



# GCOS Cooperation Mechanism

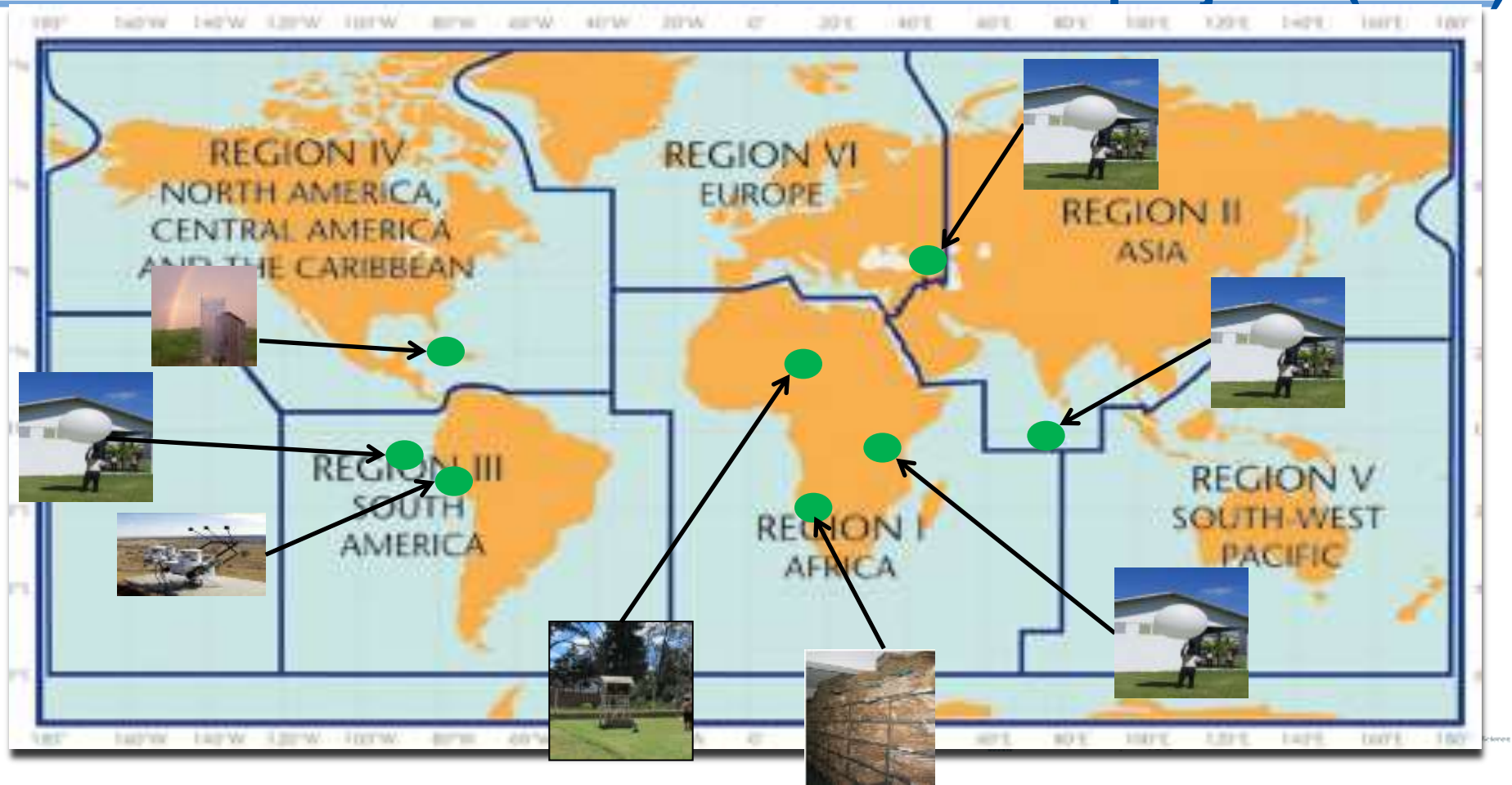


# GCOS Cooperation Mechanism (GCM)

- The GCM was established to identify and make the most effective use of resources available for improving climate observing systems in developing countries, particularly to enable them to collect, exchange, and utilize data on a continuing basis in pursuance of the UNFCCC.

Since 2005 around 3 million USD on GCM projects

# GCM projects (2016)



# Chad – Surface Instrumentation

Home / Automated Monitoring / Intellisense® Wet and Dry Bulb Psychrometer (Hygrometer)



## Intellisense® Wet and Dry Bulb Psychrometer (Hygrometer)

The Intellisense® Hygrometer is specifically designed to meet the requirements of the WMO CIMO guide, in line with the Minamata Convention Global Treaty on the phase-out of mercury by 2020.

Our Intellisense® Hygrometer is the "direct replacement" for manual hygrometers, often within a Manual Meteorological Garden.

Its technical capabilities are better than mercury, with datalogging, GPRS and expansion into an AWS with a multiplicity of different sensors for most ground data parameters.

If you, your organisation or your NHMS needs to transition away from mercury-filled instruments in the field, then the Intellisense® Kit is the perfect option.

(Stevenson Screen – Not Included) *product code: FM 6300*

**Add to enquiry**



## GCM Project

Limited funds kindly donated by Greece

In country review of existing sites.

Simple specification focused on temperature and rainfall, and no mercury.

Automated instrumentation but used by local observer.

Systems installed March 2017

# Nairobi, Kenya – Upper-Air Instrumentation



## GCM Project

Funds kindly donated by Switzerland.  
Existing ground system was unreliable/end of operational life.

‘Generic’ specification for Upper-Air system based on WMO requirements and previous procurements.

Competitive tender to get best value but meeting requirements.

New system installed/tested in Sept 2016.

Operational by end of 2016.

# Botswana – Data Rescue



## GCM Project

Funds kindly donated by Germany.

Provision of cameras and scanner.

Local contract for shelving and archive material.

Workshop October 2016.



# Summary

- **GCM Projects are able to demonstrate benefit for climate observing systems, particularly in Africa but also in remote locations (Galapagos, Cook Islands, Maldives).**
- **However, the extent of the benefit is limited to the resources available, and direct funding to the GCM trust fund has decreased significantly in recent years.**
- **Africa remains by a long way the worse performing WMO Region according to the monitoring of the GCOS surface and upper-air networks (GSN & GUAN) and there are current requests for support from many National Services, totaling more than 1 million US\$.**
- **Sustainable solutions are always the focus of GCM projects but this is reliant on the ongoing commitment from the National Service as continual funding is not possible. But technical support is.**



# Joint GCOS – WMO Integrated Global Observing System Workshop for the Pacific Small Island Developing States (SIDS)

*9-12 October 2017, Nadi, Fiji.*

**Simon Eggleston**



WMO

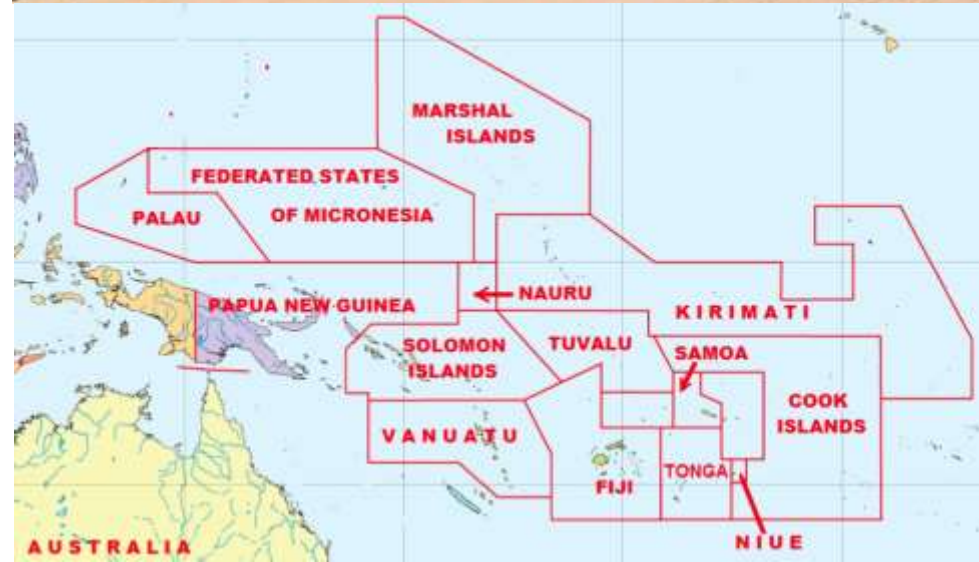


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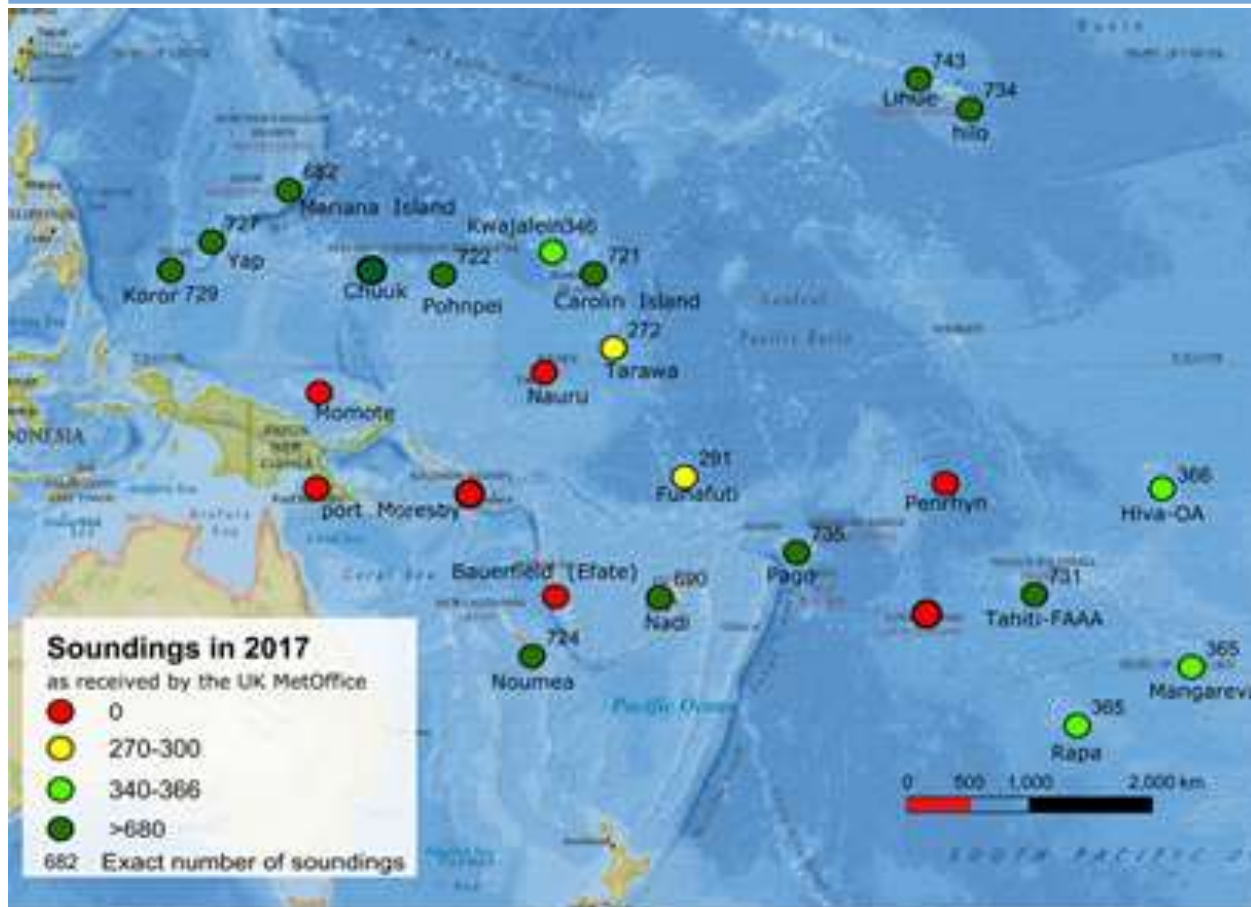




- From most islands nations
- Held jointly with the WMO Integrated Global Observing System (WIGOS)
- Hosted by the Fiji Meteorological Office
- Supported by The Secretariat of the Pacific Region Environment Programme (SPREP)



# Monitoring of Performance



# Monitoring of Performance

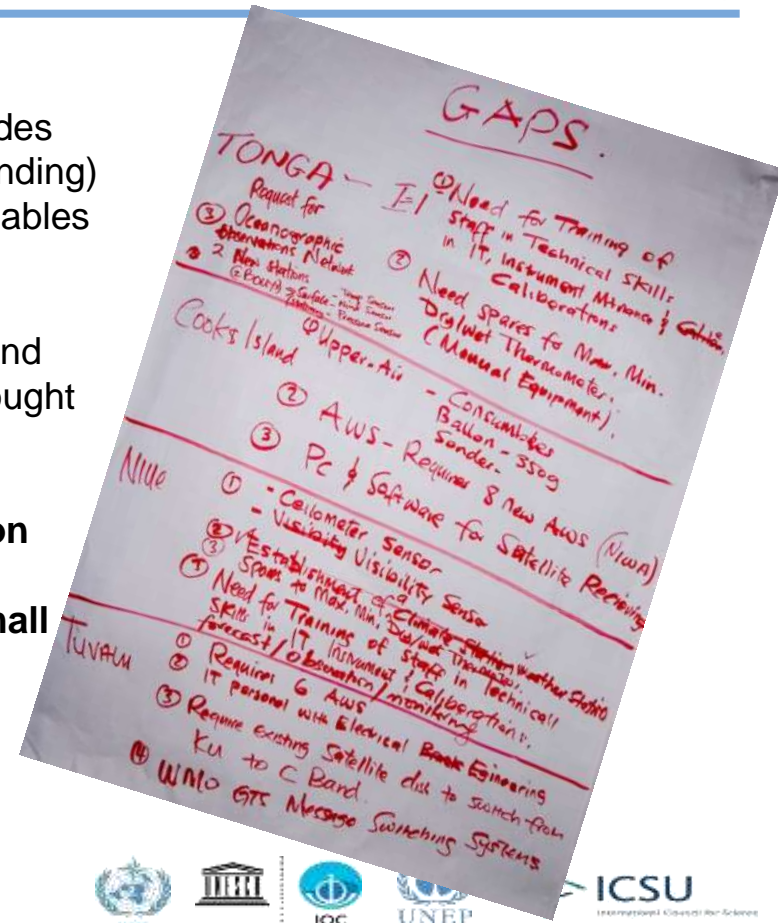
The ECMWF Deputy Director of Forecasts noted in September 2017 regarding the potential value of rehabilitating the upper air network over Papua New Guinea:

*“Radiosondes in PNG can ... help predict when Rossby wave trains may be triggered from that area, and then propagate across the Pacific to N. America, and where they influence the mid-latitude storms tracks and ultimately the weather in Europe”*

*“Isolated radiosondes are individually much more valuable and bring much more benefit to forecast quality than observations in a dense network (benefit per station that is!)”*



- **Upper air**
  - Some upper air observations have ceased (the radiosondes now operational apart from Fiji are those with external funding)
  - Main reason for stopping is lack of resources for consumables and maintenance.
- **Precipitation**
  - Precipitation measurements may not be representative and more sites are needed to cover all islands to address drought and floods
- **Remoteness of many islands increases costs, makes maintenance more difficult and exacerbates communication issues**
- **Procurement is a issue with lack of expertise, relatively small quantities and remote locations all increasing the costs**
- **Capacity building needs to be addressed**



# Key Outcomes

- **Systematic upper air observations, lead to global benefits**, underpinning forecasting and climate reanalyses which form the basis of much of our understanding of climate and climate change;
- These observations in the Pacific region have the **highest impact, of all ground-based measurements**, on the global quality of weather and climate analysis and prediction.
- Both the spatial density and observing frequency currently fall short of GCOS and WMO requirements and a beyond the resources of SIDS.
- **These observations are a global good and therefore the upper air network over the South Pacific therefore needs sustained international support.**
- Support should be based on **transparent processes** and a commitment to **free and open data sharing** in accordance with WMO Resolutions 40 and 60 and the GCOS Monitoring Principles.
- Ensuring **sustainability is of paramount importance.**
- The draft plan will be developed by GCOS and WMO in collaboration with Secretariat of the Pacific Regional Environmental Programme (SPREP), the Pacific Islands Communication and Infrastructure Panel (PICI), and Pacific Meteorological Council, and submitted to COP 24.



- **Development of a plan to address these issues for COP 24 and for WMO.**
  - Highlight the global benefits of these observations and need for continuing support
  - Identification of potential sources of funding
- **The programme of regional workshops will continue in other regions**
  - We will look to collaborate with suitable partners globally and regionally

GCOS-WIGOS/High-Way-Copernicus C3S-GFCS and UNFCCC Collaboration:  
East Africa: Uganda, Tanzania, Kenya, Rwanda, Burundi  
– @Uganda, Entebbe, 31 Oct – 2 Nov 2018

# New GCOS Implementation Plan (Capacity Development)

## Action G6:

### Assisting Developing Countries to maintain or renovate climate observation systems and to improve climate observations networks

Action	Provide financial support to the GCM through its trust fund; Cooperate between donors to provide targeted support to countries to improve their observational systems; propose suitable projects for support.
Benefit	Targeted expert assistance to improve key monitoring networks.
Timeframe	Continuous.
Who	Developed Countries, Developing Country Aid Banks, WMO Voluntary Cooperation Programme, the Global Environment Facility (GEF) and other funds for the UNFCCC, the United Nations Development Programme (UNDP), and the many national aid agencies ; project proposals coordinated by GCOS panels, GCM Board and its potential donor countries.
Performance Indicator	Funds received by the Trust Fund; Increasing number of projects supporting countries.
Annual Cost	1-10M US\$