

## 10.1 The Pacific Islands Regional Global Climate Observing System (GCOS) Program

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### 1. INTRODUCTION

The international Global Climate Observing System (GCOS) was established in 1992 to ensure that the observations and information needed to address climate-related issues are obtained and made available to all potential users. It is cosponsored by the World Meteorological Organization (WMO), the Intergovernmental Oceanographic Commission (IOC) of United Nations Educational Scientific and Cultural Organization (UNESCO), the U.N. Environment Program (UNEP) and the International Council of Scientific Unions (ICSU). GCOS is intended as a long-term, user-driven operational system capable of providing the comprehensive observations required for monitoring the climate system, for detecting and attributing climate change, for assessing the impacts of climate variability and change, and for supporting research toward improved understanding, modeling and prediction of the climate system. It addresses the total climate system including physical, chemical and biological properties, and atmospheric, oceanic, hydrologic, cryospheric, and terrestrial processes. More information on the international program can be found at <http://www.wmo.ch/web/gcos/gooshome.html>

### 2. BACKGROUND OF THE U.S. GCOS PROGRAM

As a result of the United Nations Framework Convention for Climate Change (UNFCCC) decision in 1999, the GCOS Secretariat was directed to establish a series of workshops for developing nations. The intent of these workshops was to aid in the establishment of a sustainable in-situ climate observing system across the globe. The first of these workshops was held in Apia, Samoa, from 14-15 August 2000, and included participation from all members of the climate observing authorities in the South Pacific Regional Environment Programme (SPREP) based in Apia, as well as participation from the South Pacific Applied Geoscience Commission (SOPAC) based in Nadi, Fiji.

The United States (U.S.) has been involved with

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GCOS since its inception. Since 1992, a considerable amount of work has been done by various federal agencies. In particular, federal agencies have supported the international GCOS Steering Committee, and the work of the GCOS data, space, and science panels, as they have engaged in planning GCOS, defining its requirements, and contributing parts of the initial system. NOAA's National Climatic Data Center (NCDC) in Asheville, North Carolina, supports a number of GCOS data management activities. A national GCOS program has begun to emerge over the past two years. In November 1999, a full-time national GCOS program manager position was established and filled by NOAA/NESDIS to manage the national program.

The primary focus of this position is to coordinate the development of a national GCOS program that involves all U.S. federal agencies with a role in climate observing and monitoring. As part of this effort, the U.S. national program is also a great proponent of ensuring a robust and sustainable program in other regions. Given the importance of the Pacific region and our great involvement via the National Weather Service Pacific Region Headquarters in Honolulu, Hawaii, it was a natural extension of the national program to become more involved in the development of a Pacific Islands GCOS effort.

The full report detailing the US GCOS program, as well as a summary of the report, are available in Adobe PDF format at the U.S. national GCOS home page at [http://www.eis.noaa.gov/gcos/soc\\_long.pdf](http://www.eis.noaa.gov/gcos/soc_long.pdf)

### 3. INTERNATIONAL INVOLVEMENT

In addition to the requirement for national reports on systematic observations, the UNFCCC at its 1999 meeting invited the GCOS Secretariat to continue to assist with and facilitate the establishment of an appropriate intergovernmental process that would identify potential improvements in the global observing system for climate and set priorities for acting on those improvements. As such, the U.S. GCOS program has been one of the leaders in this effort.

The U.S. continues to be an active participant in and large supporter of the international Global Climate Observing System (GCOS) program in a number of areas. These areas of support can be characterized in

two categories of support: (1) global; and (2) regional.

### **Global Support**

The global support represents the overall U.S. Government's support of GCOS. In May 2002, the U.S. State Department contributed \$600K (US) in funding to the GCOS Secretariat in order to conduct the second adequacy study of GCOS on a global basis.

Currently in development, *The Second Report on the Adequacy of GCOS* will provide an estimate of the adequacy of GCOS. According to the present plan, an interim version will be submitted to the 8th Conference of the Parties (COP-8) under the U.N. FCCC next month in India. This will be an extremely important document for GCOS, because it will be subsequently reviewed and endorsed by Environmental and Foreign Affairs Ministers around the world, with the final report being presented to COP-9 in December of 2003.

Vice Admiral Conrad C. Lautenbacher, Jr., U.S. Navy (Ret.) Undersecretary of Commerce for Oceans and Atmosphere and NOAA Administrator in speeches to the Executive Councils of the *Intergovernmental Oceanographic Commission of UNESCO* and the WMO in June 2002, encouraged other nations to join the US in the U.S. Presidential Climate Change Research Initiative (CCRI) partnership to support GCOS.

***"I strongly believe that NOAA is the right agency to take a leadership role within the United States, but we know full well that we cannot do this alone. The global observation effort for climate is far too enormous for one organization, or even one country, to undertake alone. We must work together. Perhaps the greatest challenge is to develop one integrated observation plan for the atmosphere, ocean, and land which everyone can support. The Global Climate Observing System (GCOS) and Global Ocean Observing System (GOOS), working with the Integrated Global Observing Strategy (IGOS) Partners and others, have developed international consensus on overall needs. There is, however, much work still to be done. This challenge lies in our ability to provide one coherent plan which integrates space and in-situ observations across those three elements."***

### **Regional Support**

The regional support for GCOS represents the efforts on the part of the U.S. GCOS Program office. While the funding levels are not at the same levels as that of the U.S. global support for GCOS, it is far more focused on efforts dealing with regional workshops for developing nations with a special emphasis on the South Pacific Island States' region.

The Regional Implementation Workshop, initiated by the GCOS in response to Decision 6/CP.5 of the

UNFCCC and held in Apia, Samoa in August 2000 with support and active participation by both Australian, New Zealand, and US experts, built on the South Pacific Regional Environment Program's (SPREP) needs analysis. During follow-on meetings in Honolulu, Hawaii in October 2001 and Auckland, New Zealand in February 2000, a PI-GCOS Working Group:

(1) Identified GCOS requirements in the region and outline an approach to address these needs in a PI-GCOS Action Plan, and

(2) Provided the Action Plan to the Pacific Islands Regional GCOS Implementation Team (PIRGIT) to analyze and prepare a PI-GCOS Implementation Plan which outlines prioritized projects required for the implementation of a complete, integrated, and sustainable PI-GCOS for the region.

This has provided the basis for development of a Pacific Island-GCOS (PI-GCOS). The PI-GCOS Action Plan has identified the high priority actions, many of which can be implemented as stand alone modules, that will assist in restoring and improving observing systems in the region to a level necessary to effectively monitor the climate of the region and systematically detect trends and changes in climate.

The PI-GCOS Goal is:

**To establish a robust and sustainable climate observation and application system (PI-GCOS) that meets the climate change and variability observations and application needs of the Pacific Island nations and region and meets the GCOS requirements.**

The U.S. GCOS Program Office at NOAA has been a supporter of the PI-GCOS effort since the Apia workshop and has contributed resources towards that effort and these regional workshops, amounting to \$US90K for FY2000-2002. It plans to increase its support for FY2003 to \$US150K to address some of the more "low-hanging fruit" actions and proposals from the PI-GCOS Action Plan in FY2003. In addition, the US GCOS Program Office plans to continue contributing its in-kind support and facilitation of furthering the goals of PI-GCOS.

Recently, in line with the bi-lateral Climate Action Partnership (CAP) between the U.S. and Australia, there have been some preliminary discussions of the possibility of a similar climate change partnership between New Zealand and the United States. The partnership would be designed to enhance the mutual interest of New Zealand and the United States in reducing greenhouse gas emissions so as to achieve the objective of the UNFCCC, and would also synergize with the efforts of the CAP program in the Pacific. The partnership would be based on areas of existing

cooperation and/or common interest. Current bilateral science collaboration, such as through the US/NZ Science and Technology Treaty, would be enhanced and strengthened.

One issue that the U.S. GCOS program is addressing is the continued operation of the Global Observing System Information Center (GOSIC) located at <http://gosis.org/>. In support of the PI-GCOS effort, the GOSIC will be looking at the implementation of a Pacific Islands GCOS portal in order to facilitate the access to Pacific Islands GCOS datasets that may be held in a diverse group of data centers. This portal will be a key tool for a proposed Pacific Islands Regional GCOS Program Manager as part of the integrated Pacific Islands Regional GCOS Implementation Team effort of which the US is a member along with Australia, New Zealand, and the member nations of SPREP.

#### **4. VIRTUAL CLIMATE CENTER FOR THE PACIFIC**

A task team has been established to provide guidance and assistance in the designation and implementation process for establishing a Regional Climate Center (RCC) within the Region. This supports climate prediction which is relatively new and that National Meteorological and Hydrological Services (NMHS) are the customers of RCC products and services. The Task Team has reported that a Virtual RCC would be appropriate for the South Pacific with this

set-up allowing all Members and their respective national and regional climate centers/agencies to participate at comfortable and affordable level.

The foreshadowed South Pacific RCC is proposed to be inclusive so that all South Pacific climate centers can play a role in climate prediction and RCC services. Taking into consideration the capabilities of some NMHSs or climate agencies/centers, in particular in Small Island Developing States (SIDS), information has been provided on roles and capabilities of NMHSs or climate agencies/centres to provide forecast products and services to meet the virtual RCCs requirements. These activities will strongly support PI-GCOS activities.

#### **5. CONCLUSION**

The U.S. has been very supportive of the overall international GCOS program effort and has provided considerable support on both a global as well as regional effort. It is believed that support for GCOS should be global in nature and the US is working to be a leader in helping to make GCOS a sustainable and robust system both regionally and globally, and that can serve the needs of better climate science and analysis. In the South Pacific, these efforts are in full partnership with Australia, New Zealand and the Pacific Island States.