Climate change and its implications for fisheries and food security: FAO mid-term road map for fostering knowledge




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Outline

1. *What is at stake?*
2. *What are the climate risks?*
3. *How can we respond?*
4. *What is FAO Fisheries and Aquaculture Department doing vis-à-vis climate change?*

1. What is at stake?

- Over **500 million** people depend – directly or indirectly – on fisheries and aquaculture for their livelihoods
- Aquatic foods provide essential nutrition for **3 billion people** and at least 50% of animal protein and minerals to 400 million people in the poorest countries.
- Fish products are among the most **widely-traded foods**, with more than 37% by volume of world production traded internationally.

Drivers of change

Affecting biological processes

Pollution/Water quality

Climate

Acidification

Overfishing

Altered habitats

Etc…

Fisheries and Aquaculture systems

Affecting human choices

Governance and politics

Legal systems

Technological change

Markets

Capital/labor flows

Demographics

Culture

Etc…

2. CC impacts on fisheries and aquaculture

Biophysical changes from global warming

Ocean currents
ENSO
Sea level rise
Rainfall
River flows
Lake levels
Thermal structure
Storm Severity
Storm frequency
Acidification

Effects on:

Production
Ecology

Fishing & Aquaculture operations

Communities
Livelihoods

Wider society & Economy

Impacts on:

Species composition
Production & yield
Distribution
Diseases
Coral bleaching
Calcification

Safety & efficiency
Infrastructure

Loss/damage to assets
Risk to health & life
Displacement & conflict

Adaptation & mitigation costs
Market impacts
Water allocation

Badjeck et al, 2010

3. What can be done?

Preparing and responding to the impacts: adaptation to climate change through broader vulnerability reduction

- Ecological, Economic and Social Resilience
  - implementation of ecosystem approach to fisheries and aquaculture, the Code of Conduct for Responsible Fisheries
  - livelihood diversification, flexible access rights, public and private insurance
- Technological innovation
- Planned adaptation –policy coherence across sectors (water, agriculture, forestry, CZM)
- Disaster preparedness and response

Mitigation - Oceans, aquatic ecosystems

Removing emissions:

- **Carbon capture and storage (sea beds, phytoplankton, and blue carbon) – BIG NUMBERS 93% carbon storage and 30% sequestration**
  - Halt the disruption of carbon sequestration in aquatic ecosystems by, e.g., **habitat destruction**
  - Implement mangroves and floodplain forests in REDD+ and develop blue carbon funds

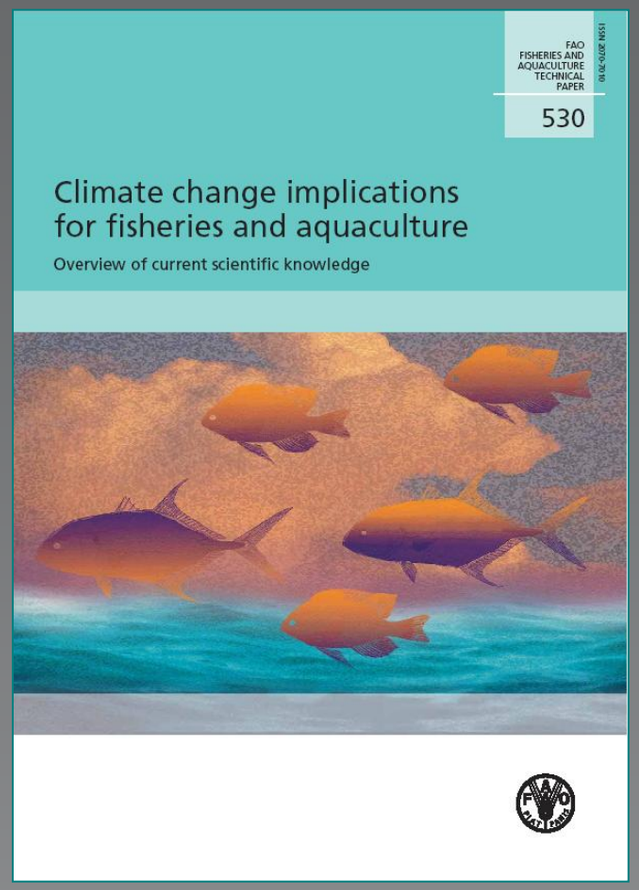
Avoiding or displacing emissions:

- Renewable energy potential – tides, currents, waves, wind, hydropower, **aquatic biofuels**

Reducing emissions:

- **Emissions reductions** from aquatic food production systems and maritime transport

4. FAO-FI activities on climate change



- Expert workshop on “Climate Change Implications for Fisheries and Aquaculture” (April 2008) (HLC, COFI)

- The FAO Fisheries and Aquaculture Department’s Climate Change Strategy

Coordinated action: the Global Partnership on Climate, Fisheries, and Aquaculture (PaCFA)

http://www.climatefish.org

OSPESCA

ICES CIEM

International Coalition of Fisheries Associations

PaCFA

Global Partnership Climate, Fisheries and Aquaculture

PICES

UNEP

Benguela CURRENT COMMISSION

ISDR
United Nations
International Strategy for Disaster Reduction

NEPAD
NEPAD Planning and Coordinating Agency
Agence de Planification et de Coordination du NEPAD

EBCD
EUROPEAN BUREAU FOR CONSERVATION & DEVELOPMENT

UNESCO

IFAD
Enabling poor rural people to overcome poverty

FAO FIAT PANIS

NACA

SEAFDEC

SPC
Secretariat of the Pacific Community

GLOBEC

NACEE

OECD

UNDP

CBD

WorldFish CENTER

FAO FIAT PANIS

FAO FI&AQ Climate Change Strategy thematic areas

- **Improving awareness of impacts pathways and vulnerabilities and supporting adaptation potentials**
- **Understanding GHG emissions from aquaculture and fisheries sectors as well as supporting mitigation efforts**
- **Communicating and advocating for the sectors in global, regional and national climate change discussions**
- **Making the bridge between science and policy**
- **Coordinating** and **collaborating** (e.g. PaCFA, COP17, joint project development, information sharing)

Thank you!

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