

**AMS 2006
International Session
San Antonio**



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Secretariat of the Pacific Regional
Environment Programme**

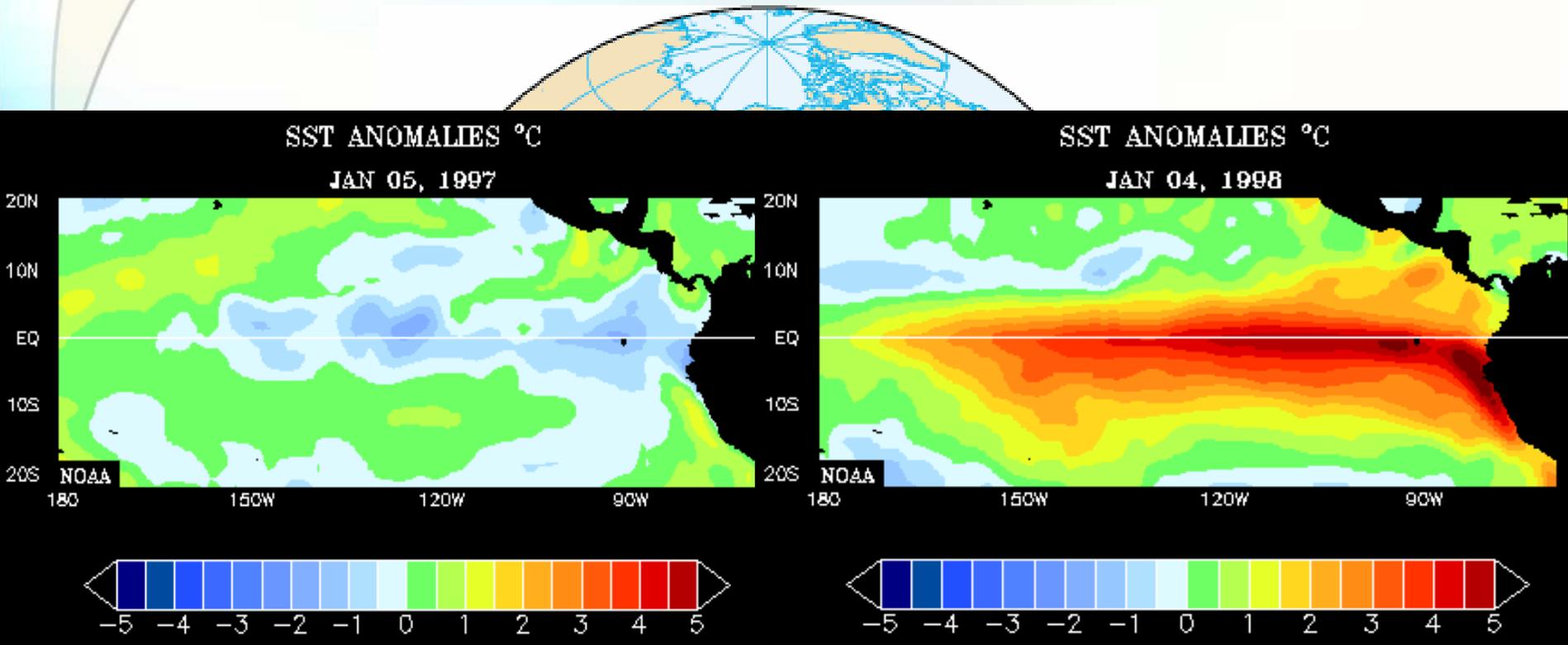
12 January

Summary

- **The Pacific Ocean, its islands, and Pacific NMHSs**
 - **The ocean and its people**
 - **Pacific NMHS and their core issues**
- **An evolution in climate information demand**
 - **Events of recent past as drivers of information demand**
 - **Lessons of ENSO and an NMHS information response**
- **What's happening now**
 - **Recent developments**
 - **Shared goals and efforts, connecting global to regional and to the local**

The Pacific Ocean, its islands, and Pacific NMHSs

The Pacific Ocean

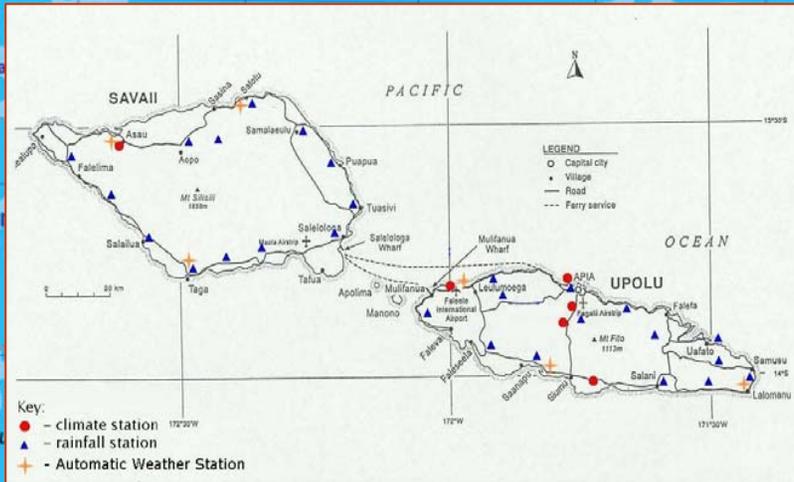


1997-98 El Nino

1998 - 99 La Nina

Image source: CIA World Factbook

The Pacific Ocean, its islands, and Pacific NMHSs



The Pacific Ocean, its islands, and Pacific NMHSs

- **National Meteorological Services in the Pacific**
 - **Operations are primarily focused on supporting basic observations in support of weather and aviation requirements and some weather forecasting**
 - **Fiscally challenged**
 - **Want to improve existing services and products of any that are offered**



The Pacific Ocean, its islands, and Pacific NMHSs

NMHS Issues and a swot of sorts

Key Weaknesses

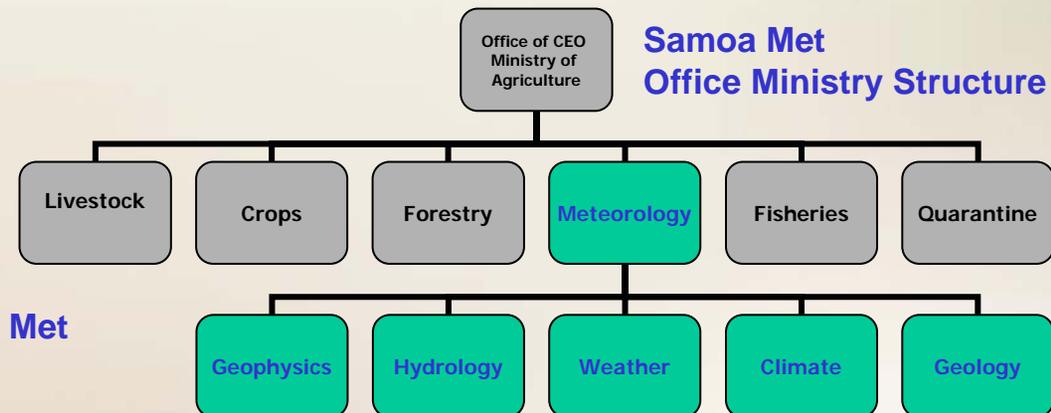
- Lack of proper, recognized and supported mandate, and institutional support
- Limited financial resources for procurement/maintenance
- Lack of proper infrastructure, facilities
- Lack of technical tools
- Lack of available skilled human resource base,
- Lack internal structure and financial resources for HR development and retention

Possible future threats

- Reduced/split mandate, institutional responsibility for related themes e.g. climate change monitoring (environment ministry), operational aviation meteorology (aviation authority)
- Further reduced fiscal year budget for HR and technical support and development
- Increased competition for science graduates (skilled and unskilled) from local and overseas employers



Tonga Met Office



The Pacific Ocean, its islands, and Pacific NMHSs

NMHS Issues and a swot of sorts

Current strengths

- **Stable staffing environment**
- **Core technical staff trained with good chance of long term retention**
- **Projects underway to assist in technical areas (PI-GCOS, PI-CPP etc)**
- **Proposals written and submitted (WMO VCP, bi-lateral, multi)**
- **Regional training programmes/workshops for met and climate in Fiji, NZ, Aust providing up-skilling opportunities**
- **Relationships/partnerships with NOAA, NIWA, ABM**

Future opportunities

- **Participation in climate change and other environmental programs**
- **Improved channels for gaining assistance**
- **Consolidated plans for expansion of local monitoring networks**
- **Career paths for HR retention and development**
- **Continued participation in available training programmes and in new ones**
- **CROP regional programmes**
- **Extreme weather, climate, now geo-related extreme events**

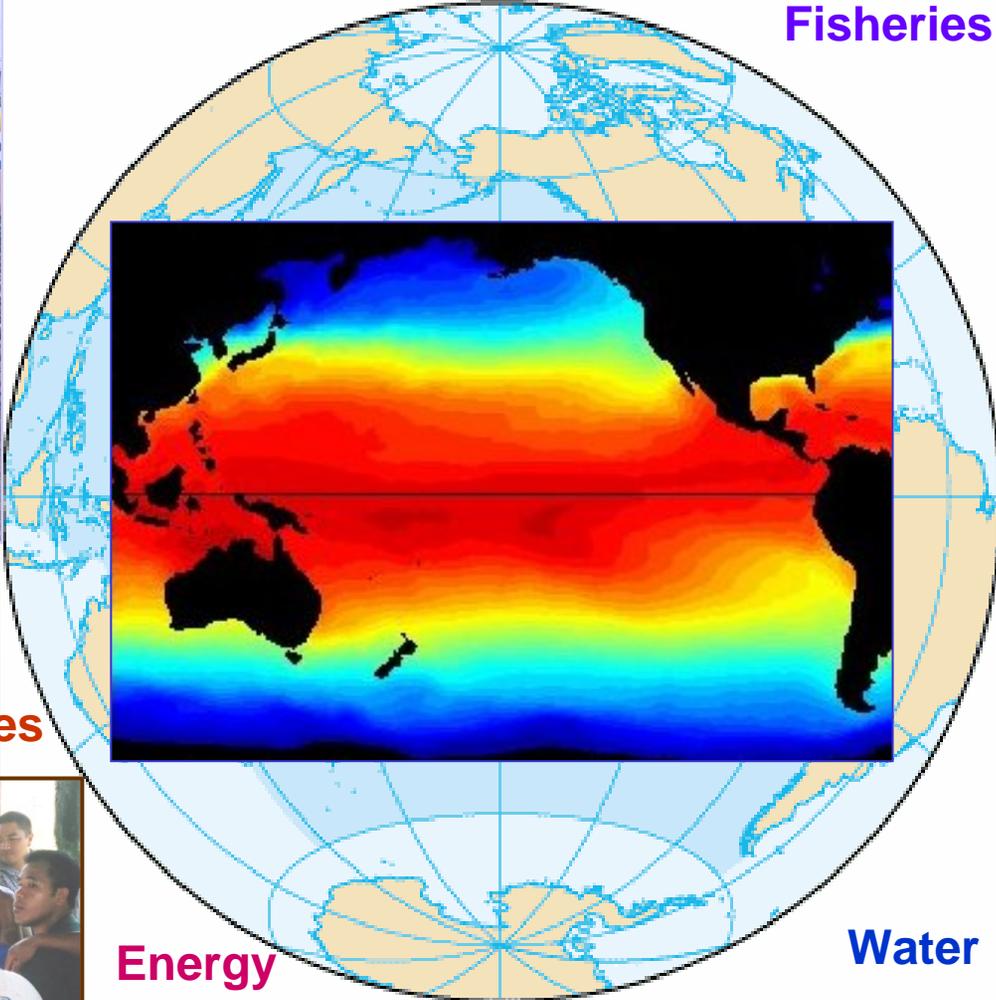


An evolution in climate information demand



Agriculture

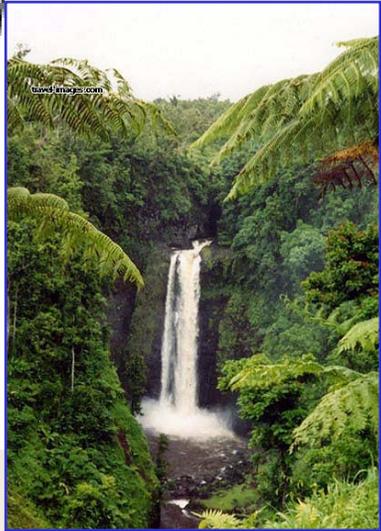
Village Communities



Fisheries



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Energy

Water

Health

Natural Resources & Environment

An evolution in climate information demand



“El Nino is here” signboard in Pohnpei, Federated States of Micronesia – put up in the early stages of the 1997 – 1998 El Nino raising awareness of likely oncoming drought and the need to conserve water

1997 – 1998 El Nino impacts in the Pacific

- Record drought length and tropical cyclones
 - Drinking water shortages
 - Crop losses (staples lost), food shortages
 - Wildfires become major hazard
 - Poor local fisheries catches
-
- Agriculture industry crippled in Fiji, PNG, Tonga – sugar farmers given cash aid
 - Major job losses in fishing industry in North-west Pacific
 - Energy sector spends more on imported diesel as hydro power zeroes
 - Health danger as drinking water quality drops

An evolution in climate information demand

Climate Information champions



Electronic Edition: Jan. 1995 - Present

A Bulletin of the Pacific El Niño-Southern Oscillation (ENSO) Applications Center Pilot Project:
University of Guam • University of Hawaii • NOAA • Pacific Basin Development Council

Pacific El Niño-Southern Oscillation (ENSO) Applications Center Pilot Project:



NOAA



UOG/WERI



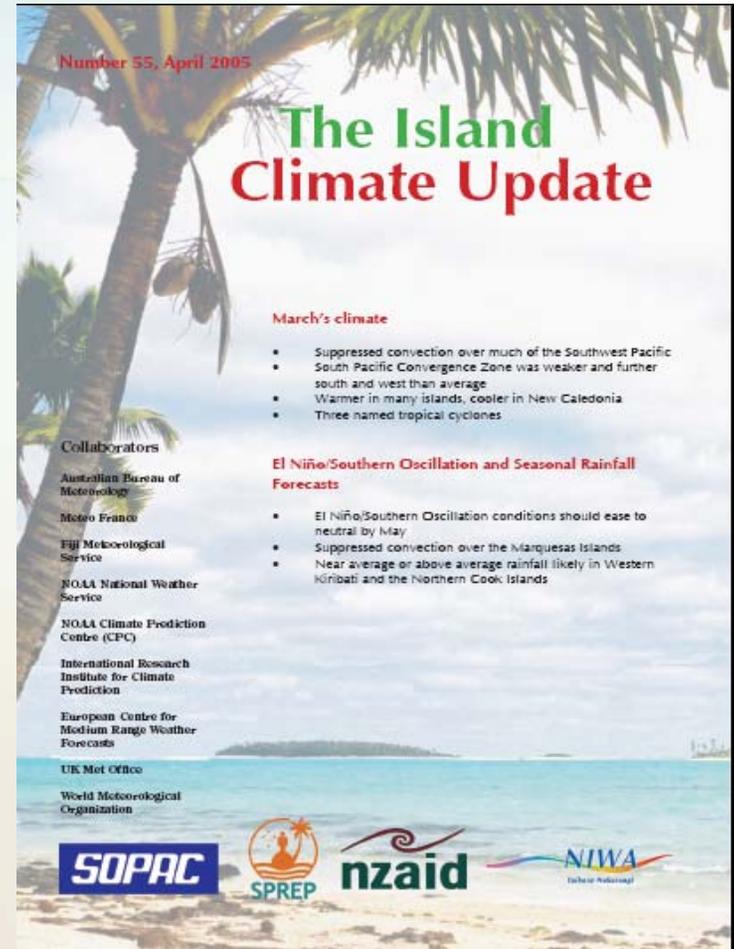
UH/SOEST



PBDC

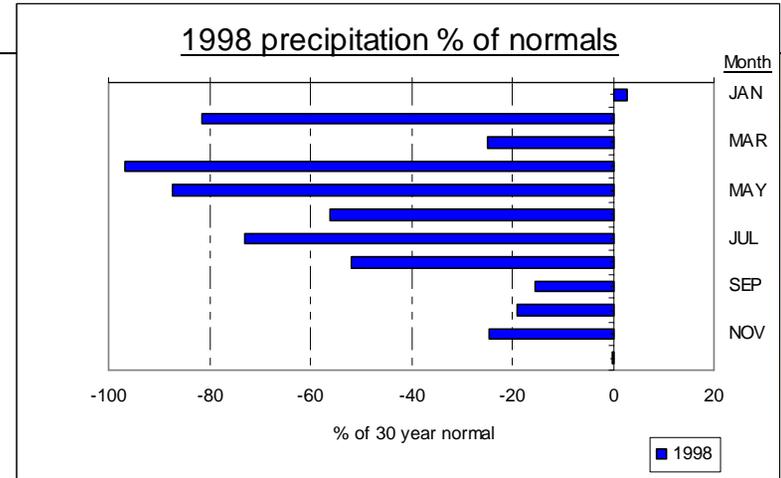
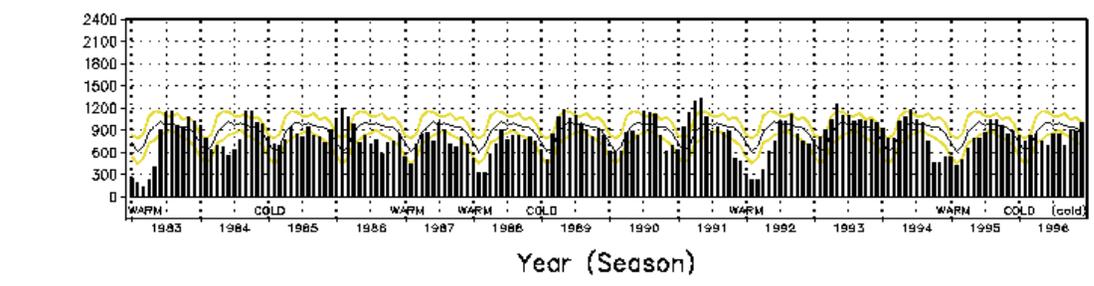
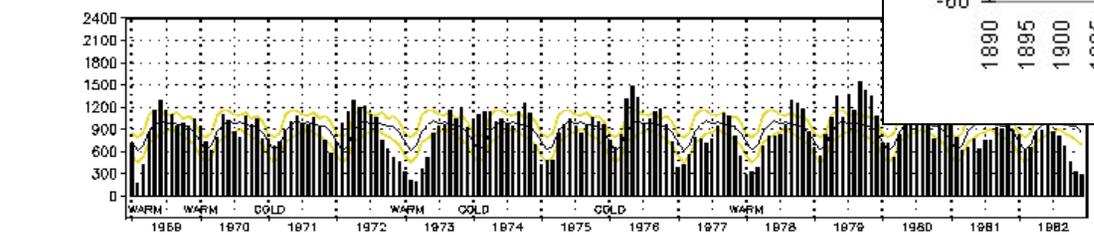
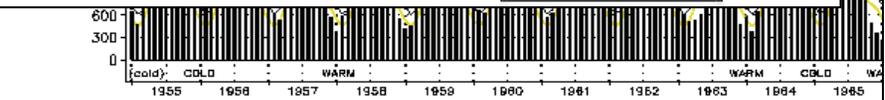
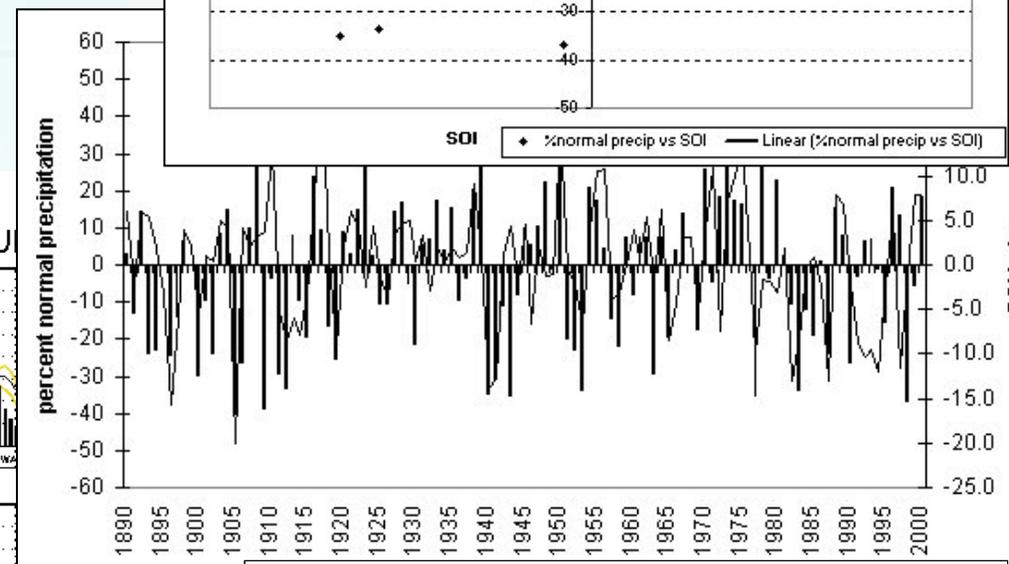
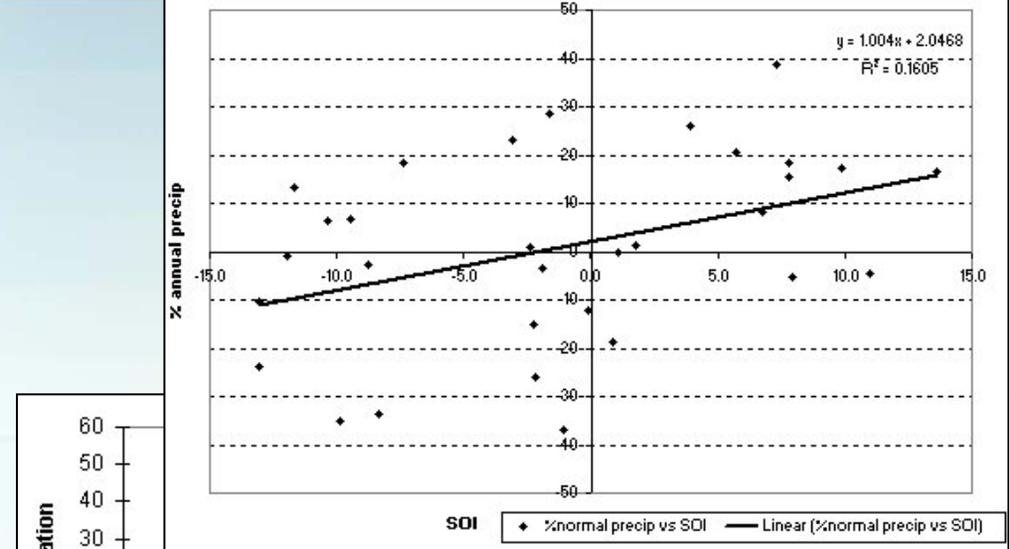
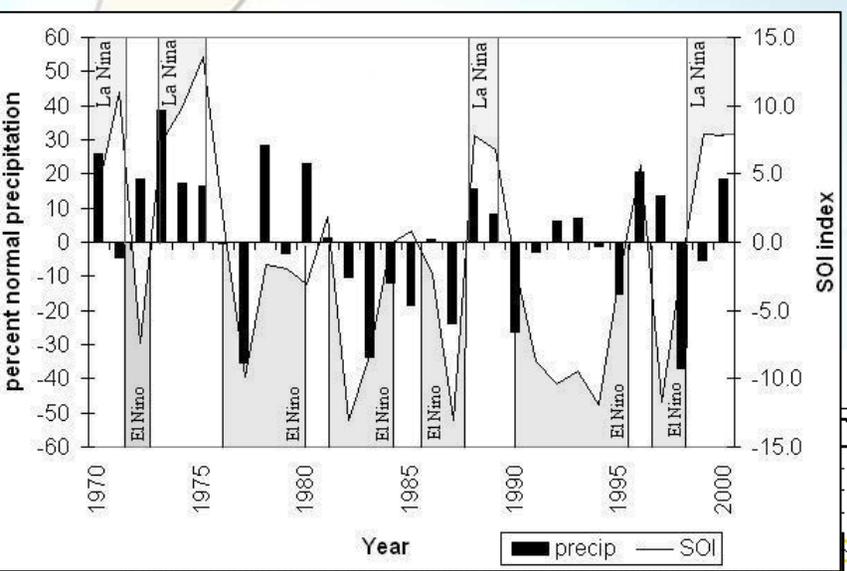
• **Pacific ENSO Applications Center (PEAC)** – collaboration of NOAA (OGP & NWS), University of Hawaii, University of Guam, Pacific Basin Development Council; est. since 1994; **END-USER DRIVEN** and **FOCUSED**

• **Island Climate Update (ICU)** – more NMHS focused; NIWA (NZ), SPREP, SOPAC, NZAID; **NMHS DRIVEN**

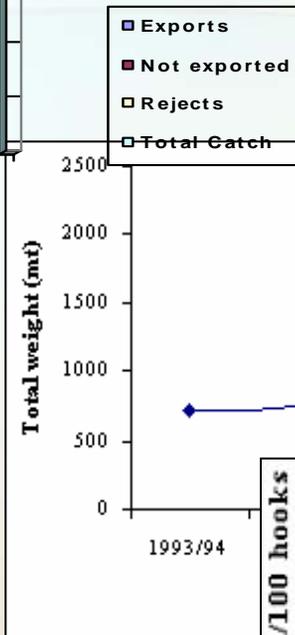
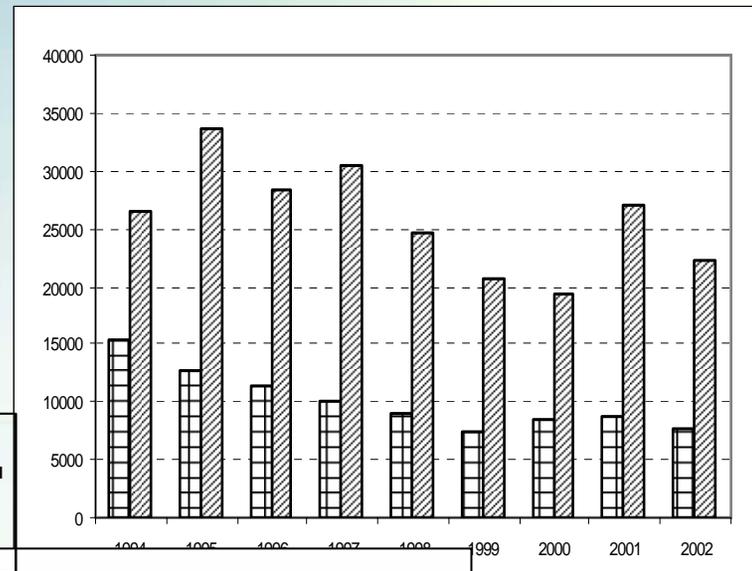
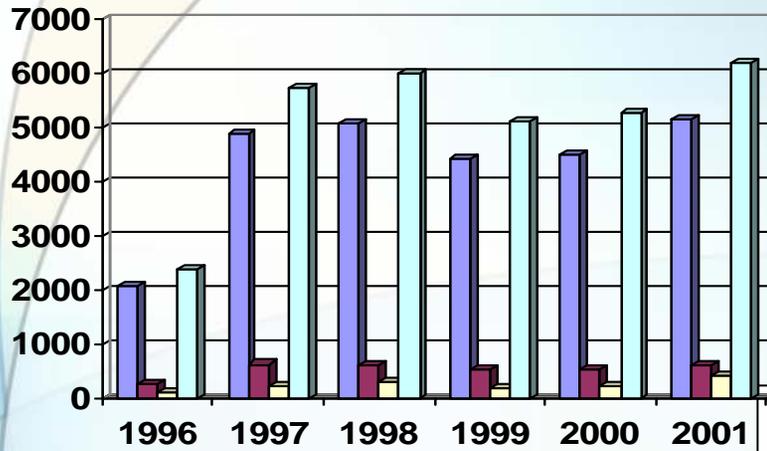


• **South Pacific Seasonal Outlook Reference Material (unofficial)** – Bureau of Meteorology

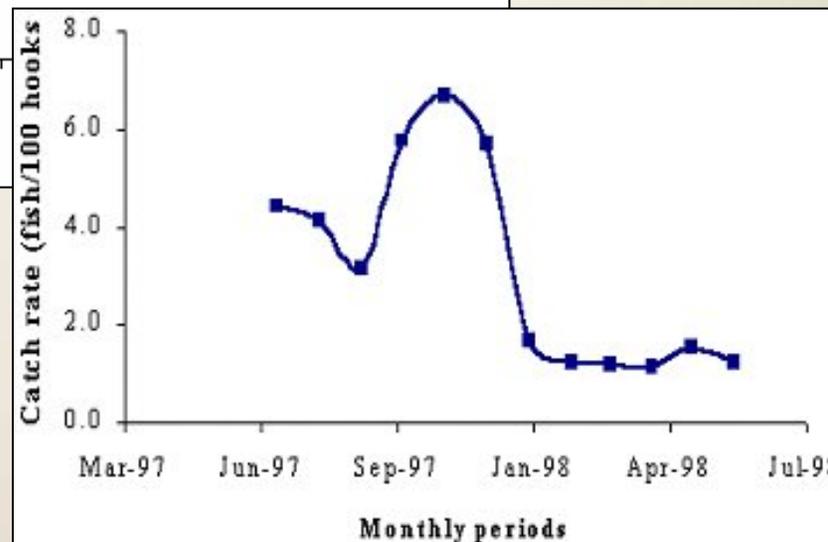
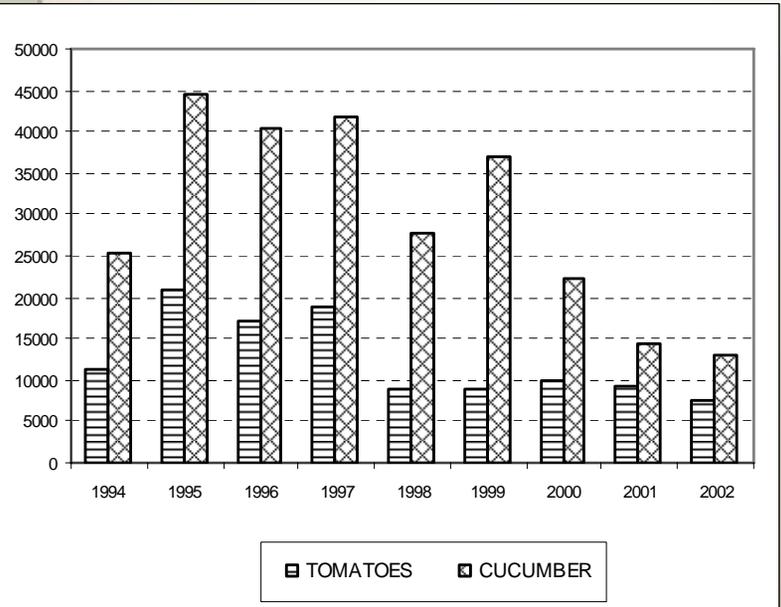
NMHS – Becoming climate data experts through working with regional and international partners



NMHS – Serving local end-users with climate data expertise



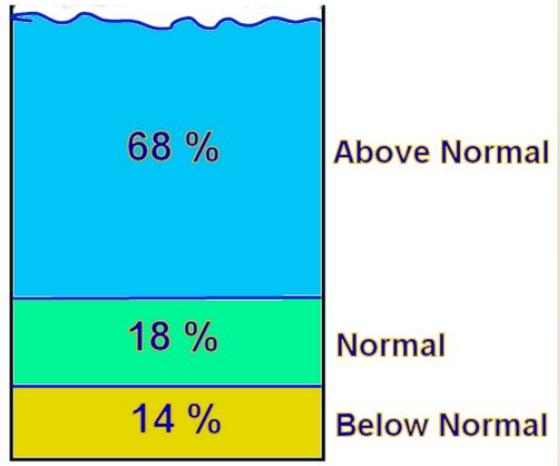
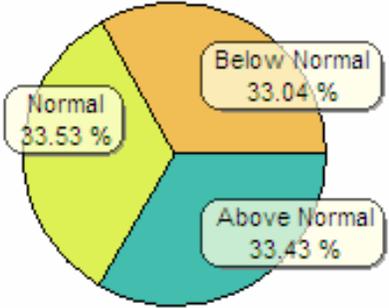
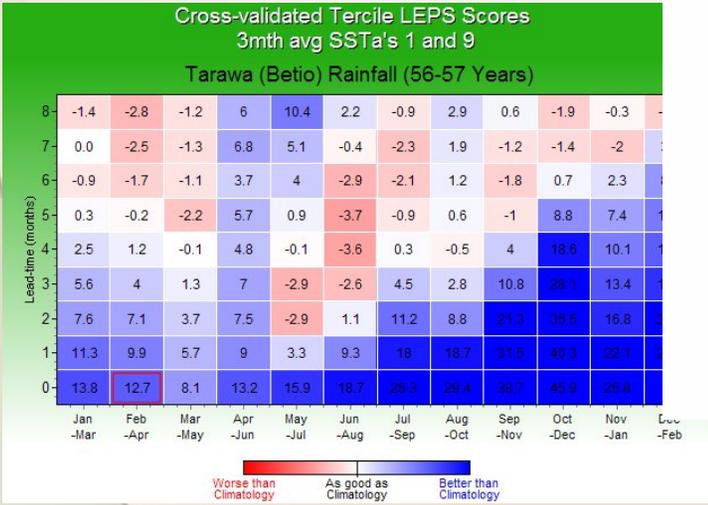
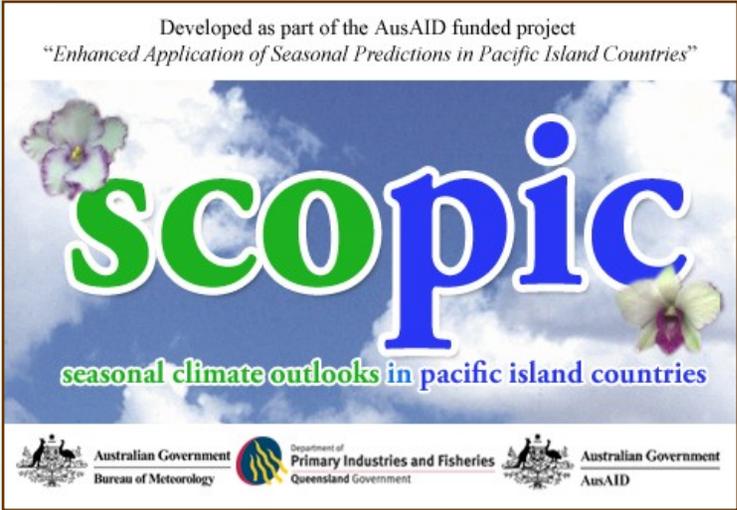
HEAD CABBAGES



An evolution in climate information demand

Some resulting NMHS Pilot Application Projects

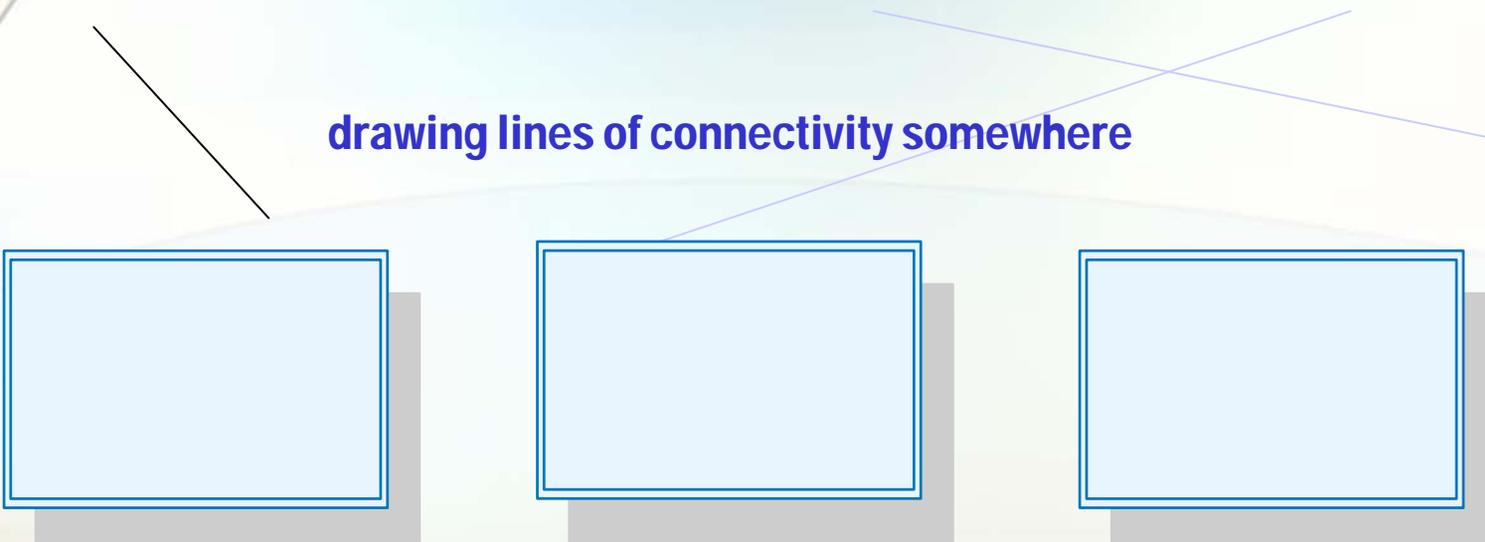
- NMHS seasonal forecasting tool 'SCOPIC'
- Sugar cane in Fiji
- Other possible application areas
 - Water Resources in Tonga, Samoa
 - Grazing industry in Vanuatu
 - Fishing in Solomon Island, Republic of Kiribati
 - Pearling in Cook Islands
- Media Interactions



An evolution in climate information demand

Supporting Pacific NMHS: roles for regional Pacific organizations

drawing lines of connectivity somewhere

A diagram consisting of three empty blue rectangular boxes arranged horizontally. Each box is set on a grey rectangular shadow. A black line points from the top-left box towards the text 'drawing lines of connectivity somewhere'. A blue line starts from the top-right box, crosses the text, and extends towards the top-right corner of the slide.

- What are some of the responsibilities / roles / opportunities for Pacific NMHS?
- National vs. Regional vs. International: Just who is responsible for what? Any sense/opportunities in linkages?
- What are the possible solutions and how much of an investment are we looking at vs. the benefits?

Supporting Pacific NMHS: roles for regional Pacific organizations

SPREP and it's Climate Change Programme



Climate Change programme core components

1. Strengthened Meteorological Services
2. Understanding Climate Change, Variability and Sea-level Rise
3. Vulnerability, Adaptation and Mitigation
4. Policy Development on Climate Change
5. Ozone Depleting Substances



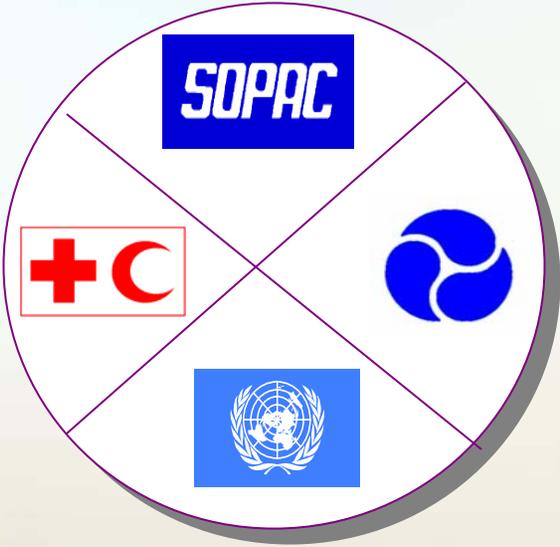
25 SPREP Members

American Samoa, Australia, Cook Islands, Federated States of Micronesia, Fiji, France, French Polynesia, Guam, Kiribati, Marshall Islands, Nauru, New Caledonia, New Zealand, Niue, Northern Mariana Islands, Palau, Papua New Guinea, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, United States of America, Vanuatu, Wallis and Futuna

Supporting Pacific NMHS: roles for regional Pacific organizations

SOPAC and it's Disaster Management Programme

The South Pacific Applied Geoscience Commission



International Federation of Red Cross & Red Crescent Societies

The Asia Foundation

United Nations Agencies



20 SOPAC Members

Australia, Cook Islands, Fiji Islands, Guam, Federated States of Micronesia, Kiribati, Marshall Islands, New Zealand, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu, Niue, Nauru and Palau, American Samoa, French Polynesia, New Caledonia and Tokelau.

Supporting Pacific NMHS: roles for regional Pacific organizations

The Regional Meteorological Services Directors (RMSD)



- Sponsored by SPREP and have met annually since 1993
- Brings together NMS Directors, regional and international partners and concerned agencies, has brought a regional approach aspect to meteorology in the region, opened up and made known national and regional needs in this area and has generated assistance through this forum

Supporting Pacific NMHS: roles for regional Pacific organizations

National

Met Services and their institutional and resource settings and needs

Engagement of user needs to set context for services?

National Development Plan linkages?

These to form national approach?

Regional

CROP agencies and their mandates, and programmes and linkages to national level

Engagement of (user and NMS) needs for these services?

What fits for the regional approach?

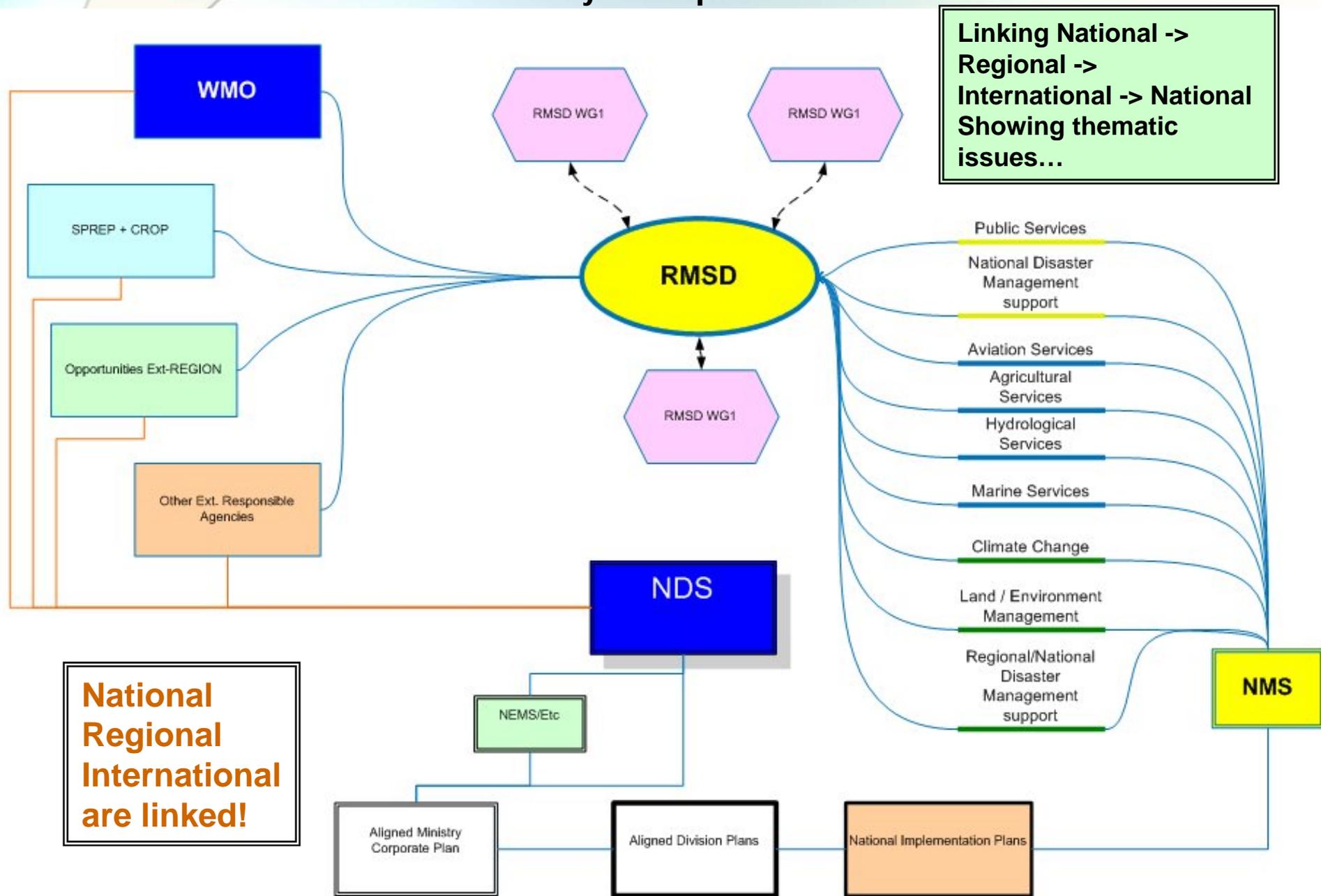
International

International agencies and their mandates
Relationship with national and regional

What processes can serve combination of all three?

What fits the international approach?

Linking National – Regional – International: success of Met oriented support is tied to an Enhanced Role of PIC NMHS in Country Development



Supporting Pacific NMHS: roles for regional Pacific organizations

Ongoing Projects (partial list)

- Climate Training Institute (APN, EWC, NOAA NWS, NIWA, USP)
- Technical Support Center (GUAN + GSN, NZ MetService, US-GCOS)
- Pacific Island Seasonal Forecasting Project (BoM)
- Pacific Island Data Rescue and Data Management projects (BoM, WMO, UKMO)
- Enhanced Telecommunications e.g.
 - RANET Community Radio (last mile)
 - HF Radio Email installation
 - PEAC, ICU (SOPAC, NOAA NWS, etc.)
- Basic Instrumentation (Oklahoma University, NZ MetService)
- Data Rescue (NZ NIWA, BoM, PICT Met services)
- PI-GCOS website and Server (Christina Lief, NOAA NCDC)



Supporting Pacific NMHS: observing systems programmes in the Pacific region

- **PI-GCOS (Pacific Islands – Global Climate Observing System)**
 - **Prioritizing the need for quality climate data and stations and includes an Action Plan covering 31 projects targeting identified NMHS needs in the Pacific, many of which are underway already**
- **PI-GOOS (Pacific Islands – Global Oceans Observing System)**
 - **Assisting development via improved capacity building, long-term ocean observations and delivery of useful products to the region.**
- **PacIOOS, similar to above with focus on North Pacific and integrated coastal management**
- **South Pacific Sea-level and Climate Monitoring Project**
 - **12 monitoring stations in place going on 15 years with excellent high resolution sea-level data**

- **Follow-on Presentation:**

- Linking National, Regional, and International Activities
- Integrated Climate Information System Concept
- US Pacific Climate Information System
- PaCIS US Contribution To WMO RA V RCC

(Delivered by James Weyman, NOAA NWS Director Honolulu Weather Forecast Office)

