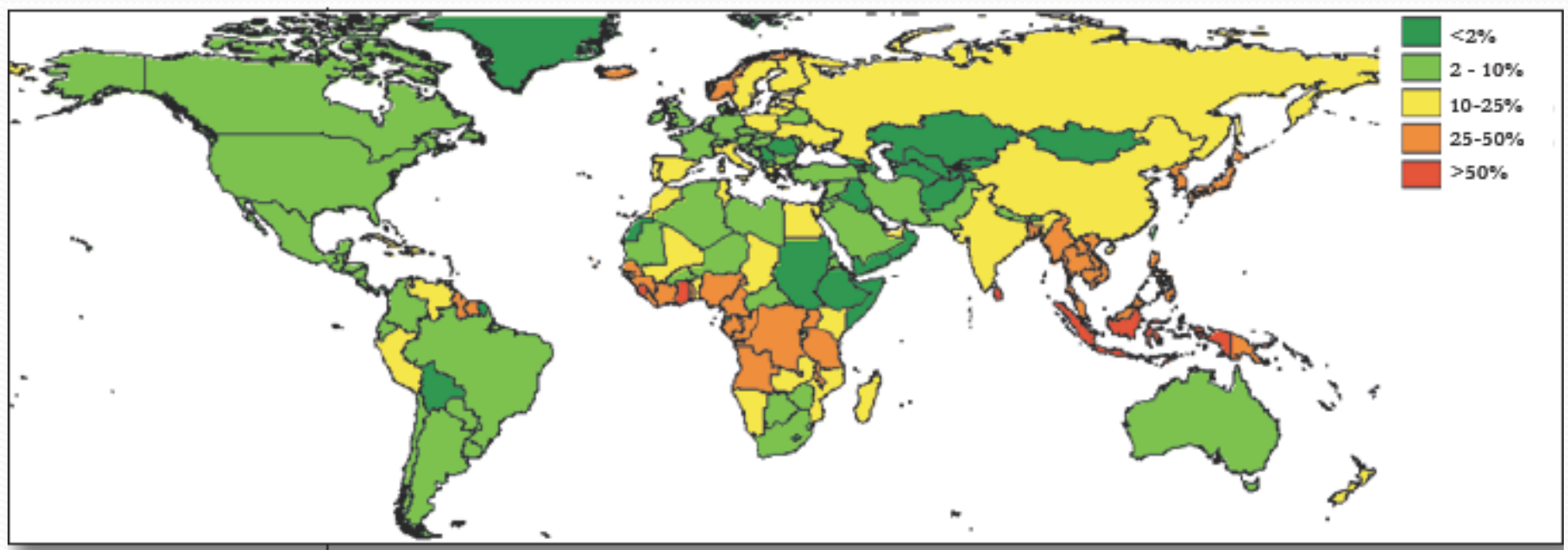




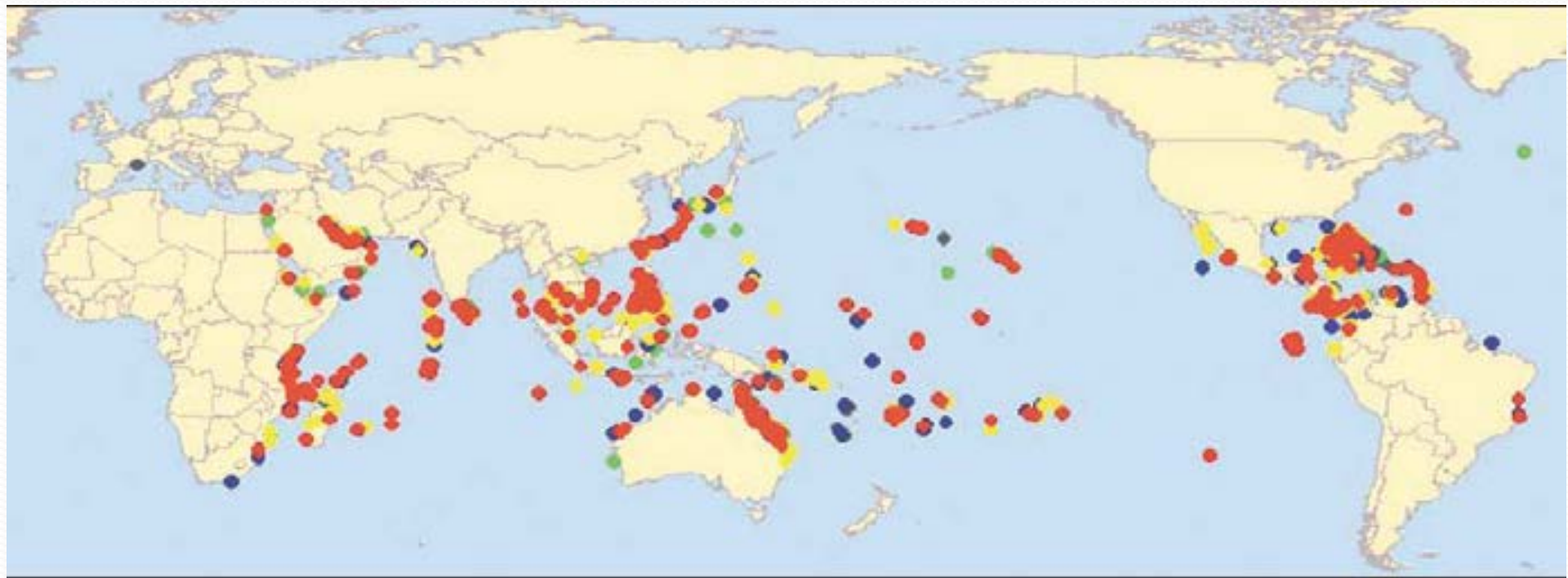
Climate change and aquaculture: potential impacts, adaptation and mitigation

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Fish Consumption as percentage of total animal protein



Coral reef bleaching severity



- = No bleaching
- = Severity unknown
- = Low bleaching
- = Medium bleaching
- = High bleaching

FACTORS THAT IMPACT AQUACULTURE

- Climate Change may reduce the abundance of some species while increasing the others.
- The abundance/shortage will affect fishermen's harvest
- Changes may impact employment opportunities because of marketing and processing of the harvested species.

FACTORS THAT IMPACT

AQUACULTURE

- Prices of fishes are highly sensitive. The harvested species may fetch low prices
- This will impact profits
- Harvest volume will also be affected
- May lead to social stress because of reduces income
- Impact political and financial sectors

CHANGES DUE TO CLIMATE

CHANGE

- Changes in global marine and freshwater primary production systems
- Changes in fish production
- Changes in fish population processes
- Changes in fisheries on human societies
- Changes in sea level rise
- Changes in marine and freshwater system productivities

WHAT WE CAN DO

- Implement comprehensive and integrated ecosystem approaches to managing coasts, oceans, fisheries, aquaculture to adapting to climate change and reducing risk from natural disasters
- Move to environmentally friendly and fuel efficient fishing and aquaculture practices.
- Eliminate subsidies that promote overfishing and excess fishing capacity
- Provide climate change education in schools and create greater awareness among all stakeholders

WHAT WE CAN DO

- Undertake assessment of local vulnerability and risk to achieve climate proofing
- Integrate aquaculture with other sectors
- Build local ocean-climate and freshwater-climate models
- Strengthen knowledge of the aquatic ecosystem dynamics and biogeochemical cycles such as ocean CO₂ and nitrogen cycle

WHAT WE CAN DO

- Encourage sustainable environmental friendly biofuels production from aquatic macrophytes, algae and seaweed
- Encourage funding mechanisms and innovations that benefit from synergies between adaptation and mitigation in fisheries and aquaculture
- Conduct scientific and other studies to identify options for carbon sequestration by aquatic ecosystem which do not harm these and other ecosystems

WHAT WE CAN DO

- Consider appropriate regulatory measures to safeguard the aquatic environment and its resources its against adverse impacts of mitigation strategies measures.
- All stakeholders may be taken onboard in decision taking mechanism
- Traditional knowledge and measures may be preserved and kept in mind in decision taking.

Fisheries, aquaculture and fish habitats are at risk in the developing world

- Deltas and estuaries are in the front line of climate change. For example, sea level rise and reduced river flows are causing increasing saltwater intrusion in the Mekong delta and threatening the viability of catfish aquaculture.
- This industry produces about 1 million tonnes per year, valued at \$1 billion and provides over 150,000 livelihood opportunities, mostly for women.

Fisheries and aquaculture need specific adaptation and mitigation measures

- improve the management of fisheries and aquaculture and the integrity and resilience of aquatic ecosystems
- respond to the opportunities for and threats to food and livelihood security due to climate change impacts, and
- help the fisheries and aquaculture sector reduce greenhouse gas emissions.

Water scarcity map

