

# REGIONAL POLICY DEVELOPMENT ON CLIMATE AND SEA LEVEL CHANGES IN THE PACIFIC REGION

By Chalapan Kaluwin

It is a great challenge to convert scientific knowledge of climate and sea level change to information that is useful to policy makers. This process is especially important in the South Pacific where many small island nations are already facing the effects of climate change. This paper will address the following topics: the importance and priority of oceanography and science policies; the type of scientific results necessary for the policy process; whether the policy development is externally driven; communication between scientists and policy makers; and the vulnerability of small island states in the face of changing environmental conditions.

The South Pacific region's combined Exclusive Economic Zones (EEZ) occupy 30 million square kilometers (three times larger than China or the USA). The land area is less than 2% of that total with an estimated population of fewer than 6 million people.

Any policy-driven strategy, for economic and environmental reasons, would target the ocean, which covers 98% of the region. Being small island countries, they lack security, are vulnerable to natural disasters, have economies in transition, and, to develop appropriate policies, need a link to institutional capacity and technical resources to implement oceanographic and scientific research.

In taking advantage of the large EEZ region, the countries have priorities focused on extracting natural resources from the ocean for their environmental and economic subsistence; for example, through marine resources and mineral exploration. Presently, the island government policies are economically driven and are coupled to limited scientific results and information from their countries or regional institutions.

A majority of the island governments do not have specific oceanography policies; however, for socio-economic reasons this issue is addressed under other disciplines of science, e.g., fisheries, agriculture, environment, water, transportation,

and meteorology. In most cases, environment, meteorology, and fisheries sectors are mandated to develop policies that deal with ocean sciences. Translating scientific findings and information specifically from within the oceanography discipline is not a priority for policy development unless it is incorporated into other economic sectors.

Given this background, this report focuses on the issues of climate variability and sea level rise that have affected the policies of the island nations, especially from external influences or advice, and that also address the oceanic sciences. Discussions will be centered on regional policy development and implementation to catalyse and change the ideas and perceptions of the individual island nations and on the need for policy advisers/makers to include climate change in their policy development.

Within the last 10 years the influx of information concerning the science of climate change, covering all aspects of environmental and economic issues in the South Pacific region, is overwhelming. Reports from international scientists, under the auspices of the Intergovernmental Panel on Climate Change (IPCC), have stated with certainty that human-induced emission of greenhouse gases will result in global warming, affecting all the environmental areas of small island nations. This is of great concern to the Pacific islands because global warming is likely to result in sea level rise, changing rainfall patterns, increased incidence of extreme events such as tropical cyclones, and disruption of the marine and terrestrial ecosystems. The IPCC Report (Working Group I) predicts that current levels of greenhouse gas emission will increase global mean temperature by about 0.3 °C per decade, with an uncertainty range of  $\pm 0.2$ – $0.5$  °C.

The **global mean sea level** is predicted to rise at an average rate of about 6 cm per decade over the next century, with an uncertainty range of  $\pm 3$ – $10$  cm. However, the scientists emphasize the uncertainties in their predictions, particularly with regard to timing, magnitude, and regional patterns of climate change; they also acknowledge their in-

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complete understanding of some climate related processes. There is still a lot of work to be done on climate change:

- more research is needed on the sources and sinks of greenhouse gases (especially in the oceans); and
- cost-effective ways of reducing greenhouse gas emissions are needed.

For the Pacific island nations and their governments the *uncertainty* of the full potential of climate change makes it very difficult for policy makers and their scientists to develop long-term planning policies in this area. In the meantime, short-term policies based on these uncertainties are being developed. Hopefully scientific research, information, and data from global, regional, and national activities will help to reduce the uncertainty factor for the small island countries.

### **South Pacific Regional Environment Programme (Regional) Policy**

#### *Priority*

The South Pacific nations take climate change issues seriously. While many policy makers around the world still may be contemplating climate change, the South Pacific nations are in the forefront in considering the issue. Climate change has been a topic on the South Pacific Forum agenda for the last 6 years. It is a subject of major policy statements from government leaders of the region.

Statements and declarations have come from the following:

- 1988—South Pacific Forum meeting in Tonga;
- 1989—Majuro Declaration on Climate Change;
- 1989—Male Declaration;
- 1990–1992—South Pacific Forum meetings (Heads of Government of South Pacific nations);
- 1990—3rd South Pacific Conference;
- 1991—SPREP Convention, Minister's Intergovernmental Declaration on Environment and Development;
- 1992—Alliance of Small Island States (AOSIS) Declaration at the United Nations Conference on Environment and Development (UNCED) meeting in Brazil; and
- 1994—Barbados Declaration, Global Conference on Sustainable Development of Small Island Developing States.

The concern expressed by the governments of the region has resulted in the establishment of a climate change program as part of the overall South Pacific Regional Environment Programme (SPREP) and is supported by its 26-member governments.

At the national level, the main scientific and impact research or activities have centered on

Australia and New Zealand, with limited and specific activities carried by regional organizations, like the South Pacific Applied Geoscience Commission (SOPAC), the Forum Fisheries Agencies (FFA), the South Pacific Commission (SPC), and SPREP.

Governments of the region have shown a strong commitment and are following up on the findings of the IPCC reports and some regional outputs. Even the governments were supportive of the Ministerial declaration of the Second World Climate Conference in Geneva in November 1990. In addition, one quarter of the total ratification to the United Nations Framework Convention on Climate Change (UNFCCC) that came into force on 21 March 1994, is from the SPREP region, which emphasizes their total commitment in this area.

The policy statements made by the South Pacific countries indicate that the "do nothing and wait and see" approach is *not* an option. Current policies for this region are being developed by using the *precautionary principle*. Consequently, the question is what strategies should be adopted for the region.

### **SPREP Work Program**

Under the SPREP Climate Change program, the strategies include two broad categories that will be discussed briefly: *limitation* policies developed for reducing greenhouse gas sources and sinks and *adaptation* policies aimed at reducing impacts. Other dedicated activities developed for SPREP regional programs (and their governments) include the following goals and objectives.

#### *Goal*

To develop and implement a regional program that will help SPREP member countries to understand and adapt to climate-linked global environmental change and to contribute to international efforts to limit future human-induced climate change.

#### *Objectives*

The objectives of the SPREP Climate Change program include the following:

- Education and awareness;
- Understanding impacts and optimizing responses;
- Regional capacity building; and
- Regional support.

Under the limitation strategies, these objectives could be undertaken immediately, while adaptation policies will generally occur when and if climate changes occur. Limitation strategies target greenhouse gases through programs aimed at reducing sources and enhancing sinks. At present, a major problem that inhibits work on enhancing sinks is the large gap in scientific knowledge on the impacts of the main greenhouse gases, particularly on carbon storage (forests and oceans).

Within the adaptation strategies, these objectives could cover diverse and "no regrets" type of actions as well as dedicated large-scale protection programs. Large dedicated adaptation programs will have similar characteristics to the long-term limitation activities in that they are most likely to be bilateral or multilateral efforts, based on national and sometimes regional programs.

A third one is the multiple benefit approach termed "no regrets", which refers to actions taken to meet economic, social and environmental goals (outside of a dedicated climate change reduction program) that will also contribute to the slowing of the greenhouse gas build-up or reduce climate change impacts, e.g., energy conservation.

#### *Activities*

In the SPREP region, activities implemented and coordinated by SPREP (with UN agencies) to reduce the uncertainty surrounding climate variability and change and sea level rise include:

- Assessment of island vulnerability to accelerated sea level rise;
- TOGA-COARE oceanographic research program;
- Monitoring climate change impacts on corals, agriculture, marine resources, energy, and water resources;
- The South Pacific Sea Level and Climate Monitoring Project;
- The Atmospheric Radiation Measurement (ARM) Project;
- Development of integrated coastal zone plans;
- Implementation of recommendations from the World Meteorological Organization (WMO)/Australian funded report: "The Changing Climate in Paradise";
- In-depth studies at country-specific sites on impacts of sea level rise and climate change in 10 countries;
- In-country public awareness and educational programs;
- Assistance to member countries on policy developments for climate change and environmental issues;
- Technical advisors to governments on environmental legislation (development of conventions, protocols, and declarations);
- Coordination of WMO, UNEP, and member participation in the SPREP region.

#### *What is the regional policy now?*

SPREP member countries and their small island states have worked very closely on international climate change issues. This is evident at international forums on the issue, particularly since the establishment of the IPCC and subsequent United Nations General Assembly (UNGA) (Resolutions 43/53, 44/206, 44/207, 45/212), the Second World Climate Conference,

and the UNFCCC process. The formation of the AOSIS group with the support of Pacific nations, especially during the UNFCCC negotiations, has ensured that there is a recognition of the special plight of the low lying coral atoll countries.

Agenda 21 (UNCED Conference), UNFCCC, and the Global Conference on the Sustainable Development of Small Island Developing States, in Barbados April/May 1994, have identified and concentrated on making special needs for programs/activities for the region or for the vulnerable group reflect their international, regional, and national policies.

In the region, SPREP, in close collaboration with other regional organizations (SOPAC, South Pacific Forum, FFA, and SPC) will continue to be the center of regional policy development on the climate impacts issues (including oceanography). Environmental ties have been strengthened over the years through a number of environmental legislative meetings that have provided opportunities to review these issues.

One of the main objectives for the SPREP Climate Change Programme is the ability to translate scientific data/information from a regional perspective so that it can be used to catalyse and facilitate the implementation of national policies, which are currently in progress.

#### *Conclusion*

The South Pacific island states have been given clear signals that they must take climate change and sea level rise seriously. This has been developed in their regional (and national) policy statements that include the following:

- A regional acceptance that if sea level rise occurs, the low lying atoll nations will be severely affected;
- The need for this issue to be highlighted in present international negotiations, and the need for regional work to focus on scientific research and observations, improved technical information in oceans and coastal areas, and increased emphasis on coastal planning and management;
- Regional effort needed first to influence the national attitude and then collectively to address world forums and gain acceptance of the potential problems of the increase of greenhouse gas emission into the atmosphere;
- The need to support an active scientific program in the region to monitor greenhouse gas scientific research and activities and to support regional programs and cooperation, particularly through SPREP.

Policies and underlying programs should be thoroughly evaluated for their technical soundness and cost effectiveness. To be successful, policies must be based on programs that have adequate long-term funding.

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