WORLD METEOROLOGICAL ORGANIZATION

RA-V WORKING GROUP ON THE PLANNING AND IMPLEMENTATION OF THE WWW

THIRD MEETING
SYDNEY, 3 to 7 DECEMBER 2001

RA-V-PIW-3/Doc. 4(1)
(29.X.2001)

ITEM: 4

ENGLISH ONLY

THE PACIFIC METEOROLOGICAL SERVICES NEEDS ANALYSIS PROJECT

Background to the project

Sponsors of the project: AusAID, SPREP, WMO, Australian Bureau of Meteorology, Fiji Meteorological Service, French Polynesia Meteorological Service (Meteo-France), Meteorological Service of New Zealand Limited, US National Weather Service, Pacific Region.

Scope

The goal of the project was to improve the Pacific NMSs. The objectives of the project were:

- Identify national, regional, & international obligations, especially relating to: weather services; climate change and variability; international cooperation; and national development;
- Determine capacity of each service to meet these obligations and related needs; and
- Present a range of options for projects suitable for donor agencies to undertake to address the needs.

Outputs specified for the project were:

- Single report identifying:
  - -National/regional/international obligations and needs relating to meteorological Services and capacity of each NMS to meet these;
  - -An integrated range of project concepts to address these needs

Socioeconomic status

Most Pacific Island Countries (PICs) may be categorized as microstates and micro-economies with agriculture, forestry, fisheries, tourism, small-scale manufacturing, and mining as the main components of the cash economy. Their economies are characterised by a fairly large subsistence component, mainly agriculture and fishing. While they may all be classified as micro-economies, there is significant range in the composition and size of the economies – commercial agriculture, forestry and mining is confined largely to the countries with larger, more mountainous islands, while the smaller islands and coral atolls are dependent on tourism and fishing. Foreign aid forms a large part of the annual national public expenditure in most countries.

Major weather and climate concerns and user needs

Their economies and social activities are highly sensitive to weather and climate. Severe weather phenomena which adversely affect the economy and the society are:- tropical cyclones, droughts, floods, and prolonged heavy rain (not necessarily associated with cyclones). National activities which are particularly sensitive and need to respond to fluctuations in weather and climate are air, sea , and road transportation, disaster management, energy, and water resources. Climate variability (seasonal to interannual scale) featured strongly as a very significant new area of concern among users of weather and climate information, especially in respect of severe weather. Users generally appear not to be concerned greatly with climate change except in the context of climate variability. Many users do not see a distinction between the two.

The main concerns of users that surfaced in most countries were:

- Improved cyclone warnings (for public, aviation and marine interests);
- Climate variability and associated seasonal/interannual prediction, particularly of droughts, and cyclone frequency and intensity; and
- Climate change (mainly in relation to climate variability)

Areas of improvement identified

Related areas identified for improvement to address these concerns for NMSs were :- (focussed on common regional needs)

- Observations;
- Communications;
- Infrastructure; and
- Human resources development

Status of NMSs and resource levels

Pacific Island NMSs may be grouped into five categories as follows:

Category A: These NMSs receive full funding from external sources and are relatively well equipped – American Samoa, Federated States of Micronesia, Commonwealth of the Northern Mariana, French Polynesia, Guam, New Caledonia Republic of the Marshall Islands, Republic of Palau and Wallis and Futuna.

Category B: Fiji stands alone in this category. It has the most developed of fully nationally funded NMSs. It has also been designated as a Regional Specialized Meteorological Center (RSMC).

Category C: Nationally funded with some forecasting capability but poor infrastructure - Solomon Islands, Papua New Guinea, Vanuatu, and Samoa.

Category D: Partly funded nationally and partly funded by external sources. These NMSs have minimum forecasting capability and rely fully on Fiji and New Zealand for the provision of weather and climate services - Cook Islands, Tuvalu, Kiribati, and Tonga.

Category E: Partly funded nationally with external financial support, and with limited resources; their operations are minimal - Nauru, Niue, and Tokelau.

The analysis of the needs of users (detailed in Section 2.2) for weather and climate services and products identified the following five common themes:

a) Severe Weather Warnings
b) Climate Information and Prediction Services
c) Upgrade and strengthen observational networks
d) Upgrading telecommunication systems, and
e) Infrastructure and institutional strengthening.

These five themes provide the basis for formulating the proposed development projects recommended in this report. While the need for improvement in aviation and marine weather services were also identified as common themes across the Pacific, these were not specifically singled out as additional broad themes for the purpose of developing separate development projects. However, it should be noted that severe weather warnings rely very heavily on aviation and marine observations, and that severe weather events impact very significantly on aviation and marine operations. Some sub-projects relating to aviation weather services have been included under the severe weather theme. Each theme includes some elements of capacity building and human resource development.

Table 2: Present status of National Meteorological Services of Pacific Island Countries and Territories

Country	Category	2000 Annual Operating Budget (estimate) (US$000)	Eng'r/ Tech'n	Info-tech	All staff
American Samoa	A	660	1	0	8
Cook Islands	D	150	2	0	11
Commonwealth of Mariana Islands	A	10	0[a]	0	0
Federated States of Micronesia	A	2,199	3[a]	0	34
Fiji	B	1,500	2	3[e]	91
French Polynesia	A	5,700	6	7	112
Guam	A	2,000	1[b]	1	22
Kiribati	D	165(150 – WWW)	0[g]	0	19
Marshall Islands (Republic of)	A	800	1[a]	0	10
Nauru	E	XX	0	0	5
New Caledonia	A	5,200	8	7	74
Niue	E	40	0[g]	**0**	3
Palau (Republic	A	820	1[a]	0	11

of)					
Papua New Guinea	C	821	3[f]	0	97
Samoa [c]	C	132	0	0	10
Solomon Islands	C	325	2	0	46
Tokelau	E	12	0[g]	0	0
Tonga[c]	D	160	0[g]	0	18
Tuvalu[d]	D	183 (+113-WWW)	0[g]	0	20
Vanuatu	C	270	1	1	29
Wallis and Futuna	A	See New Caledonia	0	0	13

a. These countries also get technical maintenance support from the Sub-regional Maintenance Depot, Guam.
b. Guam WFO has three additional technicians to provide support to US-affiliated states.
c. One degree holder on staff, but without professional training.
d. Two degree holders but without professional training.
e. One of the three is an expatriate.
f. The Office of Civil Aviation provides support for major engineering work.
g. No in-house technician (or not fully trained), but support from other organizations (eg. Telecoms) available, sometimes at low priority.

Conclusions

- Large range in capacity to maintain networks/provide services
- Most countries have suffered decline in resources and capacity over last 2 to 3 decades
- Lack of resources for ongoing expenditure a serious problem in many countries
- Main common priority needs across the region- cyclone warnings & climate services (including season/interannual prediction) - other areas (aviation/marine important)
- Upgrading basic observations/communications infrastructure essential for services to be improved
- External assistance vital for improvement