



NIUE METEOROLOGICAL SERVICE COUNTRY REPORT

Reporting on National Priority Actions of the Pacific Islands Meteorological
Strategy (PIMS) 2012-2021

This Report is presented to the Fourth Pacific Meteorological Council (PMC-4) Meeting held in Honiara from 14-18 August 2017

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1.0 Summary

The report is structured to allow the secretariat to capture the Progress of each National Meteorological and Hydrological Services against the National Priority Actions of the 14 Pacific Key Outcomes (PKO's) of the Pacific Islands Meteorological Strategy (PIMS) 2012-2021 which will be reviewed at this meeting. This report will contribute to;

- i. monitoring the progress of each NMSHs against the implementation of the PIMS
- ii. inform the Work Program of the Pacific Met Desk Partnership (PMDP)
- iii. identify gaps and needs some of which will be packaged for projects and presented to the Donors and Partners

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2.0 Background Information

2.1 Institutional Setup

Niue Meteorological Service vision is a prime driver of weather and climate service that aims to deliver credible and efficient weather and climate information for a prosperous Niue. Niue Meteorological Service directly supports the Environment and Climate Change pillar in the Niue National Strategic Plan 2015-2025. The provision of weather and climate information also links to the pillars on enhancing Economic Development, Governance, Infrastructure, Social Services, Tāoga Niue and Private Sector.

Governance and Planning's of the NMHS

Governance	Description
MET LEGISLATION: Update on whether or not your country have a stand-alone Meteorology Act or equivalent or is it part of other government's legislations to guide the NMHS to perform its role and responsibility? Briefly describe it.	<ul style="list-style-type: none"> • Policy Framework for the provision of Meteorology and Climate Services in Niue • Niue Meteorological Services Act 2012
Do you require for your Act to be reviewed? If it is already reviewed, what is the current status of your Act	<ul style="list-style-type: none"> • Not at this stage
Strategic Planning	
Describe how meteorology (weather) and climatology (climate variability and climate change) are featured in the current national development plan, government ministries corporate and implementation/operational plans.	<ul style="list-style-type: none"> • Reflected under Environment and Climate Change pillar
Describe the process if your NMHSs is reporting against the SDG or its national equivalent	<ul style="list-style-type: none"> • NMS use existing mechanisms to provide feedback and update on the progress of meeting the SDG goals through the Project Management Unit (PMU) and UNDP focal point.
Does your NMHS have a strategic plan, implementation/operational plan or equivalent(s)?	<ul style="list-style-type: none"> • Niue Meteorological Service does have a Corporate Plan and Department Work Plan
Describe how meteorology (weather), climatology (climate variability and climate change), disaster management and early warning systems are feature in your NMHS strategic plan, implementation/operational plan or equivalent(s).	<ul style="list-style-type: none"> • Standard Operating Procedures implementation of activities

2.2 Staffing

2.2.1 Staff Qualification

- (a) One of the main priorities for the Niue NMHS is to increase capacity of human resource development through capacity building trainings at a national level, regional and international level. This will help to enhance and strengthen weather and climate services.
- (b) An updated list of personnel of NMHS, including their level of academic qualification is shown in the matrix below.

Staff	Qualification	Division/Section	No. Professional Staff		Total
			Male	Female	
<i>Staff Name</i>	<i>(Description the qualification under each division) Example; WMO Class 1-4 or other qualification or professional training, education and research)</i>	<i>Responsibility of Staff (Forecast, Climate, Observation, Administration, etc)</i>			<i>Total Number of Staff</i>
Rosslynn Pulehetoa-Mitiepo	WMO Class II Certificate, Bachelor of Science (Geography) and Postgraduate Climate Change Certificate, Statement of Competency (Direct Observations, Oral Questions, Written Examination of METAR/SPECI report).	Overall Management of Administration, Budgetary and Operation.		✓	
Robert Togiamana	Have not carried out any studies in relation to Meteorology. Statement of Competency (Direct Observations, Oral Questions, Written Examination of METAR/SPECI report).	Communication – TV Weather, Climate & Weather Observation, Traditional Knowledge	✓		
Sean Tukutama	WMO Class III, Class IV Certificates, Statement of Competency (Direct Observations, Oral Questions, Written Examination of METAR/SPECI report).	Forecasting, Weather Observation, Climate Observation, Quality Management System, Technical maintenance of equipments	✓		
Hingano Laufoli	NCEA Level 3, Statement of Competency (Direct Observations, Oral Questions, Written Examination of METAR/SPECI report).	Climate & Weather Observation, Climate Data Records and Data Entry, Climatology, Forecasting.		✓	
Clemencia Sioneholo	NCEA Level 3, University Entrance, Statement of Competency (Direct Observations, Oral Questions, Written Examination of METAR/SPECI report).	Climate & Weather Observation, Climate Data Records and Entry and Forecasting		✓	
Floyd Viliamu	NCEA Level 2, On the Job training assessment for 6 weeks to complete BIP-MT 2017 training course ending August 2017.	Climate and weather observation	✓		
					6

2.3 Finance

Description	2016	2017 Funds		Total
	Total Budget (NZD)	Administration (NZD)	Operation (NZD)	
<i>Government Support</i>	220,000.00	174,000.00	46,000.00	\$220,000.00 NZD

2.3.1 Projects supporting the NMHSs

Name of Project	Total Project Budget	Percentage of how much is provided to the NMHSs	Summary of NMHSs activities covered by the project
<i>Project 1 Traditional Knowledge Project - COSPPAC</i>	\$20,000.00 NZD	\$20,000.00 NZD	TK Survey, Glossary Terms, Draft Document of Traditional Knowledge in Niue relating to Weather and Climate.
<i>Project 2 Second National Communication Project - UNFCCC, GEF</i>	\$450,000.00NZD	\$50,000.00NZD	Administrative support, Education and Awareness programs, Support to World Meteorological Day, Technical assistance for Meteorology
<i>Project 3 Flexible Fund - COSSPAC</i>	\$24,000.00 NZD	\$24,000.00 NZD	Upgrade of computers, printers, cartridges, support community education and awareness during village show days, support In-country workshops

2.3.1 Potential Collaboration on project proposals

Priority areas for collaboration on future projects need to be aligned with the Niue Meteorological Service Corporate plan for 2015 to 2019 and including the Niue National Strategic Plan (NNSP) from 2015 to 2025.

- Develop a Human Resource Development Plan.
- Develop the Meteorology Communications
 - Website development
 - Pre-recorded TV weather presentation by Met Staff
 - Initiate discussions on the need for a Radio frequency or station for Weather and Climate Updates
- Develop sector-specific climate information for Fisheries, Agriculture, Health and Tourism.
- Develop educational materials on weather, climate and hazards for village communities.
 - There are 14 village communities in Niue and are governed by a body of the Village Council.
 - Require funding of about NZD \$5,000.00 to NZD 7,000.00 for the awareness programs on Island.
 - Require funding of about \$8,000.00 for the development of the materials.

Education and awareness is always important and ongoing in order to ensure people are aware of the work that National Met Services do as well as understand the vulnerable environment we live in and to be prepared and adapt to the changes of climate.

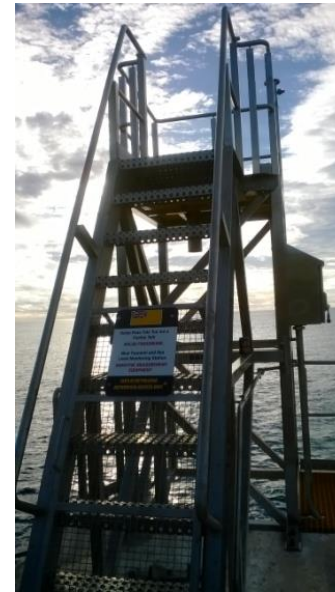
- Build technical capacity for staff to support existing and ongoing weather and climate services.
 - There is a high staff turnover for a currently small staff and training new recruits is essential to continue and support in the transition period.
 - The call is for funding through a scholarship for a certificate level course in Information and Technology, degree program in the field of geography and basic maths and physics certificate towards a meteorology course.
- Seek funding to implement Climate Early Warning Systems (CLEWs) in Niue.
- Call for continuous donor support for CLIDE database project, Tide Gauge maintenance project, SCOPIC software and OCOF Teleconference and Traditional Knowledge Project.

2.4 Development

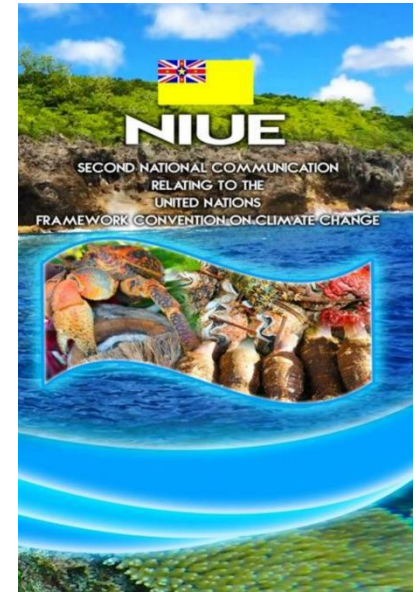
Development since 2015 and also anticipated development in the near future.

Pictures would assist in this section. Highlight gaps and needs.]

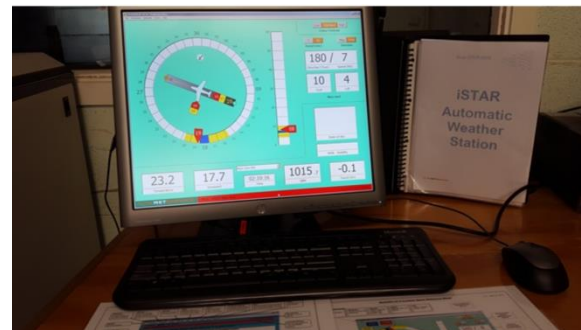
- Tide Gauge installation September 2015
- Launch of Second National Communication 2016
- Installation of the Istar Automatic Weather Station June 2016
- Installation of the new Automatic Rain gauge June 2016
- Installation of the Lightning sensor June 2016
- Updated CLiDE Server October 2016
- Request and access into JMA 10 minute real-time satellite images November 2016
- Review Niue Meteorological Service Quality Management Manual
- Sea State Camera & Real Time Data Display (RTDD) Feb 2017
- Air Passive Sampling installation June 2017
- Mergence with Environment May 2017



Tide Gauge



Sea state camera view, Alofi Wharf, Niue



Automatic Weather Station



2.4.1 Buildings Infrastructure

- Infrastructure development of the NMHSs since 2015
- Installation of the Switch Board into the main office enabling full power supply to the Civil Aviation generator.

2.4.3 Update on Communications Infrastructure (to support current and future development)

	Details
What is the mode of communication for transmitting oceanographic and hydro-meteorological data from remote stations?	Niue has no remote station
What is the Mode of transmitting data to the Global Data Network?	Data is send by email to Wellington to put on GTS to Melbourne to transmit to the globe.
What is your Current Internet Speed , and is your main office connected to a secure national Government provided IT network (inbound and outbound)?	Met is connected to the secure Government IT Network Current internet speed is 2MG.
Does your NMHS have access to SATAID information?	Program of SATAID software is available and yet to be installed into an office computer.
Which geostationary satellite(s) do you utilize, and which product(s) do you rely upon and how do you obtain it?	GOES and Himawari satellite via internet, ir, eir, vs, wv GOES via LRIT System
How many Upper Air Station does your NMHSs operate and what is their	No upper Air Station.

<p>status? Do you have access to Lightning data, and do you use it in your forecasts?</p>	<p>Installation of Lightning sensor however data is yet to be available until all lightning sensor allocated in the Pacific Meteorological Service are completed.</p>
<p>What is the scope and extent of marine weather services provided by your NMHSs and describe your NMHSs interaction with your national marine/port authorities and the marine user communities?</p>	<p>Marine weather provided for coastal waters for Niue. Forecast mainly used by local fishermen, which they can access by ringing 101 at Telecom Department and email or contact the Niue Met Service by phone. TV weather also broadcast on Radio and TV. Forecasts also send to shipping agent to forward to the captain.</p>
<p>What type of marine weather products, warnings, advisories do you provide?</p>	<p>Marine weather forecast, Strong Wind Warning, Damaging Heavy Swell Warning and Cyclone Warning.</p>
<p>Does your NMHS have a Port Meteorological Officer and are they involved in the WMO VOS Programme?</p>	<p>No</p>

2.4.4 Training

Training or Workshop Title attended by NMHS staff from 2015-2017	Start and End dates	Donor	Number of Participants from the NMS
High Level Support Mechanism Meeting for Pacific SIDS, Samoa	6 th - 8 th April, 2016	SPREP	2
United Nations Climate Change Conference, Bonn, Germany.	16 th - 26 th May 2016,	UNFCCC	2
RA V Workshop on WMO Information System/Table Driven Codes Form, Melbourne, Australia	29 April -03 May 2013	Australia Bureau of Meteorology and AusAID	1
Training Course on ISO 9001:2015 Quality Management System (QMS) Aeronautical Meteorological Service, Nadi, Fiji.	16 th – 27 th May 2016	JICA	1
Ocean Observation Training Workshop, Noumea, New Caledonia.	24 th – 27 th May 2016,	Australian Governments' Department of Foreign Affairs and Trade. Climate Ocean Supports Program in the Pacific (COSPPac) & SPREP.	1
Republic of Korea_Pacific Islands Climate Prediction Services Project (ROK-PI CliPS) Project Regional Workshop & Communications to enhance Climate Services Training to be held on the, Rarotonga, Cook Islands.	18 th – 23 rd July 2016	SPREP	1
Fourth Meeting of the Intergovernmental Coordination Group for the Pacific Tsunami Warning System (ICG/PTWS), Regional Working Group on Tsunami Warning and Mitigation in the South-West Pacific (ICG/PTWS/WG-SWP), Honiara, Solomon Islands.	22-23 August 2016	World Meteorological Organisation (WMO) & Intergovernmental Oceanographic Commission (IOC).	1
Meeting of the Regional Subproject Management Team of the Severe Weather Forecasting and Disaster risk	25-27 August 2016 29 August - 2	World Meteorological Organisation (WMO) &	1

reduction Demonstration Project (SWFDDP) for the South Pacific Islands, and the sixteenth session of the RA V Tropical Cyclone Committee (RA V TCC-16) Honiara, Solomon Islands.	September 2016,	Intergovernmental Oceanographic Commission (IOC).	
Regional Ocean and Tides Workshop, Nadi, Fiji.	05 th September–08 th September 2016,	Australian Governments' Department of Foreign Affairs and Trade. Climate Ocean Supports Program in the Pacific (COSPPac).	1
Training Course in the field of satellite meteorology on Analysis and Application of Himawari-8 Data, Nadi, Fiji.	12 th September–16 th September 2016	JICA	1
Second Pacific Islands Climate Outlook Forum (PICO-2) & the Pacific Regional Implementation Roadmap for Climate Services Workshop, Tanoa Hotel, Nadi, Fiji.	17-21 Oct 2016	SPREP & SPC	
Climate and Oceans Support Program in the Pacific (COSPPac) and Climate Data for the Environment (CliDE) Climate Data Management System User Training Workshop, Apia, Samoa.	25 th -27 th October 2016	COSPPac	2
Training course on the Maintenance and Calibration of Meteorological Instruments from the Nadi, Fiji.	21 st November – 2 nd December 2016,	JICA	1
Regional Dialogue on (Intended) Nationally Determined Contributions, (I)NDCs, for the Pacific Islands, and the MRV (Measurement, Reporting & Verification) Workshop	5-9 December 2016	UNDP	4
Pacific International Deck Training, Cohort 1, Honolulu, Hawaii	6th March – 31st March 2017	National Oceanic Atmospheric Administration's (NOAA's & World Meteorological Organization (WMO).	1
High Level Support Mechanism – Pacific Post Paris Strategy Development Apia, Samoa	6 th to 8 th April 2017	SPREP	2

Basic Instructions Package for Meteorological Technicians (BIP-MT) training course, Fiji Meteorological Service, Nadi, Fiji	24 April -29 June 2017	JICA	1
Pacific Islands Meteorological Strategy Mid-Term Review and Pacific Roadmap for Strengthened Climate Services Roadmap, Tanoa Hotel, Nadi Fiji COSPPac (Climate and Oceans Support Program in the Pacific) Planning Workshop, Nadi Fiji. Pacific Island Communication and Infrastructure (PICl) Panel, Nadi, Fiji	8th – 9th May 2017 10th-11thMay 2017 13th – 15th May 2017	COSPPac	1
APEC Climate Center Young Scientist Support Program, Busan, South Korea.	15th May – 14th July 2017	YSSP	1

2.4.5 Update on Climate Services (to support current and future development)

Questions	Details
What level is your climate services according to WMO standard? (Class 1-4)	
Do you have an update climate science publication for your country? If not, when is the last one and how often do you want to have climate science published?	Climate Change in the Pacific: Scientific Assessment and New Research, Volumes 1 & 2 (2011). Climate Variability, Extremes and Change in the Western Tropical Pacific: New Science and Updated Country reports, Climate of Niue. Niue Climate Outlook sent every month.
List the qualification obtained by climate officers (do not specify names)	
List the types of training needed by you to enhance the generation and production of climate services	ENSO prediction Ongoing Drought monitoring via SCOPIC
What tools do you use to provide seasonal forecast? (please select from	SCOPIC and POAMA

SCOPIC, POAMA, METPI, CLIKP, PEAC)	
What model(s) do you use to provide seasonal forecasts on monthly basis?	SCOPIC, POAMA
What are the climate variables you are forecasting?	Rainfall, Temperature, SSTs
What are some variables you would like to forecast in the future to meet needs of your client?	Tropical Cyclones
How many AWS do you have that feed into the database you are using?	None
List in order of importance some sectors you engage with? List what products you issue for these sectors?	Government Officials Private Sector Weather Forecast, Niue Climate Outlook, Tropical Cyclone Reports, Tsunami Information.
List 5 most important mode of communication of seasonal forecasts in your country.	Government email Newsletter
Do you have any early warning system (EWS) for climate extreme events?	Media release for drought We follow SOPs for Tropical Cyclones and Tsunami
What are some climate extreme events that you want to be included in your EWS?	Drought Coral Bleaching
What are some challenges that you have in climate division that you want to address with climate science and climate change mitigation and adaptation issues	Rebuild capacity of new recruits with limited climate knowledge High staff turnover and 1-3 months gap before a new recruit is appointed Climate information still needs to be translated to local language and develop into posters or stickers for the communities and schools.
What are some priority needs for your services that you want to achieve in the next 5 years?	Ensure Communication Strategy is completed, increase human resources by two extra people, continue to have in-country training on climate science and tools used such as on SCOPIC and CLIDE database, implement CLEWs project, staff to attend regional weather and climate training workshops.

3.2. Proposed Activities to be Carried out in the Future (2017-2019)

No	Proposed Activities to be carried out between 2017-2019	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Develop a Human Resource Development Plan.										x	x			
2	Develop sector-specific climate information for Fisheries, Agriculture, Health and Tourism.			x			x								
3	Develop educational materials on weather, climate and hazards for village communities.			x			x					x	x		
4	Seek funding to implement Climate Early Warning Systems (CLEWs) in Niue.	x	x	x	x								x		
5	Publish Traditional Knowledge (TK) on Weather and Climate for Niue and implement verification of TK.											x	x		

4.0. Identify Gaps and Future Needs that would Improve the National Meteorological and Hydrological Services

- Spares for AWS and rain gauge
- Inspection calibration Tool Kit
- Basic meteorological observers training similar to WMO class 3 & 4 , Training for WMO Class 1 in Meteorology
- Online courses available for Staff in areas of Climate change and Meteorology