

Joint Meeting
Of the National Meteorological and Hydrological
Services and National Disaster Management Offices
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Novotel, Nadi, Fiji

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The Joint Meeting of the National Meteorological and Hydrological Services and National Disaster Management Offices was made possible with the support of the respective communities of practice throughout the Pacific and the collaborative and generous support, coordination and financial assistance of the following key partners:

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- Fiji Meteorological Services
- Fiji National Disaster Management Office
- European Union
- Intra-ACP Climate Services and Related Application (ClimSA)
- United Nations Disaster Risk Reduction (UNDRR)
- Climate and Oceans Support Program for the Pacific (COSPPac)
- World Meteorological Organization (WMO)
- Pacific Regional Climate Center-Network
- Government of Australia
- Government of New Zealand
- Pacific Community
- Secretariat of the Pacific Regional Environment Programme

The success of the Joint Meeting belongs to the more than one hundred participants from throughout the region and beyond. The Joint Meeting ensured the collective sharing of experiences and inputs will continue, to help shape and facilitate the interaction and knowledge exchange between the Meteorology and Disaster Risk Reduction communities of practice for the safety and protection of Pacific island people of the Blue Pacific Continent.

List of Acronyms

APCC	Asia-Pacific Economic Cooperation (APEC) Climate Centre
AWP	Annual Work Plan
BCDRP	National Broadcast and Climate Disaster Resilience Plans
BoM	Bureau of Meteorology
CAP	Common Alerting Protocol
CbEWS	Community-based Early Warning Systems
CDCRM	Community Disaster & Climate Risks Management
CLiDE	Climate data for the environment
ClimSA	European-Union funded Intra-ACP Climate Services and Related Application
COP	Conference of the Parties
COP27	27th session of the UNFCCC Conference of the Parties
COSPPac	Climate and Oceans Support Program
CREWS	Climate Risk Early Warning System
CROP	Council of Regional Organisations of the Pacific
CSIRO	Commonwealth Scientific and Industrial Research Organisation of Australia
DRR	Disaster Risk Reduction
EAR Watch	Early Action Rainfall Watch
ECMFW	European Centre for Medium-Range Weather Forecasts
EIA	Environmental Impact Assessment
ENSO	El Niño-Southern Oscillation
ERN	Emergency Radio Network
ESN	Emergency Siren Network
EU	European Union
EW4A	Early Warning For All Initiative
FAO	Food and Agriculture Organization
FDSS	Flood Decision Support System
FMS	Fiji Meteorological Services
FRDP	Framework for Resilient Development in the Pacific
FSM	Federated States of Micronesia
GCF	Green Climate Fund
GEF	Global Environment Facility
GFCS	Global Framework for Climate Services
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GNAP	Global Air Navigation Plan
HydroSOS	Global Hydrological Status and Outlook System

IBF	Impact-based Forecasting
ICAO	International Civil Aviation Organization
IDSS	Impact based decision support services
IMO	International Maritime Organization
INDC	Intended Nationally Determined Contributions
INTEGRE	Initiative des Territoires pour la gestion régionale de l'environnement
IOC	Intergovernmental Oceanographic Commission
IRD	Institute de Recherche pour le Développement Institute of Research for Development
MEA	Multilateral Environmental Agreements
MECDM	Solomon Islands Ministry of Environment, Climate Change, Disaster Management and Meteorology
MEIDECC	Tongan Ministry of Meteorology, Energy, Information, Disaster Management, Environment, Climate Change and Communication
MHEWS	Multi-Hazard Early Warning Systems
MNRE	Samoa Ministry of Natural Resources and Environment
MOU	Memorandum of Understanding
NCOF	National Climate Outlook Forum
NDMO	National Disaster Management Office
NEMS	National Environment Management Strategies
NIWA	National Institute of Water and Atmospheric Research
NMHSs	National Meteorological and Hydrological Services
OPMET	Operational meteorological
ORSNET	Oceania Regional Seismic Network
PASO	Pacific Aviation Safety Office
PCCC	Pacific Climate Change Centre
PCCP	Pacific Climate Change Portal
PCCR	Pacific Climate Change Roundtable
PDNA	Post Disaster Needs Assessment
PHS	Pacific Hydrology Services
PICI	Pacific Island Communication and Infrastructure
PICOF	Pacific Islands Climate Outlook Forum
PICS	Pacific Island Climate Services
PIDF	Pacific Island Development Forum
PIETR	Pacific Island Training, Education and Research

PIFS	Pacific Islands Forum Secretariat
PI-GOOS	Pacific Islands Global Ocean Observing System
PIMOS	Pacific Island Marine and Ocean Services
PIMS	Pacific Islands Meteorology Strategy 2017-2026
PMC	Pacific Meteorological Council Meeting
PNGNWS	Papua New Guinea National Weather Service
PRC	Pacific Regional Centre
PRSCS	Pacific Roadmap for Strengthened Climate Services Pacific Roadmap for Strengthened Climate Services
PRP	Pacific Resilience Partnership
P-RTC	Pacific Regional Training Centre
PSIDS	Pacific Small Island Developing States
PTWC	Pacific Tsunami Warning Center
QMS	Quality Management System
RCC	Pacific Regional Climate Centre
ROK-PI CliPS	Republic of Korea-Pacific Islands Climate Prediction Services Project
RSMC	Regional Specialised Meteorological Centre
SOE	State of Emergency
SOP	Standard Operating Procedures
SPC	The Pacific Community
TEMCO	Territorial Emergency Management Coordination
TEOP	Territorial Emergency Operations Plan
TC	Tropical Cyclone
TK	Traditional Knowledge
UIP	User-Interface Platform
UKMO	United Kingdom Met Office
UNDP	United Nations Development Programme
UNDRR	United Nations Disaster Risk Reduction
UNEP	United Nations Environment Programme
UNESCO-IOC	Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNFCCC COP	Conference of the Parties to the UNFCCC
USP	University of the South Pacific
WISER	Weather and Climate Services
WMO	World Meteorological Organization

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Introduction

The User-Interface Platform (UIP) is a key pillar under the Global Framework for Climate Services (GFCS) and the Pacific Roadmap for Strengthened Climate Services (PRSCS). The primary purpose of the UIP is to foster collaborations and facilitate interactions among users, researchers, and climate service providers.

It aims to promote the collective development, delivery, and utilisation of climate information to enhance decision-making processes.

The Joint meeting between the National Meteorological and Hydrological Services (NMHSs) and the National Disaster Management Office (NDMO) is organised as the inception meeting to co-develop Regional User-Interface Platform (UIP) for the Disaster Risk Reduction (DRR) sector in the Pacific.

This meeting is supported through various sources, including the European-Union funded Intra-ACP Climate Services and Related Application (ClimSA) project by SPREP, the United Nations Disaster Risk Reduction (UNDRR), and the Climate and Oceans Support Program for the Pacific (COSPPac). Additionally, support is provided by the World Meteorological Organization (WMO), the Pacific Regional Climate Center-Network, and other partnering organisations.

The Joint Meeting is driven by several overarching objectives, which include:

1. Identifying optimal methods to solicit feedback from the Disaster Risk Reduction (DRR) community regarding the products provided by National Meteorological and Hydrological Services (NMHSs).
2. Co-developing products at the regional or national level to support initiatives like the Pacific Island Climate Outlook Forum (PICO) & National Climate Outlook Forum (NCOF)
3. Building dialogue and fostering collaboration between the DRR community and stakeholders responsible for observation, research, and information systems.
4. How to strengthen outreach efforts to enhance climate literacy within the user community.
5. Establishing a Regional User-Interface Platform (UIP) or conducting a Joint Meeting to continue facilitating the interaction and knowledge exchange between the Meteorology and Disaster Risk Reduction communities of practice.

Session 1: Official Opening

1. The meeting opened with a prayer from Reverend Tevita Ramokoso Kete, who highlighted the importance of “faith to sustain”. The message echoed a key message for the Joint Meeting of the National Meteorological and Hydrological Services (NMHSs) and National Disaster Management Offices (NMDO), which is for the two communities of practice to work together to serve the needs of Pacific Island people, particularly during times of natural disasters.
2. The opening remarks were delivered by Mr. Cyrille Honoré of the World Meteorological Organization (WMO); Ms. Gabrielle Emery of the United Nations Disaster Risk Reduction; Ms. Rhonda Robinson, Director of Geoscience and Energy and Maritime Division, of the Pacific

Community; and Ms. Tagaloa Cooper Director of Climate Change Resilience Programme at the Secretariat of the Pacific Regional Environment Programme (SPREP). *Refer to Annex 1 for speeches.*

3. Mr. Bipen Prakash, Acting Director of the Fiji Meteorological Service welcomed all delegates on behalf of the Fiji Government as host of the Joint Meeting. The importance of the meeting was acknowledged in bringing the two communities of practice together to deliberate on how collaboration can enhance the impact of their work for guiding decision making, including at the grassroots level. A key aspect highlighted by Mr. Prakash was the importance of connecting products and services with their intended users, which has been a critical challenge. The Joint Meeting is a welcomed initiative to strengthen collaboration for the benefit of Pacific Island people.
4. Mr. Naheed Hussein, Project Manager of the Intra-ACP ClimSA of SPREP provided an overview of the European Union funded project worth € 9 million, which targets 14 Pacific island countries. It was noted that there are pilot projects in Samoa and Kiribati, and activities in Tonga and Nauru. It was shared that the target sector is in agriculture and fisheries and disaster risk resilience. Mr. Hussein informed the meeting, that the focus of the deliberations is to bring the two communities of practice together to discuss the User Interface Platform (UIP) which is a key pillar under the Global Framework for Climate Services (GFCS) and the Pacific Roadmap for Strengthened Climate Services (PRCS). It was noted that it has been 10 years since the two communities of practice have met, and the timing viewed as opportune to consider the:
 - a. Importance of a joint meeting at the regional level
 - b. Establishing or reviving the joint meeting platform
 - c. Potential support from donor agencies and international organisations
 - d. A structured approach of having the joint meeting.
5. Mr. Hussein highlighted the importance of representatives deliberating on the topics noted to guide the next steps of what is viewed as a priority for the Pacific region.

Session 2: DRR – A Pacific Context (Setting the scene) Panel Discussion

1. Mr. Terry Atalifo, Pacific Regional Climate Centre (RCC) Coordinator of the Intra-ACP ClimSA Project presented a brief overview of the types of hazards in the Pacific, both rapid and slow onset, to help set the scene of disaster risk reduction in the region:
 - a. Volcanoes 22.1%
 - b. Drought 2.4%
 - c. Earthquakes 35.4%
 - d. Landslide 4.2%
 - e. Tropical Cyclones 10.7%
 - f. Tsunami 18.8%
2. Mr. Ueneta Toorua, Director of the Kiribati Meteorological Services shared the experience of Kiribati as a Small Island Developing State prone to natural disasters, highlighting the slow onset hazard of drought. National activities set up to mitigate the impacts of drought, include the establishment of a

drought committee which include the hydrological sector and key stakeholders responsible for the provision of support for water distribution. From this committee, a 3-level threshold associated with drought was developed that considers:

- a. Rainfall and the importance of Met Services providing information on weather to inform national decisions relating to drought.
 - b. Salinity and rainfall thresholds.
3. It was shared that the declaration of drought is not based on rainfall alone, but also the level of salinity of the water reserves. Mr. Toorua informed the meeting that while there has been rain in Kiribati, they remain at level 3, due to the salinity of their water reserves.
4. Mr. Mafua-'i-Vai'utukakau Maka, Director of the Tonga National Emergency Management Office shared the experience of volcano and tsunami preparedness. Mr. Maka noted that the recent volcanic event that occurred in 2022 instigated major changes in Tonga outlined as follows:
 - a. Policy reforms whereby the Disaster Risk Management (DRM) Act was enacted in July 2023 replacing the Emergency Management Act, 2007.
 - b. The Disaster Risk Management (DRM) Act reinforces a whole societal approach while also informing the role of stakeholders in achieving the effective outcomes of the Act.
 - c. Numerous systematic improvements to ensure that the DRM governance and institutional systems are best placed for the future and the functions of agencies and associated actors/stakeholders need to give effect to the Act to achieve desired outcomes.
 - d. Stakeholders are required to increase their responsibilities in areas of disaster risk management advice and policy, whereby their roles are clearly outlined, including for NMHS and the dissemination of information to inform critical response and disaster preparedness.
5. Mr. Maka noted the information that is shared needs to be designed in such a way that it is easy to respond to regional adaptation plans and risk assessment investments. It was also shared that there is a need to establish a risk information system that is publicly accessible to enable collaboration with agencies to help prioritise country needs. Mr. Maka also identified the following areas that maybe considered:
 - a. More robust tools and equipment to create and establish more critical analysis of information on the ground level.
 - b. Legislation which reflects transformational change, to also consider where this change may occur and how to apply technical expertise and roles of stakeholders in maintaining disaster risk in management planning and the budgeting process.
 - c. Talking to each other collaboratively at the regional level and extending the discussions and collaborations to the communities, due to the impacts on livelihoods.

6. As a respondent to the panel Mr. John Strickland, Director of the Cook Islands Emergency Response Coordination Office congratulated Tonga for their approach in disaster risk reduction and the lessons learned from their experience. Mr. Strickland emphasised the importance of traditional knowledge that needs greater recognition, as technology is not always reliable, and traditional knowledge can play a key role that all countries may take heed of and adhere to.
7. Mr. Katabwena Tawaka, Manager of the Humanitarian Unit of the Pacific Disability Forum emphasised the importance of the NDMO and NMHSs including vulnerable communities from the outset noting the insight they provide from a humanitarian perspective. It was highlighted to ensure that disabilities are contextualised in disaster risk reduction including thresholds and legislation that are set in place for all of the community, including those with disabilities. More capacity building and information sharing is required to ensure that all population groups are properly considered from the planning stage to help build a more resilient and inclusive Pacific.
8. Ms. Litea Biukoto, Disaster Risk Team Leader of the Pacific Community (SPC) shared the importance of regional platforms meeting to collectively gather, exchange and share information. This mode helped serve as the foundation of the Framework for Resilient Development in the Pacific (FRDP), which derived from Members. It was recognised that the development process required to withstand the shocks of disasters, is not only to coordinate efforts through discussion in such platforms, but to collaborate effectively and efficiently to implement meeting outcomes.
9. It was shared that discussions need to be held not only between the different agencies, NDMOs and NMHSs but should also include other stakeholders inclusive of but not limited to civil society, donors, and development partners. Samoa was shared as an example whereby civil society are included in the decision-making process.
10. Ms. Biukoto shared that the convening of meetings does not drive what the communities of practice do together, but rather how agencies can help and better support countries in their respective roles to address priorities. It was further noted that beneficiaries should be included from the outset in the design and planning phase, rather than at the end of activities, to help identify or reflect the challenges faced by countries and its different stakeholders. This was viewed as critical to ease the delivery of information and to help connect with its intended users. The importance of simplifying terminology was also highlighted, to enable all stakeholders to be able to work effectively together.
11. Mr. Terry Atalifo summed up the discussions with the following key observations:
 - a. Discussions were centralised around two primary themes of providers of information and users of information. The NMHSs provide climate and met services information. The NDMO help translate the information for communities to take action.
 - b. The issue of terminology is crucial for understanding the different languages of stakeholders, which regional organisations may help address, but must be resolved collectively.
 - c. Capacity building remains critical to ensure communities are included and remain engaged.
 - d. The importance of bringing the users i.e. the beneficiaries into the design phase from the outset rather than at the end, viewed as crucial to be more impactful and to help tailor information to what users need.

Session 3: The HydroMet Landscape in the Pacific

1. Mr. Terry Atalifo, Pacific Regional Climate Centre (RCC) Coordinator of the Intra-ACP ClimSA Project of SPREP presented a brief overview of the Pacific Met Desk Partnership including the structure and the products from the RCC. The regional structures that exist to support NMHSs under the Pacific Meteorology Council and WMO was shared. It was noted there is guidance at the regional level for data and capacity building to support the region and for use at the national level. Mr. Atalifo shared that Pacific Island Climate Services (PICS) Panel works with the WMO RA-V Pacific Regional Climate Centre (RCC) for long term climate outlooks. The RCC is a hub for up-to-date regional long-range climate forecasts, climate monitoring products, climate change projections, climate data services, and information on regional training activities. The RCC consists of five nodes that include:
 - a. Node on Long-Range Forecasting
 - b. Node on Climate Monitoring
 - c. Node on Climate Change Projections
 - d. Node of Operational Data Services
 - e. Training Function
2. Mr. Salesa Nihmei, Meteorology & Climate Adviser of SPREP elaborated on the PMC structure for experts outside of the NMHSs to assist with the PICS Panel which is chaired by Australia. This enables outside experts from universities, NGOs and research agencies to help provide advisory technical support as needed. Set up in 2013 by the PMC. The RCC plays a similar role, which brings all the different experts together on a regular basis to provide information on a national basis. The PICS Panel has been operating for a while. The RCC is at the demonstration phase and is to be operationalised.
3. The RCC assists National Meteorological and Hydrological Services (NMHSs) in the Pacific Islands region to deliver better climate services and products and to strengthen their capacity to meet national climate information and service delivery needs. The RCC is supported by the University of Papua New Guinea (UPNG), National Institute of Water and Atmospheric Research (NIWA) New Zealand, Australian Bureau of Meteorology (BoM), US National Oceanic and Atmospheric Administration (NOAA), Asia Pacific Climate Centre (APCC), United States Global Change Research Program (USGCRP), South Pacific Regional Environment Programme (SPREP) and Australian Commonwealth Scientific and Industrial Research Organisation (CSIRO), Meteo-France, University of Hawaii, and Pacific Community (SPC).
4. Mr. Stephen Meke of the Fiji Meteorological Services provided in-depth insight into the products produced nationally and also shared regionally, which are all available on their website. The example of the Tropical Cyclone Outlook was shared including the process for levels of information disseminated under the different scenarios with respect to level of risk. *Refer to power point presentation for more information.*
5. Dr. Herve Damlamian, Team Leader of the SPC Oceanography Team presented on the Ocean Outlook and Coastal Inundation Modelling. Dr. Damlamian highlighted the importance of data to enable accurate modelling to be calculated and scenarios to be developed that will assist with early warning systems including understanding risk. Much of what the team have developed has informed their hazard and risk assessment methodology which has assisted them with their Green Climate Fund initiatives in helping to understand hot spots for much needed investment. In 2023 they have also

developed national risk products for the Cook Islands, Samoa, Tonga, and Vanuatu. It was highlighted the benefit in investing in high quality baseline data to enable high resolution models. The importance of science-based decisions, viewed as critical. *Refer to power point presentation for more information.*

6. Mr. Ofa Fa'anunu, Director of the Tonga Meteorological Services shared that in a natural disaster any movement of water is potentially the biggest casualty of life. The impacts of tsunami in the region, viewed as critically underfunded and requiring the urgent attention of Ministers. Mr. Fa'anunu shared that while tsunami do not happen often, when they do, the importance of being prepared essential for preserving life. It was noted that for the Pacific, tsunami fall under the UNESCO Intergovernmental Oceanic Commission (IOC) where each country has a national tsunami focal point, often in NDMO. Mr. Fa'anunu shared that 70% of met services provide tsunami warnings that covers the Tonga trench, Vanuatu trench and south of the Solomon Islands and Papua New Guinea. It was shared that a tsunami can reach a coastline within 20 minutes.
7. Mr. Ofa Fa'anunu informed the meeting that from 1950 all of the tsunami warnings in the Pacific were from the Pacific Tsunami Warning Center (PTWC) in Hawaii, which stopped in 2014. The PTWC still provides advice to the region, however, it is for action at the national level aligned to the respective national warning systems. It is critical therefore that there is local capacity to decipher the information received.
8. Mr. Ofa Fa'anunu shared the traumatic experience of the 2022 volcanic eruption in Tonga. One hour after the event all of the communications in Tonga were down. Officers had to physically put a stick in the sea to assess the situation. With respect to the importance of traditional knowledge, the day before the eruption happened there was a strong smell of sulphur in the air, which could be smelled for 2 hours throughout Nuku'alofa. The volcano located 70 km away from Tongatapu. In hindsight there were warning signs, which require further analysis. Mr. Fa'anunu shared that when the event happened, it was like an atomic bomb and felt like a slap on the surface of the ocean.
9. Mr. Jimmy Gomoga, Director of the Papua New Guinea National Weather Service thanked the Director of Tonga for sharing their experience. Mr. Gomoga noted the importance of including other stakeholders outside of NDMO and NMHS such as the geo-hazards sector stakeholders with respect to the context of Papua New Guinea.
10. Mr. John Strickland, Director of the Cook Islands Emergency Management Response Office, was appointed the Director in 2021, having previously served as a Police Commander leading the national disaster response. Mr Strickland shared the example of the Cook Islands working very closely with the Met Services. An example of a recent collaboration was the standardisation of colour codes, matrices and triggers for the national early warning systems.
11. Mr Andre Siohane of Niue supported the comments of Tonga, noting the close proximity of both countries to each other and the importance of strengthening the areas identified with respect to tsunami and the importance of preparedness and effectively monitoring the situation. It was noted that earthquakes cause tsunami and is a high risk to the people of Niue and the region.
12. An issue was raised by the Solomon Islands with respect to the recent Tropical Cyclones Judy and Kevin which impacted the Solomon Islands earlier this year, with prolonged heavy rain and the challenges it created for the Met Services. It was shared that there are no streams or rivers, but

the heavy rain meant people had to stay a week above the water. The Outlook information received did not align with what was happening on the ground. Mr. Terry Atalifo responded that this has been something observed across the region, with the change in weather patterns and what has been expressed as a 'lag', noting the region is in El Niño but still experiencing the La Niña effects.

13. Dr. Luteru Tavuale, Director of the Samoa Meteorology Division of the Ministry of Natural Resources and Environment shared that they learnt from the experience of the 2009 tsunami that killed more than 100 people. This event strengthened national measures to be in place including the seismic network and having standard procedures for earthquakes and tsunami.
14. The Tsunami Adviser from SPC shared a brief overview of the work of national warning centres, which will be convening in Hawaii soon to provide critical training for National Tsunami Warning Centres. It was emphasised the importance of having the competency to protect and disseminate advisory services.

Session 4: Multi-Hazard Early Warning Systems

1. Mr. Salesa Nihmei, Meteorology & Climate Adviser of SPREP provided an overview of the Pacific Meteorological Council (PMC) set up to help provide context to how the Weather Ready Pacific Programme for Decadal Investment evolved and came into fruition. The PMC was established in 2011 in the Marshall Islands by Pacific Met Directors. The structure of the PMC for Met Directors is supported by 6 technical working groups or panels and their work is guided by the strategic priorities of the Pacific Islands Meteorology Strategy (PIMS). Through the PMC mechanism it was identified the importance of elevating the portfolio of Met Services to the Ministerial level.
2. The first Ministerial convened in Tonga in 2015 and a key outcome was the need for investment in infrastructure. The last PMC convened in Samoa in 2019 and noted the impacts of climate change through the Intergovernmental Panel on Climate Change (IPCC) reports that there will be more extreme weather events. With these key decisions noted the PMC recognised the importance of the Met Services needing serious investment to address multi-hazard warnings in a strategic way, and to be addressed in a long term and sustainable manner.
3. Mr. Fa'anunu shared that the Weather Ready Pacific evolved from these decisions and out of a commissioned study on the changes happening now with the extreme weather events. The Weather Ready Pacific Decadal Programme of Investment is a Pacific led initiative that requires USD 167 million for the 5 key components to be implemented:
 - a. Governance, coordination, and leadership
 - b. Forecast and warning production
 - c. Communications of forecasts and warnings
 - d. Infrastructure and observations
 - e. Capacity and training
4. Tonga championed the Weather Ready Pacific through the Pacific Forum Leaders Meeting which was endorsed in 2021. This was further supported in the Declaration by the Pacific Ministers on Risk Reduction in September 2022. In 2023 Australia committed AUD 30 million worth of

investment and support has also been received from New Zealand. The proposed governance structure of the Weather Ready Pacific is to be presented to the 6th Meeting of the Pacific Meteorological Council next week.

5. It was highlighted that this is not a programme for the Met Services but is for all Pacific communities to be the beneficiaries of. The NDMO play a pivotal role in getting the Pacific community ready in terms of response. Investments will support both communities.
6. Mr. Cyril Honoré of WMO provided a presentation on the Early Warning for All (EW4ALL) Initiative that is a global project with partnerships between agencies of the UNDRR, International Federation of Red Cross and Red Crescent Societies (IFRC), International Telecommunication Union (ITU) and WMO. It was noted that EWS are a proven effective and cost-efficient climate adaptation and disaster risk management measure. *It was emphasised that this would add value to the Weather Ready Pacific and not duplicate efforts existing in the Pacific region.*
7. The "Early Warnings for All" initiative is a groundbreaking effort to ensure communities are protected from hazardous weather, water, or climate events through life-saving early warning systems by the end of 2027. The Pillars noted as follows:
 - a. Pillar 1: Disaster risk knowledge and management – UNDRR
 - b. Pillar 2: Detection, observation, monitoring, analysis, and forecasting – WMO
 - c. Pillar 3: Warning dissemination and communication – ITU. *Noting there will be specific dimension for the Pacific.*
 - d. Pillar 4: Preparedness and response capabilities - IRFC
8. With respect to the Pacific at this phase there is focused attention in Fiji, Kiribati, Samoa, Solomon Islands, and Tonga. Key national stakeholders have been engaged by the respective partner agencies in country. Existing mechanisms such as the Climate Risk and Early Warning Systems (CREWS) have been mobilised to support the initial roll out of activities in Asia and the Pacific region.
15. Mr. Jimmy Gomoga, Director of the Papua New Guinea National Weather Service noted the physical vastness of Papua New Guinea, which has experienced all of the hazards shared across the Asia Pacific region and the importance of having systems in place.
16. Mr. Waymine Towai, Executive Director of the National Emergency Management Office of Palau sought clarification on the presentations, noting the crossing into the disaster risk reduction spectrum. It was shared that the NDMO are in charge of specific information nationally and sought to understand the intent of the deliberations.
17. Mr. Cyrille Honoré of WMO elaborated that there are a number of different arrangements globally. The key ethos behind the Early Warning for All (EW4ALL) Initiative is to ensure that different stakeholders work together to serve and protect communities as outlined in the 4 Pillars presented. Each national arrangement will be unique to each country noting context and relationships between the key stakeholders.
18. Ms. Litea Biukoto, Disaster Risk Team Leader of the Pacific Community (SPC) elaborated on the importance of bringing the communities of practice together to work closer together. The

foundation is the same and people sit at the centre of all 4 pillars of the Early Warning for All (EW4ALL) Initiative.

- 19.** Mr. Fa'anunu of Tonga shared the importance of the Joint Meeting was to enhance working relationships and support the different leaders of the various components. It is up to the NDMO to decide what it views as best, informed with the best technical advice possible for the protection and safety of communities. It was shared for the NMHSs doing forecasts, is viewed as the least complicated component, however the work of the NDMO in getting communities ready is a key challenge. It is therefore critical that the communities of practice collaborate and work together, as we serve the same people regardless of where we sit or role we have.
- 20.** The discussion of governance structure at the PMC of the Weather Ready Pacific will be crucial and the NMHSs will come back to the NDMO community on the way forward. The Weather Ready Pacific has been endorsed by Pacific Leaders in 2021 and it is important to look at the proposed activities and come back to the NDMO community for reassessment before it is rolled out.
- 21.** Mr. John Strickland of the Cook Islands supported the sentiments expressed for the two communities of practice to support each other and work collaboratively together.
- 22.** Mr. Andre Siohane of Niue reiterated earlier sentiments expressed by colleagues on the importance of working together and that communication can be a key challenge. Information regarding hazards that are slow onset or rapid onset are critical to ensuring the safety of communities.
- 23.** Mr. Jack Kaobata of the Water Resources Division of the Solomon Islands shared their experience on the use of impact-based forecasting for NDMO and Met Services, that includes key aspects related to hydrology. It was noted that the role of hydrology is important and must always be considered in planning and response measures.
- 24.** Mr. Malaki Iakopo of Samoa thanked the Solomon Islands for highlighting the importance of hydrology and the impact of slow onset hazards such as drought. It was shared that in Samoa there has been flooding, and challenges with ground water management. The latter becoming more of an issue noting the water surface areas related to climate change. Samoa has an Early Warning System Policy in place, which was approved by Cabinet in 2022. This has enhanced collaboration between the management office of Meteorology and Hydrology. Appropriate governance measures and policy to help identify and clarify roles and responsibilities and to improve coordination, was emphasised. A request for guidance on accessing funding identified in the initiatives shared was requested, including the process for prioritisation of investment.
- 25.** Mr. Cyrille Honoré of WMO shared that the prioritisation of investments will be targeted as a complement to what is already taking place, ensuring there is no duplication. The funding mechanisms are not so fast, despite the partners willingness to support the accelerated processes. On observation infrastructure there is a financing facility for systematic observation. The investments are going to take place in a number of countries soon.
- 26.** It was noted that interested representatives on the Early Warning for All (EW4ALL) Initiative should consult directly with Ms. Gabrielle Emery of the United Nations Disaster Risk Reduction

(UNDRR) Pacific Office, Mr. Henry Taiki and Ms. Tessa Tafua of the WMO, Pacific sub-regional office, who are all present in the meeting.

27. Mr. Reginald White, Director and Meteorologist in Charge of the Weather Service Office in the Marshall Islands shared the challenge of understanding terminology and the importance of being inclusive, which means to 'include all of us'. Early warning systems cannot be done without the NDMO counterpart. Mr. White expressed support for the initiatives shared.
28. Mr. Salesa Nihmei reiterated that the Weather Ready Pacific is a vehicle for a Pacific people centred multi-hazard early warning system, which is a Pacific designed system that is a Pacific led initiative. This forum and the others that shall follow is an important opportunity to garner support for continued investment that will benefit all stakeholders including the NDMO community but most importantly Pacific island communities.
29. Ms. Tagaloa Cooper, Director of Climate Change Resilience Programme shared that all of the partners are in the room to support the next steps of Weather Ready Pacific. The outcomes of the PMC will be tabled for consideration by the 31st SPREP Meeting and the Forum Leaders Meeting, noting the Weather Ready Pacific is an endorsed priority of the Leaders since 2021. It was shared the importance of process and accountability in demonstrating that the Weather Ready Pacific is a worthy investment that provides Leader's with confidence to help protect the Blue Pacific Continent.
30. Ms. Cooper reiterated that Weather Ready Pacific belongs to all of the stakeholders in the room, including the responsibility to move it forward, working with consultants and other partners as needed. With respect to how the two communities of practice collaborate, that is a decision for each country to make on what works best on the ground. SPC and SPREP recognise that they too have to work together as peer CROP agencies, just as the two communities of practice must work together at the national and regional levels.

Session 5: The UIP Guidelines for DRR

1. Mr. Naheed Hussein, Project Manager of the Intra-ACP ClimSA of SPREP provided an overview of the UIP guidelines for Disaster Risk Reduction, which is a Platform to facilitate interactions to enable users, researchers and climate service providers to come together to develop, deliver and use climate information in support of robust climate-sensitive decision-making. The most important outcome of the meeting is for the communities of practice to decide what they view is the best way forward for working together including whether such a Joint Forum is what they seek.
2. Mr. Hussein identified the following:
 - a. Do we need a regional platform like this to continue?
 - b. There are guidelines for DRR UIP that we will need to follow.
 - c. There is funding for the next 4 years through the Intra-ACP ClimSA Project but there needs to be financial sustainability in the long term even after the project concludes.
 - d. Ownership and leadership from within the membership if such an initiative is to continue.

- e. Tangible outcomes including a joint work plan that identifies gaps and enables capacity building at the national and regional level.
3. It was highlighted the importance of having all of the key stakeholders together to consider next steps collectively on the appropriate platform for leaders to consider.
 4. Each of the countries were tasked with group work which was to consider the following key guiding questions that would be presented and discussed in Day 2.

National reflections:

- a. When and how do you work together in your own country - operation and planning?
- b. How can it be improved? If yes, how?
- c. Do you plan together? If not, what are the 3 challenges preventing you from doing do?
- d. Do you need an MoU to collaborate? If yes, what does it cover?

Regional crystal balling

- a. What does collaboration look like for the NDMO/NMHs in the region?
- b. Do you have an existing platform where you work across the Pacific with your peers? Does this include both NDMO and NMHS? What do you propose to do this at the regional level?
- c. What would be important to know if a platform is established (or needs to be improved)?
- d. What are some results that you would like for us to achieve/ work towards at the regional level?

Session 6: Recap of Day 1

1. The meeting opened with a prayer from Mr. Sosikeni Lesa, who highlighted the importance of prayer in times of trouble and song in times of joy. The message emphasised the challenges faced by the two communities of practice in addressing the needs of the Pacific region in times of natural disaster and the importance of collaboration, and true partnership. A brief overview of Day 1 was presented by Ms. Patricia Mallam, Knowledge Brokerage Officer for the ClimSA Project.

Session 7: Opportunities for co-development of products

1. Ms. Patricia Mallam presented on the Climate Station and Impact Toolbox which is part of the ClimSA Project. It was shared that the climate station was developed by the European Commission's Joint Research Centre (JRC) through the ClimSA Project for retrieving, processing, analysing and visualising climate and earth observation dataset for the implementation of climate services.
2. It was explained that the tool can be used for climate information to inform decision making. Ms. Mallam shared that all stakeholders in the room all deal with climate information. The climate station and impact toolbox were developed using Africa and the Caribbean. The ClimSA Project has enabled an opportunity for it to also include the Pacific and be contextualised using technical experts from the Pacific region including an official from the Samoa Met Services.

3. It was recognised the challenges with earth observations including observation data for NMHS in the Pacific. Difficulty with telecommunications, assessing the data quality and suitability as well as the capacity to manage the complexity of data. The Climate Station and Impact Toolbox significantly increases the remote sensing for analysing and increasing the time for interpretation as well as capacity for retrieving, processing and visualising climate and earth observations. The ClimSA Project has also enabled customisation for the Pacific with the Earth Observation datasets, made possible with the help of the Pacific Met Desk and their data sets.
4. Ms. Mallam shared that the Climate Station uses open-source software and is a cooperative tool, that has been designed to be flexible. Other features include the dashboard with login and user interface, where users may acquire information, access a data management component, which may assist with the analysis.
5. Dr. Simon McGree presented on products available in the region. It was noted that the Early Action Rainfall (EAR) Watch bulletin is produced in 12 countries. A national version is produced by NMHS and a regional one by SPREP. The product contains:
 - a. El Niño-Southern Oscillation (ENSO) information
 - b. Rainfall over the past 1-24 months where relevant for the country. There is also rainfall summary outlook for the country.
6. Dr. McGree shared that what is special about EAR Watch is the impacts linking with rainfall that are country specific and include maps. Experts are invited to let Met Services know what impacts relate to the different sectors. The EAR Watch summary can also be disseminated on social media and through simple radio messaging.
7. Dr. McGree presented on the NIWA Island Climate Update, which provides information at the regional scale and includes more information relevant to NDMO in the bulletin. The South Pacific Tropical Cyclone Outlook from the Bureau of Meteorology (BoM) is released in October each year. It includes predictions for the eastern and western Pacific. It was shared that NIWA use an analogue method and European Centre for Medium-Range Weather Forecast (ECMWF) outlook and produce regional and national outlooks. The FMS produce the Outlook for the Regional Specialised Meteorological Centre (RSMC) Nadi, Tropical Cyclone Centre. It was emphasised by Dr. McGree that when interpreting information to understand the scope and geographical target of the predictions.
8. Dr. McGree provided an overview of the Pacific Islands Climate Outlook Forum (PICOF). The TC Outlook are produced and synthesised by PICOF and condensed to a paragraph with other variables in the regional statement that is provided to the NMHS. The TC Outlook are produced for multi week scale and require a higher level of skill, compared with the seasonal outlook.
9. Mr. David Hiriasia, Director of Solomon Islands Meteorological Service presented on Impact Based Forecasting (IBF). Mr. Hiriasia shared that the WMO funded a workshop on IBF in Solomon Islands. Following the workshop support was provided by the Climate Risk Early Warning System (CREWS) Project for IBF. A key aspect of IBF is understanding what the weather will be, to what the weather will do. Impacts to be considered include level, severity and likelihood. It also involves colour coding to guide the level of risk and include colours of red, green and orange which are the standard colours

aligned to a risk matrix. It was shared that two risk matrices of risk and response have been developed for all hazards including strong winds, rainfall, cyclones and tsunami.

10. Mr. Hiriasia emphasised the importance of different stakeholders being involved in understanding all of the hazards. Establishing a working group that provides input into the process that is inclusive and representational of all communities including the vulnerable is important and is one they will formalise with the following stakeholders:
 - a. NMHS
 - b. NDMO
 - c. Hydrology
 - d. Geo-Hazards
 - e. IT
 - f. NGOs
 - g. Disability

11. Mr. Hiriasia shared the Flag Early Warning System for small crafts, that includes 3 flag poles of green, orange and red. It was also shared that they will also start using the Common Alert Protocol (CAP), which is used in the Windy app for Solomon Islands, that has been sponsored by BoM.

12. Mr. Silipa Mulitalo, ClimSA Consultant presented on the Vaisigano Flood Decision Support System (FDSS). Mr. Mulitalo shared there is a strong collaboration between the NDMO, NMHS and Hydrology, which all work under the Ministry of Natural Resources and Environment. The case study of the Vaisigano water catchment which runs through Apia was shared. It was noted that the Samoa Met has a standard operating procedure (SOP) which includes:
 - a. No threat
 - b. Flood advisory
 - c. Flood warning

13. The flood support platform is ingested in real time data to monitor the status of the catchment. The information it collects and serves includes:
 - a. Ingestion of rainfall data/Observation
 - b. Model data
 - c. Forecast water level and flow
 - d. Inform preparation and mobilisation
 - e. The outputs are in maps
 - f. Stakeholders – Fire Authority/NMDO
 - g. Installation of siren, warning tune, warning voice and warning lights
 - h. Helps the NEOC in decision making

14. Mr. Stephen Meke and Ms. Vasiti Soko, Director of the National Disaster Management Office presented on the coordination between their two agencies of the Fiji Meteorological Services and NDMO. The examples of coordination shared were during cyclones and other severe weather events. It was noted that the teams will have briefings, extensive discussion and help facilitate media releases.

15. Key challenges identified include:

- a. Lead time
 - b. Specific forecast
 - c. Risk level
 - d. Reactive responses
 - e. Impact reporting
16. Projects that both agencies are involved in include Weather Ready Nation, Fiji and Anticipatory Action Pilot, which will assist with triggers.
17. Ms. Hannah of NIWA presented on the CliDEsc tool developed by NIWA and requested by NMHS directors. The example briefly demonstrated included the historical one of Vanuatu during a normal scenario and during a tropical cyclone:
 - a. Dashboard which is running in real time.
 - b. Traffic light system that includes what variables are live and available.
 - c. Country wide overview of weather variables, which a user may select.
 - d. Location of where extreme weather events are happening.
18. Ms. Hannah demonstrated the different tabs which presented:
 - a. Overview
 - b. Rainfall tab
 - c. Wind tab
 - d. Temperature and humidity
 - e. Help to understand what is on the dashboard.
19. Ms. Rossylynn Pulehetoa-Mitiepo, Director of the Niue Meteorological Service thanked NIWA for their support of NMHS and acknowledged the importance of NMHS and Pacific Leaders being able to access these various products in real time, to help guide decision making.
20. Ms. Pulehetoa-Mitiepo sought advice on the Climate Station and what has been the feedback on the tool from those who have used it in the Pacific. Ms. Mallam responded that with respect to the Climate Station that a mission had taken place to JRC with IT experts from the Samoa Met and SPREP that were able to have hands on experience with the Climate Station and the ability to provide direct feedback to JRC regarding modifications needed for the Pacific. Since the Mission took place, the Samoa Met has since given consent for the installation of the Climate Station in Samoa.
21. A question was raised regarding whether there would be opportunities for other Pacific island countries to have such a system? Mr. Hussein, ClimSA Project Manager responded that the RCC is to provide that support and are in the transition stage to be designated from 'Demonstration' to fully 'Operational' by WMO. That function will be allocated to the RCC.
22. Mr. John Strickland of the Cook Islands shared that the mapping demonstrated in the Climate Station was viewed as new and interesting to have in the Cook Islands.
23. Mr. Bipen Prakash, Acting Director of the Fiji Meteorological Services commented on the Climate Station that to help understand the portal in depth, it is important that NMHS sit with technical people

to see a demonstration at the national level. The NIWA demonstration on CliDEsc development and extreme dashboard was viewed as good but clarification was sought on the measures for quality control on data.

- 24.** Mr. Naheed Hussein, ClimSA Project Manager informed the meeting that there will be a Climate Station demonstration in Samoa, after the installation and training of the Samoa Met Services. It was recognised that there are a number of tools available to the Pacific and the Climate Station is an option to consider. It is planned that NMHSs will be invited to Samoa to go through the training and demonstration, so that countries may consider whether it meets their specific needs.
- 25.** Ms. Dilwei Ngemaes, Meteorologist In Charge and Director of the National Weather Service Office, for Palau expressed interest in the extreme weather dashboard from NIWA which is ongoing as Palau have a few Automated Weather Stations (AWS) and if they may be included in the dashboard even after the UNEP project is completed. Ms. Ngemaes sought advice is there is an opportunity for an MOU to get this included.
- 26.** Mr. David Hiriasia of Solomon Islands emphasised the importance of building capacity within NMHS IT departments to host the Climate Station.
- 27.** Ms. Hannah of NIWA shared that the dashboard is for internal use and users may check for data quality. The data is ingested in the CliDE and there needs to be training on data quality. The dashboard is developed from the CliDE database. The dashboard undergoes quality control in real time.
- 28.** Mr. Allan of NIWA shared that sustainability is an issue for NIWA and CliDEsc has been developed for NMHSs. NIWA have a responsibility to sustain it and remain committed. The issues that have been discussed are important and are a conversation that needs to continue.
- 29.** Mr. Jimmy Gomoga of Papua New Guinea emphasised the importance of the Common Alert Protocol (CAP) which needs to be part of the NIWA dashboard. Mr. Allan Porteous responded that when using CliDE, any suspicious data is flagged. The data quality starts from equipment and to CliDE. On quality control measures Dr. Simon McGree noted that at Stage 1 there is quality control which is included in CliDE and also at Stage 2 that quality control continues of about 30 algorithm which runs over night.
- 30.** Ms. Vasiti Soko, Fiji Director of the National Disaster Management Office sought advice of when the EAR Watch is issued if there is feedback from users. It was shared by Ms. Soko that NDMO need to be trained on these products since NDMO are on the front-line coordinating responses. It was noted that there are ways to improve the information for the end user. Ms. Soko commented on the IBF and shared that Fiji is doing well in this area. However, a critical issue for Fiji is the importance of accurate baseline data. The role of NDMO as first responders and coordinating national efforts in times of natural disasters is that making critical calls regarding safety, can result in legal action when things go wrong or not to plan. Ms. Soko expressed the need for a LiDAR license, to enable Fiji to have baseline data that is correct, so that communities in high-risk area can be named.
- 31.** Dr. Simon McGree shared that skills have been provided to NMHS and there will be a sentence in recent bulletins outlining skills to have been assessed and a sentence included that conveys a level of confidence. It was noted that the end users are the Met Office, NDMO, Red Cross.

- 32.** Mr. Cyrille Honoré of WMO commented on the importance of such open and frank conversations. It was noted that a forecast is a forecast and there is always a level of uncertainty, hence why predictions try to help understand uncertainty. WMO has worked on forecast verification for decades and there are standards. However, when it comes to warning verification, this is a different area. Stakeholders feedback is critical.
- 33.** Mr. Honoré noted on IBF, there is a connection to the NIWA dashboard, which can identify the impacted area. CAP is a standard which WMO advocates for, as there is a severity level and can be a driver that can be mapped against the flag colour. The greater the accuracy there is, the closer communities can be better served.
- 34.** Mr. Katabwena Tawake of the Pacific Disability Forum shared that end users have to be considered by panel presenters and vulnerable members of the community including those with disability, who have to be part of the equation.
- 35.** Ms. Soko of Fiji NDMO sought advice on whether Samoa included developments of road and blockage of culverts into the flood warning system for Apia? This includes baseline and infrastructure, which needs to be addressed before moving to IBF. The stocktake of infrastructure in country is important and also to be expanded to the observation network. Mr. Malaki Iakopo of Samoa confirmed that they do take these factors into consideration regarding the flood warning system as presented by Mr. Mulitalo.
- 36.** Mr. Ofa Fa'anunu, Director of Tonga NMHS sought advice on whether the FMS provides advice to NDMO before a State of Emergency (SOE) is declared? Mr. Steven Meke of FMS responded that they do not have the mandate to declare a State of Emergency and that this role lies with NDMO under legislation. Ms. Soko responded that NMS provide advice to NDMO to consider, however the impact and actions lies with NDMO. It was also noted that the IBF lies with NDMO.
- 37.** Dr. Michael of UNDP, Tonga shared that hazards information is available, but the missing part is its linkages to exposure data. Dr. Michael further commented that on Traditional Knowledge, historically what may be true in the past may not be true now. Hence the importance of being careful on the accuracy of Traditional Knowledge.
- 38.** The Cook Islands NDMO and Palau NDMO shared that at the national level that they each work with their counterparts closely to assess the situation before calling any situation regarding an SOE.
- 39.** Mr. David HiriAsia of Solomon Islands expressed the importance of exposure and vulnerability database. It was also highlighted that forecasters need to know about these concepts so they can issue relevant warnings especially IBF. The Traditional Knowledge indicators needs to be monitored to verify their usefulness and if they are still valid.

Session 8: Sustaining the Pacific Coordination Mechanism for NDMO & NMHS on DRR (Working Group Presentations)

- 1.** Ms. Litea Biukoto noted the information to be presented by countries and how it is consumed and applied will help inform next steps. The respective NDMO representatives presented their country

group work in the form of power point presentations. *Refer to Annex 3 for the presentations by country in alphabetical order.*

2. Noting the feedback received from country presentations on potential structures of a Joint Platform Mr. Thierry Nervale, Director of the Solomon Islands Maritime Authority (SIMA) shared the example of the Energy and Transport Ministerial. Mr. Nervale informed the meeting that SPC serves as the Secretariat and noted that the Ministerial is convened every 3 to 4 years and includes two preceding officials level meetings in the two sectors.
3. Ms. Rhonda Robinson, Director of GEM for SPC elaborated that SPC as the convener for the noted meeting held the 5th Energy and Transport Ministers Meeting in Vanuatu in May of this year. It was noted that there are two separate convenings at the officials' level and one joint convening at the ministerial level that crosses over both communities of practice, with the one joint outcome. It was shared that it is a large event to organise and a link regarding the Meeting is available from this website link <https://gem.spc.int/meetings/5th-pacific-regional-energy-and-transport-ministers-meeting-2023>.
4. Ms. Alisia Evans of the Women's Power Coalition noted her organisation's role to help amplify the important role of women including in disaster risk reduction. Ms. Evans shared that the meeting was eye opening and wished to share two points of observation. The coalition of NDMOs and NMHS are important to help drive gender inclusiveness at the national, regional and global level, and there are echoes from CSOs, women with disabilities and young women, that women are not just vulnerable groups but experts on disasters affecting communities who are successful in this field. Ms. Evans noted there are many examples of women leading relief efforts, involved in PDNA, as well as partnerships and collaborations which help drive gender policy commitments.
5. Ms. Evans thanked the presenters for engaging with civil society in coordination mechanisms and to consider the country potential for collaboration, with organisations that include disabilities in the coordination mechanism. Ms. Evans encouraged country representatives to also think strategically at the national level, and to help strengthen partnership and collaboration with civil society for inclusive approaches and responses.
6. In summing up key aspects of all of the country presentations the following was noted:
 - a. Importance of having a consultative and inclusive approach.
 - b. Need to communicate for effective implementation.
 - c. Need to collaborate and cooperate regarding MHEWS.
 - d. To use existing regional mechanisms where possible.
 - e. The two platforms at technical level to be separate NDMO and NMHS.
 - f. Need to collaborate and cooperate for the common interest of serving the Pacific.
 - g. SPREP and SPC to figure out the coordination mechanisms for Members to consider.

Session 9: Regional Collaboration (Panel Discussion)

1. Mr. Henry Taiki, WMO Representative for the South-West Pacific WMO shared there are several coordination mechanisms that are in place with respect to the Pacific Meteorological Council, including the numerous Panels equivalent to technical working groups, that are responsible for

contributing to the effective delivery of PMC outcomes. The establishment of the Panels helps move things forward at a technical level, where different communities, agencies and experts can collectively address things that need to be done in terms of monitoring and identifying pathways for collaboration with the Met Services across the Pacific.

2. Mr. Taiki noted that programmes already exist but that there is a need to forecast how it can interconnect and coordinate activities to mould into a community. Including other stakeholders such as NDMO, civil societies to further improve efforts in Disaster Risk Reduction and Early Warning Systems, not just at the national level but also at the regional level crucial. A key aspect will be the coordination of efforts at the technical level through the different Panels to move forward.
3. Ms. Gabrielle Emery, Head of the Pacific Subregional Office of the UNDRR informed the meeting that the UNDRR adhere to the Sendai Framework for Disaster Risk Reduction that came together because of the commitment of Governments to address DRR initiatives. The primary duty of DRR is to bring different communities together, not just the NMHS and NDMOs but also several other associated stakeholders with DRR networks. Regional platforms have been established to allow for discussions at the regional level through the Asia Pacific Ministerial Conference on DRR to integrate the work being accomplished by NDMOs.
4. Ms. Emery noted the role of the Pacific Subregional office is to support stakeholders to drive the DRR agenda including working with CROP partners such as the Pacific Islands Forum, SPC and SPREP. UNDRR are identifying pathways and opportunities to coordinate and better collaborate efforts for support to NDMOs as well as how to build the regional mechanism that already exists within the Pacific Region through the Framework for Resilient Development in the Pacific and how to embed their efforts into the Framework instead of replicating.
5. Mr. Arona Ngari, Director of the Cook Islands Met Services responded to Ms. Emery informing the meeting that the Cook Islands participated in the Asia Pacific Ministerial Conference for DRR which was eye opening in terms of the opportunities that were available for building relationships and networks. Mr. Ngari noted that NMHSs that can play a key role to complement different communities such as that of the NDMOs at the regional and national level. This was viewed as an essential platform to enhance capacities with links to WMO and how NMHSs can provide necessary services. The role NMHS play in ensuring early warning systems and their responsibility in progressing this platform to enhance it viewed as critical.
6. Mr. Andre Siohane of Niue requested advice on how many countries the UNDRR Pacific Sub-Regional Office has reached out to since being established in the Pacific region? Ms. Emery responded that while they are operational in the Pacific, they are a small office of only 4 people and assist upon request of countries, and primarily act as an advisory and advocacy agency.
7. Ms. Rhonda Robinson, Director of GEM at SPC welcomed the support of UNDRR for DRR convening, having been a partner and taking the relationship with SPC and NDMOs to the Asia Pacific Convenings. It was noted that SPC as a regional partner, their efforts, and methods to strengthen DRR coordination have been:

- a. Pacific Management Emergency Alliance which coordinates and works with fire services and police at national level, and we collaborate and strengthen alliance at regional level for disaster response. These agencies need to act and prepare to together to better respond to together. How can this be done if terminologies are different.
 - b. Strategic roadmap for emergency management (PIMA work) which works with:
 - Capacity developments through accreditation trainings for disaster risk management and developing a career pathway to support NDMO community.
 - Aim/target similar trainings for people working within disaster management and associated teams.
 - Contextualise localised training to respond to local hazards faced and coordinate trainings ensuring they are people centred collaborations, capacity building focused.
 - c. Encourage alignment to existing mechanisms such as the Pacific Resilience Partnership and the PMC.
8. Ms. Robinson concluded that CROP agencies including SPC and SPREP need to work together, which means sitting down and taking stock of existing convenings and identifying what is the best fit for the two communities of practice.
9. Ms. Tagaloa Cooper, Director Climate Change Resilience of SPREP reminded the audience of the important next steps once the meeting concludes, in terms of what happens after and where to from herein terms of identifying the synergies and differences but ensuring they all go in the same direction. Ms. Cooper noted the importance of mapping out what has been done and how the conversation can continue for both communities. It was highlighted that the guidance needs to be provided from this meeting. The NMHS needs to carry this through to the PMC as an outcome of the Joint Meeting.
10. Ms. Cooper shared that the PMC has a strategy and a roadmap and so when the recommendations come from PMC it is made against the strategy. The PMC is a subsidiary of SPREP. It makes its own decisions against the strategy and SPREP supports their work. As noted by previous speakers there are different Panels that are developed to coordinate work to feed to the outcomes of the PMC regional mechanisms.
11. Ms. Cooper noted that some of the opportunities currently offered by SPREP include the Pacific Climate Change Centre which is housed at SPREP that provides capacity building pathways for the Pacific. An example of this is through the COSSPac Project, whereby there was a transition to the PCCC through their platforms for e-module trainings to ensure sustainability, once a project comes to an end.
12. Ms. Cooper also highlighted the intention of SPREP to host the Pacific Climate Change Roundtable in the first half of 2024 which will allow countries to meet and exchange lessons, ideas, best practices, and priorities on matters of financing, adaptation, and mitigation to name a few.
13. The UNFCCC COP also poses as an essential platform for discussions amongst Pacific Peers and a voice for Pacific island countries to the world with the Moana Blue Pacific Pavilion. It can act as a platform for donors and civil societies to meet, discuss and negotiate conversations moving forward. The NMHS are embedded in the process of COP as technical experts in the negotiations process. Communities

have gone a long way because of this collaboration. However, NDMO and the NMHS community have never collaborated at COP collectively. SPREP encourages UNDRR and SPC to support this collaboration and show the world how these two communities of practice can work together to build Pacific resilience. It is an opportune time to work together and showcase a joint event, inviting key strategic partners and traditional partners to COP28 which will be held in Dubai from November 30 to December 12, 2023.

- 14.** The IFRC welcomed the opportunity to be a stronger partner in the Pacific and to strengthen their participation in the regional space including opportunities to work together with other partners. Both Ms. Robinson and Ms. Cooper welcomed and encouraged the potential collaboration with the IFRC and other partners to serve both community of practices.
- 15.** Ms. Roslynn Pulehetoa-Mitiepo, Director of the Niue Meteorological Service asked why did it take so long to bring the two communities of practice together? Ms. Pulehetoa-Mitiepo observed that being in the same room has shown much progress moving forward. Previous Ministerial forums created segregated perspectives and indifferences between, NMHS and NDMOs. There is a need for NMHS and climate change presence in such fora with NDMO so that the profile of the Pacific is raised.
- 16.** Ms. Pulehetoa-Mitiepo requested the use of the PCCC to support NMHS with training. The priority is to sustain and retain Met Officers for forecasting. It was noted that BoM was the training centre but that platform appears to no longer be available. Mr. Andrew Jones of BoM responded that the training is still available and offered by BoM in Melbourne however they do not have the funding to be able to sponsor in-person training for a year. BoM are trying to look at a new hybrid way to conduct training, in ways that allow officers to get training in their offices rather than working outside of their countries.
- 17.** Ms. Cooper responded that a key catalyst was funding through the ClimSA project that could fund both NDMO and NMHS representatives. This is the result of the PMC, that recognised the two communities of practice were so closely aligned in their work and co-depend on each other. SPREP is open to the PCCC becoming a home for NMHS training. A current project with JICA enables training delivered through the PCCC, so that at its conclusion countries should be equipped to develop proposals to submit to the GCF. While recognised as ambitious, Ms. Cooper noted it is important for the Pacific to be ambitious and to know what opportunities and technology are out there.
- 18.** Ms. Elinor Lutu-McMoore, Meteorologist in Charge of the U.S. National Weather Service of American Samoa thanked the panel. Ms. Lutu-McMoore highlighted as a US territory they are left out and segregated from their peers in the Pacific because of their political status. It was noted that talk of inclusion, including the Weather Ready Pacific focuses and centres on people. However, Ms. Lutu-McMoore noted that disasters have no boundaries as alluded to in all of the presentations. Although American Samoa is a US territory, they experience the same challenges and welcome opportunities to coordinate and collaborate peers in the Pacific. Ms. Lutu-McMoore recognised that while they do not qualify for funding, that the territories of the US and France should not be excluded.
- 19.** Ms. Cooper responded that American Samoa is different because they have the benefit of being a territory of the US. The interest of American Samoa was acknowledged, including learning from peers in the Pacific, noting their similar challenges in the region. Ms. Cooper noted that SPREP remains stern in continuing partnerships and collaborations with the territories.

20. Ms. Robinson of SPC noted that the Pacific was the first region in the world to do the work of integrating climate change and disaster risk reduction with the Framework for Resilient Development in the Pacific, which was approved by Pacific Leaders in 2016. The hardest part however has been staying true to these efforts. It was noted there is a need to demonstrate how collaborations and integration can be showcased in a way that makes sense to the communities of practice. A challenge is staying true to the intentions of integration. Ms. Robinson noted how the Pacific will showcase this at COP and share stories of resilience, will be further explored after the joint meeting.

Session 10: Key Points for Presentation to the PMC

1. The meeting reviewed and considered the draft Joint Meeting of the Regional National Disaster Management and National Meteorological and Hydrological Services Outcomes. By consensus it was agreed that the Joint Meeting Outcomes would be presented by the National Meteorological and Hydrology Directors for the due consideration of the Pacific Meteorological Council and the National Disaster Management Office Directors would present the same document to their governing council. *Please refer to Annex 5 for the endorsed Joint Meeting Outcomes.*

Session 11: Reflections and Closing

1. Ms. Tagaloa Cooper, Director of Climate Change Resilience of SPREP thanked all of the participants for sharing their insights and invaluable experience from their respective communities of practice. It was noted that this joint meeting would be the start of strengthening collaboration between NMHS and NDMO across the region for the benefit of Pacific island communities. The meeting closed with a prayer from Dr. Luteru Tauvale, Director, Samoa Meteorology Division for the Ministry of Natural Resources and Environment.

Annex 1: Speeches

Opening Remarks by Gabrielle Emery Head of the Pacific Subregional Office, United Nations Office for Disaster Risk Reduction

Thanks to partners and participants.

Building resilience is everyone's business - we all have a role to play, our forecast and warning agencies – our DRM community and importantly the communities themselves. You are all leaders in advancing the disaster and climate resilience agenda in your countries and regionally, so thank you for your continued efforts.

UNDRR is delighted to support this important joint workshop, which provides us a strategic moment of pause to explore how we can work better together, capitalize on the respective expertise our agencies bring to the table and ultimately and scale up our efforts for more effective DRR and resilience building.

Our discussions over the next couple of days build on the outcomes of last year's Pacific Ministerial Meeting on DRR and the APMCDRR. It also provides us the opportunity to pick up on some of the issues that emerged during the Pacific Week of Anticipatory Action and the CREWS meeting in March, which identified opportunities for strengthened engagement and knowledge sharing between the Met/ NDMO communities.

I want to frame my remarks today around the catch cry of UNDRR. There is no such thing as a natural disaster. It is important to keep underlining this point. Because a hazard doesn't necessarily need to become a disaster, there are choices that we make as humans which will reduce and possibly even prevent a hazard becoming a disaster. There are plenty of choices we can make as individuals and institutions to avoid not only loss of life but cultural, social and losses due to hazardous event.

These choices involve making sure we work together and plan effectively. We need to understand our environment, the hazards we face, our population dynamics including their vulnerabilities and if / how they may be exposed to disaster risk. We can choose how we design our policies and interventions so they are informed by science, our culture and traditions and meet the different needs and build on the capacities of our communities.

To make the right choices, we need the right relationships, governance structures, including coordination and data/ info sharing mechanisms in place at all levels. Against this backdrop, it is very timely that we have the opportunity over the next couple of days to work through many of these issues together, particularly important in relation to our collective work on early warning.

As you know Early Warning is a foundational element of disaster risk reduction. It is actually one of the most cost effective and proven forms of climate adaptation and DRR. It forms one of the seven targets that governments have committed to under the Sendai Framework for DRR to "*Substantially increase the availability and access to multi-hazard early warning systems and disaster risk information to people by 2030*".

In order to accelerate attention, action and investment in Early Warning Systems, last year the UN SG launched the Early Warning 4 ALL Initiative at the end of last year in COP27. The initiative calls for the whole work to be covered by an early warning system by the end of 2027.

Before finishing I want to highlight a couple of key points in regard the EW4ALL initiative:

First, I want to emphasize the word “initiative” and to reinforce the idea that EW4ALL is not just another early warning project. It is an umbrella, a way to consolidate and accelerate action and investment across the many excellent regional and national early warning projects already underway. It is a really great way to tap global finance and attention to boost all the important work on EW happening in your countries, it also provides a framing to bring in other actors who may not traditionally have been so involved in the early warning systems and to more systematically bring in the NDMOs./ DRM systems and NGOs into the picture. This will be a key initiative to frame our joint work under.

Secondly, and most importantly emphasize the “for all” - at the end of the day early warning systems are pointless if they don’t result in early action by people. The best technology and forecasting will be redundant, if communities are not prepared to take action, and act at warning. It also means thinking about the different needs in our communities - persons with disabilities, the elderly, women, children – how they access warnings and how than be can be better empowered and assisted to take action

The all also implies we all need to be involved – to make this local level action a reality – we all have a choice to break down institutional silos, to build on existing strengths and expertise our relevant agencies have and to look a ways we can more effectively work together to protect and empower our Pacific communities in the face of climate change and disasters.

I am excited for our discussions over the next couple of days and rest assured of UNDRR’s commitment to work with you all to support the agreed outcomes of our discussions.

Vinaka

ENDS

**Opening Remarks
Cyrille Honoré, Director, DRR, MHEWS and Public Services
World Meteorological Organization**

(Dignitaries)

Thank you madam Moderator,

Mr Naheed Hussein, Project Manager, Intra-African Caribbean and Pacific (ACP) Climate Services and related Applications (ClimSA),

Madame Gabrielle Emery, Head of Pacific Subregional Office, United Nations Office for Disaster Risk Reduction,

Madam Rhonda Robinson, Director for the Geoscience, Energy and Maritime Division of the Pacific Community (SPC)

Madam Tagaloa Cooper-Halo, Director for Climate Change resilience of the Secretariat of the Pacific Regional Environment Programme

Mr Bipen Prakash, Acting Director of Fiji Meteorological Service and Acting Permanent Representative of Fiji to the World Meteorological Organization,

Distinguished Directors of National Disaster Management Organizations and Directors of National Meteorological and Hydrological Services, Permanent Representatives to WMO from the region,

Ladies and Gentlemen, dear colleagues,

On behalf of Professor Petteri Taalas, Secretary General of the World Meteorological Organization it is my privilege to be with you all today for this important meeting ahead of the Pacific Met Council next week.

I would like to thank the Government of Fiji and Fiji Met Service for hosting these meetings, with the specific support from the European Union and SPREP under the CLIMSA project, the United Nations Office for Disaster Risk Reduction and the Climate and Oceans Support Program for the Pacific with whom it is always WMO's pleasure and interest to collaborate.

Collaboration is the keyword here, as we indeed need to join all available forces to ensure that nations and people make risk informed decisions in the context of a changing climate.

From seasonal to sub seasonal and weather time scales, a variety of products and services based on the Earth system observation, monitoring and prediction are needed to support Comprehensive Disaster Risk management.

Different initiatives and regional arrangements support the development of these products and services, yet we all understand that we can further improve together.

Allow me to provide a quick focus on the Early Warning for All Initiative, launched last year by the United Nation Secretary General Antonio Guterres, pressing us to move forward to ensure every person on Earth is protected by Early Warning Systems (EWS) before the end of year 2027. Early warning systems are widely regarded as a relatively cheap and effective way of protecting people and assets. Early Warning Systems are a proven, effective, and feasible measure, that save lives and provide a global tenfold return on investments.

The need for inclusive and accessible multi-hazard early warning systems is urgent as the number of recorded disasters has increased five-fold, driven in part by human-induced climate change and more extreme weather.

A list of 30 countries for initial focus has been identified, comprising several members of the Committee, namely Kiribati, Samoa, Solomon Islands, Fiji and Tonga. Some activities are under way, including assisting countries to meet the WMO Global Basic Observation Network requirements through the Systematic Observation Financing Facility. National implementation will be key and countries will be supported in that regard by the UN wide partnership established, adding value wherever possible into the existing regional processes.

Ladies and gentlemen, this initiative to bring DRR and hydromet communities together for two days is indeed excellent. Operational services need to be evaluated for continuous improvement and sustainability in the long term. I trust that from this starting point, conversations between NDMOs and NMHSs will continue at both regional AND national level, in the interest of the people we all serve.

Wishing you a very fruitful meeting, I now thank you for your attention and back to you Madam Moderator.

ENDS

**Opening Remarks by
Rhonda Robinson, Director GEM Division
Pacific Community**

Ni sa bula vinaka Directors of the National Meteorological and Hydrological Services and the National Disaster Management Offices.

We often come together at global fora and in your respective countries, so it is indeed a privilege that we have you both these next 10 days. The last time we met in this very room was in 2013 from what

I understand as we embarked on a couple of firsts. The convening of the Joint Pacific Climate Change Roundtable and Pacific Disaster Risk Management Platform, the inaugural Pacific Islands Emergency Management Alliance and the beginning of the roadmap to develop a strategy for climate and disaster resilience in the Pacific which we now know as the Framework for Resilient Development in the Pacific.

Thank you to the Secretariat of the Pacific Regional Environment Programme through the auspices of the EDF 11 EU ACP *Climate Services and Related Applications (ClimSA)* programme in convening this meeting. I would also acknowledge and thank the European Union and United Nations Office for Disaster Risk Reduction for your ongoing partnership and investment in the region to support our own commitments to achieving strengthened resilience.

In September 2022, with the Pacific Islands Forum Secretariat, the Pacific Resilience Partnership Task Force and the Government of Fiji, we convened the inaugural Pacific Ministerial Meeting for Disaster Risk Reduction. Again another first!

The Declaration of the Ministerial was intentional in their REQUEST to CROP to “strengthen coherence and bring together agencies and regional actors working on resilience and ensure stronger linkages between relevant fora, platforms and network.” Our coordinated effort to anchor the Pacific Resilience Partnership (PRP) and extend our support to the PRP Task force consisting of representatives from Countries and Territories, Civil Society, Private Sector, Development partners and regional organisations ensures that we find opportunities to lead and implement climate and disaster reduction priorities in areas where we have a comparative advantage as well as complementarity.

The work of yourselves as NDMO and NMHS continue to jointly work toward strengthening people-centred end-to-end multi-hazard early warning systems amongst other things. You also work together to produce current and future risk information to drive investments towards resilience. We know you are doing this at the national level and we hope to do our bit to add value to your own efforts and regionally

In the recent years, we as CROP agencies have put our efforts in the Pacific Resilience Partnership mechanism (which implements the three goals of the FRDP and integrates DRR with CCA). The intention is to strengthen collaboration, pool resources and ensure greater coordination of impactful actions in our resilience building actions.

This multi-stakeholder approach has already delivered great results in the regional space, and is relevant to replicate down at the national and local levels as well where private sectors, civil society can work alongside your government agencies.

As mentioned before we know that you are working together but we also know that we can do more together and look forward to listening to you all in the coming week so we are able to respond and elevate your priorities.

Vinaka vaka Levu for allowing us the opportunity to be a part of the Pacific family this week on your convening and wish us all a productive and successful series of events in the lead to the Ministerial Meeting and beyond.

ENDS

**Opening Remarks by
Tagaloa Cooper, Director Climate Change Resilience Programme
Secretariat of the Pacific Regional Environment Programme (SPREP)**

Mr. Bipendra Prakash, Acting Director of the Fiji Meteorological Service.

Ms. Gabrielle Emery, Head of Pacific Subregional Office, UNDRR Suva.

Mr. Cyrille Honoré, Director - Disaster Risk Reduction, MHEWS Office and Public Services

Ms. Rhonda Robinson, Director for the Geoscience, Energy and Maritime Division at the Pacific Community.

Directors, Heads and Seniors Officials from the National Meteorological and Hydrological Services including our National Disaster Management Agencies.

Development Partners
Members of the Media
Ladies and gentlemen

On behalf of the Director General of the Secretariat of the Pacific Regional Environment Programme (SPREP), I would like to extend to you all a warm welcome to the First Joint Meeting between the National Meteorological and Hydrological Services (NMHS in short) and National Disaster Management Organizations (NDMO in short).

I want to thank the Government of Fiji for agreeing to host this important meeting and to officiate the opening of our Joint Meeting between NMHS and NDMO.

Our theme today is to promote and foster collaborations and interactions between our providers and users of climate information and co-develop Regional User-Interface Platforms (UIP in short) for the Disaster Risk Reduction (DRR) sectors in the Pacific.

It highlights the vital importance of collective development, delivery, and uptake of climate information to prepare, plan and make good decisions at all levels – the community, private sector, non-governmental organisations, government agencies and disaster managers.

Similarly, greater coordination between NMHS, NDMOs, development agencies and partners are fundamental to better prevention, preparedness, and response.

At this juncture, I would like to express the sincere gratitude of the Secretariat of the Pacific Regional Environment Programme (SPREP) to our donor partners, European-Union funded Intra-ACP Climate Services and Related Applications (ClimSA) project and the United Nations Disaster Risk Reduction (UNDRR) for supporting such joint initiative.

Today, I can confidently say that we have worked so hard, and we have a reason to celebrate all our great and collective achievements as far as our people-centred and end-to-end early warning systems are concerned in our region.

Over the years, we as a region have managed to sustain existing user interface platforms such as the Pacific Island Climate Outlook Forums (PICOF short) and expanded its scope. Such initiatives have been replicated at the national level as National Climate Outlook Forums (NCOF in short), and I am very proud of all your efforts.

However, we must be bold due to today's many changes and challenges.

Given the above, we need to build new structured engagement platforms and pursue new approaches and partnerships to strengthen the interaction between providers and users of climate information at the regional and national levels.

The collaboration between the NMHS and NDMOs plays a vital role in effectively reducing the effects of disasters and creating a safer, more resilient society. These teams achieve greater results and synergies in disaster risk reduction efforts by working together, such as:

Early Warning Systems: By working together, the National Meteorological and Disaster Risk teams can develop robust early warning systems that leverage meteorological data to forecast potential disasters accurately. This enables timely alerts and preparations, reducing the impact on communities and saving lives.

Data-Driven Decision Making: Combining meteorological data with disaster risk assessments allows for data-driven decision-making. Collaborating on data collection, analysis, and interpretation enhances the accuracy and reliability of information, facilitating more informed and effective disaster response strategies.

Enhanced Preparedness: When these teams collaborate, they can design comprehensive disaster preparedness plans based on meteorological predictions. These plans can encompass measures to strengthen infrastructure, educate communities, conduct drills, minimise vulnerabilities and foster a resilient society.

Optimized Resource Allocation: Working together allows for a better understanding of potential disaster scenarios and their associated impacts. This insight enables the efficient allocation of resources, including manpower, equipment, and funds, to areas at the highest risk, maximising the effectiveness of response efforts.

Improved Public Awareness: The National Meteorological and Disaster Risk teams can effectively coordinate public awareness campaigns by joining forces. Educating the public about the potential hazards and necessary precautions empowers individuals to take proactive measures, reducing casualties and damage.

Adaptation to Climate Change: As climate change continues to influence extreme weather events, collaboration between these teams becomes even more critical. Combining meteorological data with long-term risk assessments helps adapt to changing climatic conditions and develop sustainable disaster risk reduction strategies.

Cross-Disciplinary Knowledge Sharing: The collaboration encourages the exchange of knowledge and expertise between meteorologists and disaster risk specialists. This interdisciplinary approach fosters innovation and the development of novel solutions to address emerging challenges.

International and Regional Cooperation: Disasters often transcend national boundaries, requiring international cooperation. A strong partnership between National Meteorological and Disaster Risk

teams allows for seamless communication and coordination with neighbouring countries during regional crises.

Post-Disaster Analysis: After a disaster strikes, working together facilitates the collection of meteorological and disaster impact data. This information is crucial for conducting post-disaster analysis, identifying trends, and implementing lessons learned to enhance future disaster preparedness and response.

Sustainable Development Goals: Collaborative efforts between these teams align with the United Nations' Sustainable Development Goals (SDGs), particularly Goal 11 (Sustainable Cities and Communities) and Goal 13 (Climate Action). Reducing disaster effects contributes to creating safer and more resilient communities and mitigating the impacts of climate change.

We have two days ahead of us to share our experiences and develop new interface platforms to continue to save lives and protect the livelihoods of Pacific communities everywhere, both now and in the future.

I wish you all fruitful and successful discussions during the next two days and have fun as well!

Thank you.

ENDS

Annex 2: Agenda

**National Meteorological and Hydrological Services and National Disaster Management
Joint Meeting
10 – 11 August 2023
Novotel, Nadi, Fiji**

Day 1

Session 1: Official Opening		
9.00 - 10.00	<p>Opening Prayer: Reverend Tevita Ramokosoi Kete</p> <p>Garlanding and official speeches</p> <ul style="list-style-type: none"> ▪ UNDRR: Gabrielle Emery, Head of Pacific Subregional Office, UNDRR ▪ WMO: Mr. Cyrille Honoré, Deputy Director of the Services Department and the Director of the Disaster Risk Reduction and Public Services Branch, WMO ▪ SPC: Rhonda Robinson, Director of GEM, SPC ▪ SPREP: Tagaloa Cooper, Director of Climate Change Resilience, SPREP ▪ Government of Fiji: Bipen Prakash, Acting Director, Fiji Meteorological Services <p>Objectives of the Meeting & ClimSA Overview</p> <ul style="list-style-type: none"> ▪ (Presentation) – Naheed Hussein, Project Manager – Intra-ACP ClimSA, SPREP <p>(Mentimeter Survey on UIP) – Patricia Mallam</p> <p>Group photo – Sosikeni Lesa</p>	<p>Moderator: Patricia Mallam</p>
10.00 - 10.30	Morning Tea	
Session 2: DRR – A Pacific Context (Setting the scene) Panel Discussion		
10.30 – 11.30	<p>Overview:</p> <ul style="list-style-type: none"> ▪ definitions in the context of the Pacific (what types of hazards? (slow onset, rapid and extreme hazards) ▪ refer to examples: ENSO handbook, factsheets ▪ expectations from regional met services ▪ NDMO and NMHS will be asked to share some insights on what they're doing in-country. <p>Panelists:</p> <ul style="list-style-type: none"> ▪ SPC: Litea Biukoto, Disaster Risk Team Leader (Pacific Resilience Partnership) ▪ Pacific Disability Forum: Katabwena Tawaka, Manager Humanitarian Unit (provide insights on user expectations (vulnerable groups, women-led initiatives etc) 	<p>Moderator: Terry Atalifo</p>

	<ul style="list-style-type: none"> ▪ NDMO: Mafua i Vaiutukakau Maka, Director – Tonga National Emergency Management Office (Volcano and Tsunami preparedness) ▪ NMHS: Ueneta Toorua, Director - Kiribati Meteorological Service (Drought preparedness) 	
Session 3: The HydroMet Landscape in the Pacific (Presentations & Feedback)		
11.30 - 12.30	<p>Overview:</p> <p>Each speaker will be make a presentation on the products which are currently available in the region. Followed by a moderated discussion on the products.</p> <p>Panelists:</p> <ul style="list-style-type: none"> ▪ Pacific Met Desk Partnership – Terry Atalifo, Regional Climate Centre Coordinator ▪ Products from the RCC (TC Outlook (seasonal, sub-seasonal and weekly outlooks)) ▪ Regional Specialised Meteorological Centre (RSMC – Nadi) for Tropical Cyclones – Mr. Stephen Meke – Fiji Meteorological Services ▪ Ocean Outlook & Coastal Inundation Modelling – Herve Damlamian, Team Leader Oceanography, SPC ▪ Tsunami & Volcanic Eruptions: Warning Systems in the Pacific, Oceania Seismic Network (OSNET) – Ofa Fa’anunu, Director – Tonga Meteorological Services <p>Mentimeter – Patricia Mallam</p>	Moderator: Simon (RCC Chair)
12.30- 1.30	Lunch	
Session 4: Multi-Hazard Early Warning Systems		
1.30 - 2.30	<p>Early Warning Systems for All (EW4ALL) - Cyrille Honoré, Deputy Director of the Services Department and the Director of the Disaster Risk Reduction and Public Services Branch, WMO</p> <ul style="list-style-type: none"> ▪ frames MHEWS ▪ awareness and implementation <p>Weather Ready Pacific – Ofa Fa’anunu and Salesa Nihmei</p> <ul style="list-style-type: none"> ▪ linkages to NDMO ▪ group discussion <p>Purpose of this session:</p> <ul style="list-style-type: none"> ▪ Draw out the work that NDMOs and NMHSs are doing collaboratively. ▪ Introduce EWA and Weather Ready and have discussions which can be presented at PMC as outcomes. ▪ Showcase how the initiatives will help the sectors (highlight the inclusion aspects) 	Moderator: Litea B
Session 5: The User Interface Platform (UIP) Guidelines for DRR (Presentation)		

2.30 – 3.00	Presentation on the User Interface Platform (UIP) for DRR (what, how to operationalise, key steps) – Naheed Hussein, Project Manager – IntraACP ClimSA, SPREP	Moderator: ClimSA
Coffee break		
Session 6: Co-Designing the Pacific Coordination Mechanism for NDMO & NMHS on DRR (Working Group)		
3.15 – 4.00	<p>Overview</p> <ul style="list-style-type: none"> ▪ NMHS + NDMO Pair up by countries to work on set questions ▪ what does the DRR mechanism look like in your own country? ▪ is a joint mechanism necessary? ▪ is there an existing platform or do you need to create one? ▪ what is the role of MOUs in your current work? ▪ how are NDMOs and NMHSs working together at the national level pre, during and post disasters? ▪ where would you say your country is in relation to the UIP Guidelines? ▪ how do countries propose to do this at the regional level? ▪ what are some priority products for co-production at the regional level? <p>Mentimeter – Patricia Mallam</p>	<p>Moderators: Silipa Mulitalo Litea Biukoto Patricia Mallam</p>
5.00	End of Day 1	

Day 2

Session 7: Recap of Day 1		
8.30 - 9.00	Recap and Prayer by Sosikeni Lesa	Moderator: Patricia Mallam
Session 8: Opportunities for co-development of products		
9.00 - 10.00	<p>Presentations</p> <ul style="list-style-type: none"> ▪ Climate Station and Impact Toolbox (ClimSA) – Patricia Mallam (5mins) ▪ Climate Data for the Environment Services Client (CliDEsc) – Hanna from NIWA (5mins) ▪ EARWatch, Island Climate Update and TC Outlook (NIWA, BoM, SPREP) – Simon McGree (15mins) ▪ Impact Based Forecasting (Solomon Is Case Study) – David Hiriasia (10mins) ▪ Vaisigano Flood Decision Support System (Samoa Case Study) – Silipa Mulitalo (10mins) ▪ NDMO & NMHS Collaboration (Fiji Case Study) – Stephen Meke (10mins) <p>Discussion (20mins)</p>	Moderator: Terry Atalifo

	<ul style="list-style-type: none"> ▪ What gaps do NDMOs see from the information they receive and what else do they want that we aren't providing? ▪ What is the feedback loop, is it useful/working? 	
10.00 - 10.30	Morning Tea	
Session 9: Sustaining the Pacific Coordination Mechanism for NDMO & NMHS on DRR (Working Group Presentations)		
11.00 – 1.00	<ul style="list-style-type: none"> ▪ Presentations from NMHS + NDMO Teams (15mins) ▪ How and what does the DRR Community of Practice/Exchange look like at a regional level? ▪ What can we do at the Regional level to support this mechanism? ▪ Best practices from National Level mechanisms 	Moderator: ClimSA
1 - 2.00	Lunch	
Session 10: Regional Collaboration (Panel Discussion)		
2.00 - 2.45	<p>Overview</p> <p>Showcase how regional partners collaborate to co-develop tools/resources to strengthen Pacific DRR.</p> <p>Panelists</p> <ul style="list-style-type: none"> ▪ WMO – Henry Taiki ▪ UNDRR – Gabrielle Emery ▪ SPC – Rhonda Robinson ▪ SPREP – Tagaloa Cooper-Halo 	Moderator: Simon McGree
Session 11: Key Points for Presentation to the PMC		
2.45- 3.30	Documentation	
Session 12: Reflections and Closing		
3.30 – 6.00	Closing Remarks	Moderator: Salesa Nihmei

Annex 3: Country Presentations

American Samoa

National Reflections

- Territorial Emergency Operations Plan (TEOP)
- Weather Act
- Stafford Act
- Collaboration well with TEMCO (Territorial Emergency Management Coordination / (Department of Homeland Security)

Regional Reflections

What's Working

- Planning together/good coordination at all levels
- Impact based decision support services (IDSS)
- Inclusion (leaving no one behind)
- NEOC/Multi hazard EWS operational and functional
- Governance Structure in place
- Traditional Knowledge Application
- Enhanced Community Awareness/Resilience
- Tsunami Sim Ex (PacWave, Tsunami Ready)
- Availability of Sector-specific products
- Leaders/Directors leading by example-Anticipation of disasters – looking beyond!
- Consistent Prayers and Faith of our leaders/communities etc
- Humanitarian Clusters/Sectors in some countries
- Tsunami WG-PICT
- Regional NDMOs Minister's Meetings

What's not working (Challenges)

- ERN & ESN – not all PIC countries are covered
- Monitoring networks-national coverage & ageing
- Priorities dependent on leadership (changing leaders will also impact priorities)
- Unclear roles and responsibilities
- People problems/varying mentalities and perceptions
- Inconsistent communication/coordination
- Remoteness of some communities
- Less funding/resources
- Staff turnover/ Understaffed
- Support to Hydrological services
- Lack of technical expertise
- NO Follow Up/ Monitoring of Actions/Implementation work from Reports eg) PDNA etc
- Data Sharing
- Sustainability of activities

Recommendations

- Regional mapping of platforms and community of practice to identify common threads
- Regional Multi-hazard Platform for regular planning meetings at regional and national levels (DMO/Meteorology/Hydrology/Geohazards)
- Alignment of regional and national MHEWS Programmes to optimize limited absorptive capacity and resources

Cook Islands

When and how do you work together

- Respective work plans
- Continuous improvement from lessons learnt
- Communications is maintained at all times
- Aligning our workplans to emergency situations
- Safety of our community is a priority

How can it be improved?

- Aligning the hazards that affect the Cook Islands
- Standardised early warning system
- Trigger matrix that identified appropriate hazards
- Derive a colour code for warnings
- Yellow – Watch
- Orange – Warning
- Red – Emergency

Need MOU to collaborate?

- Guided by the National Disaster Risk Reduction Management Legislation 2007
- Covers all facets of DRR and clearly identifies a leader to manage the process
- Located within the Centre of Government
- Annual activities
- Continuous consultation between CIMS and EMCI
- Guided by the national sustainable development plan 20+

Recommendations

- NDMO/EMCI to work closely with MS/CIMS
- Allocate an opportunity for NMHS and DMO to meet regularly face to face

Regional

- Value in retaining the Pacific Meteorological Council and the Regional Disaster Managers Meeting
- There is a need for the two groups to come together

- Need to flexible around timing of the joint meeting
- Use the platform to share SOPs, experience ...
- Using regional experiences to take back to country level
- Different platforms – don't always have joint representation
- Pacific Met Council (Aug 2023, 2025), Regional Disaster Managers Meeting (2024)
- Pacific Resilience Meeting (Oct 2023), Pacific Island Climate Outlook Forum (Oct 2023)
- Pacific Meteorology Ministers Meeting (Aug 2023), Pacific DRM Ministers Meeting (2025)
- SPREP and SPC to figure out coordination
- Achieve all of the above is our regional goal

Fiji

National Level

- Impact-based forecasting (IbF)
- Lack of infrastructure investment / Robust - Partnership: NDMO also supports MET with infrastructure investment
- Baseline ??????
- Work with us on our national priorities
- Fiji New Project => development of Fiji's Multi-hazard Early Warning RoadMap => Oct 2023
- TOO many working in SILO
- Need to talk in the same room with other key Partners => other hazard warning agencies
- MRD - assessment of earthquakes, tsunamis and landslides
- Agriculture and the Biosecurity Authority - bio-hazards to animal and plants
- Agriculture / Waterways - flood control and watershed management programmes
- Ministry of Health - disease outbreaks, epidemics and pandemics
- Ministry of Environment - landslides, toxic waste spills
- Civil Aviation Authority of Fiji - aviation emergency
- Maritime Safety authority of Fiji - maritime accidents
- Ministry of Information- Information Communication Telecommunication hazards;
- Meteorological Services - Hydro-meteorological hazards
- Ministry for Defence - search and rescue
- National Fire Authority - fire hazards

Regional Level

- NDMO needs GOVERNANCE at regional level => similar to Met- Ministerial, PMC & PANELS, RCC, PICOF at the moment ad hoc
- Capacity building at national level
- Sharing of best practice – need support to do peer to peer capability
- Ownership at national level (NDMC => FCOSS & Red Cross)

Way Forward

- Establish NDMO regional capability (GOVERNANCE) we need this 1st before we talk about joining other platforms
- Peer to Peer Support (country to country)
- SHARING BEST PRACTISE/ SHARE LESSONS LEARNS/ GAP SHARING

- Alignment of regional => National => Business Plan => KPIs = Increase in salary
- Traditional NDMOs just coordination => robust NDMOs
- Infrastructure investment => what's in the existing documents
- Early warning for all => from warning to response to early warning to rehabilitation
=> resilient communities
- Government Lead => FIJI MULTI-HAZARD EARLY WARNING SYSTEM ROAD MAP – kick start the early warning for all action

Kiribati

National Reflections

KMS & NDMO in Kiribati

- Under one ministry and Minister (HE) – Office of Te Beretitenti
- Different divisions, thus separate budget, structure, plans, and SOPs. Different laws.
- Common plan for both is OB Ministry Strategic Plan (4 years)
- Always works together in designing plan for national, ministry, hazard, and functional plans
- No MOU required. But there are specified roles and responsibilities in national plans, e.g. South Tarawa Drought management plan, National Tsunami Support Plan, etc.

Regional Reflections

- Fragmented between group agencies, e.g. KMS with SPREP, NDMO with SPC
- Project-based, not sustainable
- Often driven by regional projects
- Existing platforms:
 - For KMS – PMC (COSPPac)
 - For NDMO – PRP, PHP, RDM, PDRM, APMCDRR
- Each platform may not have both agencies (KMS & NDMO) present

Proposal for Future Sustainable Collaboration

- A coordinated, complementary, and strengthening or putting resources into existing Pacific regional governance structure, coordination mechanism and platforms
- One regional platform to use and propose to use the Pacific Regional Partnership
- PMC & other MET and NDMO platforms to align to PRP governance structure
- End of the day we report to the same Leaders

Marshall Islands

When do we work together?

- Weather Services Office sends NDMO weather forecasts daily
- During Extreme Events, WSO sends NDMO Advisories, Watches and Warnings
- Various projects as well

National Disaster Committee

- Consists of all Heads of Departments
- WSO and NDMO as advisors
- During Emergencies/Disasters, NDC meets, coordinates, and makes decisions
- NDC Meets on a quarterly basis

How can we improve?

- Establish periodic M&E meetings
- To review successes or flaws (therapy)
- Create an MOU between the Offices
- To outline the roles and responsibilities of each department
- For future directors to carry on the relationship

Regional

- Value in retaining the Pacific Meteorological Council and the Regional Disaster Managers Meeting
- There is a need for the two groups to come together
- Need to flexible around timing of the joint meeting
- Use the platform to share SOPs, experience ...
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- Pacific Meteorology Ministers Meeting (Aug 2023), Pacific DRM Ministers Meeting (2025)
- SPREP and SPC to figure out coordination
- Achieve all of the above is our regional goal

Nauru

National Reflections (NDMO & NMHS)

- NDMO & NMHS – Under one ministry
- Coordination mechanism - specified under National Disaster (Risk) Management Plan
- MetService performs hazard advisor role in NEOC (Hosted by NDMO)
- Collaborate on tsunami planning and operations for early warnings

Regional Crystal Balling

Arrangements for Coordination

- On ad hoc basis for joint collaboration (like now)
- 2 different governance arrangement (NDMO – RDMM – Ministerial) & (NMHS – PMC – Ministerial) (Two platform two ministerial)
- Yet both serve common goals under the FRDP (Goals 2 & 3)

Model for Collaborations

- Collaboration under one ministerial but separate platform (Example: Transport and Energy - Separate platform one ministerial platform)
- Collaboration under one platform (One council one ministerial)

Proposal for Way Forward

- Suggest one platform one ministerial for governance, collaboration and coordination
- Hosting of collaboration jointly to be shared by Secretariats (SPREP & SPC)
- Hosting country to be on a rotational - to enable buy-in of emergency agencies in-country
- All emergency players to form at regional level under the platform as committee, panel or whatever grouping for technical aspects

Niue

National Reflections

- **When:** 2015 – NDMO established. Prior – Niue Police. Niue Disaster Council (NDMO & MET)
- **How do you work together in your own country?** National Disaster Council (operations and planning)
- **How can it be improved?** Secondment of staff from other key departments. Integrate some of the key sectors; Water (Ministry of Infrastructure, Ministry of Social Services & Ministry of Natural Resources).
- **Do you plan together?** Yes
- **Do you need and MOU to collaborate?** No
- **National Plans:** National Disaster Plan 2010, Revised 2018

Regional crystal balling

What does collaboration look like for the NDMO/NMHS in the region?

- Strengthen collaboration at regional level.

Do you have an existing platform where you work across the Pacific with your peers?

- The PMC, PMMM, Regional Disaster Managers Meeting, Regional Disaster Ministerial Meeting, & PRP.

Does this include both NDMO and NMHS?

- Yes for some platforms.

What do you propose to do this at the regional level?

- Meeting every two years. Year 2025 at the next PMC.
- SPC/SPREP provides the regional support.

What would be important to know if a platform is established (or needs to be improved)?

- Strengthened coordination of regional meetings (planning/mapping)

Palau

National Reflections

- **When:** Early 1990s NDMO established, but work existed prior.
- **How do you work together in your own country?** National Emergency Committee (operations and planning)
- **How can it be improved?** Include Climate Change into the planning process. They were included in the committee, but has shifted to the Premier's Department.
- **Do you plan together?** Yes more than needed.
- **Do you need and MOU to collaborate?** No, binded via the framework.
- **National Plans:** Palau National Disaster Management Framework 2000

Regional crystal balling

- **What does collaboration look like for the NDMO/NMHS in the region?**
Strengthen collaboration at regional level.
- **Do you have an existing platform where you work across the Pacific with your peers?**
The PMC, PMMM, Regional Disaster Managers Meeting, Regional Disaster Ministerial Meeting, & PRP.
- **Does this include both NDMO and NMHS?** Yes for some platforms.
- **What do you propose to do this at the regional level?** Meeting every two years. Year 2025 at the next PMC. SPC/SPREP provides the regional support.
- **What would be important to know if a platform is established (or needs to be improved)?**
Strengthened coordination of regional meetings (planning/mapping)
- **What are some results that you would like for us to achieve/work towards at the regional level?**
Use existing platforms and strengthening them across organisations and partners

Papua New Guinea

National Reflections

- All 3 communities (NMHS & NDMO) under 3 separate Ministries
- MOUs – MHEWS in place but aren't fully operational
- NDC chaired by Weather Services (PNG NWS; hold meetings every month to update leaders and stakeholders on weather outlooks etc.
- NDC Act 1984, CA Act 2010, CEPA Act 2014

Regional Reflections

What's Working

- Planning together/good coordination at all levels
- Impact based decision support services (IDSS)
- Inclusion (leaving no one behind)
- NEOC/Multi hazard EWS operational and functional

- Governance Structure in place
- Traditional Knowledge Application
- Enhanced Community Awareness/Resilience
- Tsunami Sim Ex (PacWave, Tsunami Ready)
- Availability of Sector-specific products
- Leaders/Directors leading by example-Anticipation of disasters – looking beyond!
- Consistent Prayers and Faith of our leaders/communities etc
- Humanitarian Clusters/Sectors in some countries
- Tsunami WG-PICT
- Regional NDMOs Minister’s Meetings

What’s Not Working (Challenges)

- ERN & ESN – not all PIC countries are covered
- Monitoring networks-national coverage & ageing
- Priorities dependent on leadership (changing leaders will also impact priorities)
- Unclear roles and responsibilities
- People problems/varying mentalities and perceptions
- Inconsistent communication/coordination
- Remoteness of some communities
- Less funding/resources
- Staff turnover/ Understaff
- Support to Hydrological services
- Lack of technical expertise
- NO Follow Up/ Monitoring of Actions/Implementation work from Reports eg) PDNA etc
- Data Sharing
- Sustainability of activities

Recommendations

- Regional mapping of platforms and community of practice to identify common threads
- Regional Multi-hazard Platform for regular planning meetings at regional and national levels (DMO/Meteorology/Hydrology/Geohazards)
- Alignment of regional and national MHEWS Programmes to optimize limited absorptive capacity and resources

Samoa

National Reflections

- All 3 Divisions housed and operating collaboratively under the same Ministry (Ministry of Natural Resources & Environment - MNRE)
- Samoa Meteorology/Disaster Management Office/Water Resources Division
- 3 ACEOs work together cooperatively
- Disaster and Emergency Management Act 2007, MET Act 2021, NWRM Act 2008, NDMP 2017-2021 (currently under review, to be launched by the end of the year), MHEWS Policy 2022/CONOPS, NEOC SOP, Tropical Cyclones & Tsunami SOPs and Action Plans.
- Existing National Disaster Council (NDC) or CABINET of 12 Ministers, chaired by the Hon PM.

- Active Disaster Advisory Council (DAC) comprised of all heads of govt Ministries/CSOs/SOEs/Private & Public Sector/Development Partners/Diplomatic Cor
- CDCRM

Regional Reflections

What's Working

- Planning together/good coordination at all levels
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Solomon Islands

National Reflections (NDMO & NMHS)

- NDMO & Meteorology – Under on Ministry
- Hydrology in separate Ministry
- Coordination mechanism – specified under National Disaster R (RISK) MANAGEMENT PLAN – (SIN)
- MetService performs Hazard Advisor role in NEOC (Hosted by NDMO)
- Collaborate on Tsunami planning and operations for EW
- Collaborate on awareness programmes (CBDRM + Schools)
- No MoU required except where resource sharing involved

Regional Crystal Balling

Arrangements for Coordination

- On ad hoc basis for joint collaboration (like now)
- 2 different governance arrangement (NDMO – RDMM – Ministerial) & (NMHS – PMC – Ministerial) (Two platform two ministerial)
- Yet both serve common goals under the FRDP (Goals 2 & 3)

Model for Collaborations

- Collaboration under one ministerial but separate platform (Example: Transport and Energy - Separate platform one ministerial platform)
- Collaboration under one platform (One council one ministerial)

Proposal for Way Forward

- Suggest one platform one ministerial for governance, collaboration and coordination
- Hosting of collaboration jointly to be shared by Secretariats (SPREP & SPC)
- Hosting country to be on a rotational - to enable buy-in of emergency agencies in-country
- All emergency players to form at regional level under the platform as committee, panel or whatever grouping for technical aspects

Tonga

MET and NDRMO Collaboration

- In Tonga, NDRMO and MET are both under MEIDECC and they collaborate with Tonga Geological Services. The three departments are collectively responsible for the early warning system
- MET is responsible to provide climate/weather related information, while Geology is responsible to provide geohazard information to the public. The NDRMO supports both their functions/responsibilities on information dissemination as they have close collaboration with local government (district and town officers).

- MET/NDRMO and Geology/NDRMO continue to jointly facilitate advocacy and awareness sessions via radio and other forms of media, including social media during all phases of disaster
- NDRMO relies on MET and Geology's data for prepositioning of stocks – for example during the current El Niño alert, the NDRMO through its cluster coordination mechanism rolled out response planning exercise with the respective sectors.
- The NEW DRM Act 2021 formalizes the establishment of an multi-hazard early warning system for Tonga (Section 87 – Establishment and Section 88 – Responsibilities for Dissemination)
- With regulation expected to be developed over the next year, it is expected that the cooperation and partnership between MET/Geology and NDRMO will be further strengthened.

Challenges

- Coordination Challenges between agencies
- Translation of weather/climate information to public/communities
- People-Centered End to End MHEWS
- Inadequate staff contributing to capacity and resource challenges
- High maintenance cost for Early Warning Systems being a major risk factor

Recommendations

National

- Need for regulations to be developed to formalize operational processes and procedures for MHEWS.
- Increase number of targeted investments towards strengthening risk knowledge
- Targeted investments towards governance strengthening across all three agencies

Regional

- Build on existing gaps identified and meaningful engage government partners in identifying initiatives – Stop the TOP DOWN approach
- More investment needs to go to the national level instead of sitting with the regional level

Tuvalu

- NDMO and Tuvalu Met Services are under the same Ministry.
- Consultation workshops / Emergency Refresher Trainings / Awareness campaigns (World Meteorological Day, etc..)
- NDC Quarterly meetings.
- Declaration State of Emergency
- Emergency Response Operations / Search and Rescue, etc.
- Aligned SOPs and Legislations.

Vanuatu

Preparation (Planning, Coordination & Collaboration)

- VMGD and NDMO are under the same Ministry of Climate Change Adaptation and, share the same building.
- Data analysis & interpretation for effective decision-making
- Warning and Advisories shared with NDMO
- Preparedness Action (Roles and Responsibilities):
- Products: www.vmgd.gov.vu
- Data information
 - EAR watch
 - ENSO Watch
 - Clide
 - TC seasonal Outlook
 - Marine forecast
 - Volcano bulletin
- Mechanism of operation
 - Business Plan
 - VMGD NSDP 2014-2023
 - Act
 - Corporate Plan 2022-2026
 - DRRM Policy
- Community education & awareness:
 - Multi hazard early warning information
 - Toll free number 116
 - Text messaging to general public
 - Email group list
 - Social media platform
 - Daily news paper
 - Stakeholders communication network

Response (Implementation, Coordination & Collaboration)

- VMGD provide early warning information to NDMO, stakeholders and end users
- Early warning response for SLOW & RAPID ONSET
- Rapid onset; tropical cyclone, flash flooding and landslides, tsunami infrastructure damage, storm surges, human displacement, volcanic ash
 - Example:
 - TC cyclone (text messaging) NDMO
 - Tsunami (text message) NDMO
- Slow onset; El Nino & La Nina, temperature extremes, sea level rise & coastal erosion, food security, salt water intrusion (Agri soils & water source)
- Example:
 - El Nino & La Nina
 - Sea level rise

Recovery (Implementation, Coordination & Collaboration)

- Implementation of recovery activities led by NDMO and stakeholders:
 - Assessment and damage evaluation
 - Partnership and collaboration
 - Emergency relief and basic services
 - Education and awareness
 - Health and public Health
 - Infrastructure upgrades
 - Infrastructure rehabilitation
 - Community engagement
 - House and shelter
 - Livelihood restoration
- Lessons learned experiences and assessment (e.g. IBF) to improve future Planning and Response “Action Plan”
- Inform Development and Donor partners for assistance e.g. PDNA
- Contribute to knowledge base on characteristics of cause and impact natural disasters.

Regional

- Value in retaining the Pacific Meteorological Council and the Regional Disaster Managers Meeting
- There is a need for the two groups to come together
- Need to flexible around timing of the joint meeting
- Use the platform to share SOPs, experience ...
- Using regional experiences to take back to country level
- Different platforms – don’t always have joint representation
- Pacific Met Council (Aug 2023, 2025), Regional Disaster Managers Meeting (2024)
- Pacific Resilience Meeting (Oct 2023), Pacific Island Climate Outlook Forum (Oct 2023)
- Pacific Meteorology Ministers Meeting (Aug 2023), Pacific DRM Ministers Meeting (2025)
- SPREP and SPC to figure out coordination
- Achieve all of the above is our regional goal

Annex 4: Joint Meeting Outcomes

Joint Meeting of the Regional National Disaster Management and National Meteorological and Hydrological Services Outcomes

(11 August 2023)

Commend the auspices of the EU-funded Intra-ACP Climate Services and Related Applications Programme (ClimSA) and the UN Office for Disaster Risk Reduction for convening the Joint Meeting of the Pacific Regional NDMO and NMHS, which included representatives from American Samoa, Cook Islands, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu, with technical advice provided by the World Meteorological Organisation, the Pacific Community and the Secretariat of the Pacific Regional Environment Programme.

Key Outcomes:

1. **Recommend** that SPREP and SPC facilitate the establishment of a structured mechanism to foster collaboration and interaction between providers and users of early warning information which will contribute to building a resilient Pacific.
2. **Recommend** that SPREP and SPC work together to support the mechanism alongside key partners WMO, UNDRR, PDF and others <regional actors>.

The joint meeting also noted the following:

1. More investment to address geological and hydrological hazards (earthquakes and Tsunami) in our region.
2. Build capacity of all the players along the early warning value chain.
3. Take an inclusive approach towards hydrometeorological product development (co-design, co-develop, etc)
4. Better communicate early warning information.

Novotel Hotel
Nadi, Fiji

Annex 5: List of Participants

No	Title	First Name	Surname	Position in Organisation	Organisation	Country
1	Mr.	Arona	Ngari	Director	Cook Islands Meteorological Service	Cook Islands
2	Mr.	John	Strickland	Director	Emergency Management Cook Islands-Office of the Prime Minister	Cook Islands
3	Ms.	vasiti	Soko	Director	National Disaster Management Office	Fiji
4	Ms.	Takena	Redfern	Ag. Director Climate Change and Disaster Risk Management	Office of Te Beretitenti	Kiribati
5	Mr.	Ueneta	Toorua	Director	Kiribati Meteorological Service	Kiribati
6	Mr.	Isidore Simon	Robert	Director	National Disaster Management Office	Marshall Islands
7	Mr.	Reginald	White	Director/Meteorologist in Charge	Weather Service Office	Marshall Islands
8	Mr.	Johannes	Berdon	Official In Charge	National Weather Service Office, Chuuk, Federated States of Micronesia	Federated States of Micronesia
9	Mr.	Diminski	Reweru	Director of Disaster Risk Management Office	Nauru Emergency Services	Nauru
10	Mr.	Graymea	Ika	Director	Nauru Meteorology Hydrology Service	Nauru
11	Ms.	Rossylynn	Pulehetoa-Mitiepo	Director	Niue Meteorological Service	Niue

12	Mr.	Robin	Hekau	Manager	National Disaster Management Office	Niue
13	Ms.	Dilwei M.	Ngemaes	Meteorologist In Charge / Director	National Weather Service, Weather Service Office, Palau	Palau
14	Mr.	Waymine	Towai	Executive Director	National Emergency Management Office	Palau
15	Mr.	Jimmy	Gomoga	Director	Papua New Guinea National Weather Service	Papua New Guinea
16	Ms.	Fetalai	Gagaeolo	Principal Community Disaster Preparedness Officer, Disaster Management Office	Ministry of Natural Resources and Environment	Samoa
17	Dr.	Luteru	Tauvale	Samoa Meteorology Division	Ministry of Natural Resources and Environment	Samoa
18	Mr.	Jonathan	Tafiariki	Director	National Disaster Management Office	Solomon Islands
19	Mr.	David	Hiriasia	Director	Solomon Islands Meteorological Service	Solomon Islands
20	Mr.	Mafua-'i-Vai'utukakau	Maka	Director	National Emergency Management Office (NEMO)	Tonga
21	Mr.	Ofa	Faanunu	Director	Tonga Meteorological Service	Tonga
22	Mr.	Luka	Selu	Director	National Disaster Management Office	Tuvalu
23	Mr.	Tauala	Katea	Director	Tuvalu Meteorological Service	Tuvalu
24	Mr.	Abraham	Nasak	Director	Vanuatu National Disaster Management Office	Vanuatu

25	Mr.	Montine	Romone	Director	Vanuatu Meteorology and Geohazards Department	Vanuatu
26	Mr.	Henry	Taiki	Representative for the South-West Pacific	World Meteorological Organization	Samoa
27	Mr	Viliame	Vereivalu	Principal & Hydrology Focal Point	Fiji Met Services	Fiji
28	Mr	Andre	Siohane	Director & Hydrology Focal Point		Niue
29	Mr.	Malaki	Iakopo	ACEO, Water Resources Division	Ministry of Natural Resources and Environment	Samoa
30		Folauhola	Latuila	Officer	Water Resources	Tonga
31	Mr.	Jack	Kaobata	Officer & Hydrology Focal Point		Solomon Islands
32		Brooks	Rakau	Assistant Director	Hydrology Department	Vanuatu
33	Mr.	David Corbelli	Corbelli		UK Met Office	United Kingdom
34	Ms.	Elisabeth	Thompson		UK Met Office	United Kingdom
35	Ms.	Karen	McCourt		UK Met Office	United Kingdom
36	Mr.	Bill	Leathes		UK Met Office	United Kingdom
37	Mr	Cyrille	Konore		World Meteorological Organization	
38	Ms	Xioa	Zhou		World Meteorological Organization	

39	Ms.	Elinor	Lutu-McMoore	Meteorologist In Charge	U.S. National Weather Service	American Samoa
40	Dr.	Andrew	Jones	General Manager - International Development	Australian Bureau of Meteorology	Australia
41	Ms.	Corinne	Malot	Oceania Sales and Market Manager	Campbell Scientific Australia	Australia
42	Mr.	Duncan	Tippins	Director of Meteorology	Weatherzone	Australia
43	Dr.	Geoffrey	Gooley	Program Manager	Commonwealth Scientific and Industrial Research Organisation	Australia
44	Dr.	Jaclyn	Brown	Research Director, Climate Intelligence	Commonwealth Scientific and Industrial Research Organisation	Australia
45	Ms.	Katherine	Berryman	Office of the Pacific	Department of Foreign Affairs and Trade	Australia
46	Mr.	Martin	Palmer	Director, Senior Leader APAC	Weatherzone/DTN	Australia
47	Dr. /Prof	Simon	McGree	Technical Science Lead Pacific Climate Services	Australian Bureau of Meteorology	Australia
48	Mr.	Tilo	Happ	Business Development Manager	Commonwealth Scientific and Industrial Research Organisation	Australia
49	Mr.	Timothy	Cookes	Regional Sales Manager	Enterprise Electronics Corporation	Australia
50	Dr. /Prof	David	Farrell	Principal	Caribbean Institute for Meteorology and Hydrology	Barbados
51	Dr. /Prof	Awnesh	Singh	Senior Lecturer	University of the South Pacific (USP)	Fiji

52	Mr.	Herve	Dalmanian	Team Leader Oceanography	The Pacific Community (SPC)	Fiji
53	Ms.	Jacqueline	Reid	Hydrologist	The Pacific Community (SPC)	Fiji
54	Mr.	Jiuta	Korovulavula	Programme Officer	UNESCO/IOC	Fiji
55	Dr. /Prof	Kristine	Tovmasyan	Programme specialist	UNESCO Pacific	Fiji
56	Ms.	Litea	Biukoto	Disaster Risk Team Leader	The Pacific Community (SPC)	Fiji
57	Ms.	Merana	Kitione	Capacity Development and Communications Officer	The Pacific Community (SPC)	Fiji
58	Mr.	Narend	Kumar	Meteorological Inspector	Pacific Aviation Safety Office (PASO)	Fiji
59	Ms.	Nazgul	Borkosheva	Programme Management Officer	United Nations Disaster Risk Reduction	Fiji
60	Dr.	Rhonda	Robinson	Director GEM	The Pacific Community (SPC)	Fiji
61	Ms.	Ruci	Senikula	Regional Coordinator -Disaster Ready	Pacific Disability Forum	Fiji
62	Dr.	Sivendra	Michael	Disaster Risk Management Specialist	United Nations Development Programme	Fiji
63	Mr.	Takashi	Oba	Assistant Resident Representative	Japan International Cooperation Agency	Fiji
64	Mr.	Zulfikar	Begg	Coordinator Applied Science	The Pacific Community (SPC)	Fiji
65	Ms.	Lebaiatelaite	Gaunavinaka	In-Country Geospatial and Adaptation Specialist	Climate Change Division	Fiji
66	Ms.	Sophie	Martinoni	Director	Météo France	French Polynesia

67	Mr.	Stephen	Hunt	Chief Executive Officer	MetService	New Zealand
68	Mr.	James	Lunny	WMO Manager	Meteorological Service of New Zealand Ltd	New Zealand
69	Mr.	Michael	Brewer	Senior Adviser	New Zealand Ministry of Foreign Affairs and Trade	New Zealand
70	Ms.	Paula	Acethorp	Chief Meteorological Officer	Civil Aviation Authority New Zealand	New Zealand
71	Mr.	Sebastien	Boulay	Advisor	Tomorrow.io	New Zealand
72	Mr.	Andre Maurice	Siohane	Regulatory Officer	Government of Niue	Niue
73	Mr.	Geoffrey G.	Kabino	Personal Assistant of Villaney Remengesau	OMEKESANG	Palau
74	Ms.	Villaney	Remengesau	Member	OMEKESANG	Palau
75	Mr.	Espen	Ronneberg	Senior Adviser Climate Change Multilateral Agreements	The Pacific Community (SPC)	Samoa
76	Mr.	Malaki Saufoi	Iakopo	Assistant Chief Executive Officer-Water Resources Division	Ministry of Natural Resources and Environment	Samoa
77	Mr.	Chung Wei	Aw	Business Development Manager APAC	OTT Hydromet	Singapore
78	Mr.	Jack	Kaobata	Water Resources Division	Water Resources Division; Solomon Islands Government	Solomon Islands
79	Prof	Jin Ho	Yoo	Director of International Cooperation Project division	APEC Climate Center	South Korea
80	Ms.	Josephine	Wilson	Director, Business Development & Sustainability	OTT Hydromet	Switzerland
81	Dr.	Jukka Petteri	Taalas	Secretary-General	World Meteorological Organization	Switzerland

82	Mr.	Peter	Dunda	Regional Officer Aeronautical Meteorology and Environment	ICAO	Thailand
83	Ms.	Karen	McCourt	Senior Stakeholder Relationship Manager	UK Met Office	United Kingdom
84	Ms.	Katie	Barkans	Operations Manager	Varysian	United Kingdom
85	Mr.	William	Leathes	International Development Manager	Met Office	United Kingdom
86	Mr.	Eric	Baptiste	Divisional Manager Satellite Systems	Enterprise Electronics Corporation	United States
87	Mr.	Paul	Bridge	Market Development Manager	Campbell Scientific	United States
88	Mr.	Raymond Masaharu	Tanabe	Director	NOAA/National Weather Service, Pacific Region	United States
89	Ms.	Elisapeta	Alailima-Eteuati	Programme Coordinator	United Nations Environment Programme	
90	Ms.	Gabrielle	Emery	Head of Pacific Subregional Office	United Nations Disaster Risk Reduction	
91	Dr. /Prof	Joseph	Intsiful	Senior Climate Information and Early Warning Systems Specialist	Green Climate Fund	
92	Mr.	Luke	Pierce	Managing Director	Varysian Ltd	
93	Mr.	Peter	Sinclair	Water Resources Assessment and Monitoring Coordinator	The Pacific Community (SPC)	
94	Mr.	Thomas	Stewart	Hydrologist	The Pacific Community (SPC)	Fiji
95	Ms	Tagaloa	Cooper	Director, Climate Change Resilience Programme	Secretariat of the Pacific Regional Environment Programme (SPREP)	Samoa

96	Mr.	Salesa	Nihmei	Meteorology and Climate Advisor	Secretariat of the Pacific Regional Environment Programme (SPREP)	Samoa
97	Mr.	Philip	Malsale	Climatologist	Secretariat of the Pacific Regional Environment Programme (SPREP)	Samoa
98	Ms.	Wati	Kanawale	Finance & Administration Officer	Secretariat of the Pacific Regional Environment Programme (SPREP)	Samoa
99	Ms.	Tessa	Tafua	Associate Project Support Officer	World Meteorological Organization	Samoa
100	Mr.	Charlie	Reed	IT	Secretariat of the Pacific Regional Environment Programme (SPREP)	Samoa
101	Mr.	Naheed	Hussein	Project Manager - ClimSA	Secretariat of the Pacific Regional Environment Programme (SPREP)	Samoa
102	Ms.	Patricia	Mallam	Knowledge Broker Intra-African Caribbean Pacific Climate Services and Related Application Programme (ClimSA)	Secretariat of the Pacific Regional Environment Programme (SPREP)	Samoa
103	Ms.	Siosinamele	Lui	Climate TK Officer	Secretariat of the Pacific Regional Environment Programme (SPREP)	Samoa
104	Mr.	Sunny	Kamuta Seuseu	Acting Project Manager Vanuatu CISRDP (VanKIRAP) Project	Secretariat of the Pacific Regional Environment Programme (SPREP)	Vanuatu
105	Ms.	Teuila	Fruean	COSPPac Technical and Finance Officer	Secretariat of the Pacific Regional Environment Programme (SPREP)	Samoa
106	Mr.	Sosikeni	Lesa	Media and Public Relations Officer	Secretariat of the Pacific Regional Environment Programme (SPREP)	Samoa

107	Mr.	Terry	Atafilo	Regional Climate Centre Coordinator, ClimSA	Secretariat of the Pacific Regional Environment Programme (SPREP)	Samoa
108	Ms.	Yvette	Kerslake	Technical Adviser, Science to Services, PCCC	Secretariat of the Pacific Regional Environment Programme (SPREP)	Samoa
109	Mr.	Silipa Art	Mulitalo	ClimSA Consultant	Secretariat of the Pacific Regional Environment Programme (SPREP)	Samoa
110	Ms.	Audrey	Brown-Pereira	Executive Officer	Secretariat of the Pacific Regional Environment Programme (SPREP)	Samoa