



(Source: PACE SD EU-GCCA Project)



Selling fish products at markets across the Pacific is very common
(Source: Johann Bell)

The Fisheries Industry

From 1950 to 1988, the world fish catch climbed from 19 million to 89 million tonnes. However, since the late 1980's it has fluctuated between 85 million and 95 million tonnes. The fluctuations have been linked to identified threats from: Illegal Unreported and Unregulated (IUU) fishing practices, over capacity (too many boats going after a dwindling stock), lack of governance to regulate sustainable fishing practices and climate change effects.

Some 75% of oceanic fisheries are being fished today at or beyond their sustainable yields. Preservation of nursery habitats like coral reefs, mangroves, seaweed forests, and coastal wetlands is integral to keeping fish in the sea for generations to come.

Threats Due to Climate Change

Projected sea level rise and warming sea surface temperature (SST) will likely cause a decline in the productivity of fisheries in some areas of the tropical Pacific. For instance, a key impact of climate change will likely be a loss of coral reefs and mangrove forests, which many fish depend on as nursery areas. Pacific migratory fish stocks such as tuna will move to higher latitudes and deeper waters, while increases in algal blooms will lead to more diseases and toxicity of fish (e.g. ciguatera). Tuna larvae and juveniles are less tolerant than adults to SST variations: spawning grounds will shift to higher latitudes, with a decrease in adult size. Figure 1 presents some of the direct and indirect effects of climate change on fisheries.

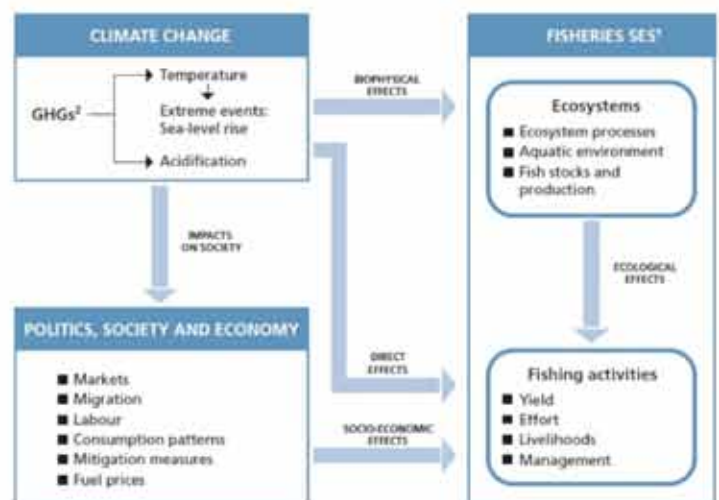


Figure 1: direct and indirect effects of climate change on fisheries
(FAO, 2010)

Figure 2 highlights the projected changes in fisheries catch potential by 2055 under a 'business as usual' climate change scenario. High latitude regions are projected to gain in catch potential while regions in the tropics, including the western Pacific ocean, may suffer from losses as equatorial regions get warmer and migratory fish seek cooler waters.

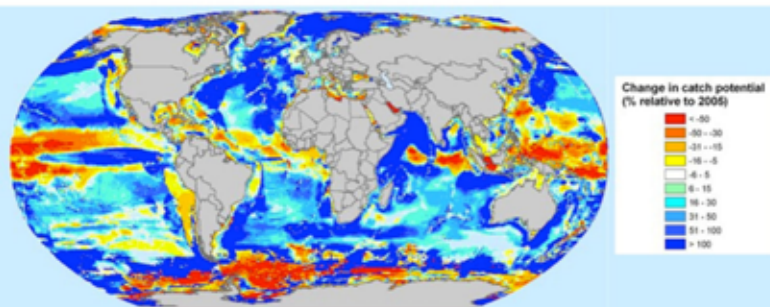


Figure 2: Projected change in fisheries catch potential by 2055, using a 'business as usual' scenario (Source: Cheung et al, 2010)

Fisheries: their importance & on-going changes in the Pacific

Fisheries (including aquaculture) are an important and crucial industry in the Pacific for three main reasons: food security; livelihoods; and an economic source for government revenue. Many communities depend on coastal fisheries for their livelihood (see Figure 3). In the Pacific, fish consumption is very high averaging at 70 kilograms per person per year (FAO, 2008). Moreover, the export of fish accounts for up to 73% of the total exports for some countries.

According to FAO (2008), key drivers of change for fisheries in the Pacific region include: climate change and rising sea surface temperature; coastal water pollution due to population growth and urbanisation; governance and political stability; global economic conditions; status of fisheries in other oceans; markets and trade; fuel costs; technology and innovation; and foreign aid. Many of the fisheries in the Pacific face collapse over the next 25 years (Gillett and Cartwright, 2010).

Adaptation Options in the Fisheries Sector

Below are some adaptation options useful for maintaining the fisheries (including aquaculture) industry in the Pacific:

- Identify regional ecosystem and fishery sensitivities and vulnerabilities induced by climate variability and change.
- Systematically develop 'plausible futures' for Pacific Island countries' aquatic resources by region, ecosystem and fishery.
- Move towards ecosystem-based management of fisheries resources by incorporating incremental improvements in the understanding of climate change impacts and adaptation responses into day-to-day management advice.
- Identify and effectively communicate advice to policy makers, fisheries managers, industry stakeholders and local communities regarding the implications of climate change impacts and adaptation research findings for the future.
- Restore and sustain coastal and freshwater fisheries.
- Restore and maintain mangrove habitats and native forests to retain fish larvae in coastal areas.
- Identify species that are currently overfished and a causal factor of undesirable ecosystem phase shifts (e.g. from coral-dominated to algae-dominated).

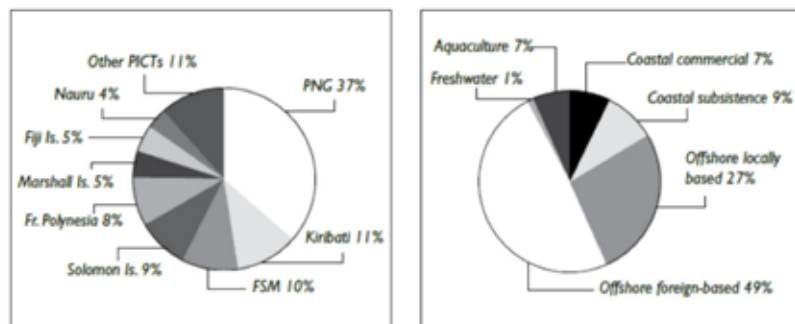


Figure 3: Production from fishers and aquaculture by country and category (Source: Gillett and Cartwright, 2010)

Fisheries and Climate Change

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