

# Adapting Fisheries to Climate Change: an NGO perspective

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International Union for Conservation of Nature



#### www.iucn.org

Changing the climate forecast Naturally energizing our future

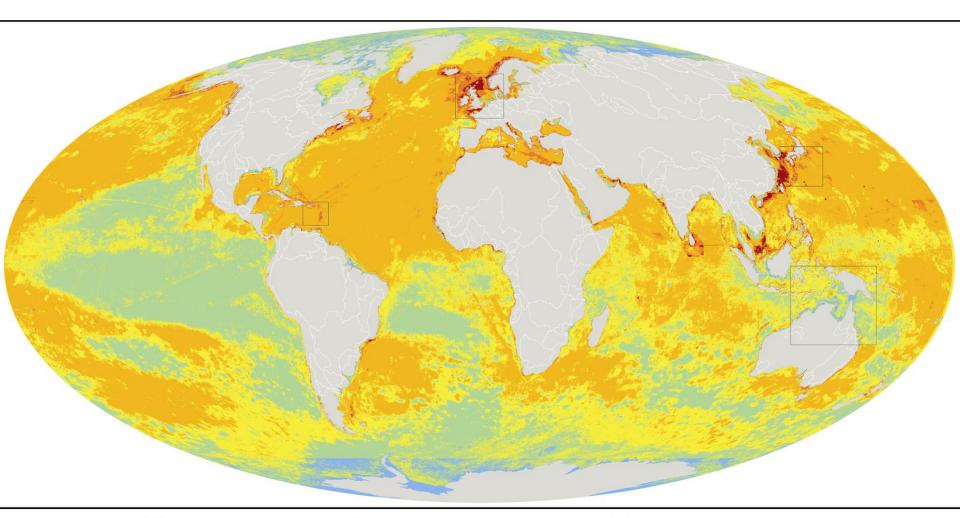
Conserving the diversity of life

Managing nature for human well-being Greening the world economy

International Union for Conservation of Nature



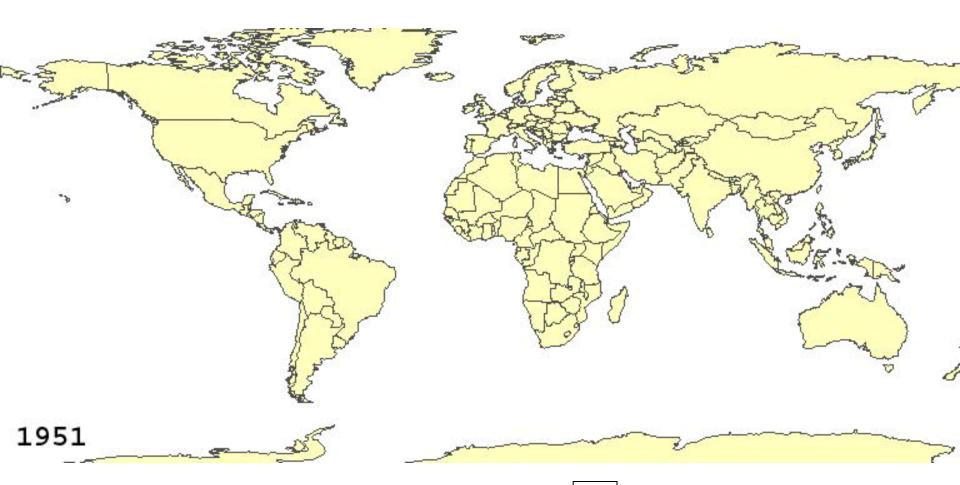
#### Human Impact



Very Low Impact (<1.4)</li>
 Medium Impact (4.95–8.47)
 High Impact (12–15.52)
 Low Impact (1.4–4.95)
 Medium High Impact (8.47–12)
 Very High Impact (>15.52)
 Halpern et al 2008

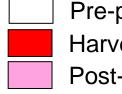


#### The Great Depletion



#### **Year of Peak Fish Harvest**

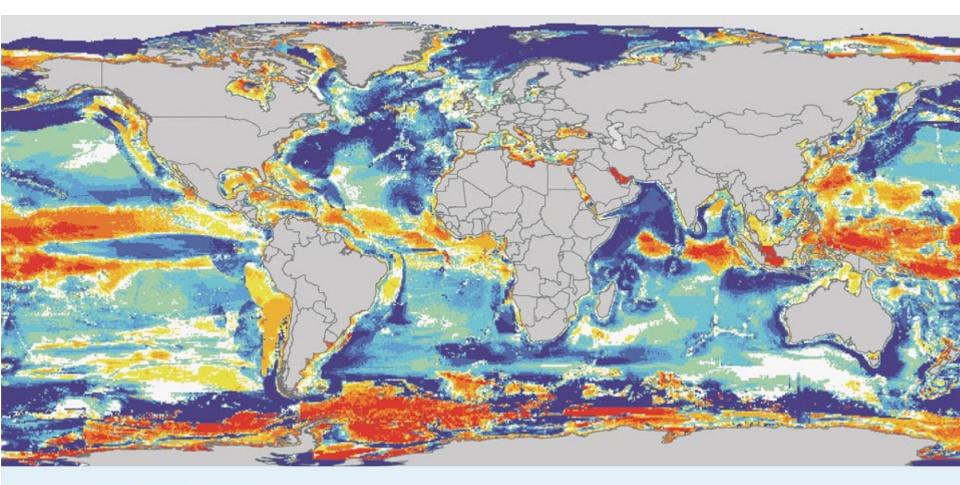
Source: Millennium Ecosystem Assessment and Sea Around Us project



Pre-peak Harvest Peak Post-peak



### **Climate Change and Fisheries**



Change in Catch Potential (% relative to 2005)





#### **Current State of Affairs**

- Fisheries Management: maximum yield, optimize return on investment, subsidize, catch technology improvement
- Fish Conservation Status: globally deficient, deteriorating, marginal consideration in most management regimes
- Climate Change: warming, ocean acidification, altered productivity patterns, food webs and habitats





### Adaptation

#### pCO2 currently at 383 ppm 00 ppm CO<sub>2</sub>e 95% 450 ppm CO<sub>2</sub>e 550 ppm CO,e 650ppm CO<sub>2</sub>e 750ppm CO<sub>2</sub>e Eventual Temperature change (relative to pre-industrial) 0°C 2°C 3°C 1°C 4°C 5°C Food Falling crop yields in many developing regions Severe impac Rising number of people at risk fro nger (25 Entire regions experier in margina 60% increase in the 2080s in one still major declines in crop Sahel regio weak carbon fertilisation), with half c (e.g. up to one third increase in Africa and West As Rising crop yields in e developed Yields in many developed region countries if strong ca decline even if strong carbon fe Significant changes in water a study projects more than a billion pe Water water shortages in the 2080s many Small mountain while a similar number disappear world Sea level rise threatens potential threat o wate major world cities, including Greater than 30% decre supplies in seve London, Shanghai, New in runoff in Mediterranear York, Tokyo and Hong H and Southern Africa Possible onset of co Coral reef ecr of part or all of An extensively a eventually irre damaged Large fraction of ecosystems unable to maintain current for Ecosystems Rising forest fires, droughts, flooding and heat w Extreme Weather Small increases in Event ntensity lead to a doubl damage costs in the L Risk of rapid Risk of weakening of natural carbon absorption and possible climate atural methane releases and weakening of the Atl change and major Increasing risk of abrupt, large-scale shift set of irreversible melt irreversible climate system (e.g. collapse of the Atlanti he Greenland ice impacts and the West Antarctic Ice Shee

#### Recognize

- the need to improve fisheries management
- the climate change vulnerability of fisheries
- that adaptation can bring ecological, social, and economic gains
- Adaptation must be implemented in the context of fisheries reform

"Large fraction of ecosystems unable to maintain current form" Stern review 2006



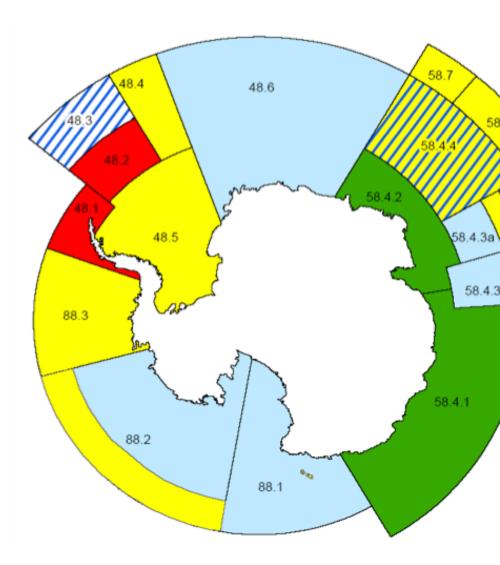
#### **Key Actions**

- Strengthen global governance system
- Rights-based management
- Protect ecosystems
- Industry transformation, phasing out capacity, livelihoods transition
- Increase demand for sustainably caught seafood
- End perverse subsidies, provide incentives for reform



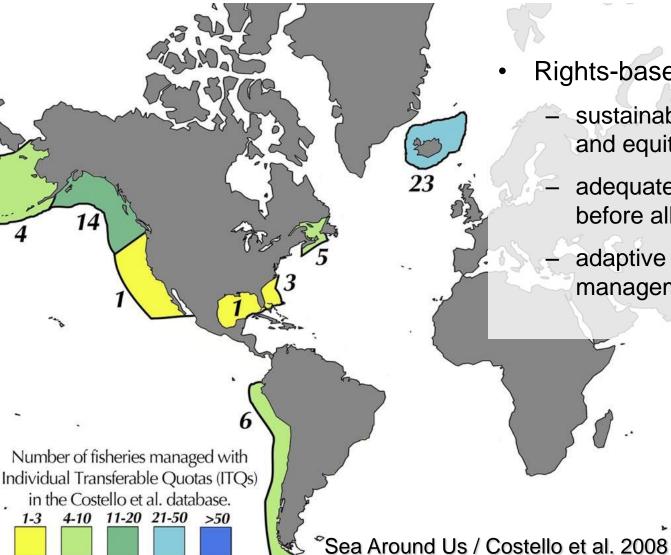
# Strengthen Global Ocean Governance

- Ecosystem-based
- Comprehensive coverage of RFMOs, reflecting stocks
- No fishing without competent RFMO in place
- Science-based, precautionary decision-making
- Full reporting, performance
  assessment
- Enforcement





# Ocean Governance – by whom?



- Rights-based fisheries regimes
  - sustainability, economic efficiency and equitable distribution

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- adequate knowledge of stocks before allocating rights
- adaptive and precautionary management regime



### **Build Ecosystem Resilience**



Establishing Resilient Marine Protected Area Networks – Making It Happen

Full Technical Version, including Ecological, Social and Governance Considerations, as well as Case Studies

2008



- Marine Protected Area (MPA) Networks
- CBD: "establishment of marine protected areas... including representative networks by 2012"
- Ecosystem approach, proven concept
- Relatively inexpensive
- Available to Government, NGO, private sector, local communities



# **Build Social/Industry Resilience**

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I	UCN

# A Framework for Social Adaptation to Climate Change

PRE-RELEASE VERSION

Sustaining Tropical Coastal Communities & Industries

NA Marshall, PA Marshall, J Tamelander, D Obura, D Malleret-King and JE Cinner December 2009



- Secure resource health
- Diversify strategies
- Support transformation
- Training
- Participatory assessment and planning
- Opportunities, incentives
- Supportive policy framework
- Rights and responsibilities



ESE

A CONSUMER'S GUIDE

# Create Sustainable Seafood Markets















Certified sustainable seafood

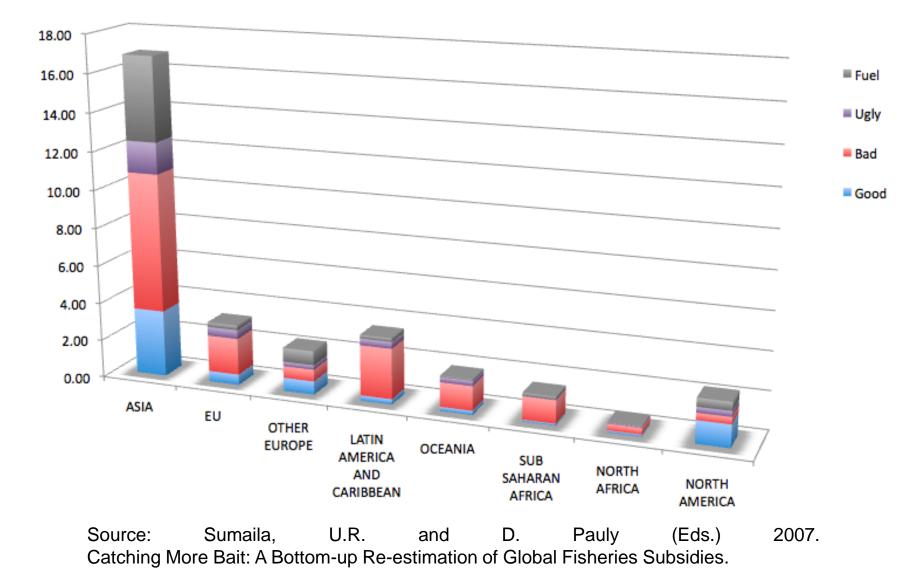


Marine Stewardship Council





#### **Fisheries Subsidies**





### **Financing Adaptation**

- Investing US\$8 billion a year could raise catches and catch value by 40% over 40 years
- Benefits of sustainable fishing are 3-5 times higher than the cost of greening fisheries



