TRIP REPORT

Exploratory Mission with UNDP to the Caribbean Institute of Meteorology and Hydrology (CIMH) in Barbados

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Introduction

The trip was organized by UNDP Pacific Centre as part of their key work planning activity under the inter-regional project entitled "South-South Cooperation between Pacific and Caribbean Small Islands Developing States(SIDS) on Climate Change Adaptation and Disaster Risk Management, which seeks to facilitate the transfer of expertise and knowledge among small island states facing similar climate related risks to build their capacity based on lessons learned and methodologies suited to SIDS.

Objectives

1. Meet the CIMH Director and Training staff to explore all Training and Education opportunities available in their institute for Fiji and the Pacific.
2. Meet the four Pacific Island Meteorological Service staff undergoing the Mid Level Technicians Training at CIMH and assess their progress.
3. Benchmark Meteorological Technicians Training offered in FMS with the training offered in CIMH.
4. Prepare a report on potential South-South training collaboration with CIMH, based on gaps and needs which have been identified in the National Meteorological Services (NMS) of the Pacific.

About Caribbean Institute of Meteorology and Hydrology-CIMH

The above institute is the regional institution mandated to conduct training in Meteorology and Hydrology both of which are important to the development of main economic sectors in the region. The institute was affiliated to the University of West Indies (UWI) in 1973 and designated as a Regional Training Centre (RTC) by the World Meteorological Organization(WMO) in 1978.

CIMH staff also provide lectures for the BSc program in Meteorology offered at the University of West Indies.

Boarding

The two day stay was arranged at the Pom Marine Hotel which is a Government School of Tourism and Hospitality Training Hotel. The hotel has training facilities for students and the students obtain their practical experience under supervision of Trainers on all aspects of the hotel industry.

Courses offered at CIMH

The details of Meteorological and Hydrological Training Courses are attached as Appendix 1-3:

Meteorology

- Entry Level Meteorological Technicians Training
- Mid Level Meteorological Technicians Training
- Senior Level Meteorological Technicians Training(SLMT –Former Class II Full BIPM Contents)
- Operational Aeronautical Forecasters Course(OAFC)

Hydrology

- Hydrological Technicians Course
- Diploma in Hydrology Course

Courses offered at University of West Indies (UWI) in association with CIMH

- BSc Degree in Meteorology

- MSc Degree in Natural Resource and Environmental Management

After completing the BSC in Meteorology (at any university or UWI), a graduate who wishes to work in an operational aeronautical office will have to attend an Operational Aeronautical Forecasting program. Since a University degree in Meteorology covers the BIPM requirements of Physical, Dynamic and Synoptic Meteorology.

The 15 month Senior Level Meteorological Technicians (SLMT) program offered at CIMH is for University graduate in a science field which MUST include at 1 year of Maths and Physics.

A Senior Level Meteorological Technician (SLMT -former WMO
CLASS II) is one who has completed the 18 month BIPM course at CIMH, and too is considered a WMO Meteorologist, since CIMH's program has been certified as being one that meets the necessary criteria.

Training Needs - Fiji Meteorological Service (FMS), Republic of Fiji Islands

Fiji Meteorological Service is the most developed Meteorological service provider in the Pacific compared to the rest of the Small Island Developing States National Meteorological Services. The Regional Specialized role of FMS and the Tropical Cyclone duties are embedded within the functions of FMS.

A fully competent and skillful cadres of personnel are required to operate the Regional Specialized Meteorological Centre, National Weather Forecasting Centre and the Tropical Cyclone Centre at the Nadi FMS complex. To become a proficient forecaster a Meteorologists needs to work on the bench for at least ten years in all aspects of Public, Marine, Aviation and Tropical Cyclone duties.

FMS Meteorologists need to undertake training courses in applied Meteorology and Research in the following areas:

- Aeronautical Meteorology
- Hydrometeorology /Oceanography
- Agrometeorology
- Climatology

FMS Meteorological Technicians need to undertake the following training courses:

- Mid –Level Meteorological Technicians Training Course
- Senior Level Meteorological Technicians Training Course
- Intensive Training on Calibration,Maintenance and Repair of Radars, Automatic Weather Stations and meteorological instruments/equipment

Upon successful completion of the Mid Level Technicians Training Course(former WMO Class III) and acquiring few years of on the job training in the Forecasting Centre, officers can proceed to undertake the 18 month -Basic Instruction Package for Meteorologists (BIP-M) training course offered at CIMH and be recognized as Meteorologists.

Training Needs - National Meteorological Services of Pacific Islands

The National Meteorological Services of the other Pacific Island countries vary in their outputs and are developing their staff capabilities and infrastructure to produce their own daily forecasts as envisaged by Regional Specialized Meteorological Centre(RSMC) in Nadi.

Vanuatu, Papua New Guinea, Solomons Is

Vanuatu, Papua New Guinea and Solomon Is Meteorological Services are now independent and have developed staff capabilities and infrastructure to produce their own Public, Marine, Aviation and Tropical Cyclone forecasts. They are also rapidly developing their Climate services/Climate Change divisions to deal with the current and future needs of their respective countries.

To sustain progress and enhance outputs for the above Meteorological Services
training and education in areas of Research, Management of Meteorological Services, Inspections, Calibration and Maintenance of conventional and electrical/electronics equipment is required. Specialized training in Aviation forecasting./Aeronautical Meteorology is also required to comply with the forthcoming ISO certification.

Senior Meteorological Technicians (Observers) with good Maths and Physics qualification, who have progressed to this level through internal promotion and have at least 10 years service left before retirement, should be considered for further training at the Senior Level Meteorological Technicians Training Course and the Forecasters Training Course offered at CIMH

Tonga, Samoa

The National Meteorological Services of Tonga and Samoa are producing their own Public and Marine forecasts although their Aviation Forecasts are prepared and transmitted from Nadi on a daily basis. They fully depend on Nadi RSMC for all their Tropical Cyclone forecasts.

The number of Meteorologists with Aviation Forecasting competencies needs to be increased so that Aviation forecasts are also prepared for local and international use for the Tonga area.

Meteorological Technicians also need to attend higher level training courses at the Mid Level and Senior Level Meteorological Technicians Training Courses to attain competencies required for ISO certification and future needs of aviation industry.

Cook Islands, Kiribati, Tuvalu, Niue

The National Meteorological Services of these Island Nations fully depend on Nadi RSMC for all their forecasting needs including Tropical cyclone forecasting.
These Meteorological Services do not have qualified Meteorologists to prepare any of the forecasts and their offices are manned by either Senior Meteorological Technicians or the Mid Level Meteorological Technicians who have had some training in Basic forecasting training courses conducted under JICA sponsorship in Nadi.

One of the Senior Staff in the Cook islands Meteorological Service had acquired the WMO class II(Aviation Forecaster Qualification in 1996 from BOM Australia) and since then attended various training courses in Operational Meteorology. Officers of his caliber together with other eligible candidates need to attend the Forecasters Training course (BIPM) to be recognized as Meteorologists in order to begin preparing Public and Marine Forecasts for their Island Nation in future.

Tuvalu, Kiribati and Niue National Meteorological offices are manned by Meteorological Technicians who have had their Entry Level Meteorological Technicians training in RSMC Fiji either under JICA or World Meteorological Organization sponsorship. Further staff development up to Mid and Senior Level Meteorological Technicians Training is eminent in the near future as this will enhance their inspections and maintenance of stations program.

Recommendations

- Each country, in the Pacific, has its own training and education requirements and capacity building is to be done according to the needs of each country. For example Kiribati and Tuvalu would not be able to carry out their own forecasting duties unless the Meteorological infrastructure buildings, communications system and human resource development is done in a structured manner.

- Meteorological Services in few of their respective countries should be given more prominence as most of the Meteorological Services fall under their respective Governments hierarchy of the Civil service with limited budgets and lack staff development programs compared to the rest of the civil service. Meteorological Services should be seen as a very specialized scientific organization where people have scarce skills which cannot be replaced in a short period of time as training and Education opportunities in Meteorology are not offered extensively around the globe.

- The Meteorological Services of Cook Is, Niue, Tuvalu and Kiribati possibly in future would be able to produce their own Public, Marine and Aviation forecasts with structured human resource learning and development programs in place to upgrade the knowledge and skills of existing staff. All countries in the Pacific must have staff retention policies as Meteorologists and Meteorological Technicians have a high turnover rate in few of the Pacific island countries.

- A greater collaboration should be undertaken with CIMH in staff development programs for the Pacific National Meteorological Services under the auspicious South South Program.

- All stakeholders for providing funding for capacity building programs for the Pacific National Meteorological Services shall pool resources to have a better visible effect on

staff and infrastructure development programs. Few Meteorological Services in the Pacific seem to be stagnant for decades in terms of infrastructure and human resource development programs. This is evident in the actual outputs of the respective countries Meteorological products and services.

- All donors of equipment and instruments to Meteorological Services of the Pacific shall ensure the Technical staff responsible for calibration, maintenance and repairs of the equipment/instrument are provided the training and acquire the competencies before finally handing over the equipment/instrument to the respective Meteorological organizations. Sustainability of instruments/equipment donated is of a great concern in Small Island Developing states.

- RSMC Nadi to continue striving to collaborate with Meteorological Aid donors in terms of capacity building for the Pacific National Meteorological Services.

- Monitoring and compliance teams to be developed from the donor agencies to gauge progress of projects and audit outputs of investments made in the respective countries. Staff of few Meteorological Services seem to attend seminars/conferences/meetings/training courses/training workshops on a continuous basis, which is fully paid by donor agencies, although no visible effects are seen in their outcomes after return from such events.
- Most of the countries of the Pacific do not have professional Hydrologists/Hydro Meteorologists although they are being inundated with flash floods, major rivers flooding and causing widespread damage to property and loss of lives, especially during adverse weather conditions between November to April. It is imperative now that Hydrological and Meteorological Services band together to produce timely and accurate flood forecasts for all sectors of the community.

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