



(Source: PACE SD EU-GCCA Project)

Climate Change Impacts Worldwide

Globally, both observed and projected impacts of climate change can have significant social, economic and environmental implications for countries. Figure 1 illustrates the projected impacts on various sectors, a function of global temperature rise.

It is estimated that in Fiji, agricultural losses (due to climate change) could reach US\$23-52 million/year by 2050.



(Source: PACE SD EU-GCCA Project)

Agriculture will be one of the hardest hit by climate change

Pacific Islands' most important natural resource — tuna fisheries — could migrate towards the central Pacific ocean and adversely affect peoples' sustainable livelihood as well as economy.

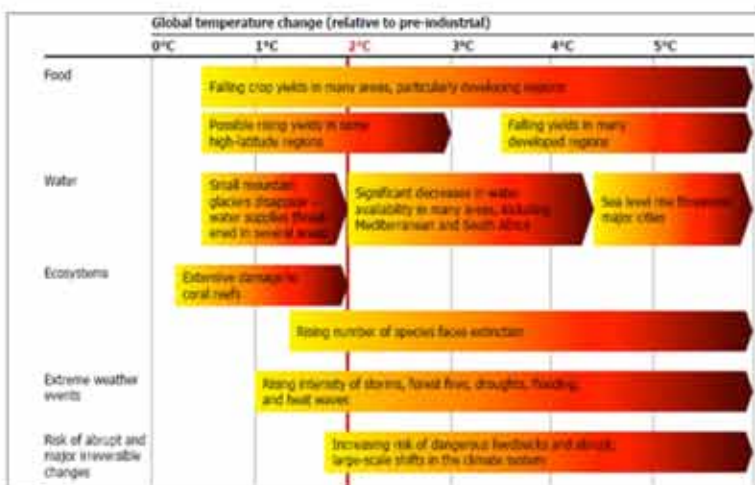


Figure 1: Projected impacts of climate change on various sectors (Source: Stern, 2006)

How will climate change affect our lives in the Pacific?

Food Security: Agriculture and Fisheries

Changes in rainfall patterns, and the increased frequency and intensity of cyclones are major threats to agriculture (such as productivity levels and pests).

Water Resources

Pacific countries are extremely vulnerable to reduced rainfall. Low-lying coral atolls are especially threatened

- Tarawa Atoll (Kiribati) is expected to have a 10% reduction in rainfall with an corresponding 20% reduction in freshwater supplies

- Sea level rise is causing a decline in freshwater supply from groundwater (water pumped from beneath the surface).
- An accentuated El Niño Southern Oscillation (ENSO) cycle (due to climate change) could further threaten freshwater supplies by causing long periods with no rainfall.

Human Health / Well Being

- Anticipated climate change will lead to increasing rates of vector-borne diseases such as malaria, dengue fever and filariasis. The 1997/1998 dengue outbreak in Fiji resulted in 24,000 infections, 13 deaths and US\$3-6 million in economic losses.
- Higher temperatures and water scarcity can increase individual rates of diarrhoea.
- Cyclones, floods and storm surges can cause physical injury, loss of life and communities.



The dengue mosquito (Source: PACE SD)

Economy and Infrastructure

- More frequent and severe extreme events will undermine human resources and threaten economic development.
- Much of the infrastructure in Pacific countries (such as roads, airports and ports) is situated in coastal areas, making it at risk from flooding and inundation. In Fiji or Samoa, a 0.5m rise in sea level and a cyclone event would cause major damage to port facilities.
- The tourism industry is likely to be affected due to the decline in ecosystems, especially coral reefs.

Biodiversity and Coastal Resources

- Coastal wetlands, fisheries, coral reefs and mangrove habitats will be threatened by sea level rise and/or warming ocean temperatures.
- Loss of coral reefs and their richly diverse marine life is possible. Increasing ocean temperatures and acidification (more acidic, citric acid and vinegar are common household acids), sea level rise and cyclones will continue to stress coral reefs.
- Within the next 30-50 years, coral bleaching could expand significantly in Pacific countries and seriously damage marine ecology.
- Increasing extreme events (such as cyclones) are likely to cause severe and lasting damage to biodiversity (especially in forests).
- Likely increases in coastal erosion, flooding, inundation and saline intrusion.

Impacts

This factsheet was produced by PACE-SD under the funding support of the Australian Government's 'Future Climate Leaders Program' (AusAID-FCLP) and the European Union's 'Global Climate Change Alliance (EU GCCA) Project'.

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