CREWS PROJECT STATUS REPORT

1. Project title	*Strengthening Hydro-Meteorological and Early Warning Systems in the Pacific (CREWS Pacific SIDS)*	**2. Project reference** *CREWS/RegProj/04/Pacific*
3. Lead IP	**WMO**	**4. Other Implementing Partners** Secretariat of the Pacific Regional Environment Programme (SPREP) The Pacific Community (SPC)
5. Reporting period	**June 2019 – November 2019**	
6. Reporting focal point	**Josephine Wilson** jowilson@wmo.int **Donna Pierre** dpierre@wmo.int **Jason Watkins** jtwatkins@wmo.int	
7. Project overview	**Please include synergies, leveraging, key project deliverables and total funding in bullet points. (max 250 words)** The CREWS Pacific SIDS Project is co-funded by the CREWS Initiative (USD 2,500,000) and Environment and Climate Change Canada through the project "Building Resilience to High-Impact Hydro-Meteorological Events through Strengthening MHEWS in Small Island Developing States (SIDS) and South East Asia (USD 2,500,000). The project focuses on strengthening the Regional Specialised Meteorological Centre in Nadi (RSMC-Nadi), Fiji and the NMHS that it serves; Cook Islands, Fiji, Kiribati, Niue and Tuvalu. Moreover, the project supports the Federated States of Micronesia, Marshall Islands, Nauru, Niue, Palau, Samoa, Solomon Islands, Tokelau, Tonga, and Vanuatu. The prioritization is based on regional outreach, and other projects under implementation in the region. The project has three main components: Improved governance: strengthened governance structures and mechanisms for regional centres and NMHSs	

	targeted by the project are in place. Enhanced product development and accessibility: enhanced regional and national facilities and capacities of regional centres and NMHSs targeted by the project to produce impact-based forecasts and risk-informed warnings of extreme and high impact hydro-meteorological events, accessing and using global and regional data, products and services. Enhanced service delivery: Regional centres and NMHSs targeted by the project better deliver impact based and risk informed hydro-meteorological data, products and services to MHEWS stakeholders for their decision support. Moreover, the project is closely coordinating with the Australian Government funded project Climate and Ocean Support Program in the Pacific (COSPPAC) and the UNDP "Disaster Resilience for Pacific Small Island Developing States (RESPAC) Project.
8. Progress summary	**What has been achieved between June - November? – Please list the most significant and tangible developments?** The reporting period has seen significant progress highlighting the following: Improved governance: - The Pacific Meteorological Council (PMC) successfully hosted the Fifth meeting of the PMC-5 following funds received from WMO. The meeting was held in Apia from 05 to 09 August 2019. - 35 Women from 13 islands received Leadership training. This group were from Meteorology, Hydrology and Climatology units of Pacific Island States . The workshop was held in Samoa along with a number of other meetings which complemented the theme of the PMC between 29 July to 6 August 2019.(see Output 6). - The strategic plan and meteorological bill for Tuvalu drafts have been reviewed and will be presented to its new line ministry, Ministry of Environment and Public Utilities (EPUI) at the end of November 2019. - Plans are on the way to develop a Hydrological strategy for Tonga's Geoscience Service unit. Two consultants have been hired and country consultations will start in December.

	<u>Enhanced product development and accessibility:</u> - The High-Performance Computer (HPC) has been procured in FMS and will be used for high-resolution Numerical Weather Prediction mesoscale models. - Fiji Flash Flood Guidance System (FFGS) Radar Hydrology Training was provided for seven experts from FMS. The training was held at the Hydrologic Research Center (HRC) in San Diego, California, USA from 19 August to 6 September 2018. - Fiji FFGS Operational Training (Step 3), was provided for five experts from the FMS and was also held at the Hydrologic Research Center (HRC), San Diego, USA, 7 October – 1 November 2019. - The Impact-based coastal inundation forecasting in Kiribati and Tuvalu is progressing according to plans: the development of the wave models for both Tuvalu and Kiribati as well as final procurement of wave buoys and pressure sensors are completed. The project is pairing with the UNDP Tuvalu Coastal Adaptation Project (TCAP) to conduct a bathymetry survey and liDAR topography for the whole Tuvalu. This will provide data needed for model simulations and an inundation forecasting system for the country. The Pacific Community has completed the satellite bathymetry for Kiribati and this will be used by the project for the off-shore wave and coastal inundation forecasting models/system. - The Pacific Climate Change Center led a regional training workshop on information technology in support of NMHS IT tools and websites took place between 4 October - 9 October 2019 and was held at the SPREP compound in Apia. 19 IT specialists from Pacific Island Countries attended, 18 were male and 1 female. - Assessment of emergency communication in Tokelau has started. <u>Enhanced service delivery</u> - The Fifth Pacific Islands Climate Outlook Forum (PICOF-5) took place between the 14-18 October. Following this, Regional Statement on the Climate of 2018/19 and Climate, Ocean and Tropical Cyclone Outlook for October to December 2019, have been issued. - 70 participants from the National Meteorological and Hydrological Services (NMHSs) and National Disaster Management Offices (NDMO) attended a regional workshop on Impact-Based Forecast and

	Warning Services (IBFWS) for the Pacific Small Island Developing States (SIDS) took place in Honiara, Solomon Islands, 16 – 20 September 2019.

9. Project Performance

Interpretation of color coding		
	**High**	Good progress; on track in most or all aspects of delivery
	**Medium**	Moderate progress or on track in some aspects of delivery
	**Low**	Less than moderate or poor progress. Not on track in critical areas of its delivery. Requires remedial attention

	Rate of expenditure	Rate of delivery	Alignment of Objectives
Coding			
Narrative	The rate of expenditure is on track with a total expenditure of USD 1,384,000 (56%) from CREWS.	The delivery is on track, and the regional partners, SPREP and SPC are moving forward according to plans. There have been some delays on the assessments, and on the training activities under the Severe Weather	The project remains aligned to its original objectives.

		Forecasting and Disaster Risk Reduction Demonstration Project (SWFDDP). However, following close coordination with the MetService New Zealand, the training plan is moving forward and training workshops for the nine participating NMHSs (Solomon Islands, Vanuatu, Fiji, Samoa, Kiribati, Tuvalu, Tonga, Niue and Cook Islands) will take place in 2020. Furthermore, there have been some slight delays in the revision and development of National Strategic Plans for Kiribati and Fiji. Upon request, both NMHS have delayed the start dates to Q1 2020	

10. Risk Management Status

Risk Status	What is the current risk status as compared to what was identified in the project proposal? The overall risk remains low.
Measures to address	What mitigation measures have been developed to address the risk status? Risks are being mitigated through close cooperation with the regional partners SPC and SPREP, and through close coordination between the beneficiary NMHSs and WMO. The project receives continued support from WMO Regional Office for Asia & the South-West Pacific and more specifically WMO personnel situated within the Pacific offices in Apia, Samoa.

11. Contributions to CREWS Output(s)s

11.1 National Output(s)s

CREWS Output(s) 1: National Meteorological and Hydrological Services service delivery improved, including the development of long-term service delivery strategies and development plans				
State Project Output(s) in this section	**Overall Project Target**	**Target for reporting period**	**Progress by June 2019**	**Progress by November 2019**
1.1 Regional assessment of public and private capacities, gaps and needs with respect to MHEWS governance, product generation and service delivery	**1 regional assessment**	**1 regional assessment**	**0 regional assessment**	**ToRs in place assessment in Q1 & Q2 2020.**
1.2 In-country assessments of NMHS capacity (under strategic planning process)	**8 in-country assessments**	**3 in-country assessments**	**0 assessments**	**1 assessment**
1.3 Regional workshops to increase awareness of national MHEWSs and regional/global support mechanisms, and the understanding by MHEWS stakeholders of their respective roles and responsibilities.	**1 Regional workshop**	**1 Regional workshop**	**N/A**	**0 regional workshop**
1.4 Development of long-term strategic plans for targeted NMHSs	**8 Strategic Plans**	**3 strategic plans**	**0**	**1 strategic Tuvalu strategic plan, reviewed by WMO and NMHS focal point, due to be completed by the end of November.**

1.5 Development of Meteorological Bills for targeted NMHS	**1 Meteorological bill**	**1 Meteorological Bill**	**0**	**1 (Tuvalu)**

Narrative:

Output 1.1

- ToRs in place. Assessment to commence Q1 2020. The regional assessment has been postponed to Q1 2020 so that the organization conducting the assessment and holding national stakeholder consultations can do so outside of the Cyclone season.

Output 1.2

- Assessments of the national capacities of NMHSs are incorporated under the development of the strategic plans (Output 1.4).
- Assessment of the national capacities of NMHSs are carried out through consultations at the national and local levels, Tonga to take place in December, and Kiribati to take place in Q1 2020.

Output 1.3

- This activity has been moved to 2020, due to take place outside of the Cyclone season.

Output 1.4

- Hydro SP for the Tonga Geoscience Unit is currently under development and is to be completed by December 2019.
- Kiribati Strategic and Implementation Plan due to commence in March 2020 at NMHS's request. Likely to take place in Q1/Q2 2020, depending on election timing.
- The Fiji Strategic Plan will be revised again during Q4 2019 & Q1 2020 following the request of the new director. The revision is necessary as Fiji Met Service has recently moved from the Ministry of Rural Development to the Ministry of Infrastructure, Transport, Disaster Management and Meteorological Services.
- Hiring a team of consultants to conduct multiple strategic plans for 6 countries, Tokelau, Tonga, Nauru, Federal States of Micronesia, Republic of Marshall Islands & Palau estimated to begin in Q1 2020. Terms of Reference for the remaining Strategic and Implementation Plan have been completed or are being developed. This is being adopted to improve efficiency and overcome the challenges of coordinating these activities with national level stakeholders.

Output 1.5

- A Strategic and Implementation Plan was developed for Tuvalu and will be presented to the Ministry of Environment and Public Utilities (EPUI).

CREWS Output(s) 2: Risk Information to guide early warning systems and climate and weather service developed and accessible				
State Project Output(s) in this section	**Overall Project Target**	**Target for reporting period**	**Progress by June 2019**	**Progress by November 2019**
2.1 Implementation of Fiji Flash Flood Guidance System (FFGS)	**Operational FFGS in Fiji**	**Include RADAR data into the FijiFFGS**	**Radar data ingested.**	**7 Fiji Met Service staff received Radar Hydrology Training**
2.2 Impact-based coastal inundation forecasting in Tuvalu and Kiribati	**Coastal Inundation forecasting operational for 3 sites**	**Continue installation of 6 wave buoys and 10 pressure sensors and two high end computers**	**6 wave buoys and 10 pressure sensors and two high end computers installed**	**The development of the wave models for both Tuvalu and Kiribati as well as final procurement of wave buoys and pressure sensors are completed.**
2.3 Regional Climate Outlook Fora	**Support for 3 PICOFS**	**1**	**N/A PICOF did not take place during this reporting period**	**1**
2.4 National Climate Outlook Fora	**Support for 5 NCOFs**	**1 NCOF**	**1 NCOF (Tonga)**	**0**

2.5 National Drought consultations	**4 National drought consultations**	**0**	**2 National drought consultations (2017)**	**0**
2.6 In-country training workshops on forecasting and warning services for SWFDP	**10 national training workshops**	**0**	**0**	**0**
2.7 Other capacity building initiatives for NMHS	**Needs based**	**Training visit from Vanuatu to BMKG (Indonesia)**	**Cancelled**	**Cancelled**

Narrative:

Output 2.1

- Seven experts from FMS, radar precipitation experts, hydrological and meteorological forecasters, GIS Specialist and IT expert attended the Fiji FFGS Radar Hydrology Training.
- Five experts from the FMS completed the Operational Training (Step 3), consisting of five modules of the flash flood guidance on-line courses: Elements of Meteorology, Elements of Hydrology, Flash Flood Guidance, GIS, and Remote Sensing that comprise Step 2 of the flash flood hydrometeorologist training programme, experts were eligible to participate in Step 3 training.

Output 2.2

The project is pairing with another project, the UNDP Tuvalu Coastal Adaptation Project (TCAP) to conduct a complete bathymetry survey and liDAR topography for the whole Tuvalu. This will provide data needed for model simulations and an inundation forecasting system for the country. As for Kiribati, SPC has completed the satellite bathymetry for the country and this will be used by the project in their off-shore wave and coastal inundation forecasting models/system.

Output 2.3

Support for participants to PICOF-5 (Noumea, New Caledonia).

Output 2.4

- WMO is reviewing the request from Tuvalu to support participation in the NCOFs to be held in the respected countries.
- Preliminary discussions have begun to support Federal States of Micronesia NCOF.

Output 2.6
NZ Met Service, initially agreed to undertake the first series of trainings including Niue, Cook Islands, Vanuatu, Solomon Islands and Nauru will take place in September-October 2019. However these trainings have not taken place sue to the lack of human resources NZ Met Service have had available to conduct them. NZ Met Service have recently taken on many new recruits within their own workplace, and have been training their domestic meteorologists, hydrologists and climatologists. Therefore, it has been propose that trainings are provided to all 10 countries in 2020.

Output 2.7
This activity was cancelled due to political unrest between the two countries.

CREWS Output(s) 3: Information and Communication Technology, including common alerting protocol, strengthened				
State Project Output(s) in this section	**Overall Project Target**	**Target for reporting period**	**Progress by June 2019**	**Progress by November 2019**
3.1 Upgraded webpage of 4 NMHS	**4 webpages**	**1 web page**	**0**	**1 Webpage created (Cook Islands)**
3.2 Regional training on IT Technologies	**2 Regional trainings**	**1**	**0**	**1**
3.3 Procurement and installation of HPC for implementation of NWP LAM in Fiji Meteorological Service/RSMC Nadi	**Installation of a High-performance Computer Fiji**	**Preparation for installation underway**	**Began collection quotes for costing**	**Underway**
3.4 Feasibility study conducted for FM Radio in Tokelau	**1 feasibility study**	**0**	**0**	**0**
3.5 CAP Jumpstart Workshops	**CAP Jumpstart workshops in 7 countries**	**0**	**7 completed (2017)**	**7 completed (2017)**
3.6 CAP online training module developed	**1 training module**	**1 training module**	**0**	**1 training module completed**

3.7 In-country and regional workshops on dissemination pathways and enhancement of communication	**Needs based**	**0**	**1 TV workshop in Fiji (2017)**	**0**

Narrative:

Output 3.1

Tuvalu webpage in final testing.

Output 3.2

Pacific Climate Change Center (SPREP) led a regional training workshop on information technology in support of NMHS IT tools and websites took place between 4 - 9 October 2019 and was held at the SPREP compound in Apia.

Output 3.4

Team of consultants have begun assignment to produce an assessment report and feasibility study on installing FM radio on Tokelau. Consultants will undertake national stakeholder consultations taking place in November, Feasibility Study to be finalized in December 2019.

CREWS Output(s) 4: Preparedness and response plans with operational procedures that outline early warning dissemination processes developed and accessible

State Project Output(s) in this section	**Overall Project Target**	**Target for reporting period**	**Progress by June 2019**	**Progress by November 2019**
4.1 Regional workshops to initiate impact-based forecasting with relevant stakeholders and implement the WMO Strategy for Service Delivery	**1 regional workshop**	**1 regional workshop**	**0**	**1**
4.2 National workshops on impact-based forecasting	**4 workshops**	**0**	**0**	**0**
4.3 Community-based early warning services (CBEWS) in Niue, Federated States of Micronesia and The Republic of the Marshall Islands	**4 CBEWS in place**	**Selection of sites in 4 countries Jump start workshops in 4 countries**	**0**	**0**

Narrative:

Output 4.1
The workshop is attended by 70 participants from the National Meteorological and Hydrological Services (NMHSs) and National Disaster Management Offices (NDMO) including Australia, Cook Islands Federated States of Micronesia, Fiji, Kiribati, Nauru, Niue, Papua New Guinea, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, USA and Vanuatu. Also representatives from national, regional and international stakeholders participated in the workshop such as the United Nations Development Programme (UNDP), Caribbean Institute of Meteorology and Hydrology (CIMH), International Federation of Red Cross and Red Crescent (IFRC), Secretariat of the Pacific Community (SPC), World Bank, Australian World Vision, Solomon islands World Vision, Solomon Islands Red Cross Society, Solomon Island Broadcasting Commission (SIBC), Solomon Islands Newspapers namely the Solomon Islands Star and Solomon Islands Sun, PAOA FM radio station, and Solomon Islands Maritime Safety.

Output 4.2
First national workshop planned to take place in the Solomon Islands Q1 2020.

CREWS Output(s) 5: Knowledge products and awareness programmes on early warnings developed

State Project Output(s) in this section	**Overall Project Target**	**Target for reporting period**	**Progress by June 2019**	**Progress by November 2019**
Narrative: No targets planned for the reporting period				

CREWS Output(s) 6: Gender-sensitive training, capacity building programmes provided

State Project Output(s) in this section	**Overall Project Target**	**Target for reporting period**	**Progress by June 2019**	**Progress by November 2019**
Female staff in targeted NMHS have been trained on women in leadership	**1**	**1**	**0**	**1 Women in Leadership Workshop and Training completed**

Narrative:

35 Women from 13 islands trained in Leadership, representing Meteorology, Hydrology and Climatology. The workshop took place prior to the Fifth Pacific Meteorological Council Meeting in Samoa, in August. The 1.5-day workshop focused on Leadership for women in meteorology and hydrology for Pacific Small Island States in WMO Regional Association V (South West Pacific). The workshop built upon and strengthened participants' leadership skills, with a focus on communication, confidence, and shared strategies for positive change at the national and international level.

11.2 Regional Output(s)s

CREWS Regional Output(s): Institutional and human capacities at Regional WMO and Intergovernmental organizations to provide regional climate and weather services to LDCs and SIDS increased				
State Project Output(s) in this section	**Overall Project Target**	**Target for reporting period**	**Progress by June 2019**	**Progress by November 2019**
R.1 Development of long-term strategic plan for FMS/RSMC Nadi	**1 strategic plan**	**N/A**	**Activity completed September 2017**	**Activity completed September 2017**
R.2 Implementation of a high-resolution NWP mesoscale model in Fiji	**FMS/RSMC Nadi staff have the necessary skill set to implement high resolution NWP model in Fiji**	**No training planned for reporting period**	**Waiting for the installation of the HPC**	**Installation in progress**
R.3 Access for FMS and RSMC Nadi to high-quality NWP products and relevant tools	**ECCharts for FMS/RSMC Nadi in place**	**ECCharts available for 2019 and 2020**	**ECCharts not available**	**Pending**
R.4 RSMC Nadi website and portal upgraded	**1 upgrade of website and portal**	**0**	**0**	**0**
Narrative: **R.4** Activity scheduled 2020				

12. Contributions to Value Propositions

Gender Sensitive	Gender specific indicators have been developed under the sub-projects with SPC and SPREP. Partners are being asked to report on gender, and SPREP has set a target to ensure that participation of female staff and stakeholders is never under 30%. In the assessments of NMHS' capacities and regional assessments, special attention is given to the different ways women and men, girls and boys and vulnerable groups are accessing weather and climate information as well as early warnings.
Multiplier	Certain project components are building on existing and/or past successful initiatives such as CBEWS and promoting these in further countries. The components are building on activities first piloted under FINPAC and COSPPAC projects. Through the CREWS Pacific SIDS project the lessons learned have been taken into consideration, as well as the expansion to countries that were not involved in previous initiatives.
People-centered	The Community-Based Early Warning System component led by SPREP is people-centred, and focuses on reaching communities that are not currently well connected with the NMHS. In Niue, CBEWS is focused on youth. The choice of countries and communities were based on reaching the last mile.
Promote Coherence	The project is promoting coherence through cooperation with other ongoing projects in the region (including KfW project, UNDP TCAP, UNDP RESPAC, UNDP CLEWS Project, and COSPPac), and active participation in, and contributing to, the formulation of new proposals including the UNEP GCF Project Proposal currently under development.
Solution-oriented	The project promotes an active dialogue with the beneficiaries, looking to find solution to their identified EWS related problems. In Fiji (FMS), the first ever training on downloading global and regional NWP data and developing value-added products served as an eye-opener to use global and regional NWP model data instead of developing high resolution develop limited area model for Fiji. In addition to these, the training has brought together meteorologist and IT programmers to discuss data and subsequently development of tailored products for Fiji. Fiji FFGS planning meeting and the on-line training have further brought together meteorologists, hydrologists, climatologists, IT programmers, and Disaster Managers. Additionally, FijiFFGS provides a country-wide monitoring system for potential floods instead for each river basin or catchment.
Unique	

13. Visibility products

*a. **Insert or copy any links to press releases, videos or communication items and/or social media links***

- Pacific Islands climate forum issues seasonal outlook (PICOF-5) Press Release
- Fifth Pacific Met Council Meeting Article in MeteoWorld
- Pacific Islands develop impact-based forecasts Press Release

14. Supporting documents

*a. **List and annex to the report any documents providing details on project activities such as reports of training sessions, assessment reports, online solutions and tools, manuals, summaries of high-level discussions etc.***