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CLIMATE CHANGE IN THE PACIFIC

A MATTER OF SURVIVAL



Cyclone hitting Ontong Java atoll, Solomon Islands – Photo: Thomas Birk

Indigenous peoples in the Pacific region are among the first to face the direct adverse consequences of climate change, due to their dependence upon and close relationship with the environment and its resources. While they are amongst the lowest emitters of greenhouse gases, they are also amongst the most vulnerable to the impacts of climate change due to their small size, coastal populations, high dependence on natural resources and the low-lying nature of their lands. As a result, indigenous peoples in many Pacific Island countries feel particularly helpless. Further, they realize that there are climate change threats that cannot be reduced, mitigated or eliminated and they are therefore forced to accept that adaptation is the only responsive option available to them

Impacts of climate change

On average, more than 90% of the population of the Pacific region are indigenous. This includes Vanuatu, the Solomon Islands, Fiji, Samoa, Tuvalu, Rapa Nuie (Easter Island), Papua New Guinea etc. Most of the Pacific region comprises small island states and indigenous peoples are heavily impacted by climate-induced warming: their islands are inundated by rising sea levels, increasing erosion occurs from intense storms, and saltwater intrudes into freshwater supplies. These changes are affecting livelihood activities such as hunting and fishing, and impacting on island infrastructure, access to water resources, food and housing availability, and even the very health of indigenous peoples. There is also concern that climate change will result in revenue loss across important economic sectors such as agriculture, forestry, tourism, energy and other industry-related sectors.

Rising sea levels

Many Pacific Islands have low land masses and, as a result of the rise in sea levels, are experiencing damage to buildings and infrastructure. Crops and causeways linking villages are being flooded, forcing cars, buses and trucks to drive through seawater. This has been particularly noticeable in Kiribati and a number of other small Pacific Island nations, which could completely disappear beneath the waves at some point this century. The small island of Tebua in Tarawa used to be a landmark for fishermen but today it is knee-deep under water. Kiribati suffers the effects of king tides that wash through the islands from one side to the other with great ease. It is now a common

factor in Kiribati to have king tides with waves 2.8 metres in height.¹

High tides and stormy seas have also recently caused problems in the Marshall Islands, Cook Island, Tuvalu and low-lying islands of Papua New Guinea. In Tuvalu, fresh groundwater mixes with salty seawater, forcing some farmers to grow their root crops in tin containers. These damaging effects of climate change are likely to intensify if sea levels rise as predicted.

Damage to Pacific ecosystems

In the Pacific region, environmental changes are prominent on islands where volcanoes build and erode; coral atolls submerge and reappear and the islands' biodiversity is in flux. The region has suffered extensively from human-made disasters and hazards resulting from nuclear testing, pollution including shipping-related pollution, hazardous chemicals and hazardous wastes (Persistent Organic Pollutants or POPs), and solid waste management and disposals. These issues, as well as the threats of climate change, have severely affected the ability of island ecosystems to maintain a healthy and pristine environment for the economic, social and cultural viability of indigenous communities.²

Warmer temperatures have led to the bleaching of the Pacific Islands' main source of survival – the coral reefs. Bleaching occurs when reef-building corals, reacting to stress such as warmer waters, loosen the algae that help feed them. Because the algae give them colour, the starved corals look pale, hence the term "bleaching". Continued bleaching ultimately kills corals. Reef-building corals provide most of the primary productivity of coral reefs and are also an important shelter for a diversity of marine organisms. Reduced abundance and diversity of reef-building corals is thus very likely to have a major influence on the surrounding biodiversity. Coral reefs are home to much of the seafood that is enjoyed by indigenous peoples in the region.³

Food and water security

Agriculture in the Pacific region, especially in small island states, is becoming increasingly vulnerable due to heat stress on plants and salt water incursions. Crops with low tolerance to climate hazards such as bananas, one of the main staple crops, are severely threatened. Soil erosion from destructive wave activity, frequent storm surges and landslides causes land loss to many indigenous communities. Plantations

and livestock are the major sources of subsistence farming, and are now faced with serious threats from new diseases and pests linked to flooding, drought and other climatic variations. Threats to food security are thus of great concern to the region.

A significant impact of climate change and climate variability on indigenous peoples in the Pacific region is unreliable water availability. In many places, there is often a lack of water storage systems such as water tanks. If improvements were made to water supplies and accessibility systems, indigenous peoples would not have to rely on unpredictable and untreated river sources. Hence, sustainable water sources, maintaining and improving water quality and minimizing the spread of water-borne diseases is an important issue for indigenous peoples in the Pacific.

Drought

Some 2,000 miles to the west of the Pacific is Australia, which is experiencing the worst drought in 100 years, even with the flooding that occurred in late 2007 and early 2008. Scientists are not certain that climate change is to blame but it is the most popular theory. One concern is that when there is rain in the north-east coastal regions, soil washes into the Great Barrier Reef, the world's largest coral reef. This process is damaging the coral, and warmer waters are also killing parts of the reef.

Carbon emissions trading

In the Pacific, like in most other regions, indigenous peoples are not only affected by climate change but also by the initiatives developed to address it. Carbon emissions trading is an area of concern for many indigenous peoples. At the same time, however, some indigenous peoples see the potential economic benefits of taking part in carbon trading projects, especially when indigenous communities have already developed, over thousands of years, sustainable, neutral and carbon negative livelihoods. A unique agreement, which claims to be the first of its kind in the world, was recently negotiated in Australia. In June 2007, when a giant new natural gas refinery was constructed in Darwin, ConocoPhillips agreed to pay the Aboriginal people of the Western Arnhem Land region of Australia AUD 1 million (USD 850,000) per year, for 17 years, to offset 100,000 tons of the refinery's own greenhouse emissions (The Western Arnhem Fire Management Agreement). The Aboriginal people concerned will use traditional fire management prac-

tices, which have been scientifically shown to reduce greenhouse gas emissions as compared to naturally occurring wildfires.⁴

Carbon trading continues to be a hugely contentious issue, however, mainly due to its inherent problems. The main concern is that, while companies do not have to actually reduce their emissions, they can pay other companies and groups, mostly from non-industrialized countries, to reduce emissions or to absorb CO₂ from the atmosphere, and thus account for these as their own reductions. The big benefit to companies is that, when paying others, they pay only a fraction of what they would need to invest at home to achieve the same goal.⁵

Adapting to climate change through migration

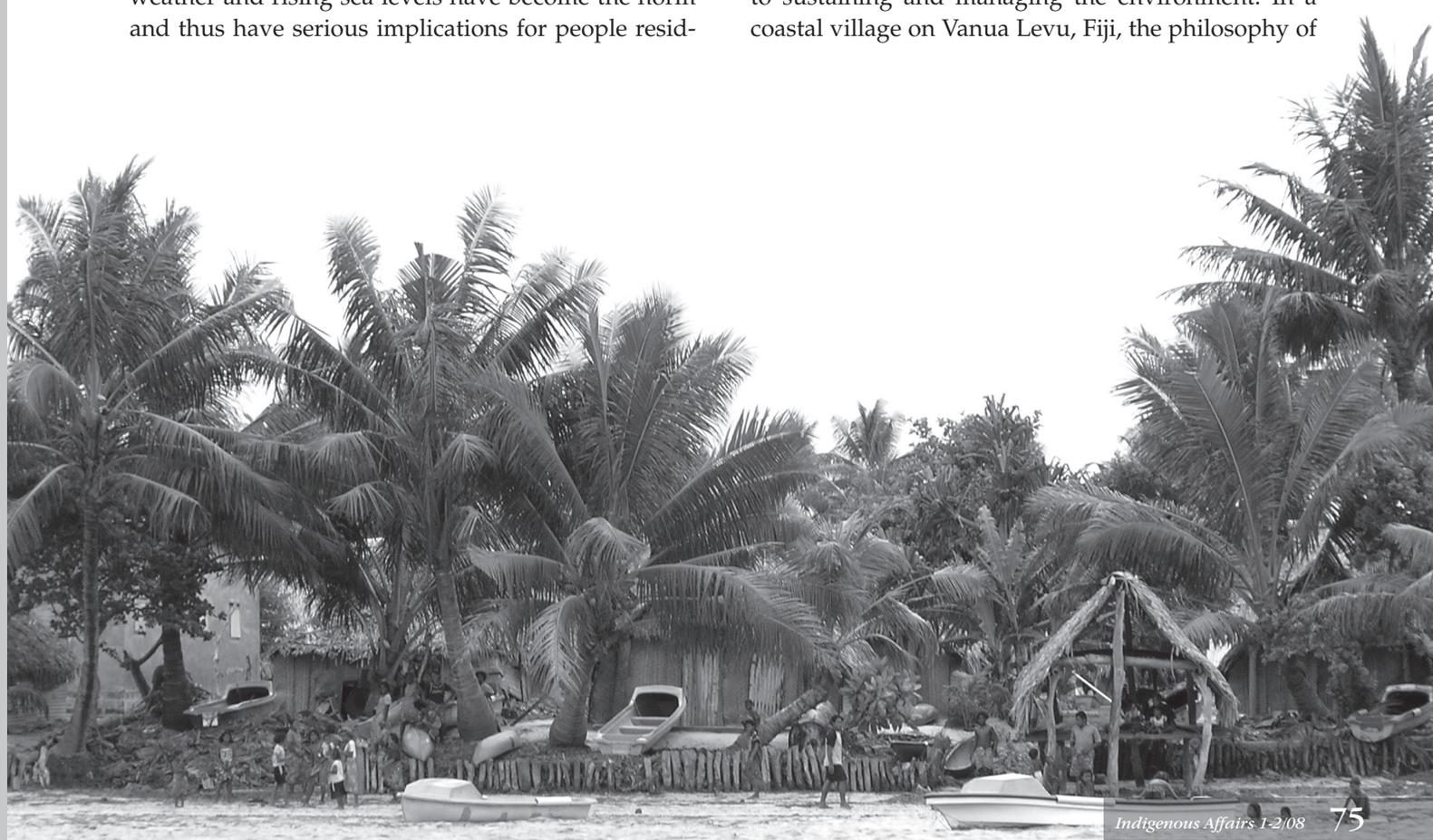
As people begin to feel the heavy impact of climate change on the quality of life in the Pacific, migration will become a major issue, particularly as a result of flooding from the rising sea level. Forced adaptation is already underway, with some communities being displaced from their traditional lands and territories due to coastal and land erosion caused by large storm-driven waves. Dislocation is already a reality in Samoa and Vanuatu, where flooding from extreme weather and rising sea levels have become the norm and thus have serious implications for people resid-

ing in the region. People living in Papua New Guinea's Bougainville atoll island of Cartaret have asked to be moved to higher ground on the mainland. The people of Sikaiana Atoll in the Solomon Islands have also been migrating away from their atoll, primarily to Honiara, the capital. Similarly, there has been internal migration from the outer islands of Tuvalu to the capital, Funafuti. In the case of Tuvalu, this migration has brought almost half of the national population to Funafuti atoll, with the inherent negative environmental consequences, including an intensified demand for local resources.⁶ New Zealand has agreed to take 75 Tuvaluans per year, in a slow evacuation process of the island.

Migration as a solution is, however, highly problematic. It is a violation of the right of countries to exist as peoples, a threat to cultures and tradition, causes loss of lives, loss of biodiversity, loss of spiritual connectivity and loss of settlement.⁷ It is therefore crucial that the issue of "environmental refugees" is seriously discussed and that indigenous peoples become genuinely involved in designing and implementing responses to climate change.

Adapting by applying traditional knowledge

Traditional knowledge and practices are important to sustaining and managing the environment. In a coastal village on Vanua Levu, Fiji, the philosophy of







Extreme weather events, Ontong Java atoll, Solomon Islands – Photo: Thomas Birk

vanua (which refers to the connection of people with the land through their ancestors and guardian spirits) has served as a guiding principle for the management and sustainable use of the rainforest, mangrove forest, coral reefs and village gardens.

In other parts of the Pacific, indigenous peoples have supported mangrove conservation along the coastline to protect against natural disasters such as cyclones and tsunamis. It is seen as a cheaper undertaking than seawalls, which are funded from external sources. Mangrove conservation involves the community in the management process as well as the inclusion of women in the replanting activities. Other activities include the provision of a water drainage system as well as banning tree clearing. However, it is recognized in the Pacific that enhancing adaptive capacity involves more than local options, which will only be successful if they are integrated with other strategies such as disaster preparation, land-use planning, environmental conservation and national plans for sustainable development.⁸

Grants from United Nations agencies, such as the International Fund for Agricultural Development (IFAD), promote the development and dissemination of appropriate crops and technologies in the Pacific region. The merging of indigenous and atoll technologies through action research and documentation is designed to support agriculture and fisheries. A similar activity, managed by the Solomon Island Development Trust, is due to take place through a small grant from IFAD's Indigenous Peoples' Assistance Facility (IPAF). Indigenous populations will be assisted to improve post-crisis resilience by merging traditional with scientific knowledge.

Institutional barriers that prevent adaptation exist in the Pacific region. For example, adaptive capacity and resilience in the Pacific is hampered by limited resources and lack of access to technology. On the other hand, the application of traditional knowledge and past experiences has been strengthened in various ways, such as the implementation of traditional marine social institutions, as exemplified in the Ra'ui in Rarotonga, Cook Islands. This is an effective conservation management tool aimed at improving coral reef health. Indigenous peoples' ecological knowledge and customary sea tenure is also integrated with marine and social science to conserve some of the wildlife, such as the bumphead parrotfish in Roviana Lagoon, Solomon Islands. Changes in sea tenure, back to more traditional roles, have also taken place in Kiribati.⁹

What needs to be done

While there is scientific consensus, notably through the Intergovernmental Panel on Climate Change (IPCC), with regard to the threats that climate change poses, governments have been slow to respond. The vulnerability of the whole Pacific region to disasters poses a real threat to achieving economic stability, social development, environment conservation and cultural diversity. In September 2007, Mr. Elisara-La'ulu, Director of Ole Siosimaga Society (OLSSI) in Samoa, said that bystanders who knew that the world was in crisis but did nothing were just as bad as the architects of the crisis. He urged government leaders to ask indigenous peoples about the effects of climate change before taking any decisions, and that indigenous peo-

ples should not act when under pressure from global processes driven by big governments.¹⁰ During a meeting in April 2008, Mr. Elisara noted that:

*“For us Pacific peoples, the discussion on climate change is not just a theoretical issue that we talk about when we come to these global meetings! It is there and we see the effects in our daily lives. For us it is a matter of life and death! In many cases we have to decide whether to stay on our islands or leave our homes. As sovereign countries, our rights as countries are protected under the Charter of the United Nations. We plead accountability against those causing these violations of our rights to exist as peoples, as countries, and as sovereign nations. Someone must bear responsibility for our demise when we lose our cultures, when our traditional ways of lives are trashed, and we are denied our freedom to exist as peoples. This is an issue of climate justice that we are calling for here and will continue to do so in every opportunity that comes our way!”*¹¹

There are two important issues that some of the small island states, such as Samoa, are highlighting. The first issue is the importance of allowing communities themselves to prioritize and pursue their adaptation needs. Community representatives need to work with policymakers to identify solutions that take account of cultural values in order to protect the livelihood and well-being of indigenous peoples. The second issue is the urgent need to put early warning systems in place to ensure that indigenous communities have the information they need to respond to each hazard and potential threat. This in turn will go some considerable way towards implementing sustainable community activities to adapt to, and minimize, the adverse impacts of climate change.

At the *Pacific Regional Civil Society Organization Forum* held in Tonga in October 2007, the following recommendations were made:

- That regional contingency plans be developed to accommodate environmental refugees in a manner that maintains their national identity and indigenous cultural integrity;
- Engage indigenous peoples’ organizations in the development of programmes that involve measures to deal with the effects of climate change;
- Promote forest conservation, energy efficiency and renewable energy; and
- Involve indigenous peoples in programs that support community-level mitigation and adap-

tation measures and, at the same time, recognize the value of the traditional knowledge of indigenous peoples, which has enabled them to maintain and interact with their environment in a sustainable way.¹²

Notes

- 1 Fiu Mataese Elisara. *Effects of Climate Change on Indigenous Peoples*. A Pacific presentation during the International Expert Group Meeting on Indigenous Peoples and Climate Change, Darwin, Australia April 2-4, 2008.
- 2 Ema G. Tagicakibau. *Pollution in Paradise: The Impact of Nuclear Testing and Radio-Active Pollution on Indigenous Peoples in the Pacific and Strategies for Resolution*. Pacific Concerns Resource Centre, August 2007.
- 3 Robert W. Buddemeier, Joan A. Kleypas, Richard B. Aronson. *Coral Reefs and Global Climate Change: Potential Contributions of Climate Change to Stresses on Coral Reef Ecosystems*. Pew Centre, January 2004, page 25.
- 4 Victo Mugarura. *Aborigines burn the way to climate control*. BBC, September 18, 2007 <http://news.bbc.co.uk/2/hi/asia-pacific/6726059.stm>
- 5 D. Wysham. *A Carbon Rush at the World Bank*. Foreign Policy in Focus, February 2005. See www.fpif.org
- 6 Intergovernmental Panel on Climate Change (IPCC). *Report of Intergovernmental Panel on Climate Change, Working Group 2: Climate Change Impacts, Adaptation and Vulnerability*, 2007, page 708.
- 7 Fiu Mataese Elisara. *Effects of Climate Change on Indigenous Peoples*. A Pacific presentation during the International Expert Group Meeting on Indigenous Peoples and Climate Change, Darwin, Australia April 2-4, 2008.
- 8 Intergovernmental Panel on Climate Change (IPCC). *Report of Intergovernmental Panel on Climate Change, Working Group 2: Climate Change Impacts, Adaptation and Vulnerability*, 2007, page 709.
- 9 *Ibid*, page 708.
- 10 Meetings Coverage, DPI/NGO Annual Conference, NGO/626, PI/1794, Department of Public Information, UN, New York, 6 September 2007.
- 11 Fiu Mataese Elisara. *Effects of Climate Change on Indigenous Peoples*. A Pacific presentation during the International Expert Group Meeting on Indigenous Peoples and Climate Change, Darwin, Australia April 2-4, 2008.
- 12 Communiqué of the *Pacific Regional Civil Society Organization Forum* held in Tonga in October 2007, pages 4-5.

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The views expressed in this paper do not necessarily represent those of the United Nations or the Secretariat of the Permanent Forum on Indigenous Issues.