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Climate change and the oceans: Consequences for fisheries

Manuel Barange

Director Fisheries and Aquaculture Division

Food and Agriculture Organization of the UN, Rome, Italy



Manuel.Barange@fao.org



[@manu_FAO](https://twitter.com/manu_FAO)





- 1. Fish is food*
- 2. ...of particular importance to the poor and hungry*
- 3. Fish is more than food*
- 4. Not everyone knows this. We must do something about it*



The real challenge: how to feed the world

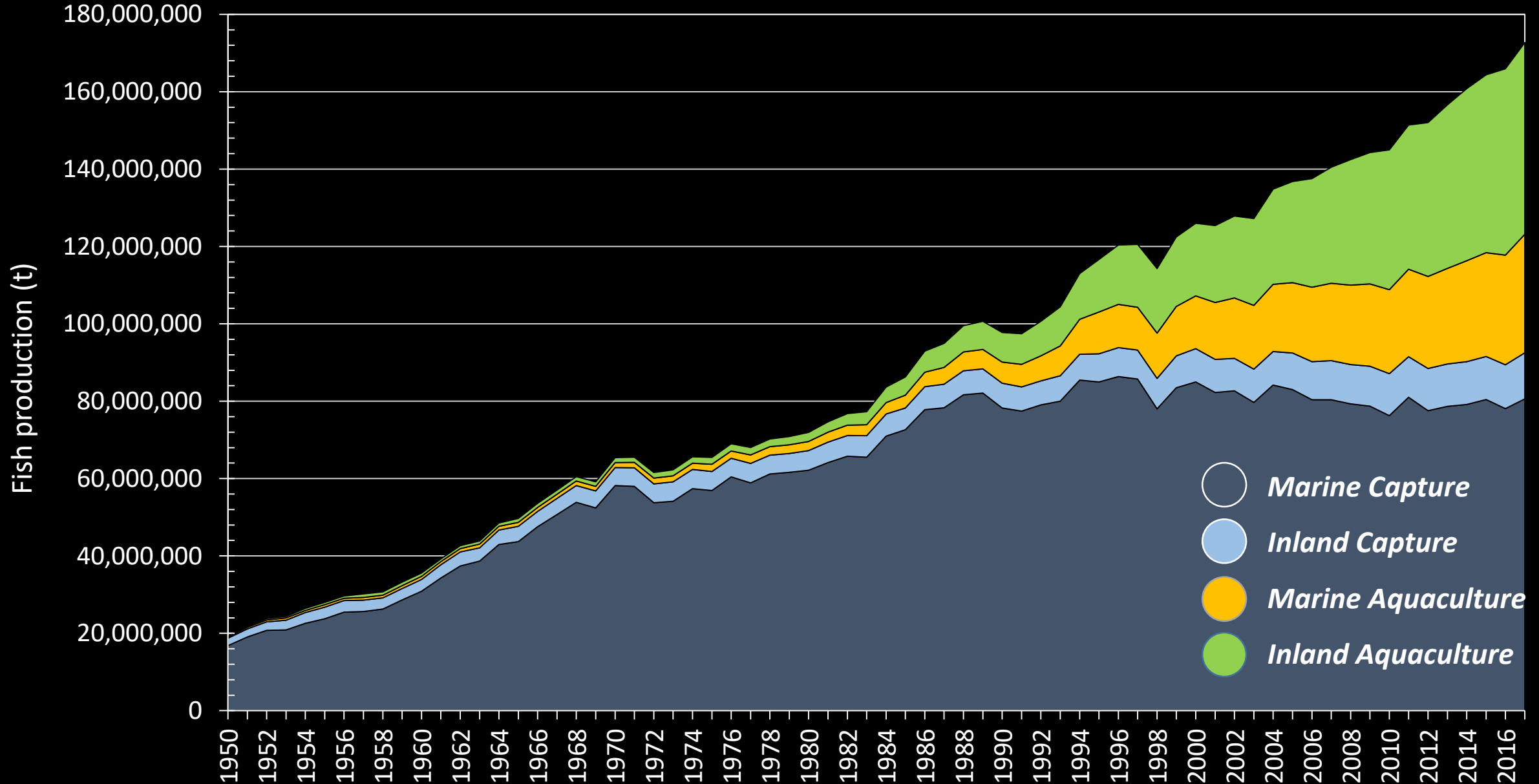
- *821 million people are undernourished*
- *Hunger has been on the increase since 2015*
- *More than one in eight adults is obese*
- *One in three women of reproductive age is anaemic*
- *We are not doing well as a society*
- *We are not recognizing enough the contribution of fish*





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A brief history of fish production in one slide





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and country level, but remarkably stable
globally

Global Marine Fisheries Production: 1970 - 2017

Production (tonnes) by country over time.

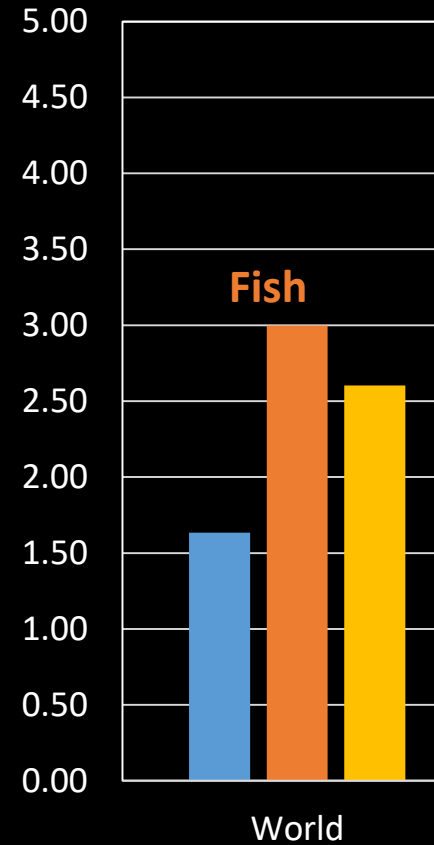


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Nutrition transition

Annual growth rate - 1961-2013 (%)



■ Population

■ Fish proteins by annual amount

■ Animal proteins by annual amount





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ipcc
INTERGOVERNMENTAL PANEL ON climate change

The Ocean and Cryosphere in a Changing Climate

This Summary for Policymakers was formally approved at the Second Joint Session of Working Groups I and II of the IPCC and accepted by the 51th Session of the IPCC, Principality of Monaco, 24th September 2019

Summary for Policymakers



Climate change –
more than a
challenge, it is the
ultimate disruptor

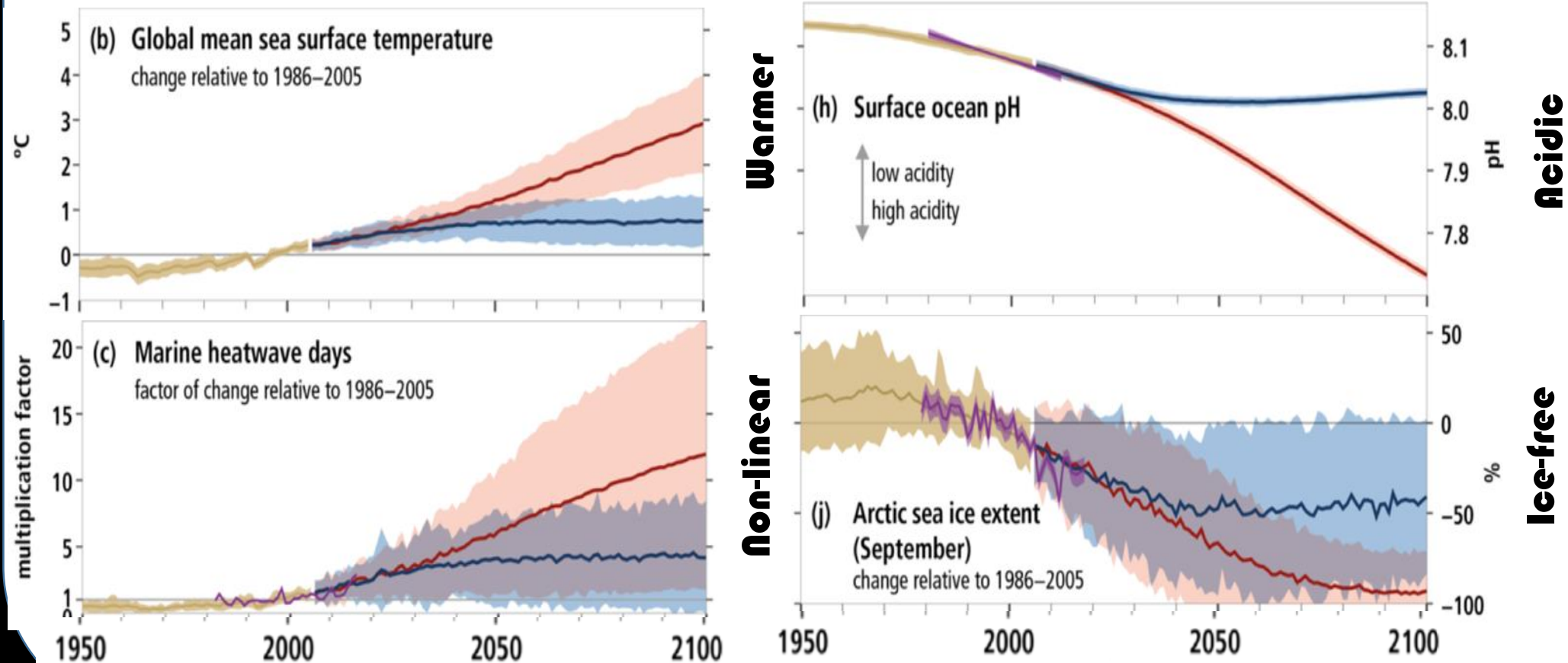


Dramatic climate change is not inevitable

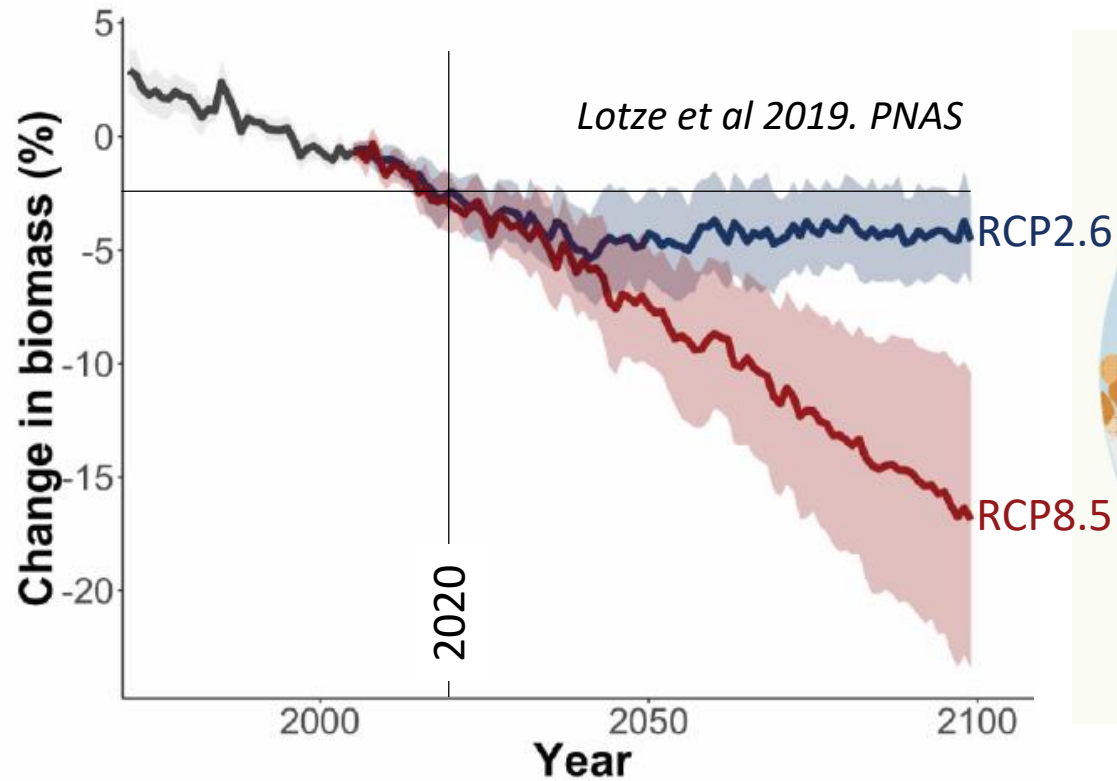
Past and future changes in the ocean and cryosphere

Historical changes (observed and modelled) and projections under RCP2.6 and RCP8.5 for key indicators

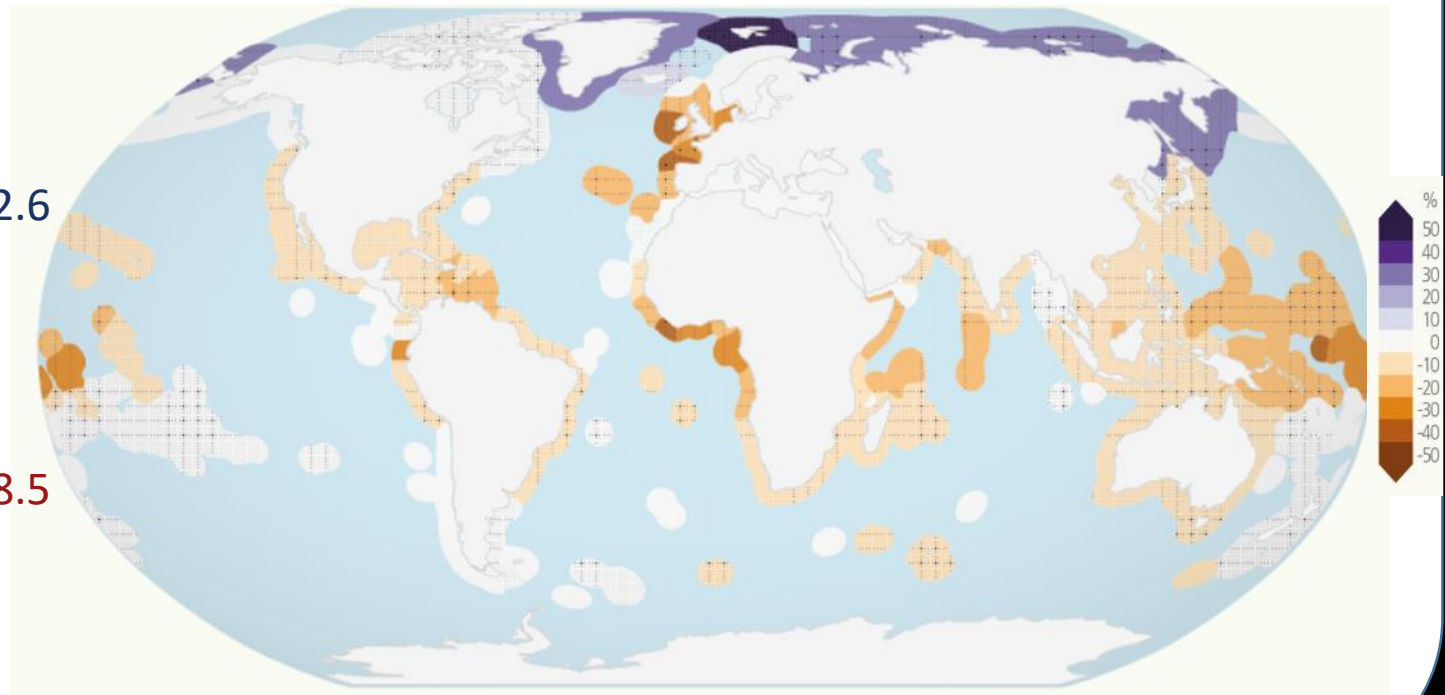
Historical (observed) Historical (modelled) Projected (RCP2.6) Projected (RCP8.5)



Projected changes in total animal biomass (including fishes and invertebrates)



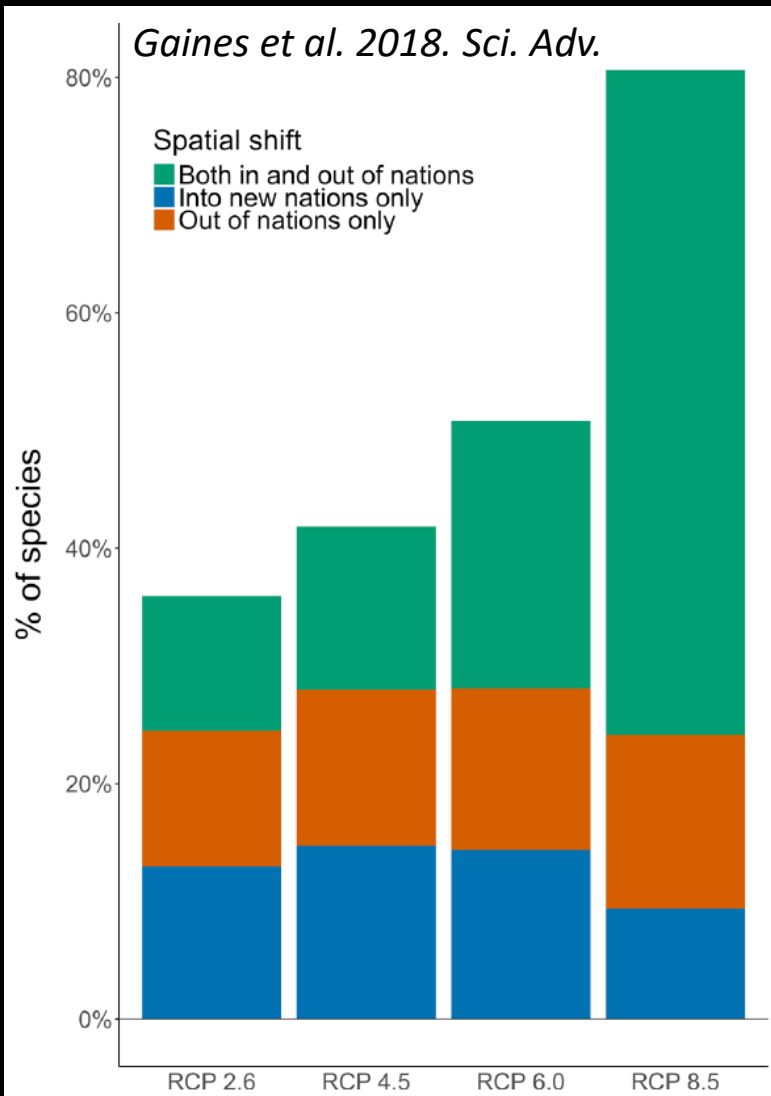
Projected changes in maximum fisheries catch potential (2041-2060 relative to 1991-2010; RCP2.6)



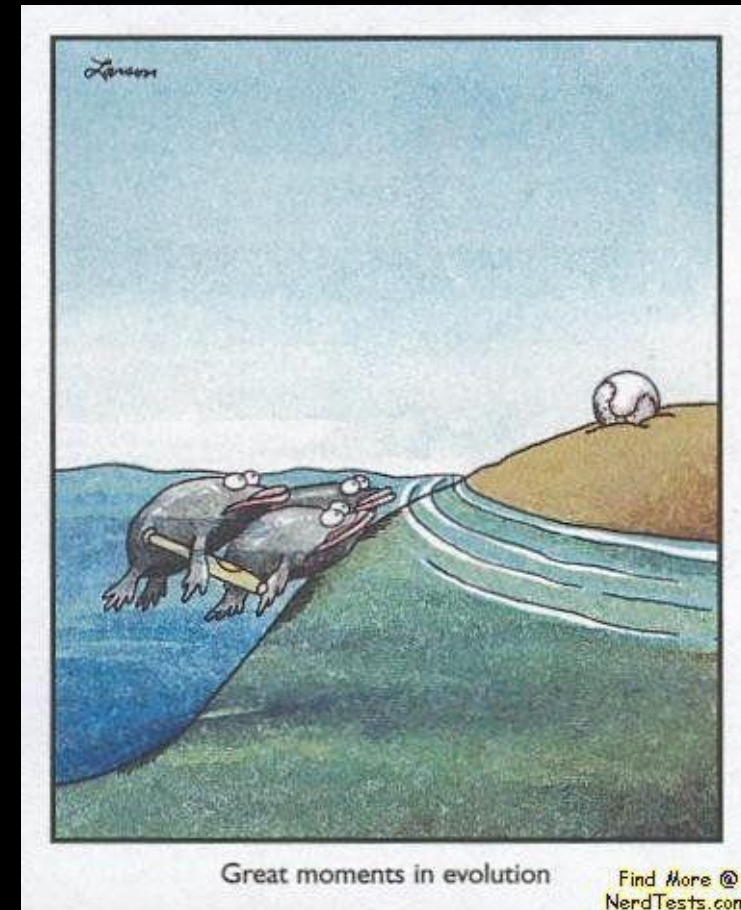
IPCC SROCC 2019

- Global maximum fish catch potential = (-) 2.8-12.1% by 2050
- With large geographical differences
- Tropical regions worse affected
- Changes are both due to distributional shifts and production changes

Percentage of species that move into and out of one or more EEZs by 2100

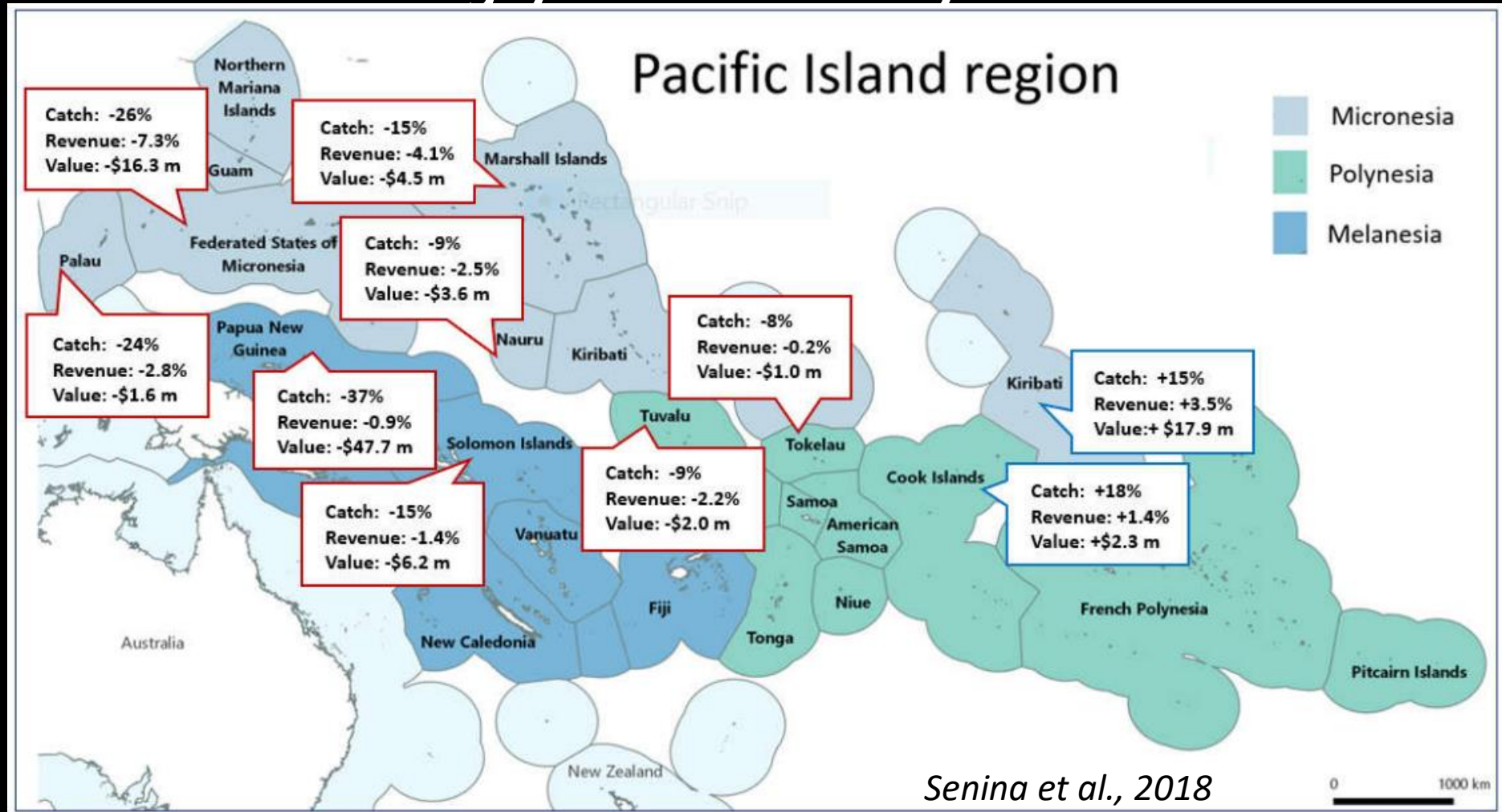


- Many EEZs will see new transboundary stocks
- **Management response crucial to minimize threats and maximize opportunities**
- Adaptations needed across the value chain



There will be winners and losers

Changes in the combined catch of skipjack, yellowfin and bigeye tuna in EEZs by 2050

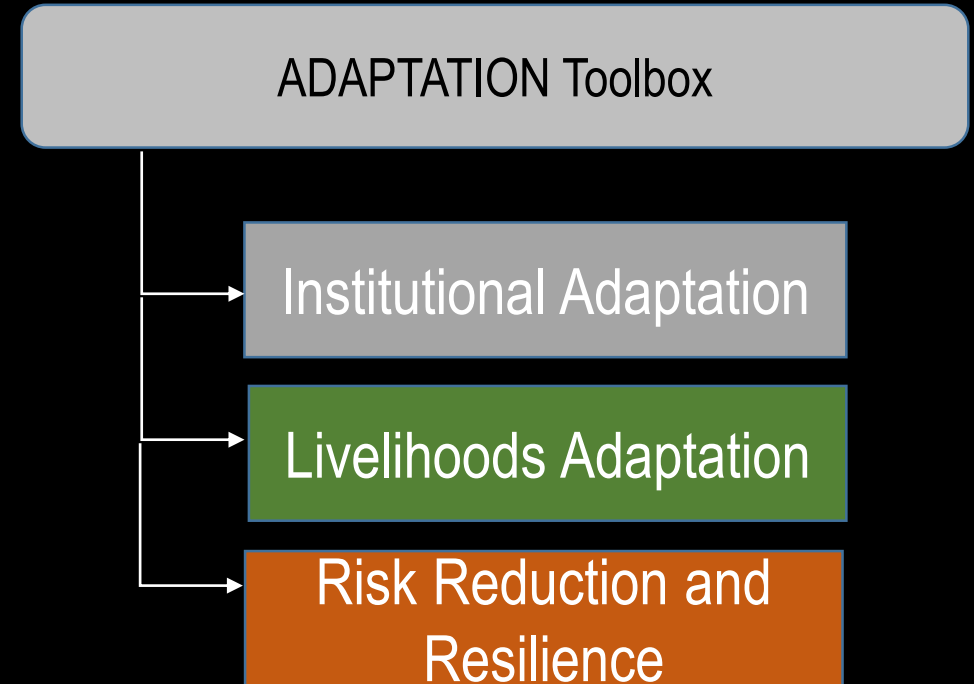




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2015 Paris Agreement includes a long-term adaptation goal, ***in a manner that does not threaten food production,***



- Placed and context based
- Effective adaptation can have very positive results
- Maladaptation can lead to terrible outcomes



Take home messages

- A world in fear has no space for information. We need to fight this
- In future we have to use the ocean more as a food provider
- How to do so is less evident, when 33% of fish stocks are overexploited, and when climate change will become the ultimate disruptor
- Appropriate management response more crucial than ever to minimize threats and maximize opportunities
- Not a zero-sum game, but there will be winners and losers. Adaptation will be crucial
- Industry must lead, because public opinion is not on your side





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International Symposium on Fisheries Sustainability

FAO Headquarters, Rome, 18–21 November 2019

STRENGTHENING THE SCIENCE-POLICY NEXUS



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#SustainableFisheries



What constitutes evidence in a world of information overflow?
What does society expect from fisheries in the 21st century?



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Thank you

