

## Project Status Reports

### December 2017 - June 2018

1. As per *CREWS Operational Procedures Note N°2: Monitoring and Evaluation*, Implementing Partners are responsible for reporting on project implementation semi-annually and annually. The following document comprises the project status reports submitted by the World Meteorological Organization (WMO) and the World Bank and the Global Facility for Disaster Reduction and Recovery (GFDRR), for the period December 2017 through June 2018.
2. Most projects are now finalizing needs assessments and implementing activities to build the capacity of country partner agencies responsible for early warning. The highlights include:
  - In **Burkina Faso**, forecasters were trained on sand and dust storm forecasting and numerical weather prediction, the seasonal prediction team was reinforced, and farmers benefitted from seminars with support from local radio communicators and agricultural extension workers. A letter of agreement was signed between WMO and Météo-France to strengthen agrometeorological capacities.
  - In the **Democratic Republic of the Congo**, studies are planned to improve flood warnings in Kinshasa by mapping populations at risk and exposed assets, to model flood risk, and to design a real-time monitoring system. In addition, the CREWS project was presented at the University of Kinshasa at a well-attended joint event of Civil Protection, the meteorological service—MettelSat, and the World Bank.
  - In **Mali**, the project implementation plan was finalized and adopted at the launch workshop held in April 2018. Progress was also made toward the adoption of procedures and tools for rapid warning, which will complement existing early warning arrangements. The project is focusing on floods, sandstorms and bushfires, which require the coordinated action of the institutions responsible for monitoring and forecasting, for coordinating the response, local authorities and citizens.
  - In **Niger**, the project implementation plan, based on a joint World Bank and WMO assessment of capacities and needs, was adopted at the launch workshop held in April 2018. The Ministry of Humanitarian Action and Disaster Management (MAH/GC) launched a bimonthly alert bulletin on extreme hydrometeorological events such as heat waves and low water levels of the Niger River. The bulletin will focus on the risks of floods and droughts at the beginning of the rainy season.
  - In the **Pacific Region**, the strategic plan for the Fiji Meteorological Service (FMS) and the Regional Specialised Meteorological Centre (RSMC) in Nadi has been completed. Based on an expert capacity assessment, RSMC will contribute to the development of a flash flood guidance system for the Pacific and the Severe Weather Forecasting Demonstration and Disaster Risk Reduction Project for the region. Through an agreement with the Pacific Community, Kiribati and Tuvalu will be benefitting from impact-based coastal inundation forecasts.

- In **Papua New Guinea**, the most recent approved CREWS project, letters of agreement are under review by the Papua New Guinea National Weather Service and the Bureau of Meteorology (BOM) of Australia. At the project launch workshop, tentatively scheduled for the end of July, all relevant stakeholders will refine the project work plan.

CREWS Project Status Report: Burkina Faso		
1	<b>Project Title</b>	Strengthening national capacities for EWS Service Delivery in Burkina Faso
2	<b>Project Reference</b>	CREWS/CProj/03/Burkina
3	<b>Reporting Period</b>	December 2017-June 2018
4	<b>Reporting Focal Point</b>	Jean-Baptiste Migraine (jbmigraine@wmo.int)
5	<b>Project Status Overview</b>	<p>Before the reporting period (since July 2017):</p> <ul style="list-style-type: none"> <li>• 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;</li> <li>• A GIS software was procured to enhance ANAM capacity in relation with statistics and basic tools for climate services;</li> <li>• A license was purchased providing access to products from the European Centre for Medium-Range Weather Forecasts (ECMWF);</li> <li>• An assessment of the observing network took place, organized by WMO/WIGOS. The draft report is available and will become public soon;</li> <li>• An assessment of the capacity of the hydrological service took place, organized by WMO/HWR. The report will be made available publicly soon;</li> <li>• Assessments of user requirements with regards to agrometeorological services was developed for the pilot municipalities of Niangoloko, Tenado and Titao.</li> </ul> <p>During the reporting period:</p> <ul style="list-style-type: none"> <li>• 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 in agrometeorological services and (iii) strategic planning within ANAM, signed on May 24, 2018;</li> <li>• A training on sand and dust storm was provided to one ANAM forecaster (Cairo, 10-12 February 2018);</li> <li>• A training on numerical weather prediction was provided to two ANAM forecasters (Langen, 12-16 March 2018);</li> <li>• A ToR for the gender-informed socio-economic analysis was prepared;</li> <li>• Consultation with AGRHYMET and CIRAD was</li> </ul>

	<p>organized towards operational use of SARRA models in support of agricultural meteorology services. A letter to DG AGRHYMET inviting to be CREWS project formal partner has been sent in May;</p> <ul style="list-style-type: none"> <li>• 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 Titao in April-May 2018; the report will become available in June 2018.</li> <li>• 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 (4) will be working with Meteo France for the sub-seasonal component.</li> </ul>
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**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**

<b>Project Outputs and Estimated Progress to Date</b>	<b>Output Start &amp; End Date</b>	<b>Progress by Nov 2017</b>	<b>Progress by June 2018</b>
<i>1.1. Assessment of the observing network as an update of the <a href="#">SAP-IC midterm review report (2017)</a> 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 some meteorological stations. The WIGOS report is available as draft and will become public by end of Q2 2018.</i>	Q4 2017- Q2 2018	60%	80%
<i>1.2. Assessment of the hydrological service's national capabilities as an update of <a href="#">Serge Pieyns' report (2014)</a> 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 hydrology mission held on 6-10 November 2017, an assessment report will be developed by end of Q4 2018. The next step is to develop terms of reference for this deliverable.</i>	Q4 2017- Q4 2018	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.</i>	Q4 2017- Q3 2018	60%	80%

Mission 17-22 December 2017, the mission reports are available (see “documents” section below) and the work plan still under draft.

**CREWS Output 2: Access and use of hazard and risk information**

<b>Project Outputs and Estimated Progress to Date</b>	<b>Output Start &amp; End Date</b>	<b>Progress by Nov 2017</b>	<b>Progress by June 2018</b>
<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.</i>	Q3 2018- Q4 2019	0%	0%
<i>2.3. Development of a Burkina-Faso specific interface as part of the West Africa Severe Weather Demonstration Project (SWFDP-West Africa). RSMC Dakar Website enhancement in progress.</i>	Q3 2018- Q4 2019	0%	25%
<i>2.4. Identification of flood prone areas and flood causes in a GIS portal. 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.</i>	Q3 2018- Q4 2019	0%	0%
<i>2.5. Calibration of a crop model (SARRA-H) for the agro-meteorological pilot zones and training of staff, to anticipate crop failures and enhance agro-meteorological advisories. Consultations with AGRHYMET and CIRAD were held in Q1 2018 and a training will be organized in 2018.</i>	Q1 2018- Q4 2019	0%	10%
<i>2.6. Development of priority agromet indices based on Land Data Assimilation Systems (LDAS).</i>	Q1 2018- Q4 2019	0%	10%

**CREWS Output 3: Improvement of NMHSs service delivery**

<b>Project Outputs and Estimated Progress to Date</b>	<b>Output Start &amp; End Date</b>	<b>Progress by Nov 2017</b>	<b>Progress by June 2018</b>
<i>3.1. 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.</i>	Q3 2017- Q4 2017	100%	100%
<i>3.2. Development of an agro-meteorological</i>	Q2 2018-	0%	10%

<i>production suite taking into account seasonal and sub-seasonal forecasting. The twinning arrangement (LoA) with Météo-France was signed in May 2018.</i>	Q4 2019		
<i>3.3. Development of a Flash Flood Guidance Service for meteorology, hydrology and civil protection.</i>	Q3 2018- Q4 2019	0%	0%
<i>3.4. Development of a GIS-based service delivery tool for meteorological, agro-meteorological and hydrological outputs.</i>	Q3 2018- Q4 2019	0%	0%
<i>3.5. Training on sand and dust storm. Provided to one ANAM forecaster in Cairo, 10-12 February 2018</i>	Q1 2018- Q1 2018	0%	100%
<i>3.6. Training on limited area modeling (LAM) numerical weather prediction (NWP). Provided to two ANAM forecasters in Langen, 12-16 March 2018</i>	Q1 2018- Q1 2018	0%	100%
<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. First training provided through video-conference</i>	Q1 2018- Q3 2019	0%	25%
<i>3.8. Training on basic hydrological processes.</i>	Q3 2018- Q3 2018	0%	0%
<i>3.9. Training of ANAM agro-meteorological staff on the use of ARCGIS software for data analysis and production of services.</i>	Q3 2018- Q3 2018	0%	0%
<i>3.10. Training of ANAM staff on the use of sub-seasonal and seasonal outlooks in agro-meteorological advisories.</i>	Q1 2019- Q3 2019	0%	0%
<i>3.11. Joint training of ANAM and DGRE staff on standard operation procedures (SOP) for warning production, dissemination, response and return on experience.</i>	Q3 2018- Q3 2018	0%	0%
<b>CREWS Output 4: Development of long-term service delivery strategies and development plans for NMHS</b>			
<b>Project Outputs and Estimated Progress to Date</b>	<b>Output Start &amp; End Date</b>	<b>Progress by Nov 2017</b>	<b>Progress by June 2018</b>
<i>4.1. Strategic plan for ANAM, as an update to the <a href="#">KPMG Modernization Plan (2014)</a> and <a href="#">National Framework for Climate Services (2016)</a></i>	Q2 2018- Q4 2018	0%	10%
<i>4.2. Strategic plan for national hydrological service (DGRE)</i>	Q3 2018- Q4 2019	0%	0%
<b>CREWS Output 5: Procurement and installation of high priority observation and information and communications technology (ICT) equipment</b>			
	<b>Output</b>	<b>Progress</b>	<b>Progress</b>

Project Outputs and Estimated Progress to Date	Start & End Date	by Nov 2017	by June 2018
5.1. Setup of a data concentration and data management system. Procurement process initiated for 12 PCs, 2 laptops, 1 server, 13 external disks, ten mobile broadband devices with Internet connectivity for 30 months.	Q3 2017-Q2 2019	10%	10%
5.2. Procurement and installation of soil moisture sensors in pilot sites	Q3 2018-Q2 2019	0%	0%
5.3. Support to operational use of remote sensing techniques for rainfall monitoring	Q3 2018-Q3 2019	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 Nov 2017	Progress by June 2018
6.1. Proposal for standard operation procedures (SOP) for warning production, dissemination, response and return on experience in line with the <a href="#">national disaster risk reduction law (2014)</a> . Terms of reference were drafted.	Q3 2018-Q4 2019	0%	10%
6.2. Proposal for data exchange agreement between entities involved in the SOP.	Q3 2018-Q4 2019	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 Nov 2017	Progress by June 2018
7.1. Roving seminars - 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 Titao in April-May 2018; the report will become available in June 2018.	Q1 2018-Q2 2018	0%	90%
7.2. Regional workshops for exchange of good practices among West Africa and DRC CREWS countries.	Q3 2018-Q3 2018	0%	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 Nov 2017	Progress by June 2018
8.1. Identification of specific women requirements during user consultations in rural agro-meteorological	Q3 2017-Q4 2019	0%	40%



	<i>pilot zones.</i> - The mission in Dec 2017 initiated some specific requirements. A specific report will be developed based upon lessons learned during the roving seminars and the socio-economic analysis.			
	<i>8.2. Delivery of specific agro-meteorological products targeted to women taking into account their specific roles in rural communities.</i>	Q3 2018- Q4 2019	0%	0%
	<i>8.3. Gender-informed socio-economic analysis</i>	Q1 2018- Q4 2019	0%	10%
<b>7</b>	<b>Funding Spent</b>	CHF 302,000 out of which CHF 30,000 during the current reporting period		
<b>8</b>	<b>Changes in Organization and Operating Procedures, Project Viability and Sustainability</b>	<p>The project time frame is being updated</p> <ul style="list-style-type: none"> <li>• from January 2017 – December 2019</li> <li>• to July 2017 – December 2020</li> </ul>		
<b>9</b>	<b>Lessons Learned</b>	<p>The assessments available to date revealed that</p> <ul style="list-style-type: none"> <li>• previous <a href="#">UNDP CIRDA project</a> 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;</li> <li>• the World Bank is appraising 2 pipeline investments. The US\$31 million <a href="#">Africa Hydromet Program – Burkina Faso Country Project</a> will support 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 Resource Management project (US\$300 million) will also continue to support hydrological services with about US\$6 million.</li> <li>• 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 and salaries are insufficient to attract and retain skills on the long term.</li> <li>• The institutional framework, data sharing practices and definition of warning are adequate for</li> </ul>		



		institutional collaboration in relation with anticipating impacts of drought and locust infestation; and still inadequate for warning in relation with rapid-onset events.
10	Documents	<ul style="list-style-type: none"> <li>• Project proposal approved by CREWS Steering Committee (Feb 2017) - <a href="#">pdf</a></li> <li>• Assessment of observing networks (Oct 2017) - to be validated</li> <li>• Agro-meteorological requirements, Titao pilot site (Dec 2017) - <a href="#">pdf</a></li> <li>• Agro-meteorological requirements, Tenado pilot site (Dec 2017) - <a href="#">doc</a></li> <li>• Agro-meteorological requirements, Niangoloko pilot site (Dec 2017) - <a href="#">pdf</a></li> <li>• Report from the COSMO training (March 2018) - <a href="#">doc</a></li> <li>• Report from the Sand and Dust Storm Training in Cairo (March 2018) - <a href="#">doc</a></li> <li>• Report from the agro-meteorological roving seminars in Niangoloko (April 2018) - <a href="#">doc</a></li> <li>• Report from the agro-meteorological roving seminars in Tenado (April 2018) - <a href="#">doc</a></li> <li>• Report from the agro-meteorological roving seminars in Titao (April 2018) - <a href="#">doc</a></li> <li>• Report from the West Africa Climate Outlook Forum PRESASS (May 2018) - <a href="#">doc</a></li> </ul>

CREWS Project Status Report: Democratic Republic of the Congo		
1	Project Title	<b>Democratic Republic of the Congo: Strengthening Hydro-Meteorological and Early Warning Services</b>
2	Project Reference	CREWS/CProj/01/DRC
3	Reporting Period	December 2017 - June 2018
4	Reporting Focal Point	Lorenzo Carrera, Disaster Risk Management Specialist, The World Bank, <a href="mailto:lcarrera@worldbank.org">lcarrera@worldbank.org</a> , +1 202 813 5847
5	Project Status Overview	<p>CREWS resources are contributing to the improvement of the DRC hydro-meteorological and early warning services by providing:</p> <ul style="list-style-type: none"> <li>– improved weather forecasts disseminated through different media, including television, radio and internet;</li> <li>– agrometeorological information services;</li> <li>– extreme weather warnings (mostly in urban areas and along fluvial navigation channels), and;</li> <li>– support to aviation services.</li> </ul> <p>The activities as presented in the Investment Plan are reflected below:</p> <ul style="list-style-type: none"> <li>- 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;</li> <li>- 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 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).</li> </ul> <p>More specifically, CREWS is leveraging 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. CREWS funds were received by the World Bank and the creation of a specific trust fund was completed in December 2017. The investment project became effective in February 2018.</p> <p>On January 3-4, 2018, flood events in Kinshasa caused 51 fatalities,</p>

	<p>affecting around 16,000 people and causing damages and losses of 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 Project on Urban Development in Kinshasa (around US\$20M) and the Kinshasa Urban Development and Resilience Project (around US\$150M funded by IDA).</p> <p>The section below describes major activities that have been carried out during the reporting period.</p>
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<b>6</b>	<b>Project Activities Contributing to CREWS Outputs</b>	
	<b>CREWS Output 1: Assessments of NMHSs capacities, user needs, alignment with other programmes socio-economic benefits</b>	
	<b>Project Activities and Estimated Progress to Date</b>	
	<ul style="list-style-type: none"> <li>Assessment of capacity for early warning of drought, heavy precipitation, river flooding, flash flooding, wind storm and recommendations for improvement</li> </ul>	5%
	<b>CREWS Output 2: Access and use of hazard and risk information</b>	
	<b>Project Activities and Estimated Progress to Date</b>	
	<ul style="list-style-type: none"> <li>Activity 2.1. Development of a national risk geoportal and development of hazard, exposure and vulnerability information for flood risk assessment and impact forecasting</li> </ul>	5%
	<ul style="list-style-type: none"> <li>Activity 2.2. Studies for the design and implementation of a flood EWS in a pilot urban watershed of Kinshasa (N' Djili watershed):               <ul style="list-style-type: none"> <li>a. <i>Identification and mapping of exposed assets and population to flood risk</i> This activity is on-going in collaboration with GFDRR. A firm has been selected to carry out community exposure mapping, in collaboration with relevant governmental entities (Municipality of Kinshasa, Ministry of Urbanism, MettelSat, Civil Protection, Agency for Architecture Studies, etc.).</li> </ul> </li> </ul>	30%

<p>A training was organized in Kampala on June 11-14, 2018 and the activity is expected to be launched in Kinshasa in July 2018. Exposure mapping will inform flood risk assessments, which are necessary to develop impact-based forecasting models.</p> <p>Exposure mapping will also be supported by drone photogrammetry, which will provide the bases for the development of a site specific Digital Terrain Model.</p>	
<p><i>b. Flood risk modelling</i> The selection of an international firm is on-going to provide flood risk modelling for the city of Kinshasa.</p>	20%
<p><i>c. Preliminary and specific 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 selected technical firm will finalize the specific design of the system, which will be implemented by leveraging resources from the World Bank Hydromet investment project.</p>	30%
<b>CREWS Output 3: Improvement of NMHSs service delivery</b>	
<b>Project Activities and Estimated Progress to Date</b>	
<ul style="list-style-type: none"> <li>with the Development of Quality Management Systems for air navigation meteorological services, supporting MettelSat and RVA. 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 and a following one is foreseen in June 2018. A guideline and methodology to estimate the re-distribution of air navigation revenues for meteorological services has been developed.</li> </ul>	20%
<ul style="list-style-type: none"> <li>Provision of technical and operational trainings for MettelSat with the support of international experts and through learning visits. MettelSat representatives participated in an operational training in Dakar, Senegal on May 29-31, 2018. Other technical trainings are foreseen from September 2018.</li> </ul>	15%
<ul style="list-style-type: none"> <li>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 Mettelset. The selection process is on-going and it is expected to be completed in July 2018.</li> </ul>	80%
<ul style="list-style-type: none"> <li>Improved weather forecast capacity including extreme weather</li> </ul>	0%

<ul style="list-style-type: none"> <li>events: <ul style="list-style-type: none"> <li>a. Specifications of the central weather forecast system and central production system;</li> <li>b. Integration of local mesoscale and descent scale models (twinning);</li> <li>c. Update of (location-specific) numerical weather forecasting capacities to better track extreme events</li> </ul> </li> </ul>	
<ul style="list-style-type: none"> <li>• Development of the management, operation and maintenance procedures of the operational observation network</li> </ul>	0%
<ul style="list-style-type: none"> <li>• Development of operational procedures to convert extreme weather forecasts (rains, floods, winds, heat waves) in potential impacts</li> </ul>	0%
<b>CREWS Output 4: Development of long-term service delivery strategies and development plans for NMHS</b>	
<b>Project Activities and Estimated Progress to Date</b>	
<ul style="list-style-type: none"> <li>• Development of the MettelSat Strategy and Action Plan</li> </ul> <p>The strategy for MettelSat is under preparation. A first workshop was held in December 2017 and a second stakeholder workshop is planned for June 18-22, 2018. Well recognized international experts are supporting MettelSat in the preparation of the workshop and the elaboration of the analysis and the strategy.</p>	20%
<ul style="list-style-type: none"> <li>• Identification of network operating costs per various scenarios</li> </ul>	0%
<b>CREWS Output 5: Procurement and installation of high priority observation and information and communications technology (ICT) equipment</b>	
<b>Project Activities and Estimated Progress to Date</b>	
<ul style="list-style-type: none"> <li>• No procurement of equipment planned but required equipment will be identified as part of needs assessment (Output 1)</li> </ul>	
<b>CREWS Output 6: Preparedness for response plans with operational procedures for dissemination, readiness to act with regular simulation exercises</b>	
<b>Project Activities and Estimated Progress to Date</b>	
<ul style="list-style-type: none"> <li>• 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</li> </ul>	0%
<ul style="list-style-type: none"> <li>• Specifications of decision-making tools for warning based upon forecasts and location-specific risk information and contribution to its operating costs</li> </ul>	0%
<ul style="list-style-type: none"> <li>• Specifications of the severe weather forecast production tool for river</li> </ul>	0%


	and lake navigation	
	<ul style="list-style-type: none"> <li>Specifications of the crisis center of the civil protection and contribution to its operating costs</li> </ul>	5%
	<ul style="list-style-type: none"> <li>Risk mapping and emergency response plans for municipalities including training of operational and decision-making civil servants</li> </ul>	10%
<b>CREWS Output 7: Targeted education and public awareness programmes available for warning systems and related public action</b>		
<b>Project Activities and Estimated Progress to Date</b>		
	<ul style="list-style-type: none"> <li>The Faculty of Science, University of Kinshasa 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 was well attended by 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.</li> </ul>	100%
	<ul style="list-style-type: none"> <li>Training for regional and local food security and disaster management committees</li> </ul>	0%
	<ul style="list-style-type: none"> <li>Study tour for the 4 institutions contributing to early warning (MettelSat, DPC, RVF, CVM)</li> </ul>	0%
<b>CREWS Output 8: Activities promoting gender equality in all aspects of early warning systems</b>		
<b>Project Activities and Estimated Progress to Date</b>		
	<ul style="list-style-type: none"> <li>Indicators developed to monitor the number of people with improved hydromet services access, disaggregated by gender.</li> </ul>	10%
<b>7</b>	<b>Funding Spent</b>	Disbursed: US\$79,566 Committed: US\$134,844 plus US\$1,200,000 (selection of technical assistance firm on going) Total disbursed and committed: US\$1,414,410
<b>8</b>	<b>Changes in Organization and Operating Procedures, Project Viability and Sustainability</b>	No changes
<b>9</b>	<b>Lessons Learned</b>	Significant technical support is required to MettelSat for the implementation of project activities. This support will be provided by an international technical firm, for which selection is ongoing and through individual consultants (on-going).





CREWS Project Status Report: Mali		
1	Project Title	Mali Hydrological and Meteorological Services Modernization Project
2	Project Reference	CREWS/CProj/02/Mali
3	Reporting Period	December 2017-June 2018
4	Reporting Focal Point	Koffi Hounkpe, Senior Disaster Risk Management Specialist, The World Bank, <a href="mailto:khounkpe@worldbank.org">khounkpe@worldbank.org</a> , +22822536730
5	Project Status Overview	<p>For the past three decades more than 7 million Malians have been directly impacted by drought and flood events, and UN agencies are warning that more than 4 million people will need <a href="#">humanitarian assistance</a> this year. Associated economic damage and losses have been calculated at approximately USD140 million per year. Two thirds of Mali’s land area is classified as desert or semi-desert and the country is one of the most drought-prone in the world. It is also frequently impacted by flooding events, caused by combination of river overflow and heavy precipitation.</p> <p>The CREWS project, which was officially launched on April 30, 2018, will contribute to improve the country’s hydro-meteorological, early warning and response systems and services in targeted areas:</p> <ul style="list-style-type: none"> <li>– Enhanced hydro-meteorological observing, monitoring and impact forecasting services</li> <li>– Enhanced food security early warning system</li> <li>– Establishment of a flood early warning service</li> <li>– Enhanced civil protection response capacities</li> </ul> <p>More specifically, CREWS financing expands the scope of the World Bank “Mali Hydrological and Meteorological Services Modernization Project” in preparation under the regional Hydromet operation. The Mali Hydromet project includes an <a href="#">US\$22.75 million Green Climate Fund (GCF) grant</a> together with an US\$8.15 million national IDA and US\$16.30 million regional IDA. CREWS resources will support capacity development among stakeholders involved in early warning (meteorology, hydrology, civil protection, food security monitoring, selected municipal councils, and the population in areas prone to</p>

		<p>flash-floods).</p> <p>The activities as presented in the Investment Plan are reflected below:</p> <ul style="list-style-type: none"> <li>- Component A. <b>Institutional Strengthening, Capacity Building and Implementation Support:</b> i) reinforcing the legal and regulatory framework of Mali Météo and Directorate of national hydraulic (DNH) in order to develop partnerships and Standard Operating Procedures (SOPs) for delivery of services; ii) implement a long-term and on-demand capacity development and training program for staff of Mali Météo, DNH, early warning system for food security (SAP) and General directorate of civil protection (DGPC).</li> <li>- Component B. <b>Enhancement of Service Delivery to End-Users</b> will provide technical assistance for delivery of more accurate, timely and user-friendly products and services to decision-makers and end-users. The component will specifically address (i) definition of requirements and development of feedback mechanisms with different user groups (in line with the National Framework for Climate Services); and (ii) development of customized products and services made available to user groups through dedicated interfaces.</li> </ul> <p>The detailed implementation plan was finalized and adopted at the CREWS launch workshop on April 30, 2018. CREWS will ensure optimal support to the 4 national institutions involved in early warning for drought, locust, heavy precipitation, river flooding, flash flooding, wind storm and sand storm: 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). Activities and working plan have been developed to support capacity development.</p> <p>In the section below, activities are specified in line with the updated CREWS monitoring and evaluation framework.</p>
6	<b>Project Activities Contributing to CREWS Outputs</b>	

<b>CREWS Output 1: Assessments of NMHSs capacities, user needs, alignment with other programmes socio-economic benefits</b>	
<b>Project Activities and Estimated Progress to Date</b>	
<ul style="list-style-type: none"> <li>Validation of workplan and launch of project. The project was launched on 30 April as part of a wider plan to <a href="#">modernize Mali's hydrological and meteorological services</a>. A work plan for activities was validated during the day launching workshop. The project will be implemented during the next four years and brings together national institutions responsible for meteorology, hydrology, food security and civil protection. The area of focus is to strengthen flood monitoring system along the Niger River, with improved flood bulletins based on precipitation forecasts.</li> </ul>	100%   Mali CREWS Story VMay 8.docx
<ul style="list-style-type: none"> <li>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</li> </ul>	10%
<ul style="list-style-type: none"> <li>Needs assessment in University of Bamako towards development of a disaster risk management curriculum with focus on early warning</li> </ul>	10% (ToR developed)
<b>CREWS Output 2: Access and use of hazard and risk information</b>	
<b>Project Activities and Estimated Progress to Date</b>	
<ul style="list-style-type: none"> <li>Feeding the national risk geoportal (temporarily available from <a href="http://ml-risk.pigeosolutions.fr">http://ml-risk.pigeosolutions.fr</a>) with hazard, exposure and vulnerability information for flood risk assessment and impact forecasting</li> </ul>	10% (development of the geoportal)
<b>CREWS Output 3: Improvement of NMHSs service delivery</b>	
<b>Project Activities and Estimated Progress to Date</b>	
<ul style="list-style-type: none"> <li>Implement a capacity development and training program for staff</li> </ul>	10%

(including operational training)	
<ul style="list-style-type: none"> <li>Operational rainfall estimates based upon cellphone signal attenuation</li> </ul>	10%
<ul style="list-style-type: none"> <li>Modernizing the data collection for rainfall and water level</li> </ul>	10%
<ul style="list-style-type: none"> <li>Development of operational procedures to convert extreme weather forecasts (rains, floods, winds, heat waves) into potential impacts assessments</li> </ul>	10%
<b>CREWS Output 4: Development of long-term service delivery strategies and development plans for NMHS</b>	
<b>Project Activities and Estimated Progress to Date</b>	
Adoption of procedures and tools for rapid warning, which will complement existing early warning arrangements for concerted action between the institutions responsible for monitoring and forecasting, for coordinating the response, local authorities and citizens.	20%
<b>CREWS Output 5: Procurement and installation of high priority observation and information and communications technology (ICT) equipment</b>	
<b>Project Activities and Estimated Progress to Date</b>	
<ul style="list-style-type: none"> <li>No procurement of equipment planned but required equipment identified as part of needs assessment (Output 1).</li> </ul>	
<b>CREWS Output 6: Preparedness for response plans with operational procedures for dissemination, readiness to act with regular simulation exercises</b>	
<b>Project Activities and Estimated Progress to Date</b>	
<ul style="list-style-type: none"> <li>The Ministry of Security and Civil Protection has recently recruited more than 300 staff of which more than 80% are for fire guards for the General Directorate for Civil Protection (DGPC). CREWS is developing a training program for capacity development for better</li> </ul>	15%

	disaster preparedness and field intervention.	
	<ul style="list-style-type: none"> <li>Development of standard operational procedures within each of the 4 institutions and overall among the 4 institutions responsible for warning activation and warning dissemination</li> </ul>	10%
	<ul style="list-style-type: none"> <li>Emergency response plans for 5 municipalities</li> </ul>	10% (ToR developed)
	<ul style="list-style-type: none"> <li>Training of Regional Disaster Assessment Units</li> </ul>	0%
<b>CREWS Output 7: Targeted education and public awareness programmes available for warning systems and related public action</b>		
<b>Project Activities and Estimated Progress to Date</b>		
	<ul style="list-style-type: none"> <li>Development of a training program for regional and local food security and disaster management committees.</li> </ul>	10%
	<ul style="list-style-type: none"> <li>Training of mayors on the integration of meteorological and climatological data and information in the development of Communal Development Plans (PDC).</li> </ul>	10% (ToR developed)
	<ul style="list-style-type: none"> <li>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.</li> </ul>	10%
<b>CREWS Output 8: Activities promoting gender equality in all aspects of early warning systems</b>		
<b>Project Activities and Estimated Progress to Date</b>		
	Development of indicators to monitor the number of people with improved hydromet services access, disaggregated by gender.	10%
<b>7</b>	<b>Funding Spent</b>	US\$92,257.35
<b>8</b>	<b>Changes in Organization</b>	No changes

	<b>and Operating Procedures, Project Viability and Sustainability</b>	
<b>9</b>	<b>Lessons Learned</b>	There is lack in information sharing between the four main agencies implementing preparing Hydromet project. CREWS launching and the preparation of the working plan were good opportunities for these agencies to start effectively working together and build confidence in sharing information.


CREWS Project Status Report: Niger		
1	<b>Project Title</b>	<b>Niger Strengthening Early Warning Services</b>
2	<b>Project Reference</b>	CREWS/CProj/07/Niger
3	<b>Reporting Period</b>	December 2017-June 2018
4	<b>Reporting Focal Point</b>	Koffi Hounkpe, Senior DRM Specialist; Email: khounkpe@worldbank.org
5	<b>Project Status Overview</b>	<p>The objective of CREWS Niger project is to reinforce warning capacities, focusing primarily on rain and fluvial floods. CREWS Niger includes the following components and sub-components:</p> <ul style="list-style-type: none"> <li>• Component A. Institutional and regulatory strengthening, technical capacity building, with 2 sub-components: <ul style="list-style-type: none"> <li>✓ A1. Strengthening the institutional and regulatory framework of hydrometeorological warning services</li> <li>A2. Capacity building and staff training</li> </ul> </li> <li>• Component B. Basic alert services provision in accordance with the national framework for climate services, with 2 sub-components: <ul style="list-style-type: none"> <li>✓ B1. Identifying the needs of decision-makers and the population at risk for warning of extreme weather events</li> <li>• B2. Data concentration, design, production, dissemination of alert and information services</li> </ul> </li> <li>• Component C. Support for emergency response planning (contingency plans, emergency organization plans, municipal backup plans)</li> </ul> <p>The key implementation agencies of CREWS Niger are: 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). Other structures also support the implementation of CREWS Niger; these include AGRHYMET, NBA, ACMAD, <i>Niger Disaster Risk Management and Urban Development Project (P145268)</i> known on acronym PGRC-DU.</p> <p>The workshop on launching CREWS and activities planning for 2018-2020 was held from 03 to 04 April 2018 in Niamey. The 2018 business plan is currently being implemented.</p>
6	<b>Project Activities Contributing to CREWS Outputs–National Projects</b>	
	<b>CREWS Output 1: Assessments of NMHSs capacities, user needs, alignment with other</b>	



<b>programmes socio-economic benefits</b>			
<b>Project Outputs and Estimated Progress to Date</b>	<b>Output Start &amp; End Date</b>	<b>Progress by Nov 2017</b>	<b>Progress by June 2018</b>
<p><i>Project output 1.1. 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 19 to 24 March 2018.</i></p> <p><i>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.</i></p> <p><i>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.</i></p>	Q3 2017-Q4 2019	2 %	30%
<b>CREWS Output2: Access and use of hazard and risk information</b>			
<b>Project Outputs and Estimated Progress to Date</b>	<b>Output Start &amp; End Date</b>	<b>Progress by Nov 2017</b>	<b>Progress by June 2018</b>
<p><i>Project output 2.1: 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.</i></p>	Q1 2018-Q2 2020	10%	30%
<p><i>Project output 2.2: As part of the 2018 activities, the National Framework for Climate Services (CNCS) developed and disseminated thematic bulletins on Health and Water Resources. Two regional forums were held respectively in Dosso and Maradi and a training session for community radios on the development of a communication strategy.</i></p>			

<p><i>Project output 4.1: 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.</i></p>	<p>Q1 2018- Q4 2020</p>	<p>10%</p>	<p>30%</p>
<p><b>CREWS Output3: Improvement of NMHSs service delivery</b></p>			
<p><b>Project Outputs and Estimated Progress to Date</b></p>	<p><b>Output Start &amp; End Date</b></p>	<p><b>Progress by Nov 2017</b></p>	<p><b>Progress by June 2018</b></p>
<p><i>Project output 3.1: Short-term training on short and medium-range weather forecasts (24H to 72H) in collaboration with WMO.</i></p>	<p>Q1 2018- Q4 2020</p>	<p>10%</p>	<p>25%</p>
<p><i>Project output 3.2: Training on forecasting of heavy rainfall in collaboration with ACMAD.</i></p>			
<p><i>Project output 3.3: Training on hydrological modeling in collaboration with AGRHYMET and (Niger Basin Authority (NBA).</i></p>			
<p><i>Project output 3.4: Training observers of meteorological and hydrological stations on the collection and transmission of meteorological and hydrological data and information.</i></p>			
<p><i>Project output 3.5: Support for the participation of representatives of the DMN and the DGRE in a workshop on the 2018 Seasonal Forecast organized from April 30 to May 4, 2018 in Abidjan, Ivory Coast.</i></p>	<p>Q1 2018- Q4 2020</p>	<p>10%</p>	<p>25%</p>
<p><i>Project output 3.6. Support for the participation of Niger representatives in a coordination and information sharing workshop for CREWS project representatives from Burkina Faso, DRC, Niger and Mali, scheduled for July 2018.</i></p>	<p>Q1 2018- Q4 2020</p>	<p>10%</p>	<p>25%</p>

<b>CREWS Output 5: Procurement and installation of high priority observation and information and communications technology (ICT) equipment</b>			
<b>Project Outputs and Estimated Progress to Date</b>	<b>Output Start &amp; End Date</b>	<b>Progress by Nov 2017</b>	<b>Progress by June 2018</b>
<i>Project output 5.1: Internet connection of General Directorate for Water Resources (DGRE) and Directorate of National Meteorology (DMN). The ToR of this activity are developed.</i>	Q1 2018- Q4 2020	10%	25%
<i>Project output 5.2: Support meteorology field information collection for database development from thirty (30) automatic weather stations and 120 rain gauges SPIEA-type installed in 30 communes and 120 localities of Niger, under PASEC frame and financed by the World Bank. .</i>			
<i>Project output 5.3: Support hydrology field information collection for database development from four hundred and thirty-five (435) rain gauges SPIEA type installed in 2016 and 1000 rain gauges of the same type to be set up in 2018 and 2019 by the DMN as part of the PIDIC financed by the AfDB. .</i>			
<b>CREWS Output 6: Preparedness for response plans with operational procedures for dissemination, readiness to act with regular simulation exercises</b>			
<b>Project Outputs and Estimated Progress to Date</b>	<b>Output Start &amp; End Date</b>	<b>Progress by Nov 2017</b>	<b>Progress by June 2018</b>
<i>Project output 6.1: Adoption of national early warning legislation. A drafting workshop was organized from 10 to 12 May 2018 in Dosso by the General Directorate of Civil Protection (DGPC).</i>	Q1 2018- Q4 2020	10%	30%
<i>Project output 6.2: Training of regional directors of civil protection on national and district managements plans by the General Directorate of Civil Protection (DGPC).</i>			
<i>Project output 6.3: Training workshop on the elaboration of the ORSEC plan by the General Directorate of Civil Protection.</i>			

	<i>Project output 6.4: Training workshop on the Municipal Protection Plan by the General Directorate of Civil Protection.</i>			
	<i>Project output 6.5: Implementation of civil society organization for food security monitoring and early warning system in areas at risk of flood.</i>			
	<i>Project output 6.6: Training of governors, prefects, mayors in the dissemination of alerts in 4 regions.</i>			
<b>CREWS Output 7: Targeted education and public awareness programmes available for warning systems and related public action</b>				
	<b>Project Outputs and Estimated Progress to Date</b>	<b>Output Start &amp; End Date</b>	<b>Progress by Nov 2017</b>	<b>Progress by June 2018</b>
	<i>Project output 7.1: Training of villagers in the collection and transmission of daily rainfall data by the DMN.</i>	Q1 2018-Q4 2020	10%	25%
	<i>Project output 7.2: Training of mayors on the integration of meteorological and climatological data and information in the development of Communal Development Plans (PDC), by the DMN.</i>			
	<i>Project output 7.3: 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, in the frame of PASEC.</i>			
	<i>Project output 7.3: Each of the five agencies implementing CREWS has participated in a study tour in France from January 14 to 19, 2018.</i>			 ToR CREWS Visite France20 dec17.docx
<b>CREWS Output 8: Activities promoting gender equality in all aspects of early warning systems</b>				
	<b>Project Outputs and Estimated Progress to Date</b>	<b>Output Start &amp; End Date</b>	<b>Progress by Nov 2017</b>	<b>Progress by June 2018</b>
	<i>Project output 8.1: Development of indicators to monitor the number of people with improved hydromet services access, disaggregated by gender..</i>	Q1 2018-Q4 2020	10%	30%
<b>7</b>	<b>Funding Spent</b>	\$300,500 spent through June 2018		
<b>8</b>	<b>Changes in Organization and Operating</b>	Niger Disaster Risk Management and Urban		

	<b>Procedures, Project Viability and Sustainability</b>	<i>Development Project (P145268) and CREWS are supporting the four agencies implementing CREWS in terms of equipment, data collection, hydromet information production and use with the aim these functions will be integrated in agencies' regular work, so after the project is closed they will continue activities]</i>
9	<b>Lessons Learned</b>	<p><i>The implementation mechanism of CREWS Niger is appropriate to achieve the immediate and short-term objectives. To ensure the viability and sustainability of the mechanism, it is essential to establish better synergy and pooling of efforts by all actors at the national, sub-regional and international levels (key national actors, AGRHYMET, ABN, ACMAD, WMO, BM, UNDP...).</i></p> <p><i>In addition, to ensure efficient and effective implementation of CREWS Niger, it is necessary to define and adopt the roles and responsibilities of the various actors.</i></p> <p><i>Therefore, to ensure continuity in the monitoring of CREWS activities, it is recommended to designate one Focal Point and an Assistant Focal Point at each of the key four national agencies implementing CREWS, instead of one as is currently the case.</i></p>
10	<b>Documents</b>	<ol style="list-style-type: none"> <li><i>1. Aide-Memoire World Bank Support Mission to CREWS Niger, 19-24 March 2018.</i></li> <li><i>2. CREWS Niger Action Plan Matrix for 2018-2020, from the workshop on launching CREWS and activities planning organized from 03 to 04 April 2018 in Niamey.</i></li> </ol>

**CREWS Project Status Report: Pacific Region**

<b>1</b>	<b>Project Title</b>	
<b>2</b>	<b>Project Reference</b>	CREWS/RegProj/04/Pacific
<b>3</b>	<b>Reporting Period</b>	December 2017-June 2018
<b>4</b>	<b>Reporting Focal Point</b>	Lina Sjaavik (lsjaavik@wmo.int)
<b>5</b>	<b>Project Status Overview</b>	<p>The Pacific CREWS Project (co-funded by the CREWS Initiative and Environment and Climate Change Canada (ECCC)) has made significant progress in setting up the necessary structures for the following main activities:</p> <ul style="list-style-type: none"> <li>- Impact-based coastal inundation forecasting: An agreement with the Pacific Community for the development of Impact-based Coastal Inundation Forecasting for Kiribati and Tuvalu;</li> <li>- Flash Flood Guidance System (Fiji) an agreement has been signed (April 2018) with the Hydrological Research Center (HRC) for the development of a Flash Flood Guidance System in Fiji.</li> </ul> <p>In May 2018 an expert mission to Fiji Meteorological Service (FMS) and the Regional Specialised Meteorological Centre in Nadi (RSMC-Nadi) took place. The expert mission was comprised of experts from WMO, Australian Bureau of Meteorology (Bom), New Zealand Met Service, the Indonesian BMKG, and the Secretariat of the Pacific Environment Programme (SPREP), with the purpose of i) gaining buy-in from the Fijian government in support of the project and strengthening FMS and RSMC Nadi, and; ii) to assess the current capabilities and capacities of RSMC Nadi. This expert mission contributes to the provision of services from RSMC Nadi to the Pacific Island Countries (PICs) it serves and will contribute to the development of a flash flood guidance system (FFGS) for Pacific Fiji and the Severe Weather Forecasting Demonstration and Disaster Risk Reduction Project (SWFDDP) for the Region.</p> <p>Moreover the strategic planning documents for Fiji, Kiribati, Tuvalu, Tonga, and Federated States of Micronesia in process. While the Strategic Plan for Fiji will be finalized during a stakeholder validation workshop in September, the other strategic planning documents are in their initial phases and will be completed by November 2018. The consultants have also been tasked with assessing EWS gaps and needs in-country, including a strong gender focus.</p>

**CREWS Output 1: Assessments of NMHSs capacities, user needs, alignment with other**

<b>programmes socio-economic benefits</b>			
<b>Project Outputs and Estimated Progress to Date</b>	<b>Output Start &amp; End Date</b>	<b>Progress by Nov 2017</b>	<b>Progress by June 2018</b>
<i>Project output 1.1: Assessment of Capacities and Needs of targeted NMHS including gender considerations.</i> - <i>ToRs for assessments of NMHS developed</i>	Q3 2017- Q4 2018	15%	15%
<b>CREWS Output 2: Access and use of hazard and risk information</b>			
<b>Project Outputs and Estimated Progress to Date</b>	<b>Output Start &amp; End Date</b>	<b>Progress by Nov 2017</b>	<b>Progress by June 2018</b>
<i>Project output 2.1: Global/regional/national data products are available for RSMC Nadi</i> - <i>Expert mission to Fiji in May 2018 identified the needs of RSMC Nadi</i>	Q3 2018- Q4 2020	0%	10%
<i>Project output 2.2: Targeted NMHS have access to high performance computing NWP models and tools</i>	Q1 2019- Q4 2020	0%	0%
<i>Project output 2.3: RSMC Nadi website and portal are upgraded</i>	Q4 2019 Q4 2020	0%	0%
<i>Project output 2.4: Regional policy paper on data sharing pertaining to WMO resolution 40 developed</i> - <i>The project supported the WIGOS/GCOS workshop that took place in Fiji in October 2017, and further identified regional observation needs.</i>	Q1 2019- Q4 2020	10%	10%
<i>Project output 2.5: Impact-based coastal inundation forecasting in place in Tuvalu and Kiribati</i> - <i>Terms of reference developed with the Pacific Community (SPC).</i>	Q2 2018-Q1 2021	0%	5%
<i>Project output 2.6 Community based mechanisms to prepare and respond to impact-based forecast and risk-informed warnings are in place</i>	Q4 2018-Q4 2020	0%	0%
<b>CREWS Output 3: Improvement of NMHSs service delivery</b>			
<b>Project Outputs and Estimated Progress to Date</b>	<b>Output Start &amp; End Date</b>	<b>Progress by Nov 2017</b>	<b>Progress by June 2018</b>
<i>Project output 3.1 A high resolution Numerical Weather Prediction mesoscale model is implemented at FMS</i> - <i>The first step towards implementing the NWP mesoscale model took place with the expert</i>	Q2 2018-Q4 2019	0%	10%



	<i>mission to Fiji in May 2018.</i>			
	<p><i>Project output 3.2 Implement Fiji FFGS</i></p> <ul style="list-style-type: none"> <li>- <i>The first step towards implementing the NWP mesoscale model took place with the expert mission to Fiji in May 2018.</i></li> <li>- <i>The agreement with HRC for procurement and delivery of FFGS was signed in April 2018 and the transfer to HRC was made in May 2018 (Canada CREWS funds)</i></li> </ul>	<i>Q2 2018- Q2 2020</i>	<i>0%</i>	<i>15%</i>
	<p><i>Project output 3.3: Capacities of the targeted NMHS are developed to access, use and develop regional/national data, products, tools and services.</i></p> <ul style="list-style-type: none"> <li>- <i>CAP workshops took in eight PICs in July 2017</i></li> </ul>	<i>Q3 2017 – Q4 2020</i>	<i>5%</i>	<i>5%</i>
	<p><i>Project output 3.4: Regional/national data, products and services are developed and verified, using global/regional data, products, tools and services.</i></p>	<i>Q3 2018-Q4 2020</i>	<i>0%</i>	<i>0%</i>
	<p><i>Project output 3.5: Capacities of the Regional Centres/NMHSs targeted by the Project to deliver data, products and services and incorporate feedback are developed.</i></p>	<i>Q4 2018- Q4 2020</i>	<i>0%</i>	<i>0%</i>
	<p><i>Project output 3.6: Quality Management Systems (QMS) for service development and delivery are in place.</i></p>	<i>Q3 2018- Q4 2020</i>	<i>0%</i>	<i>0%</i>
	<p><i>Project output 3.7: Hydrometeorological data, products and services are delivered to end users and feedback is received and incorporated.</i></p> <ul style="list-style-type: none"> <li>- <i>Drought monitoring workshops took place in Tuvalu in Nov/Dec 2017. The consultants involved will further interact with Tuvalu officials in 2018 to fully develop a draft National Drought Policy that can then be considered for adoption by the Tuvalu Government. This is done in coordination with the Integrated Drought Management Programme (IDMP) which is co-sponsored by WMO and the Global Water Partnership with over 30 international, regional and national partner organizations</i></li> <li>- <i>Fiji TV Weather presenter workshop</i></li> </ul>	<i>Q3 2017- Q4 2020</i>	<i>0%</i>	<i>5%</i>
	<p><i>Project output 3.8 Community-based mechanisms and activities to prepare and respond to impact-based forecasts and risk-informed warnings are in place</i></p>	<i>Q4 2018- Q4 2020</i>	<i>0%</i>	<i>0%</i>
<b>CREWS Output 4: Development of long-term service delivery strategies and development plans for NMHS</b>				

<b>Project Outputs and Estimated Progress to Date</b>	<b>Output Start &amp; End Date</b>	<b>Progress by Nov 2017</b>	<b>Progress by June 2018</b>
<i>Project output 4.1: Development of long-term strategic plan for FMS/RSMC Nadi</i> - Final draft of strategic plan for Fiji submitted to WMO in January 2018. The validation workshop will take place in September 2018	Q1 2017- Q4 2018	50%	90%
<i>Project output 4.2: Development of long-term strategic plans for targeted NMHS</i>  - The ToRs are developed for the strategic plans Kiribati, Tuvalu, Tonga, Federated States of Micronesia. WMO is currently processing the consultancy agreements for the consultants to develop the plans.	Q1 2017- Q4 2018	0%	10%
<i>Project output 4.3: Development of Meteorological Bills for targeted NMHS</i> - The ToRs are developed WMO is currently processing the consultancy agreements for the consultants to develop the bills.	Q1 2017- Q4 2018	0%	10%

**CREWS Output 5: Procurement and installation of high priority observation and information and communications technology (ICT) equipment**

<b>Project Outputs and Estimated Progress to Date</b>	<b>Output Start &amp; End Date</b>	<b>Progress by Nov 2017</b>	<b>Progress by June 2018</b>
<i>Project output 5.1 Procurement and installation of HPC for implementation of NWP LAM in Fiji Meteorological Service/RSMC Nadi</i> - The expert mission to Fiji to identify the needs and capacities for installation of HPC took place in May 2018.	Q1 2018- Q4 2020	0%	10%
<i>Project output 5.2 Procurement and installation of necessary ICT for targeted NMHS</i> - The needs of the NMHS have been preliminary identified	Q3 2018- Q4 2020	0%	5%
<i>Project output 5.3 Procurement and installation of AWS in Tokelau</i>	Q4 2018- Q2 2019	0%	0%

<b>CREWS Output 6: Preparedness for response plans with operational procedures for dissemination, readiness to act with regular simulation exercises</b>			
<b>Project Outputs and Estimated Progress to Date</b>	<b>Output Start &amp; End Date</b>	<b>Progress by Nov 2017</b>	<b>Progress by June 2018</b>
<i>Project Output 6.1 Bilateral coordination mechanisms between NMHS and other national MHEWS stakeholders are established</i>	Q3 2018- Q4 2020	0%	0%
<b>CREWS Output 7: Targeted education and public awareness programmes available for warning systems and related public action</b>			
<b>Project Outputs and Estimated Progress to Date</b>	<b>Output Start &amp; End Date</b>	<b>Progress by Nov 2017</b>	<b>Progress by June 2018</b>
<i>Training of Fiji meteorologists to communicate forecasts effectively through TV and social media</i>	Q3 2018- Q4 2020		100%
<b>CREWS Output 8: Activities promoting gender equality in all aspects of early warning systems</b>			
<b>Project Outputs and Estimated Progress to Date</b>			
<i>8.1 Targeted NMHS assess their capabilities to include gender equality in EWS - ToRs developed for the assessment of gender inclusions in EWS</i>			
<i>8.2 Female staff in targeted NMHS have been trained on women in leadership</i>			
<b>6.1 REGIONAL OUTPUTS</b>			
<b>CREWS Regional Output A: Assessments of institutional capacities of regional centers to meet NMHSs' needs, alignment with other programmes socio-economic benefits</b>			
<b>Project Outputs and Estimated Progress to Date</b>	<b>Output Start &amp; End Date</b>	<b>Progress by Nov 2017</b>	<b>Progress by June 2018</b>
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	Q1 2018- Q4 2020	0%	80%

	current capacity and capabilities of FMS and RSMC Nadi to provide services to Fiji and other countries served by RSMC Nadi.			
<b>7</b>	<b>Funding Spent</b>	<i>USD 156,000 (CREWS MDTF) CAD 509,702 (Canada CREWS)</i>		
<b>8</b>	<b>Changes in Organization and Operating Procedures, Project Viability and Sustainability</b>			
<b>9</b>	<b>Lessons Learned</b>	<i>No further lessons learned from current reporting period.</i>		
<b>10</b>	<b>Documents</b>	<i>Report from Expert Mission to be submitted to CREWS Secretariat.</i>		

## CREWS Project Status Report: Papua New Guinea

<b>1</b>	<b>Project Title</b>	<b>Weather and Climate Early Warning System for Papua New Guinea</b>		
<b>2</b>	<b>Project Reference</b>	CREWS/CProj/08/Papua New Guinea		
<b>3</b>	<b>Reporting Period</b>	December 2017-June 2018		
<b>4</b>	<b>Reporting Focal Point</b>	Robert Stefanski (rstefanski@wmo.int)		
<b>5</b>	<b>Project Status Overview</b>	Letters of Agreement are under review by the PNG National Weather Service and Bureau of Meteorology (BOM) of Australia. The next step will be the launch workshop, with all relevant stakeholders, tentatively scheduled for the end of July. The project work plan will be refined at this workshop.		
<b>6</b>	<b>Project Activities Contributing to CREWS Outputs –National Projects</b>			
	<b>CREWS Output 1: Assessments of capacities, user needs, alignment with other programmes and socio-economic benefits</b>			
	<b>Project Outputs and Estimated Progress to Date</b>	<b>Output Start &amp; End Date</b>	<b>Progress by Nov 2017</b>	<b>Progress by June 2018</b>
	1. <i>Detailed assessment of user needs including PNG NWS and other stakeholders (6 stakeholders' workshops)</i>	Q3 2018 – Q4 2020	0%	0%
	2. <i>Assessment of observation systems for early warning systems. Recommendations on improvements</i>	Q4 2018- Q3 2019	0%	0%
	3. <i>Assessment of national capabilities on drought forecasts</i>	Q4 2018 – Q3 2019	0%	0%
	4. <i>Assessment of Climate and Hydrological Database Management Systems</i>	Q4 2018 – Q1 2019	0%	0%
	5. <i>Assessment of Climate data rescue needs</i>	Q1 2019 – Q2 2019	0%	0%
	6. <i>Assessment of national capabilities on flood / flash flood forecast for urban or near-by areas, some to be addressed by SouthEastern Asia Oceanic FFG (SAOFFG)</i>	Q2 2020 – Q1 2021	0%	0%

<b>CREWS Output 2: Access and use of hazard and risk information</b>			
<b>Project Outputs and Estimated Progress to Date</b>	<b>Output Start &amp; End Date</b>	<b>Progress by Nov 2017</b>	<b>Progress by June 2018</b>
<i>Adapt and implement Australian Climate and Weather Extremes Monitoring System to PNG for basic monitoring of drought, heavy rainfall and frost events</i>	Q4 2018- Q2 2019	0%	0%
<i>Develop NWP products from Global NWP centres including BOM for use in short-range forecasting</i>	Q4 2018- Q2 2019	0%	0%
<i>Guidance documentation about how to use Sub-Seasonal to seasonal forecasts (1week to 3 months) from Global Centers</i>	Q1 2020- Q3 2020	0%	0%
<i>Catalog of maps of flood prone areas and flood causes, some to be addressed by SouthEastern Asia Oceanic FFG (SAOFFG)</i>	Q4 2019 – Q2 2020	0%	0%
<i>Introducing impact-based drought forecasts and risk-informed warnings for improved decision making by the users</i>	Q1 2021- Q2 2021	0%	0%
<i>Develop on operational climate early warning system for drought</i>	Q3 2019 - Q2 2020	0%	0%
<i>Development of tailored products (e.g. drought monitoring and prediction).</i>	Q1 2020 - Q4 2020	0%	0%
<i>Pilot testing and evaluation of EWS based on prior stakeholder consultation</i>	Q2 2020 - Q4 2020	0%	0%
<b>CREWS Output 3: Improvement of NMHSs service delivery</b>			
<b>Project Outputs and Estimated Progress to Date</b>	<b>Output Start &amp; End Date</b>	<b>Progress by Nov 2017</b>	<b>Progress 2018</b>
<i>Integration of national meteorological, hydrological and climate observing systems in OSCAR/Surface, the official repository of surface-based observing stations and platforms metadata of WMO Integrated Global Observing System (WIGOS)</i>	Q4 2019- Q3 2020	0%	0%
<i>Improved climate databases based on Australia Climate</i>	Q3 2018-	0%	0%

<i>Data for the Environment (CiDE) activities</i>	Q2 2019			
<i>Integration of other compatible database systems such as agro-meteorology, hydrology, with existing database</i>	Q1 2019- Q3 2019	0%	0%	
<i>Implementation of enhanced climate database and report on climate data rescue status</i>	Q3 2019- Q2 2020	0%	0%	
<i>Recommendations and specifications for observing and forecast system improvement and product enhancement</i>	Q3 2020 - Q1 2021	0%	0%	
<b>CREWS Output 4: Development of long-term service delivery strategies and development plans for NMHS</b>				
<b>Project Outputs and Estimated Progress to Date</b>	<b>Output Start &amp; End Date</b>	<b>Progress by Nov 2017</b>	<b>Progress by June 2018</b>	
<i>1. Long-term development of PNG NWS. Five years strategic development plan, implementation plan and resource mobilization plan</i>	Q1 2019 - Q2 2020	0%	0%	
<b>CREWS Output 5: Procurement and installation of high priority observation and information and communications technology (ICT) equipment</b>				
<b>Project Outputs and Estimated Progress to Date</b>	<b>Output Start &amp; End Date</b>	<b>Progress by Nov 2017</b>	<b>Progress by June 2018</b>	
<i>Observing stations, data concentration, data management, forecasting and service production hardware, based on needs and assessment</i>	Q3 2019 - Q2 2020	0%	0%	
<b>CREWS Output 6: Preparedness for response plans with operational procedures for dissemination, readiness to act with regular simulation exercises</b>				
<b>Project Outputs and Estimated Progress to Date</b>	<b>Output Start &amp; End Date</b>	<b>Progress by Nov 2017</b>	<b>Progress by June 2018</b>	
<i>Enhanced multi-channel weather forecast and warnings communication systems</i>	Q2 2019- Q1 2020	0%	0%	
<i>Pilot testing and evaluation of EWS based on prior stakeholder consultation</i>	Q2 2020- Q4 2020	0%	0%	
<b>CREWS Output 7: Targeted education and public awareness programmes available for warning systems and related public action</b>				

	<b>Project Outputs and Estimated Progress to Date</b>	<b>Output Start &amp; End Date</b>	<b>Progress by Nov 2017</b>	<b>Progress by June 2018</b>
	<i>Training in statistics and basic tools for climate services</i>	Q1 2019- Q1 2021	0%	0%
	<i>Capacity building in preparing and interpreting the forecasts</i>	Q2 2019- Q2 2021	0%	0%
	<i>Capacity training for multi-channel weather forecast and warnings communication systems</i>	Q2 2019- Q1 2021	0%	0%
	<i>Capacity training on climate data management and data rescue</i>	Q1 2019- Q1 2021	0%	0%
	<i>Capacity training on with OSCAR/Surface</i>	Q1 2019- Q1 2021	0%	0%
	<i>Capacity training on climate extremes monitoring and drought forecast</i>	Q2 2019- Q2 2021	0%	0%
	<i>Management training for PNG staff</i>	Q2 2019- Q1 2021	0%	0%
<b>CREWS Output 8: Activities promoting gender equality in all aspects of early warning systems</b>				
	<b>Project Outputs and Estimated Progress to Date</b>	<b>Output Start &amp; End Date</b>	<b>Progress by Nov 2017</b>	<b>Progress by June 2018</b>
	<i>Gender analysis undertaken to identify opportunities and include specific interventions to promote gender equality of EWS benefits</i>	Q2 2019- Q1 2021	0%	0%
	<i>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.</i>	Q2 2019- Q1 2021	0%	0%
<b>7</b>	<b>Funding Spent</b>	CHF 0		
<b>8</b>	<b>Changes in Organization and Operating Procedures, Project Viability and Sustainability</b>	The project time frame is being updated <ul style="list-style-type: none"> <li>• from October 2017 – September 2020</li> <li>• to April 2018 – March 2021</li> </ul>		
<b>9</b>	<b>Documents</b>	<ul style="list-style-type: none"> <li>• Project proposal approved by CREWS Steering Committee – (<a href="#">pdf</a>)</li> </ul>		