWS Output 3: Improvement of NMHSs service delivery			
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2018	Progress by Nov 2018
3.1. Integration of national meteorological, hydrological and climate observing systems in OSCAR/Surface, the official repository of surface-based observing stations and platforms meta data of WMO Integrated Global Observing System (WIGOS)	Q4 2019- Q3 2020	0%	0%
3.2. Improved climate databases based on Australia Climate Data for the Environment (CliDE) activities	Q3 2018- Q2 2019	0%	0%
3.3. Integration of other compatible database systems such as agro-meteorology, hydrology, with existing database	Q1 2019- Q3 2019	0%	0%
3.4. Implementation of enhanced climate database and report on climate data rescue status	Q3 2019- Q2 2020	0%	0%
3.5. Recommendations and specifications for observing and forecast system improvement and product enhancement	Q3 2020 - Q1 2021	0%	0%
CREWS Output 4: Development of long-term service delivery strategies and development plans for NMHS			
Project Outputs and Estimated Progress to Date	Output Start &	Progress by June	Progress by Nov 2018

	End Date	2018	
4.1. Long-term development of PNG NWS. Five years strategic development plan, implementation plan and resource mobilization plan	Q1 2019 - Q2 2020	0%	0%
CREWS Output 5: Procurement and installation of high priority observation and information and communications technology (ICT) equipment			
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2018	Progress by Nov 2018
5.1. Observing stations, data concentration, data management, forecasting and service production hardware, based on needs and assessment	Q3 2019 - Q2 2020	0%	0%
CREWS Output 6: Preparedness for response plans with operational procedures for dissemination, readiness to act with regular simulation exercises			
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2018	Progress by Nov 2018
6.1. Enhanced multi-channel weather forecast and warnings communication systems	Q2 2019- Q1 2020	0%	0%
6.2. Pilot testing and evaluation of EWS based on prior stakeholder consultation	Q2 2020- Q4 2020	0%	0%
CREWS Output 7: Targeted education and public awareness programmes available for warning systems and related public action			
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2018	Progress by Nov 2018
7.1. Training in statistics and basic tools for climate services	Q1 2019- Q1 2021	0%	0%
7.2. Capacity building in preparing and interpreting the forecasts	Q2 2019- Q2 2021	0%	0%

	7.3. Capacity training for multi-channel weather forecast and warnings communication systems	Q2 2019- Q1 2021	0%	0%
	7.4. Capacity training on climate data management and data rescue	Q1 2019- Q1 2021	0%	0%
	7.5. Capacity training on with OSCAR/Surface	Q1 2019- Q1 2021	0%	0%
	7.6. Capacity training on climate extremes monitoring and drought forecast	Q2 2019- Q2 2021	0%	0%
	7.7. Management training for PNG staff	Q2 2019- Q1 2021	0%	0%
CREWS Output 8: Activities promoting gender equality in all aspects of early warning systems				
	Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by June 2018	Progress by Nov 2018
	8.1. Gender analysis undertaken to identify opportunities and include specific interventions to promote gender equality of EWS benefits	Q2 2019- Q1 2021	0%	0%
	8.2. Development and implementation of a gender action plan to ensure gender-specific activities are identified and implemented. The action plan will be discussed at the kick-off meeting and will be integrated into the project work plan.	Q2 2019- Q1 2021	0%	0%
7	Funding Spent	Expected about CHF 10,000 (CHF 2,911 on Nov 1st + about CHF 7,000 for the mission)		
8	Changes in Organization and Operating Procedures, Project Viability and Sustainability	The project time frame is being updated <ul style="list-style-type: none"> - from October 2017 – September 2020 - to April 2018 – March 2021 		

9	Lessons Learned	
10	Documents	- Project proposal approved by CREWS Steering Committee – (pdf)

WEST AFRICA CREWS Project Status Report		
1	Project Title	West Africa Region: Seamless operational forecast systems and technical assistance for capacity building
2	Project Reference	CREWS/RProj/02/WesternAfrica
3	Reporting Period	Sept - Nov 2018
4	Reporting Focal Point	Jean-Baptiste Migraine (jbmigraine@wmo.int)
5	Project Status Overview	<p>During the reporting period:</p> <ul style="list-style-type: none"> - Funding decision from CREWS Steering Committee on 7 Aug 2018; - 2 sessions held as part of West Africa Hydromet Forum (Abidjan, 19-21 Sept 2018): Setting-up a CREWS Community of Practice and Consultation on elements of the CREWS West Africa project; - Institutions have been invited to setup the Steering Committee; - WMO project team was invited to provide guidance to ECOWAS for the development of a West Africa Flood Management Strategy (7 Nov 2018); - ACMAD has been invited to represent the Africa RCC in WMO International Workshop on Global Review of Regional Climate Centre Operations, Pune India, 12-14 Nov 2018; - 15 countries participated in SWFDP Training Workshop on numerical weather prediction (NWP) interpretation, use of common alerting protocol (CAP) for warning dissemination, Lomé, 20-30 Nov 2018
6	Project Activities Contributing to CREWS Outputs	

CREWS Output 1: Assessments of capacities, user needs, alignment with other programmes and socio-economic benefits		
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by Nov 2018
1.1. Assessment of the current status and performance of the observation network and data services in CILSS and ECOWAS Member States - A draft inception report is available.	Q1 2019- Q4 2020	5%
CREWS Output 2: Access and use of hazard and risk information		
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by Nov 2018
2.1. Proposal for a data and metadata exchange collaboration framework/agreement outlining stations to be included in the regional dataset, including recommendations for incorporating missing or new stations into the WMO WIGOS and WIS systems (OSCAR/Surface, WDQMS, GTS and WIS/GISCs) and forward looking plan for establishing a regional WIGOS center - An inception report is available.	Q1 2019- Q4 2020	5%
2.2 West Africa Climate Assessment & Dataset (WACA&D) system open to use for NMHSs and regional institutions (ACMAD, AGRHYMET, NBA (Niger), OMVS (Senegal), LCBC (Lake Chad), VBA (Volta), OMVG (Gambia) and MRU (Mali)), with supporting training at regional level and tools materials in French and English - Consultation with Member States and regional organizations took place in Abidjan, 19-21 Sept, and an inception report is available.	Q1 2019- Q4 2020	5%
2.3. West Africa hydro-met and Climate Extreme database (WACE), involving a standard typology of high-impact event types and the assignment of a Universal Unique Identifier (UUID), with supporting training and guidance materials in French and English - An inception report is available.	Q1 2019- Q4 2020	5%
CREWS Output 3: Improvement of NMHSs service delivery		
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by Nov 2018
3.1 Climate Watch Service (with automatic update) - based upon monitoring products based on Satellite Application Facility on Climate Monitoring (CMSAF) and Global Precipitation Climatology Centre (GPCC) for West Africa (including software, guidance document and training), with supporting training and guidance materials in French and English. Consultation with Member States and regional organizations took place in Abidjan, 19-21 Sept, and an inception report is available.	Q1 2019- Q4 2020	10%

<p>3.2 West Africa Severe Weather Forecasting System online, in line with SWFDP guidebook, with RSMC Dakar Training Desk and supporting training and guidance materials in French and English - Forecasters from NMHSs have access to products from ECCC, NOAA/NCEP, UKMO, Meteo-France, RSMC Dakar. A training on NWP interpretation took place in Lomé in Nov 2018, focusing on interpretation of NWP products and satellite based information and making its best use in forecasts/warnings of severe and high impact weather from nowcasting to short- and medium-range. Korea Meteorological Administration (KMA) providing seed funding to kick-start the WA SWFDP process and supported the development of the website, online since Sept 2018. Consultation with Member States and regional organizations took place in Abidjan, 4-8 Sept 2017 (technical planning meeting) and 19-21 Sept 2018 (ECOWAS Hydromet Forum), and an inception report is available.</p>	<p>Q1 2019- Q4 2020</p>	<p>30%</p>
<p>3.3 West Africa Flash Flood Guidance System online, with supporting training and guidance materials in French and English - Negotiations are ongoing with the Hydrologic Research Center. Consultations are also ongoing with WASCAL and AGRHYMET to ensure synergy with FANFAR and HKV models under development.</p>	<p>Q1 2019- Q4 2020</p>	<p>5%</p>
<p>CREWS Output 4: Development of long-term service delivery strategies and development plans for NMHS</p>		
<p>Project Outputs and Estimated Progress to Date</p>	<p>Output Start & End Date</p>	<p>Progress by Nov 2018</p>
<p>4.1. Development of CREWS Community of Practice. WMO and WB organized together two sessions during the ECOWAS Hydromet Forum on CREWS in West Africa. Participants confirmed the need to develop a CREWS Community of Practice, also inviting other francophone countries benefiting from large hydromet investments such as DRC, Madagascar and Côte d'Ivoire. They also recommended close coordination between national and regional projects to ensure more optimal use of funding available for severe weather (CREWS, CDSF, GCF), climate (ACP-EU, CREWS), civil protection and food security. Two reports outline the forward looking plans: CREWS Community of practice and CREWS West Africa</p>	<p>Q1 2019- Q4 2020</p>	<p>10%</p>
<p>4.2 Recommendations and technical specifications for the development pilot services on early warnings for agricultural severe drought in West Africa. Negotiations are ongoing with UK Reading University.</p>	<p>Q1 2019- Q4 2020</p>	<p>0%</p>
<p>4.3 Recommendations related to dissemination of seasonal and monthly prediction products and services in West Africa. Negotiations are ongoing with IRI.</p>	<p>Q1 2019- Q4 2020</p>	<p>0%</p>
<p>CREWS Output 5: Procurement and installation of high priority observation and information and communications technology (ICT) equipment</p>		
<p>No procurement of equipment foreseen under this project</p>		

CREWS Output 6: Preparedness for response plans with operational procedures for dissemination, readiness to act with regular simulation exercises		
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by Nov 2018
<i>6.1. Proposed principles for Standard Operating procedures for early warning (e.g. food security, riverine flooding) and rapid warning (e.g. severe weather, flash flooding) including recommendations for (i) standard operating procedures and (ii) user interfaces - to ensure access to information as decision making support by users (hydrologists, civil protection, food security, others). Terms of reference are being drafted.</i>	Q1 2019- Q4 2020	0%
CREWS Output 7: Targeted education and public awareness programmes available for warning systems and related public action		
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by Nov 2018
<i>7.1. Training on WA-SWFDP: interpretation of NWP products and satellite based information and making its best use in forecasts/warnings of severe and high impact weather from nowcasting to short- and medium-range (Severe Weather Forecasting)</i>	Q4 2018	100%
<i>7.2. Training on Common Alerting Protocol</i>	Q4 2018	100%
<i>7.3 Training on Impact-Based Forecasting</i>	Q4 2018	100%
<i>7.4 Training on working with the media</i>	Q4 2018	100%
<i>7.5 Training on West Africa Climate Assessment & Dataset (WACA&D)</i>	Q2 2020	0%
<i>7.6 Training on West Africa hydro-met and Climate Extreme database (WACE)</i>	Q2 2020	0%
<i>7.7 Training on West Africa Flash Flood Guidance System (WAFFGS)</i>	Q2 2020	0%
<i>7.8 Training on West Africa Climate Watch System and remote sensing (CM-SAF, Land-SAF & LDAS)</i>	Q2 2020	0%
CREWS Output 8: Activities promoting gender equality in all aspects of early warning systems		
Project Outputs and Estimated Progress to Date	Output Start & End Date	Progress by Nov 2018
<i>8.1 CROSSCUTTING gender disaggregation and specific attention on the role of women under all activities listed above</i>	Q4 2018-	0%

<i>(training, workshops, tools)</i> - Terms of reference need to be developed		Q4 2020	
6.1 REGIONAL OUTPUTS			
CREWS Regional Output A: Assessments of institutional capacities of regional centers to meet NMHSS' needs, alignment with other programmes socio-economic benefits			
Project Outputs and Estimated Progress to Date		Output Start & End Date	Progress by Nov 2018
<i>under 1.1. Assessment of the current status and performance of the observation network and data services in CILSS and ECOWAS regional institutions - An inception report is available.</i>		Q1 2019- Q4 2020	5%
CREWS Regional Output B: Training for regional WMO and intergovernmental organizations to provide regional climate/weather services			
Project Outputs and Estimated Progress to Date		Output Start & End Date	Progress by Nov 2018
<i>under 3.1 Climate Watch Service - training of trainers with AGRHYMET</i>		Q3 2019- Q4 2020	0%
<i>under 3.2 West Africa Severe Weather Forecasting System - training of trainers for RSMC Dakar Training Desk</i>		Q3 2019- Q4 2020	0%
<i>under 7.1. Training on WA-SWFDP: interpretation of NWP products and satellite based information and making its best use in forecasts/warnings of severe and high impact weather from nowcasting to short- and medium-range (Severe Weather Forecasting)</i>		Q4 2018	100%
<i>under 7.2. Training on Common Alerting Protocol</i>		Q4 2018	100%
<i>under 7.3 Training on Impact-Based Forecasting</i>		Q4 2018	100%
<i>under 7.4 Training on working with the media</i>		Q4 2018	100%
<i>under 7.5 Training on West Africa Climate Assessment & Dataset (WACA&D)</i>		Q2 2020	0%
7	Funding Spent	CHF 176,000 (during the current reporting period)	

8	Changes in Organization and Operating Procedures, Project Viability and Sustainability	The project time frame is September 2018 – June 2021.
9	Lessons Learned	The CREWS West Africa consultation sessions during the West Africa Hydromet Forum (Abidjan, 19-21 Sep 2018) revealed that the institutional framework, data sharing practices and definition of warning are a dequate for institutional collaboration in relation with anticipating impacts of drought and locust infestation; and still inadequate for warning in relation with rapid-onset events. WMO will propose a technical solution to exchange precipitation data among meteorological and hydrological services in near real time (exchange of rain maps) as a basis to enable enhanced agrometeorological services and flood forecasting.
	Documents and links	<ul style="list-style-type: none"> - Project proposal approved by CREWS Steering Committee (Feb 2017) - pdf - SWFDP WA - Report of the Technical Planning Meeting (Sept 2017) - doc (funded by WMO) - SWFDP WA Implementation Plan (Sept 2017) - doc (funded by WMO) - Terms of reference of the CREWS West Africa Steering Committee - gDoc - Draft Inception Report for 1.1 - Assessment of observation network processes and needs - Draft Inception Report for 1.2 - Climate data base improvement (WACAD) - Draft Inception Report for 1.3 - Data base on impacts of extreme events (WACE) - Draft Inception Report for 1.4 - Early warning system operational procedures - Draft Inception Report for 2 - Analysis and climate watch tools - Draft Inception Report for 3 - Improved forecast capabilities focusing on severe weather (SWFDP) - Draft Inception Report for 4 - Flash Flood Forecast (FFGS) - Draft Inception Report for 5.1 & 5.2 - Subseasonal to seasonal forecast - Draft Inception Report for 5.3 - Pilot drought monitoring services - Report on establishment of a CREWS Community of Practice Session in Abidjan - gDoc - Report of the consultation on the 9 elements of the CREWS West Africa project in Abidjan - gDoc - Overall project planning spreadsheet for the CREWS West Africa project - gSheet