Factsheet

Pacific Climate Change

Effects of climate change on Pacific islands

Pacific islands are extremely vulnerable to climate change. The most substantial impacts of climate change include losses of coastal infrastructure and land, more intense cyclones and droughts, failure of subsistence crops and coastal fisheries, losses of coral reefs and mangroves, and the spread of certain diseases. Climate change will affect the Pacific way of life and the sustainable development of our islands in profound ways:

Ice melting, sea rising

The polar ice caps are melting. As the ice caps melt, and the sea temperatures increase, the oceans expand, and sea levels rise. Sea level rise will affect coastal communities, particularly in many low-lying islands found in the Pacific, as well as affecting the level of freshwater available on those islands.

Extreme weather events

Climate change will intensify extreme weather events, such as storms, cyclones, floods, droughts and heat waves. In the last decade, there were three times more weather-related natural catastrophes, mostly floods and windstorms, in the world than in the 1960s.

Water shortages

Rises in sea level, and storm surges will result in saltwater entering freshwater supplies (saline intrusion), which means that there will be less water available to drink and to grow plants and food. Climate change may also alter rainfall patterns.

Increase in drought

The changes in climate will lead to more extreme weather patterns, meaning that some places will receive more rainfall, and in other areas, less rainfall, or more intense rainfall but of a shorter duration which will result in droughts. Droughts for a long period can have other effects such as placing forests at high risk from fires. Droughts will also harden the soil, thus making it less able to absorb rain when it eventually comes.

Health issues

Climate change will affect the health of Pacific islanders. The changes in the climate, and the effects of climate change such as the increases in temperature, flooding, and contaminated water, will increase the level of waterborne and vector-borne diseases, such as cholera, typhoid, malaria and dengue.

Immersion of coastal areas at high tide is an increasingly common occurrence throughout the Pacific, as here in Tagua, Vanuatu.

Production of food

Tropical cyclones (its increase in frequency and intensity), irregular rainfall patterns, flooding in low lying and coastal areas, saline intrusion, coastal erosion and increased rates of coral bleaching mean higher demands and unstable levels of food production. This will affect diet, income generating activities for communities and economies - in essence the food security of the Pacific Islands.

Affecting unique Pacific biodiversity

The impacts of climate change, including cyclones and changes in temperature due to drought, can lead to changes in the habitats of plants and animals, and as they die out, may result in destructive invasive species taking their place in the ecosystem. It is also likely that there will be changes in overall tuna stocks and changes to tuna migratory patterns as was seen in 1997-98 El Nino, a decrease in other fish stocks as well as an increase in ciguatera poisoning outbreaks.

Erosion

Flooding of lowland and coastal areas, and severe coastal erosion will impact on coastal infrastructure. The increased rainfall will wash soil away if not managed carefully, limiting the food and plants that can be grown, as well as affecting the health of the coral reef through sedimentation. Forestry can play an important role in watershed manage-

ment and erosion control.

Future development of Pacific islands

The impacts of climate change will affect the sustainable development of the Pacific islands by affecting industries such as agriculture and tourism. Each year, millions of tourists visit the region for its 'Pacific paradise' image. The effects of climate change on tourism will likely include loss of beaches, degradation of the coastal ecosystems, saline intrusion and damage to critical infrastructure.

Adapting to the effects of climate change in the Pacific

Adaptation can be defined as actions or activities that people undertake to accommodate, cope with or benefit from the effects of climate change. This means highlighting what actions need to be undertaken at national and community levels to reduce its impacts.

Pacific islands are in a constant process of adapting to environment, social and economic factors. However, the rapid pace of climate change is unprecedented in comparison to past adaptation. The impacts of climate change may heavily affect the access to and use of natural resources that underpin Pacific life. Given this reliance on natural resources, it is important to strengthen the environment to cope with the impacts of climate change. Solutions must be found that respond to the climate change challenges faced by the communities, while at the same time being socially and culturally acceptable to the community.

SPREP's climate change initiatives

One of the greatest challenges to sustainable development in the 21st century is climate change. While the international community has initiated steps under the United Nations Framework Convention on Climate Change (UNFCCC) to stabilize greenhouse gases in the atmosphere and promoted carbon trading to assist with this overall objective under its Kyoto Protocol, progress has been slow.

The Secretariat of the Pacific Regional Environment Programme (SPREP) is an intergovernmental organisation working with Pacific island countries and territories to strengthen environmental management and promote sustainable development. SPREP works with 21 Pacific countries and territories as well as Australia, France, New Zealand and USA. SPREP members have identified four main areas of work in climate change:

1. Strengthen meteorological and climatological capacities of Pacific island countries and territories to plan and respond to climate variability and extreme weather events

2. Strengthen understanding of climate variability, climate change and sea level rise through information, research and systematic observation, and clearinghouse mechanisms. Research needs to identify and assess vulnerabilities as well as impacts.

3. Support adaptation to climate change and mitigation options and coordination. This includes sourcing adequate assistance to assess and implement feasible options and access funds for implementation of activities.

4. Provide technical and legal advisory services to assist Pacific island Parties implement the UNFCCC , to negotiate a more robust post-Kyoto framework, with environmental integrity preserved, and to ensure consistency with other international processes.

SPREP's specific climate-related activities include the Pacific Climate Change Roundtable (PCCR), Pacific Islands GCOS Programme and Implementation Plan (PI-GCOS), Pacific Adaptation to Climate Change (PACC) Project, and the Pacific Islands Greenhouse Gas Abatement through Renewable Energy Project (PIGGAREP). For more information on these programs, visit the SPREP Climate Change Portal online at www.sprep.org/climate_change/.

Climate change facts

• The Earth's surface temperature will rise between 1.1 and 2.9 degrees celcius by the end of the 21st century *(IPCC AR4, WG 1, 2007)*.

• A mean sea level rise of between 25–58cm is projected by mid 21st century along the coastlines of Pacific island countries.

• Higher sea surface temperatures will result in bleaching of coral reefs and retreating of mangrove wetlands, which means less diversity of fish and other animals.

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