



**United Nations**  
Framework Convention on  
Climate Change

# Ocean and Climate Change Dialogue 2023

**Tuesday 13 June 2023 | 14:00 – 17:00**  
**Plenary Room New York, WCCB**  
**Bonn Climate Change Conference (SB58)**



# Co-facilitators

**Julio Cordano (Chile)**



**Niall O'Dea (Canada)**





**United Nations**  
Framework Convention on  
Climate Change

# Mailing List

**Ocean and Climate Change  
Dialogue 2023**

**Day 1**





**H.E. Ms. Razan Al Mubarak**

**High Level Champion  
COP Presidency**



# High Level Remarks and Opening



United Nations  
Climate Change Secretariat

**H.E Mr. Peter Thomson**  
**UN Secretary General's**  
**Special Envoy for the Ocean**



# 5 victories in the race to protect the ocean



# High Level Remarks and Opening



United Nations  
Climate Change Secretariat

**Mr. Simon Stiell**  
**Executive Secretary**  
**UNFCCC**





# Mr. Vladimir Ryabinin

## Executive Secretary

## UNESCO Intergovernmental Oceanographic Commission (IOC)





**unesco**

Intergovernmental  
Oceanographic  
Commission



United Nations



Framework Convention on  
Climate Change

## **Subsidiary Body for Scientific and Technological Advice**

### **Ocean and Climate Change Dialogue 2023**

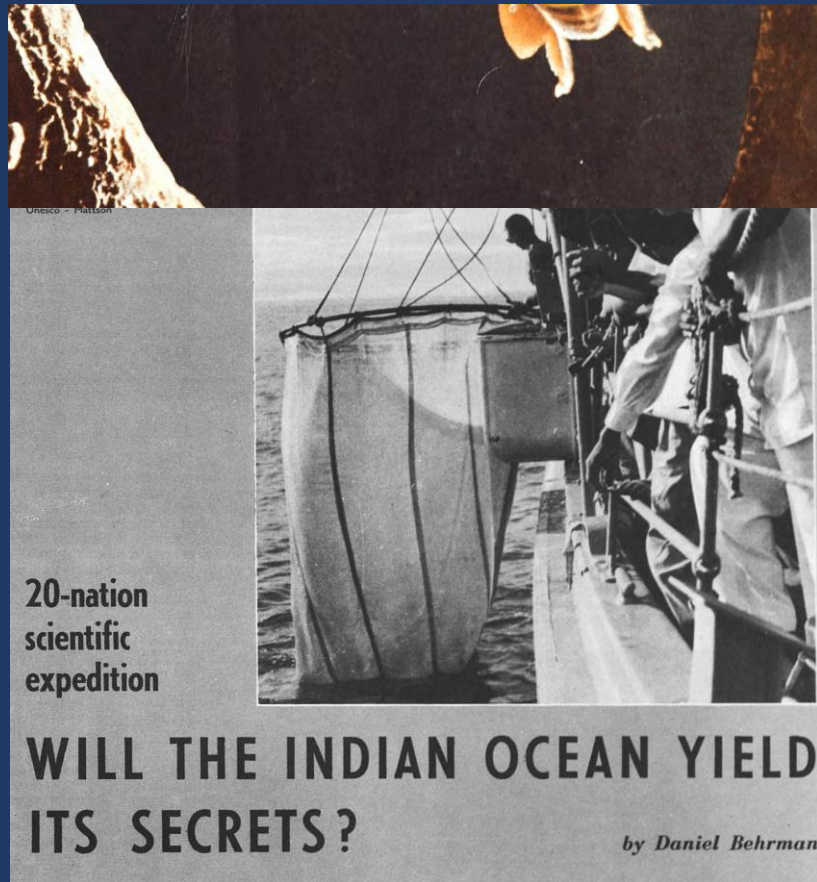
**Dr Vladimir Ryabinin**  
**Executive Secretary, IOC of UNESCO**  
**Assistant Director General, UNESCO**

**Bonn, 13 June 2023**

1960s

# IOC Evolving Agenda

Now



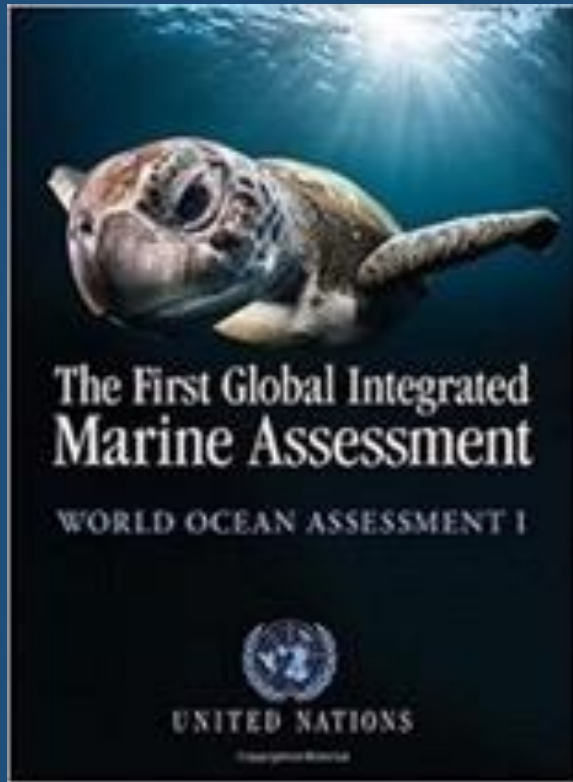
Intergovernmental UN platform  
for dialogue and cooperation  
in ocean science



Intergovernmental UN Platform to  
enable ocean science for addressing  
**existential** issues

2016

# SDG14 of the 2030 Agenda



**Humankind is running out of time to start managing the ocean sustainably**





# Commitment of 17 Panel Countries to sustainably manage 100% of EEZ by 2025



## 5 key sectors for transformation:

1. Food ( x6 )
2. Energy ( x 40 )
3. Low carbon transport & ports
4. Ocean restoration / protection
5. Tourism

- 20% of Carbon emissions gap
- GDP of **15 T\$** by 2050

## 5 “enablers” for:

### *“Sustainable Ocean Planning”*

1. Stopping land-based pollution
2. Innovative lower-risk finance
3. **Upgrading ocean accounting**
4. **Data + guidance (= science)**
5. **Ocean planning**  
+
6. Climate change mitigation/adaptation

# Key Ocean Management Domains



Coastal zone  
management  
and adaptation



**Marine Spatial  
Planning/**  
Sustainable  
ocean economy



BBNJ, LMEs  
MPAs, **ecosystem  
restoration**



Management  
of fisheries  
and aquaculture



**Adaptation to  
and mitigation  
of climate change,  
NDCs**



Development of  
national R&D  
strategies &  
ocean policies



Real-time  
oceanographic,  
weather/climate  
services



Regional and  
national capacity  
development



Early warning  
systems

# Current IOC Portfolio

**E: 2030 Agenda and SDG 14, UN, UNFCCC + Paris Agreement, UNCLOS, BBNJ, CBD, MSP, Sendai, Coastal zones,**

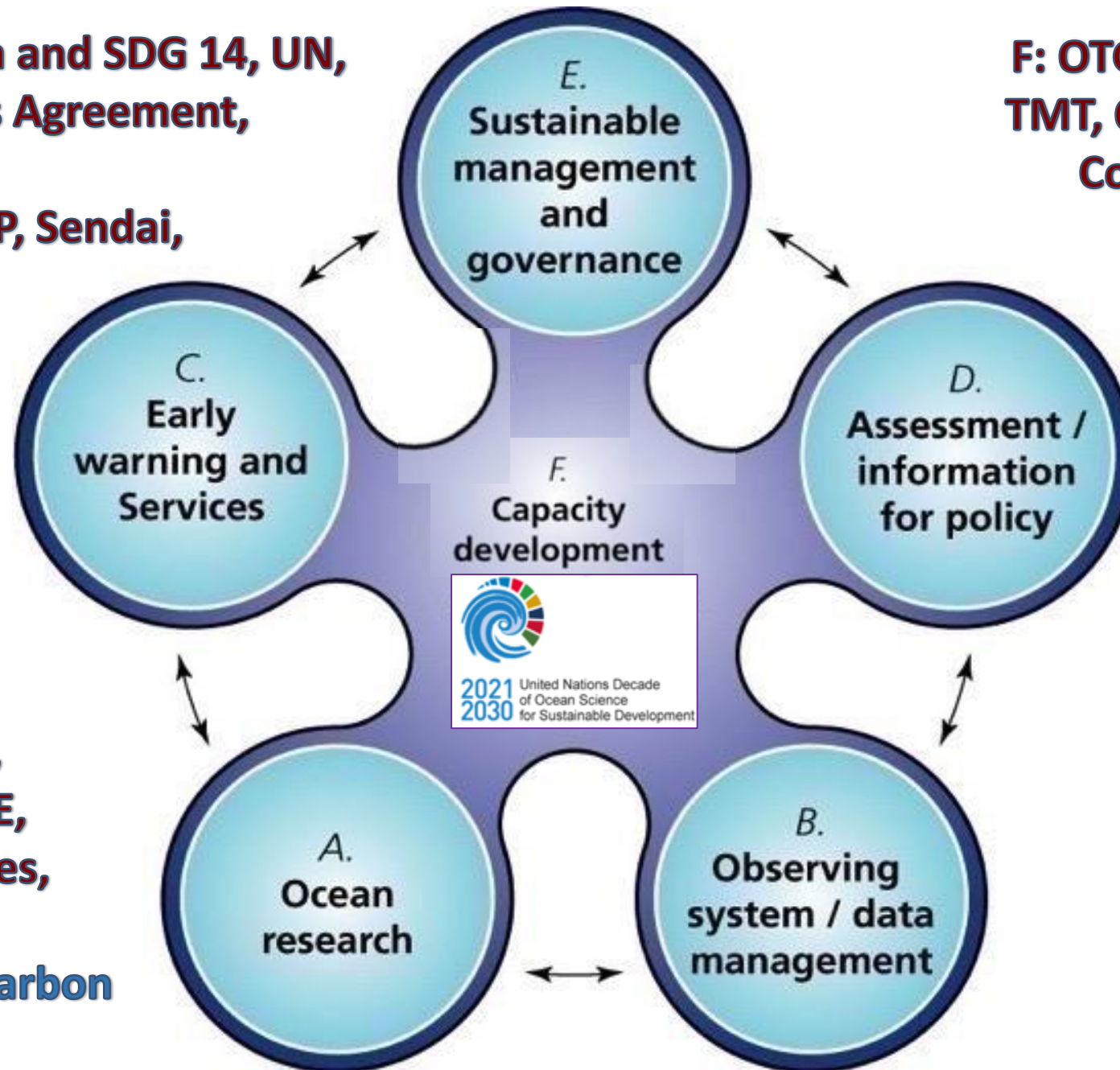
**C: Tsunami, HABs, Ocean Prediction**

**A: GOSR, StOR, GOAON, GO<sub>2</sub>NE, Long-term Series, WCRP, IIOE-2, Carbon, Blue Carbon**

**F: OTGA, RTRCs, CD, TMT, Ocean literacy, Communication, Education**

**D: IPCC, WOA3, SDG 14.3, SDG 14.a**

**B: GOOS, GLOSS, IODE, OBIS, GEBCO**



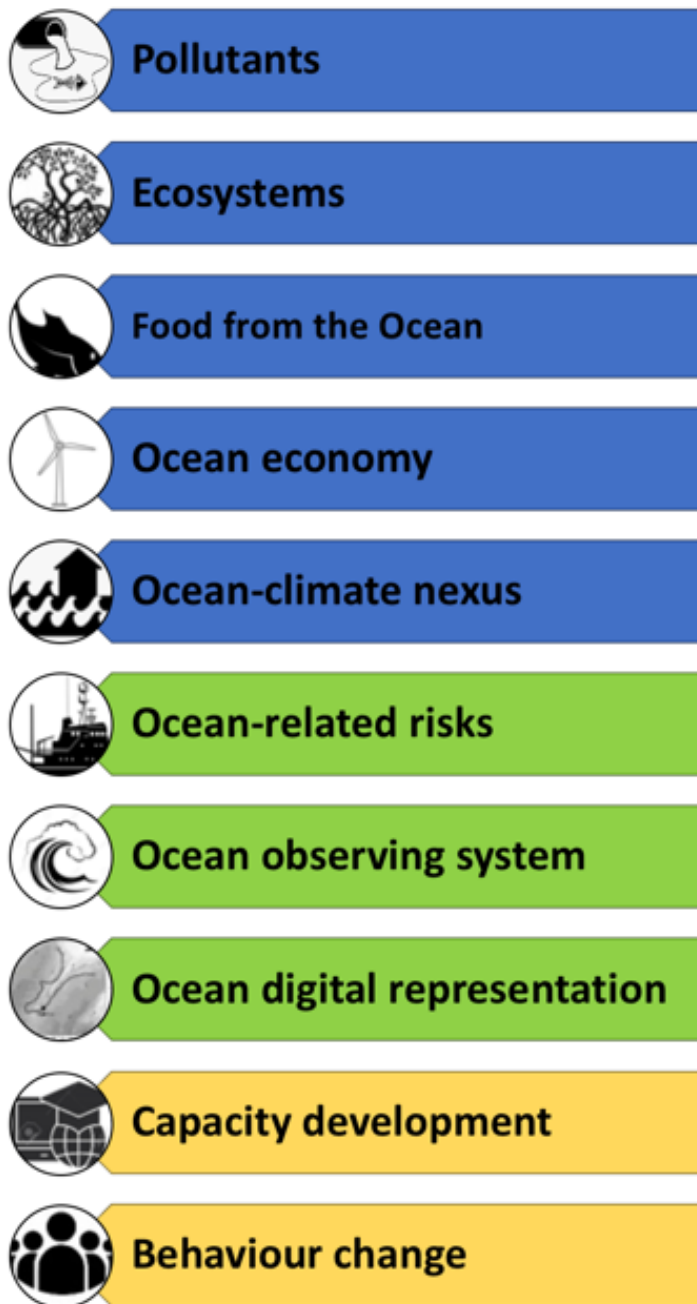


**2021** United Nations Decade  
**2030** of Ocean Science  
for Sustainable Development

*The science we need  
for the ocean we want*

- Clean
- Healthy and resilient
- Productive
- Predicted
- Safe
- Accessible
- Inspiring and engaging

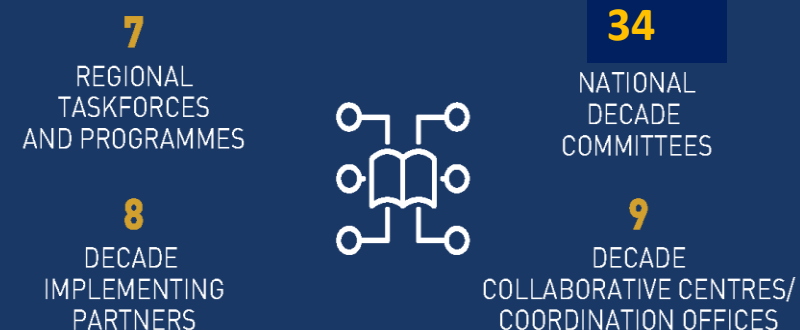
## OCEAN DECADE CHALLENGES



## ENDORSED OCEAN DECADE ACTIONS



## REGIONAL AND NATIONAL COORDINATION



## ENGAGEMENT AND OUTREACH



# IOC WORK ON BLUE CARBON

## The Blue Carbon Initiative (BCI):

- Support scientific research on blue carbon
- Methods for assessing blue carbon stocks and emissions
- Provide policy guidance (e.g., NDCs guidance)

## International Partnership for Blue Carbon (IPBC):

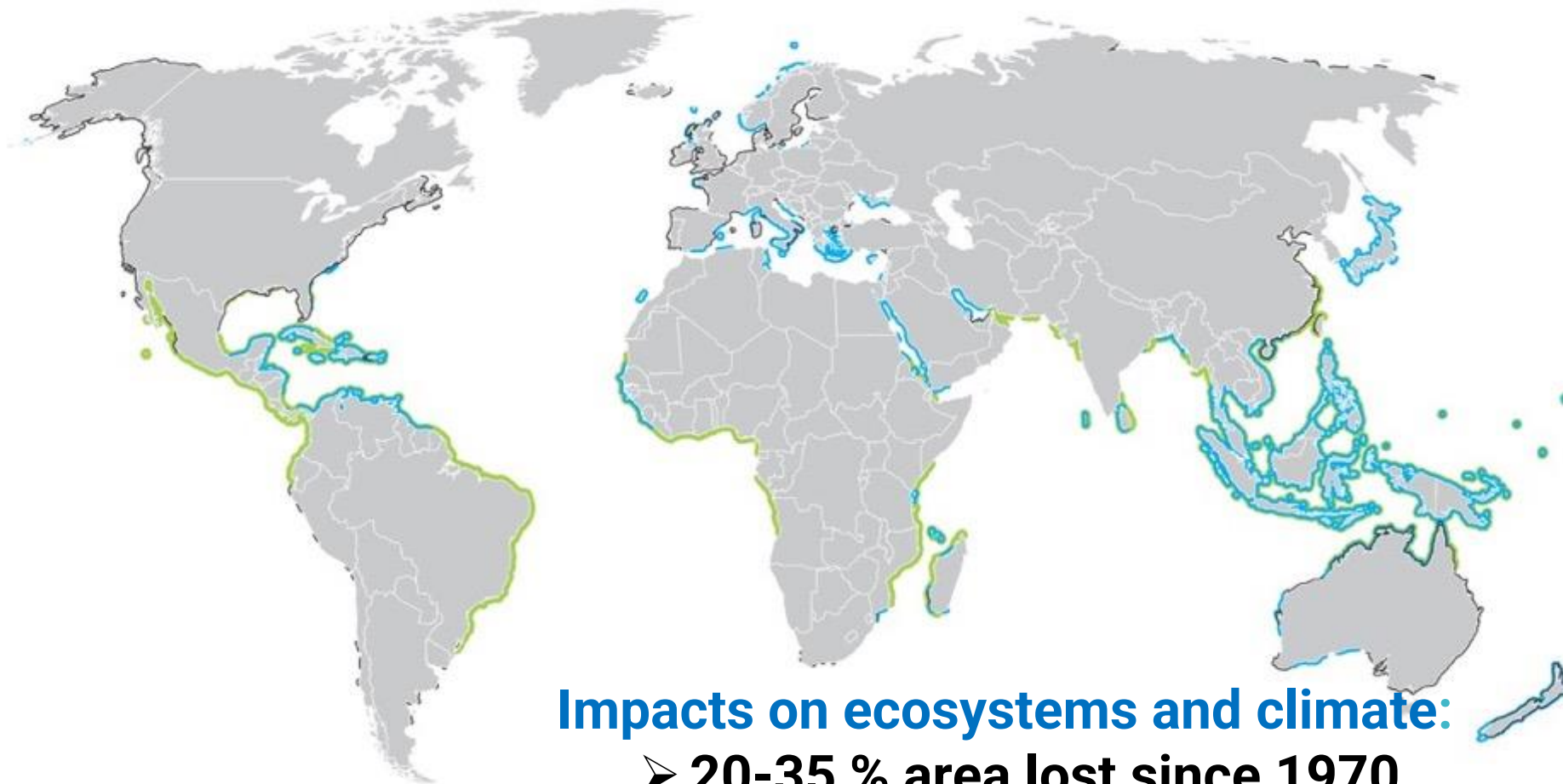
- 1) Increase international commitments to protect coastal blue carbon ecosystems
- 2) Improve national policies
- 3) Accelerate on-the-ground action (Blue Carbon Accelerator Fund)

## Global Ocean Decade Programme for Blue Carbon (GO-BC):

- Enhance scientific cooperation at global/regional level
- Coordinate capacity building activities







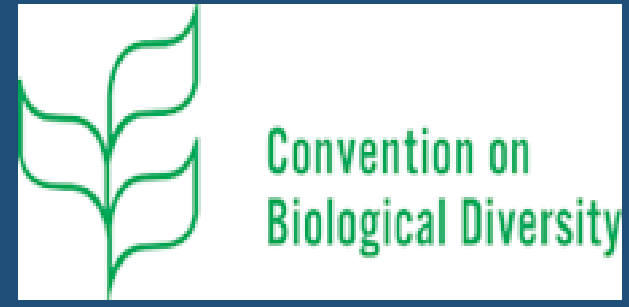
■ Saltmarsh ■ Seagrass ■ Mangroves

Figure 1: overview of the global distribution of mangroves, saltmarshes and seagrasses (source: The United Nations Environment – World Conservation Monitoring Centre (UNEP-WCMC13) datasets).

## Impacts on ecosystems and climate:

- 20-35 % area lost since 1970
- Up to 92% of original C stocks can be released back
- 0.141-0.466 gigatons CO<sub>2</sub> per year could be avoided by preventing degradation of blue carbon ecosystems

# Ocean in UN Frameworks



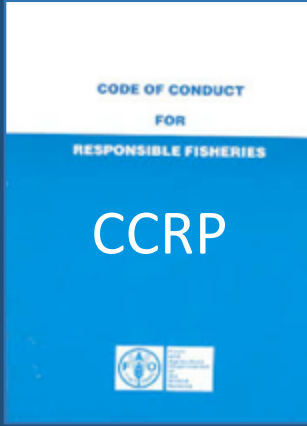
Kunming-Montreal GBF

Ocean-Climate Dialogue



Sendai Framework for Disaster Risk Reduction  
2015 - 2030

+ ILBI on Plastic Pollution 2024



# More Effective Approach to Ocean Issues in UN



Agencies,  
Conventions,  
Frameworks,  
Protocols



Private Sector

Science  
Community

Ocean Science -  
Policy interface



For the 1<sup>st</sup> time in history this is feasible (+ more effective):

climate-smart, ecosystem-focussed, ethical & equitable  
ocean management on the basis of science-supported  
planning for a sustainable blue economy

(UN needs a *consolidated* approach, call it an SDG14 Plan)

# Setting the Scene



United Nations  
Climate Change Secretariat



**Mr. Tristan Tyrrell**  
Programme Management Officer  
UN Convention on Biological  
Diversity (UNCBD)

# The Kunming-Montreal Global Biodiversity Framework Oceans & Climate Change

Tristan Tyrrell  
CBD Secretariat

13 June 2023



Convention on  
Biological Diversity



**2020 UN BIODIVERSITY CONFERENCE**

**COP 15 - CP/MOP 10 - NP/MOP 4**

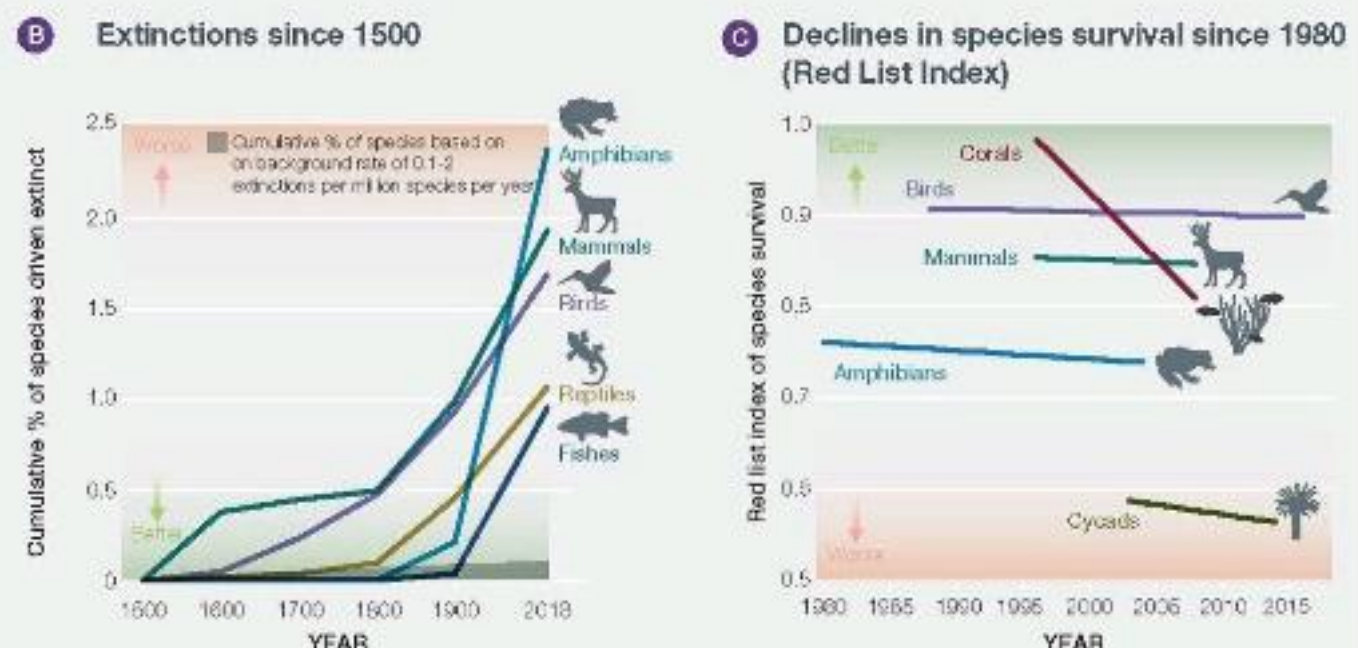
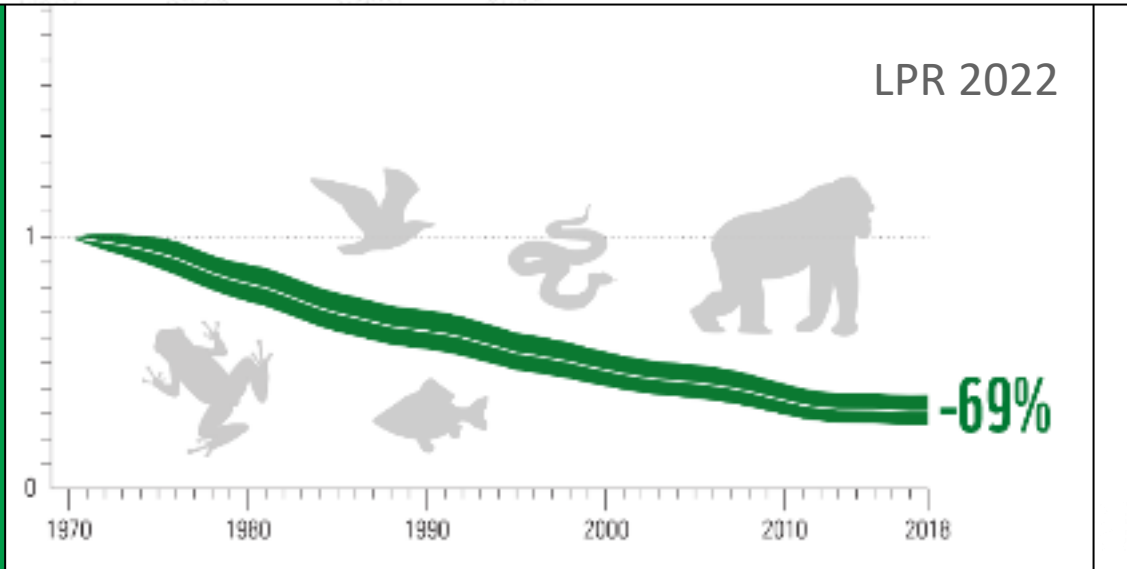
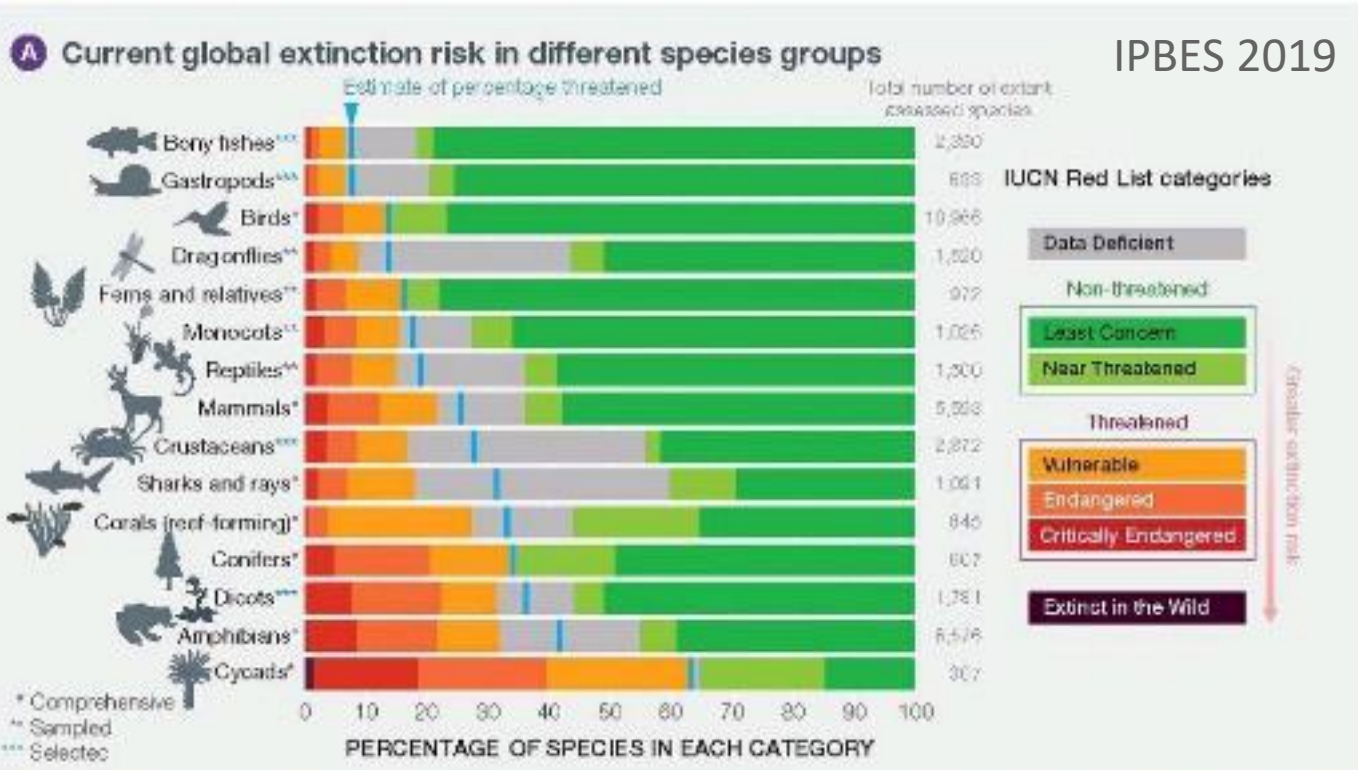
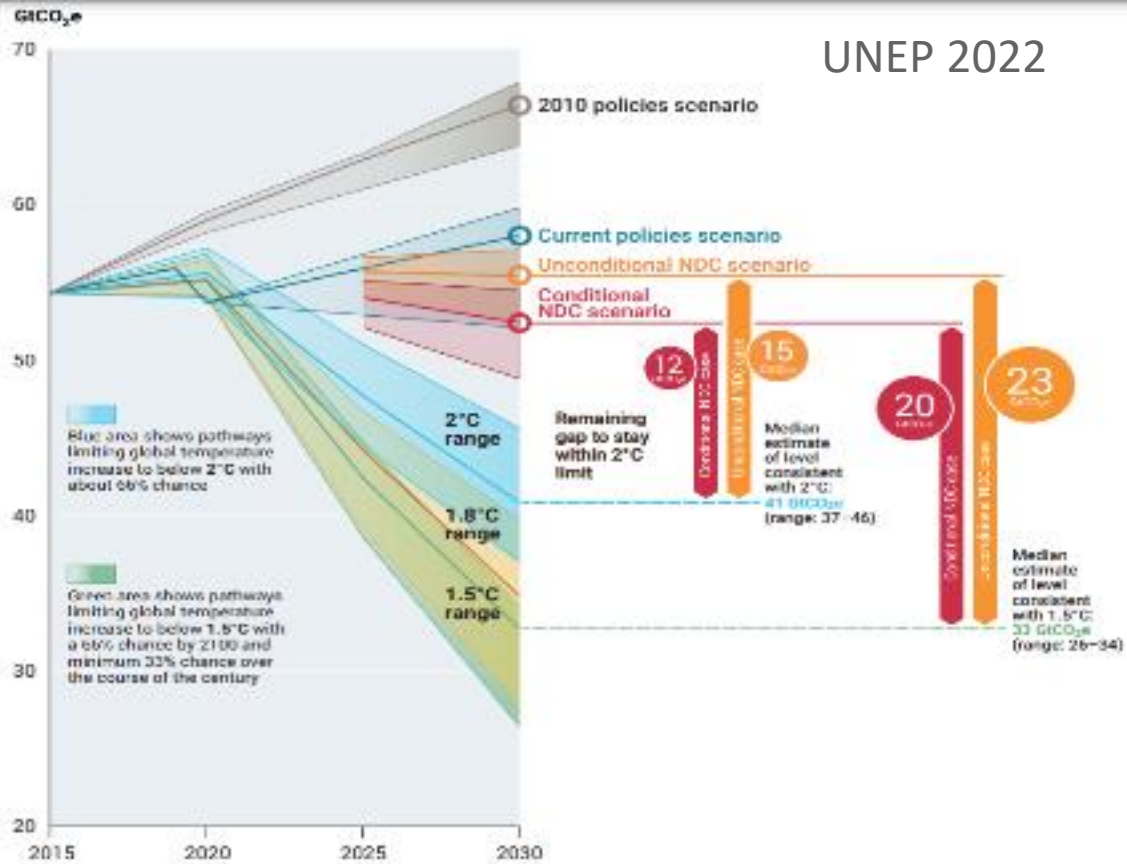
Ecological Civilization-Building a Shared Future for All Life on Earth

KUNMING – MONTREAL



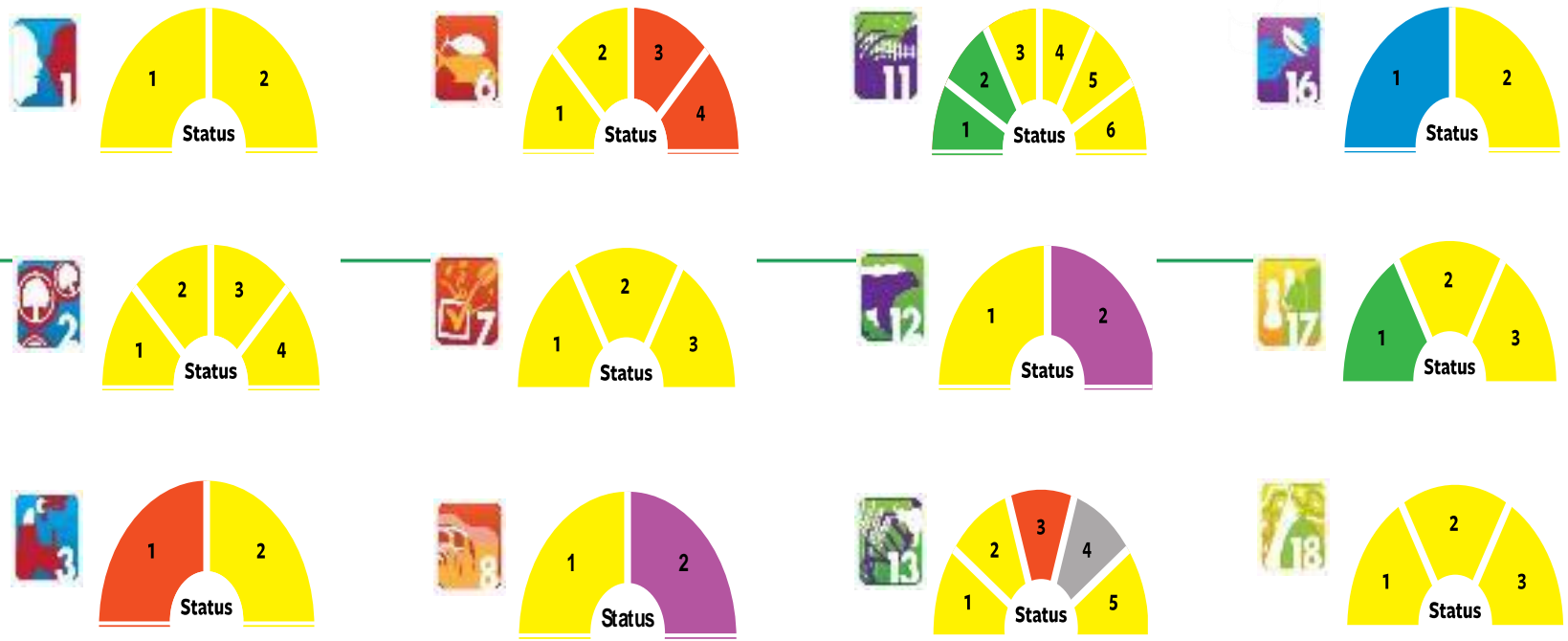
UNITED NATIONS DECADE OF  
**ECOSYSTEM  
RESTORATION**  
2021-2030





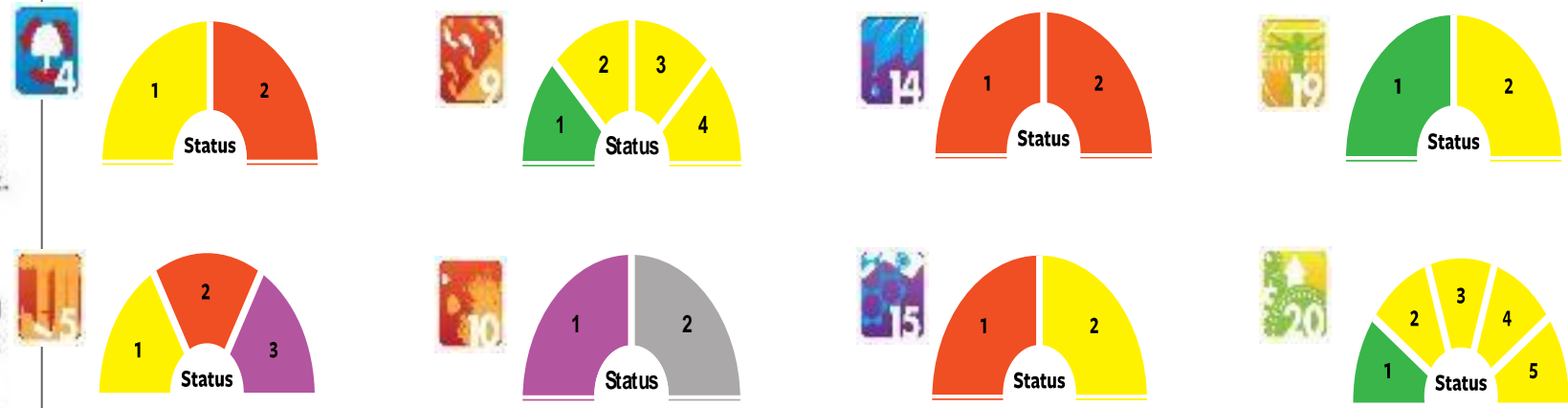
# Process v. impact

## 5<sup>th</sup> Global Biodiversity Outlook ([www.cbd.int/gbo](http://www.cbd.int/gbo))

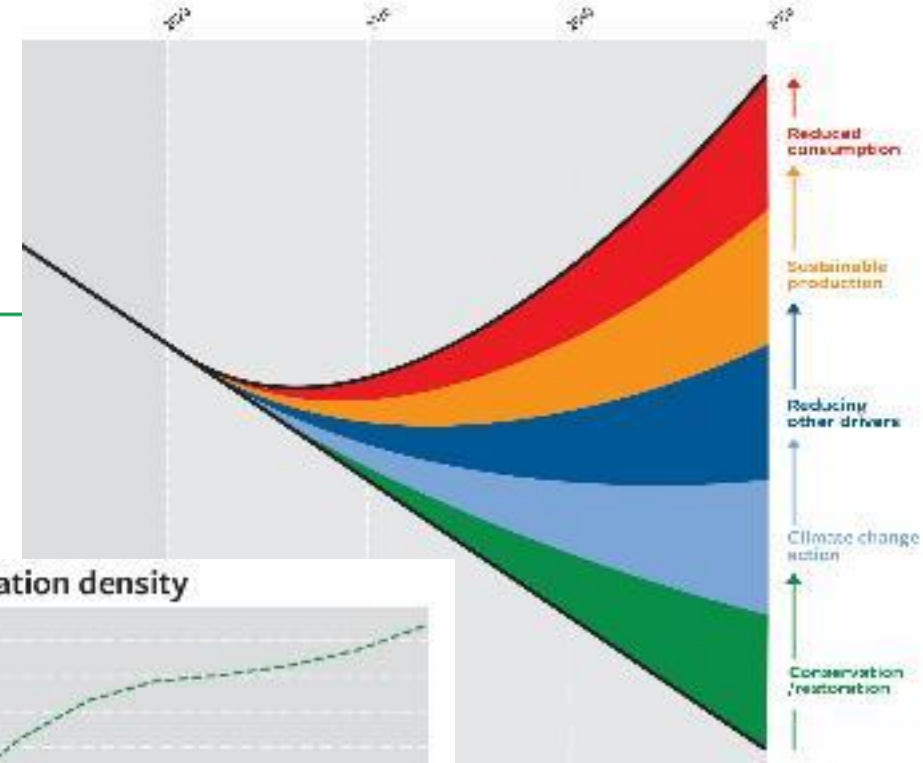


### Aichi Targets

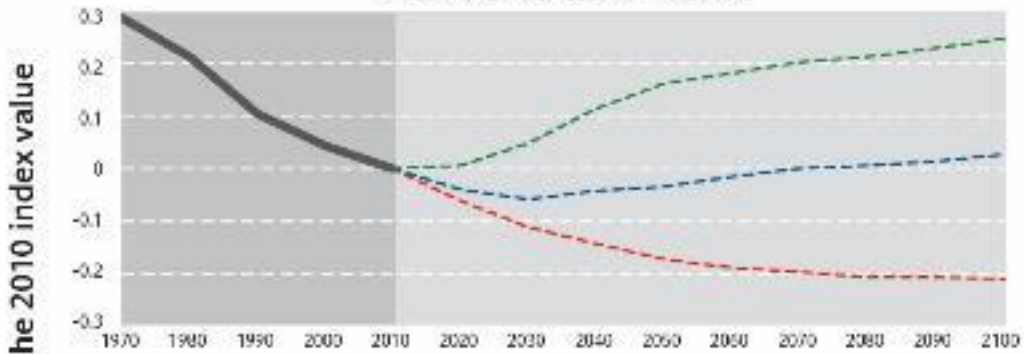
- |   |   |   |
|---|---|---|
|  Understand values        |  Reduce pollution      |  Enhance resilience        |
|  Mainstream biodiversity  |  Reduce invasive spp.  |  Implement Nagoya Prot.    |
|  Address incentives     |  Minimize reef loss  |  Revise NBSAPs           |
|  Sustainable production |  Protected areas     |  Respect and conserve TK |
|  Halve rate of loss     |  Prevent extinctions |  Improve knowledge       |
|  Sustainable fisheries  |  Conserve gene pool  |  Mobilize resources      |
|  Manage within limits   |  Restore ecosystems  |   |



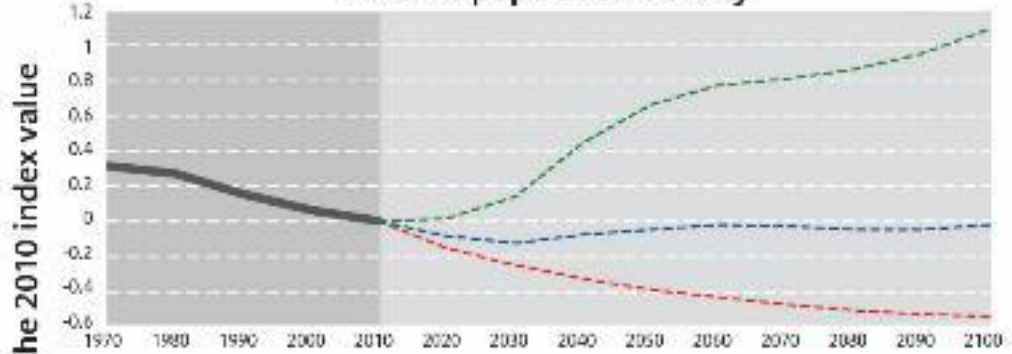
# Bending the curve



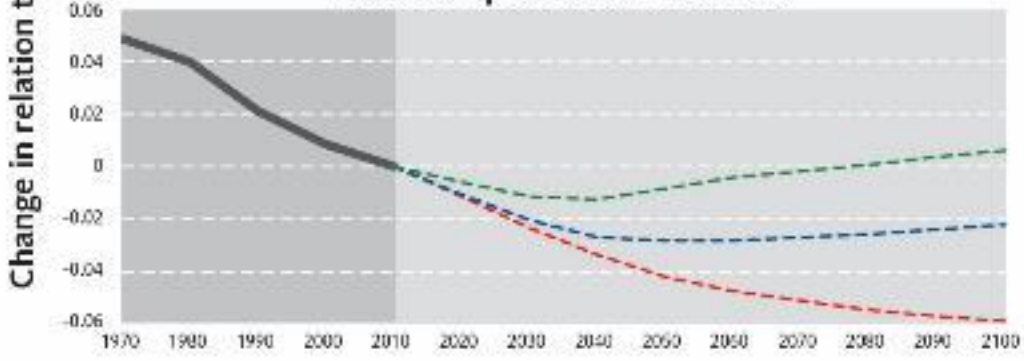
Extent of suitable habitat



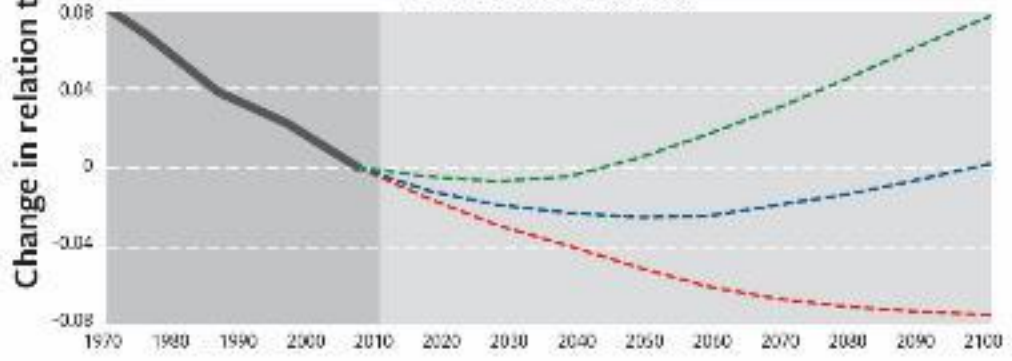
Wildlife population density



Local compositional intactness



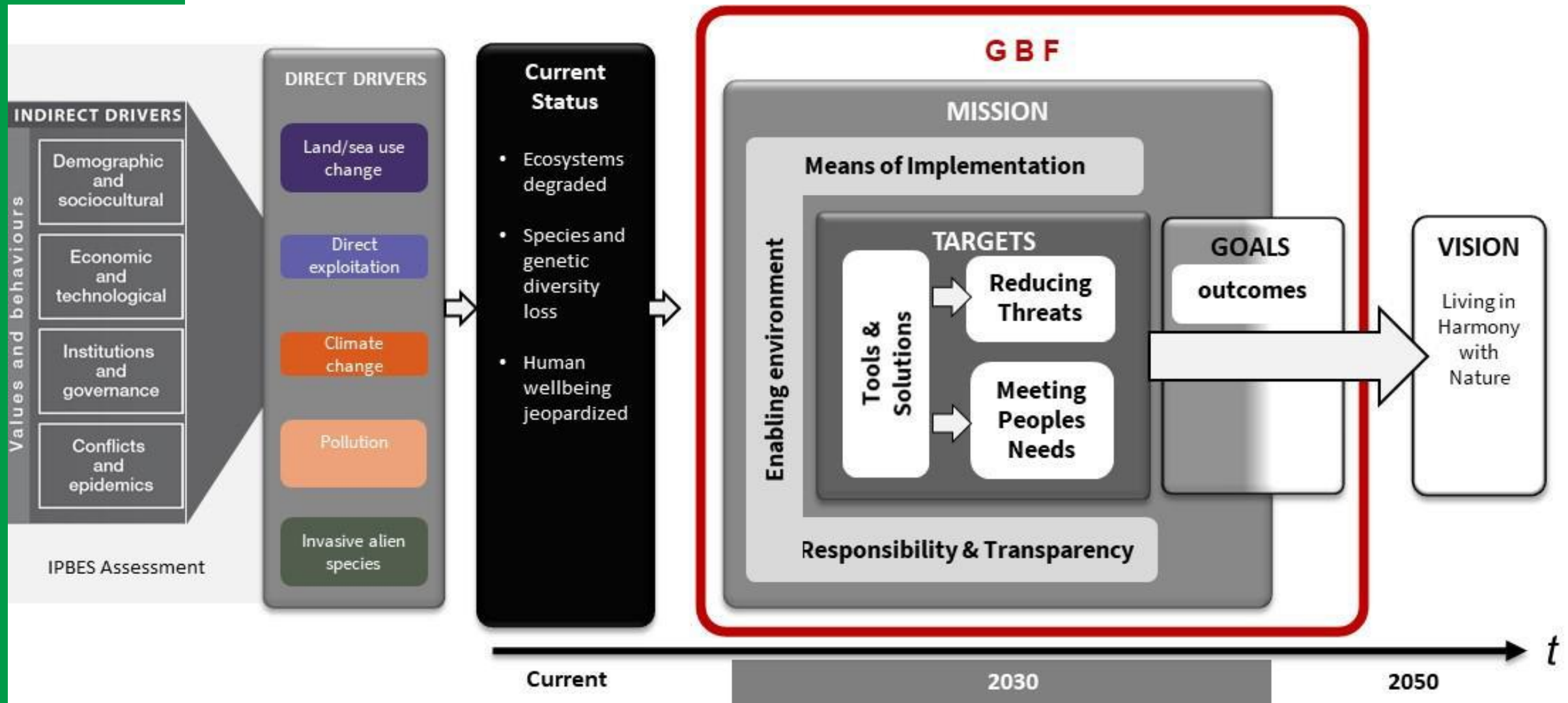
Global extinctions



— Historical trend    - - - Business as usual    - - - Conservation action only    - - - Integrated action



# GBF is a whole: every part is important



# COP15 Major Outcomes



Kunming-Montreal  
GBF  
(decision 15/4)

GBF Monitoring  
framework  
(decision 15/5)

Mechanisms for  
planning,  
monitoring,  
reporting and  
review (decision  
15/6)

Resource  
mobilization  
(decision 15/7)

Capacity-building  
and development  
& technical and  
scientific  
cooperation  
(decision 15/8)

Digital sequence  
information on  
genetic  
resources  
(decision 15/9)



# Kunming-Montreal Global Biodiversity Framework

Builds from the **Strategic Plan for Biodiversity 2011-2020** and is a global response to the continued alarming **loss of biodiversity** and the threat that this poses to **nature** and **human well-being**.



## Vision

A world of living in harmony with nature where:  
“By 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people.”



UNITED NATIONS  
ECOSYSTEM  
RESTORATION  
2020-2030



# Kunming-Montreal Global Biodiversity Framework

## Goal A

Ecosystems maintained, enhanced, or restored, extinctions are halted, extinction rate reduced tenfold and genetic diversity is maintained

## Goal B

Biodiversity is sustainably used and its contributions to people are maintained, enhanced or restored

## Goal C

Benefits from the use of genetic resources are shared and sustainably increased

## Goal D

The biodiversity funding gap of 700 billion USD is closed by ensuring adequate means of implementation are available.

4 Global Goals for 2050



# Kunming-Montreal Global Biodiversity Framework

## *I. Reducing threats to biodiversity*

1. Spatial planning and effective management
2. Ecosystems & restoration
3. Protected areas & OECMs
4. Threatened species
5. Sustainable use
6. Invasive alien species
7. Pollution
8. Climate change

## *II. Meeting people's needs through sustainable use & benefit-sharing*

9. Wild species
10. Agriculture, aquaculture, fisheries and forestry
11. Nature's contributions to people
12. Urban areas
13. Access and benefit-sharing

## *III. Tools and solutions for implementation and mainstreaming*

14. Sectoral planning
15. Private sector
16. Sustainable consumption
17. Biosafety
18. Negative incentives
19. Financial resources
20. Capacity-building and development
21. Data & knowledge
22. Participation
23. Gender equality

**23 action-oriented Global Targets for 2030**

*\*Unofficial short-form target headings\**

# Targets 2 & 3



**2.** Ensure that by 2030 **at least 30 per cent of areas of degraded** terrestrial, inland water, and **marine and coastal ecosystems** are under effective **restoration**, in order to enhance biodiversity and **ecosystem functions and services**, ecological integrity and connectivity.

**3.** Ensure and enable that by 2030 **at least 30 per cent of** terrestrial and inland water areas, and of **marine and coastal areas**, especially areas of particular importance for biodiversity and ecosystem functions and services, are effectively conserved and managed **through ecologically representative, well-connected and equitably governed systems** of protected areas and other effective area-based conservation measures, recognizing indigenous and traditional territories, where applicable, and **integrated into wider landscapes, seascapes and the ocean**, while ensuring that any sustainable use, where appropriate in such areas, is fully consistent with conservation outcomes, recognizing and respecting the rights of indigenous peoples and local communities, including over their traditional territories.



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RESTORATION  
2020-2030



# Targets 8 & 11

8. **Minimize the impact of climate change and ocean acidification on biodiversity and increase its resilience through mitigation, adaptation, and disaster risk reduction actions**, including through nature-based solution and/or ecosystem-based approaches, while minimizing negative and fostering positive impacts of climate action on biodiversity.

11. **Restore, maintain and enhance nature's contributions to people, including ecosystem functions and services**, such as regulation of air, water, and climate, soil health, pollination and reduction of disease risk, as well as protection from natural hazards and disasters, through nature-based solutions and/or ecosystem-based approaches for the benefit of all people and nature.



# Implementation

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- Contribution and rights of indigenous peoples and local communities
- Different value systems
- Whole-of-government and whole-of-society approach
- National circumstances, priorities and capabilities
- Collective effort towards the targets
- Right to development
- Human rights-based approach
- Gender
- Biodiversity and health
- Formal and informal education
- Access to financial resources
- Cooperation and synergies



# Oceans & Climate Change



- Actions called for across the KMGBF will help to ensure the healthy functioning of marine ecosystems, allowing them to adapt to climate-related changes and to continue to support both mitigation and adaptation.
- Will be important to incorporate considerations of climate effects in planning and implementing tools like MPAs and spatial planning, to best manage and adapt to climate-driven changes, such as species migrations driven by ocean warming.
- Synergistic financing across biodiversity, ocean and climate-focused financing sources is critical to maximize the impact of investments and use resources most efficiently.
- New energy sources from the ocean, including ocean-based renewable energy, should be implemented in an ecosystem approach to avoid adverse impacts on the environment.



UNITED NATIONS  
ECOSYSTEM  
RESTORATION  
2021-2030



# Questions ?

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## Secretariat of the Convention on Biological Diversity

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Montreal, Quebec, Canada H2Y 1N9  
Tel. +1 514 288 2220

[secretariat@cbd.int](mailto:secretariat@cbd.int)  
[www.cbd.int](http://www.cbd.int)



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**Ms. Tarûb Bahri**  
Fishery Resource Officer  
Food and Agriculture Organization  
(FAO)



Food and Agriculture Organization  
of the United Nations

# FISHERIES & FOOD SECURITY

Ocean and Climate Dialogue 2023

13 June 2023, Bonn, Germany



**Dr Tarûb Bahri**

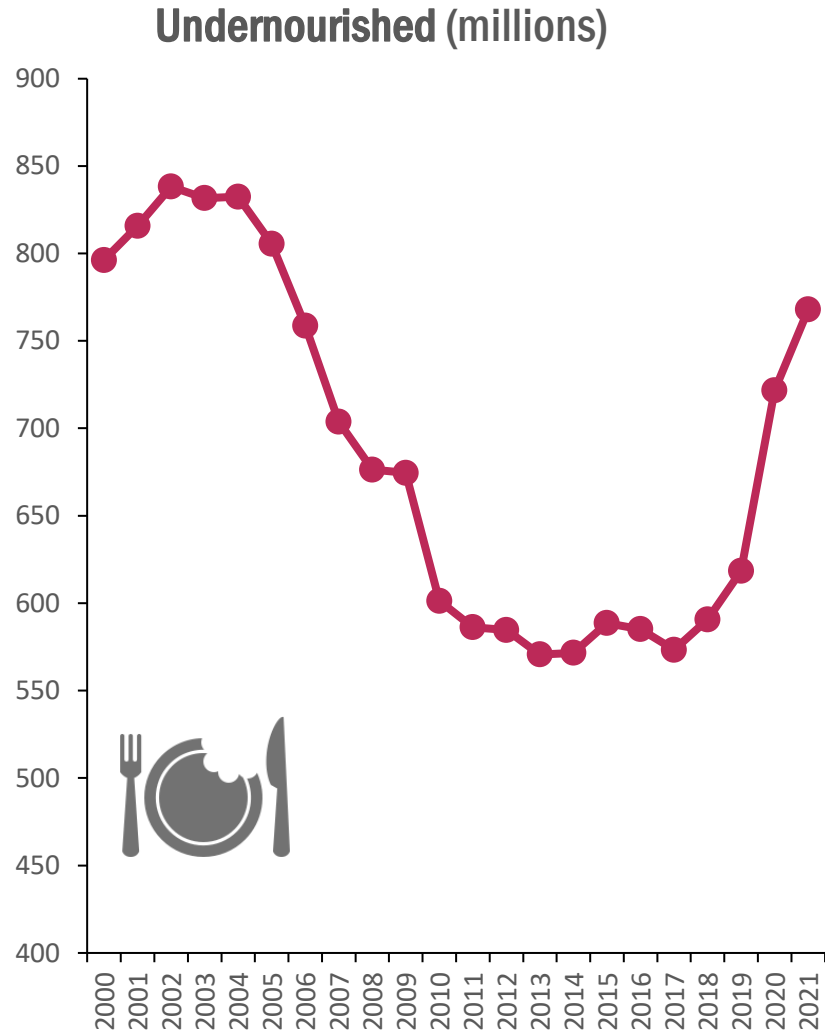
Food and Agriculture Organization of the United Nations

# THE GROWING CHALLENGE TO FEED THE WORLD



Food and Agriculture  
Organization of the  
United Nations

## Food Price Index



© FAO data

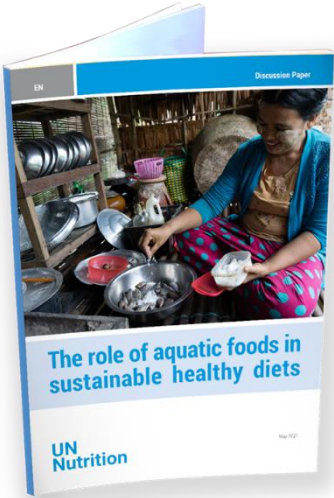


Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13 Jan-14 Jan-15 Jan-16 Jan-17 Jan-18 Jan-19 Jan-20 Jan-21 Jan-22

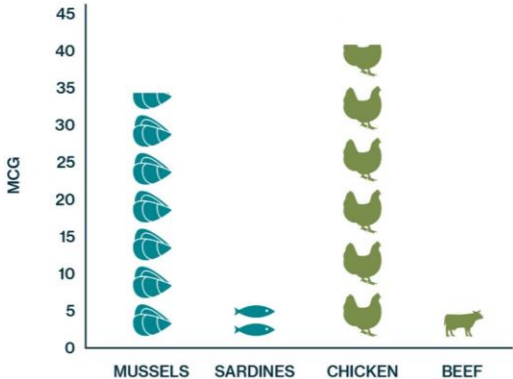
# MICRONUTRIENT DEFFICIENCY: THE OTHER SIDE OF HUNGER



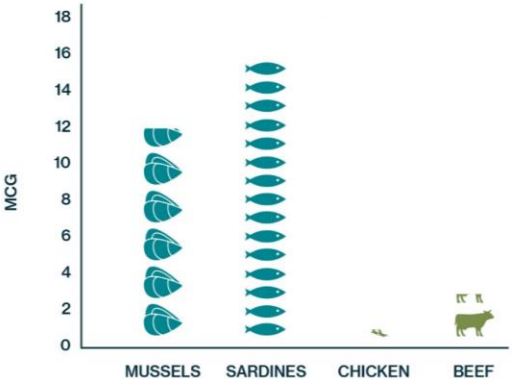
Food and Agriculture Organization of the United Nations



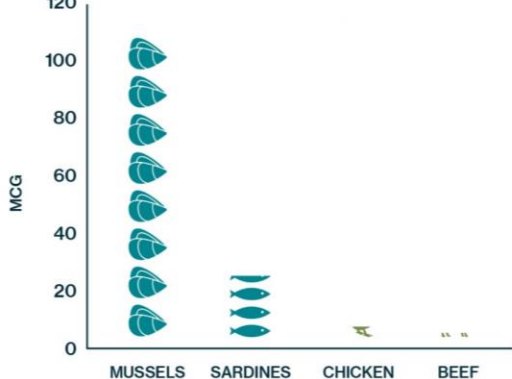
**VITAMIN A** (mcg per 100g serving)



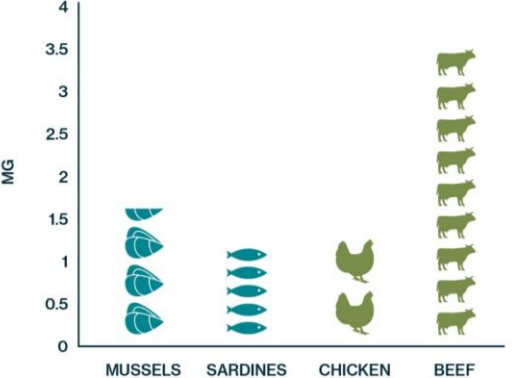
**VITAMIN B12** (mcg per 100g serving)



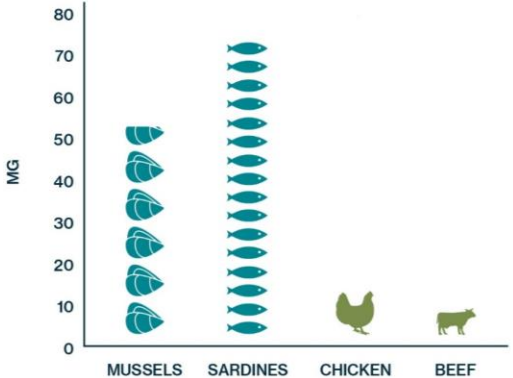
**IODINE** (mcg per 100g serving)



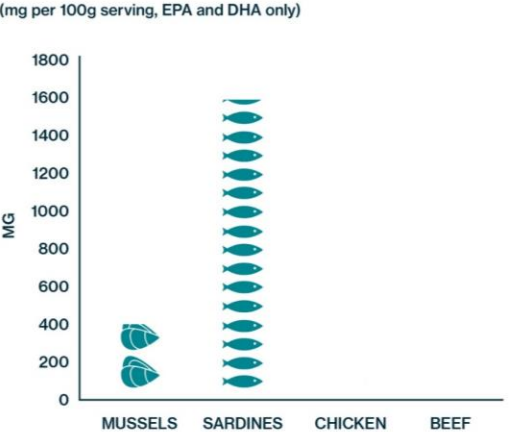
**ZINC** (mg per 100g serving)



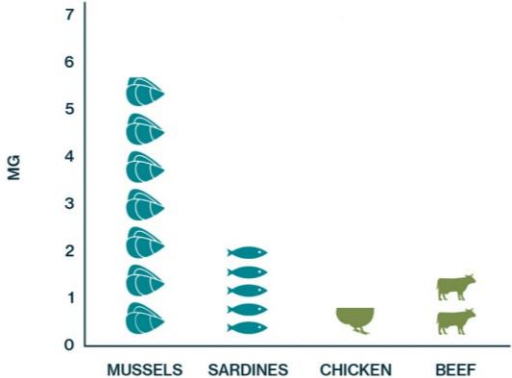
**CALCIUM** (mg per 100g serving)



**OMEGA-3 FATTY ACIDS**



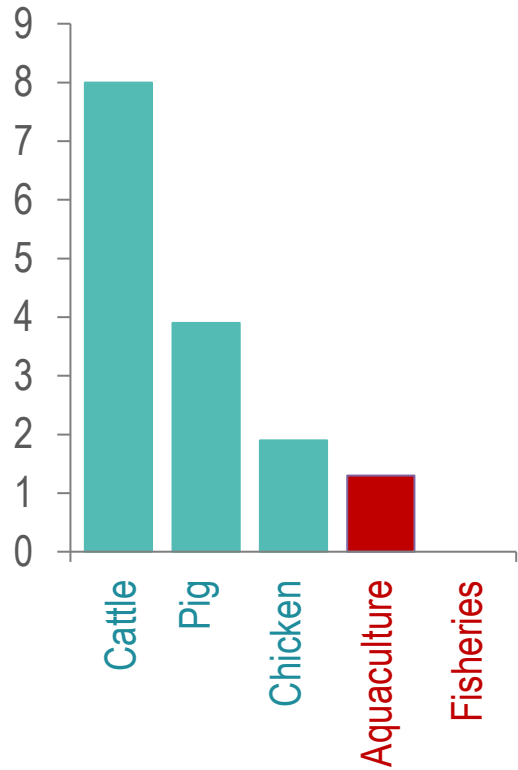
**IRON** (mg per 100g serving)



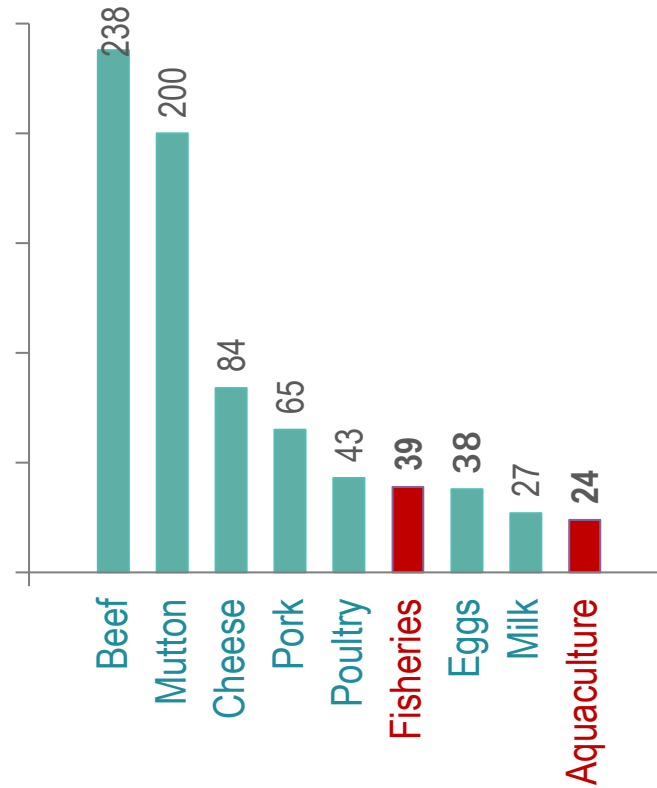
# AQUATIC FOODS: LOW ENVIRONMENTAL FOOTPRINT



**Conversion Efficiency**  
(kg feed/ Kg live weight)



**GHG Emissions Intensity**  
(g CO2 eq./g protein)

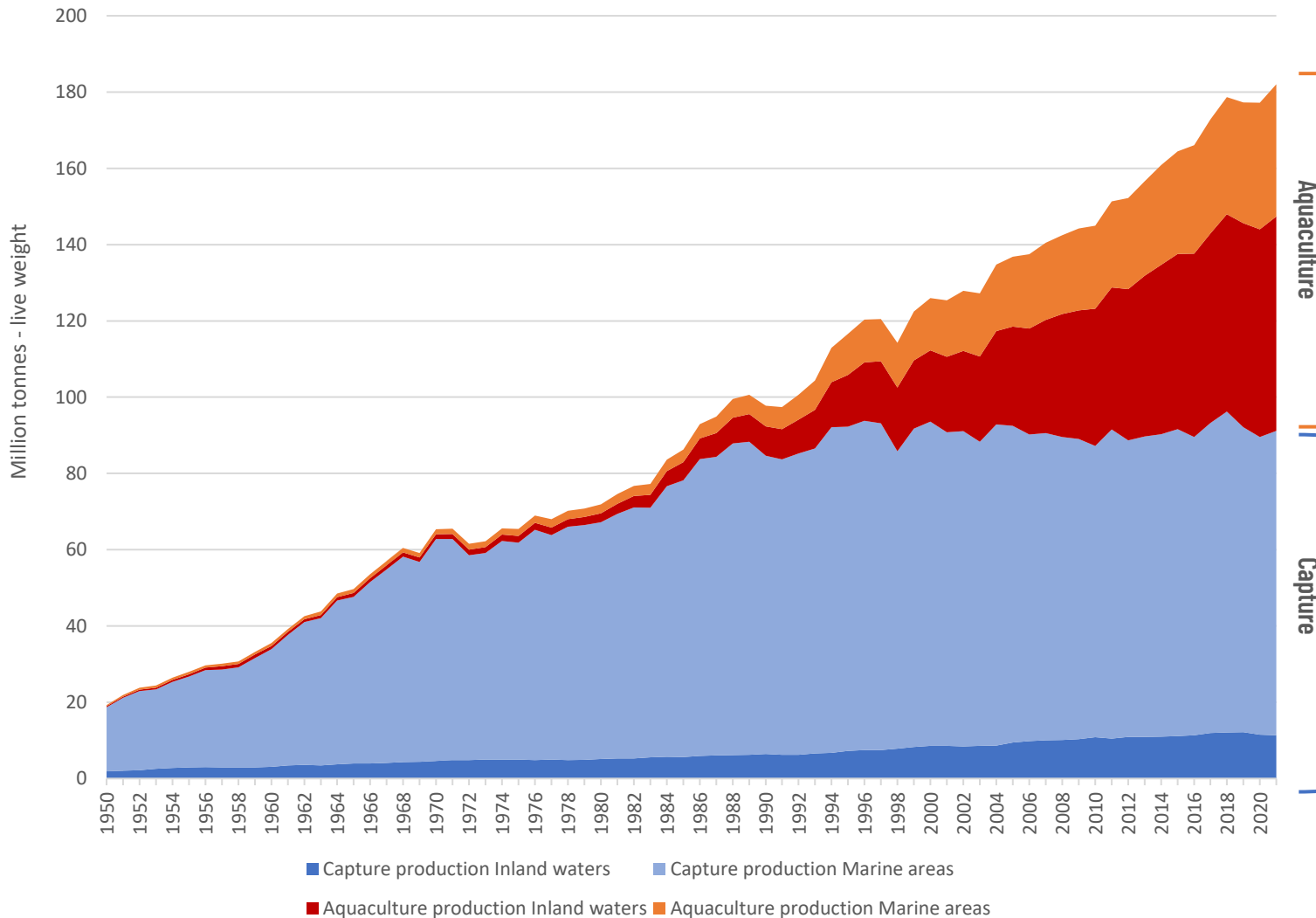


# AQUATIC FOODS: INCREASING FOCUS



Food and Agriculture Organization of the United Nations

## TOTAL FISHERIES AND AQUACULTURE PRODUCTION 2021 = 218.4 Mt, A NEW RECORD



**ANIMAL PRODUCTION = 182.1 Mt** ↑ 2.7%

**Capture fisheries = 91.2 Mt** ↑ 1.8%  
(12.5% Inland)

**Aquaculture = 90.9Mt** ↑ 3.7%  
(61.9% Inland)

**ALGAE PRODUCTION = 36.3 Mt** ↑ 0.2%

### Biodiversity

**2 981** capture fisheries species

**652** aquaculture species



**600 million**

depend from the sector

**50%**

women when post-harvest is considered



# CLIMATE CHANGE: IMPLICATIONS OF THE ULTIMATE DISRUPTOR



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United Nations

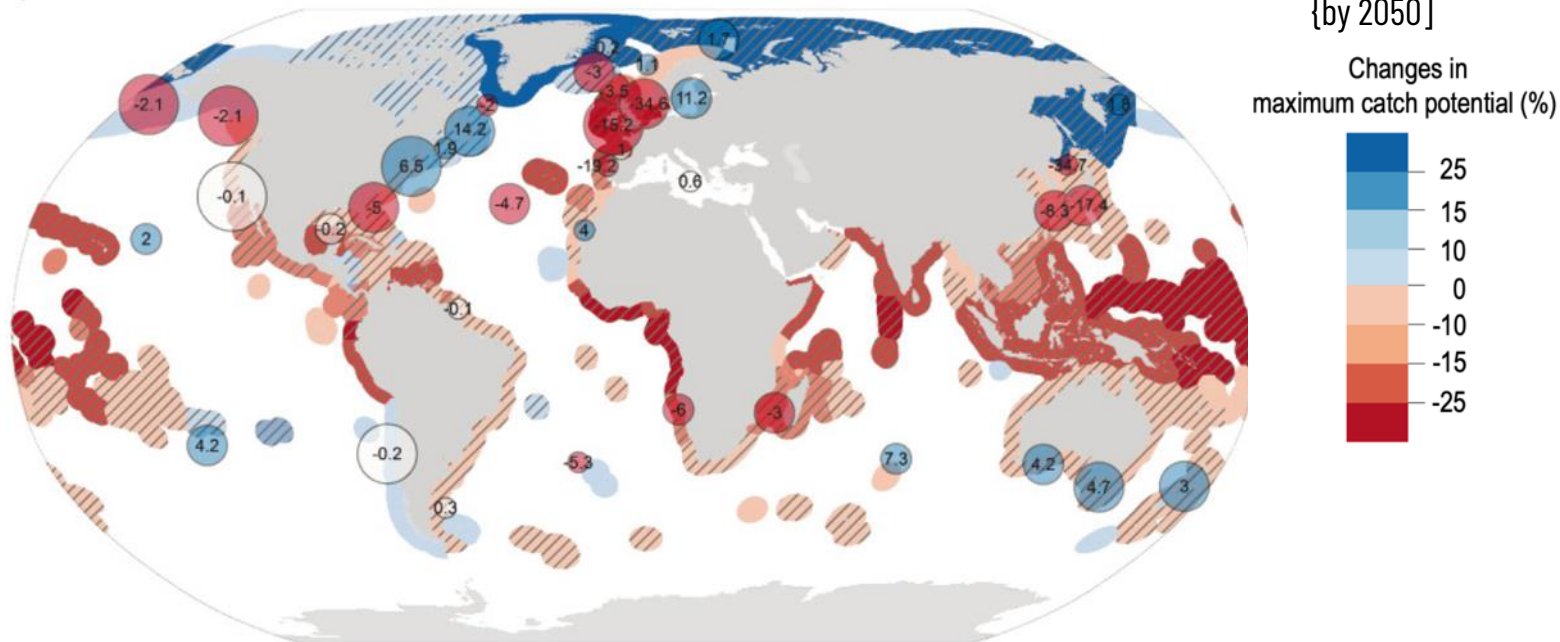
- ❖ Institutions
- ❖ Management systems
- ❖ Fishing & farming operations
- ❖ Offloading/ Processing
- ❖ Markets
- ❖ Consumer



# PRODUCTIVITY CHANGES

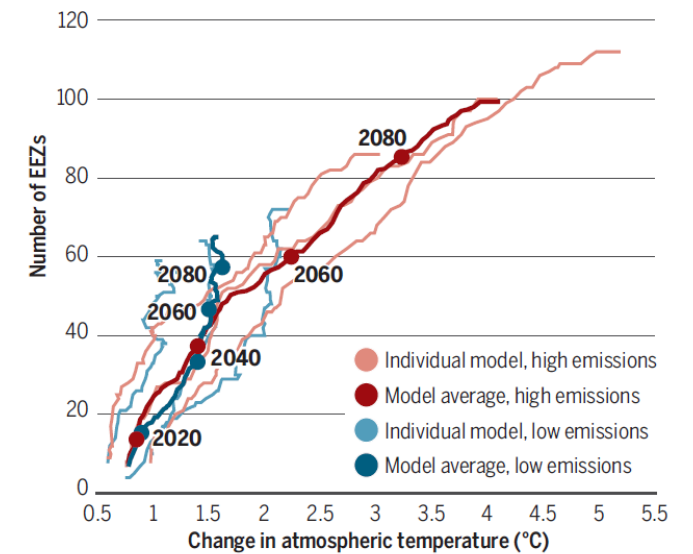
- Expected change in maximum catch potential is projected to decrease (-) 2.8-12% by 2050, but with very large geographical differences
- 45% of transboundary stocks will have shifted, and 81% of the world's EEZs will have experienced at least one shifting stock by 2100 (Palacios-Abrantes et al., 2022)

## Impacts of future warming on marine fisheries production



© IPCC SROCC 2019

## Number of EEZs with new transboundary stocks



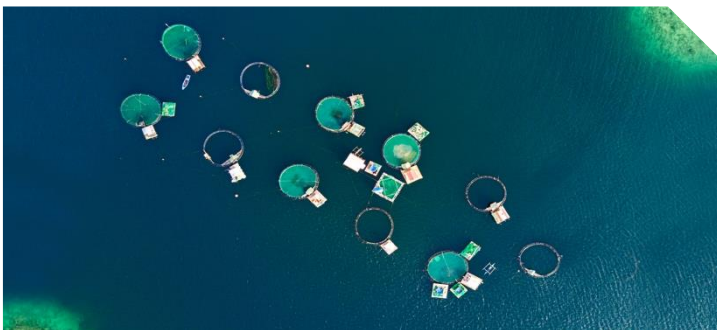
© Pinsky et al. 2018

An aerial photograph of a coastal village. The houses have colorful roofs in shades of red, blue, and white. The water is a deep greenish-blue, and several traditional outrigger canoes are visible. The land is covered in dense green trees. A white silhouette of a map of the Philippines is on the left side of the image.

# **BLUE TRANSFORMATION**

**Harnessing the possibility  
of tomorrow.**

# AQUATIC SYSTEMS ARE A POWERFUL SOLUTION: THE NEED FOR A BLUE TRANSFORMATION



## OBJECTIVE 1

**Sustainable aquaculture intensification and expansion** satisfies global demand for aquatic foods and distributes benefits equitably.



## OBJECTIVE 2

**Effective management of all fisheries** delivers healthy stocks and secures equitable livelihoods.



## OBJECTIVE 3

**Upgraded value chains** ensure the social, economic and environmental viability of aquatic food systems.

# SUSTAINABLE AQUACULTURE



Food and Agriculture  
Organization of the  
United Nations

## SEAMOSS FARMING & AQUAPONICS



### OBJECTIVE 1

**Sustainable aquaculture intensification and expansion** satisfies global demand for aquatic foods and distributes benefits equitably.



### Adaptive livelihood options:

- **CO<sub>2</sub> and Nitrogen** absorption
- Increases **biodiversity**
- **Additional income** and livelihoods
- Increase **production**

# SUSTAINABLE FISHERIES



Food and Agriculture  
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United Nations

## FAO ADAPTATION TOOLBOX



### OBJECTIVE 2

Effective management of all fisheries delivers healthy stocks and secures equitable livelihoods.



### An iterative adaptive management framework:

- Institutional adaptation
- Livelihoods adaptation
- Risk reduction and management for resilience

## SUSTAINABLE VALUE CHAINS



Food and Agriculture  
Organization of the  
United Nations

## RENEWABLE ENERGY IN SSF VALUE CHAINS



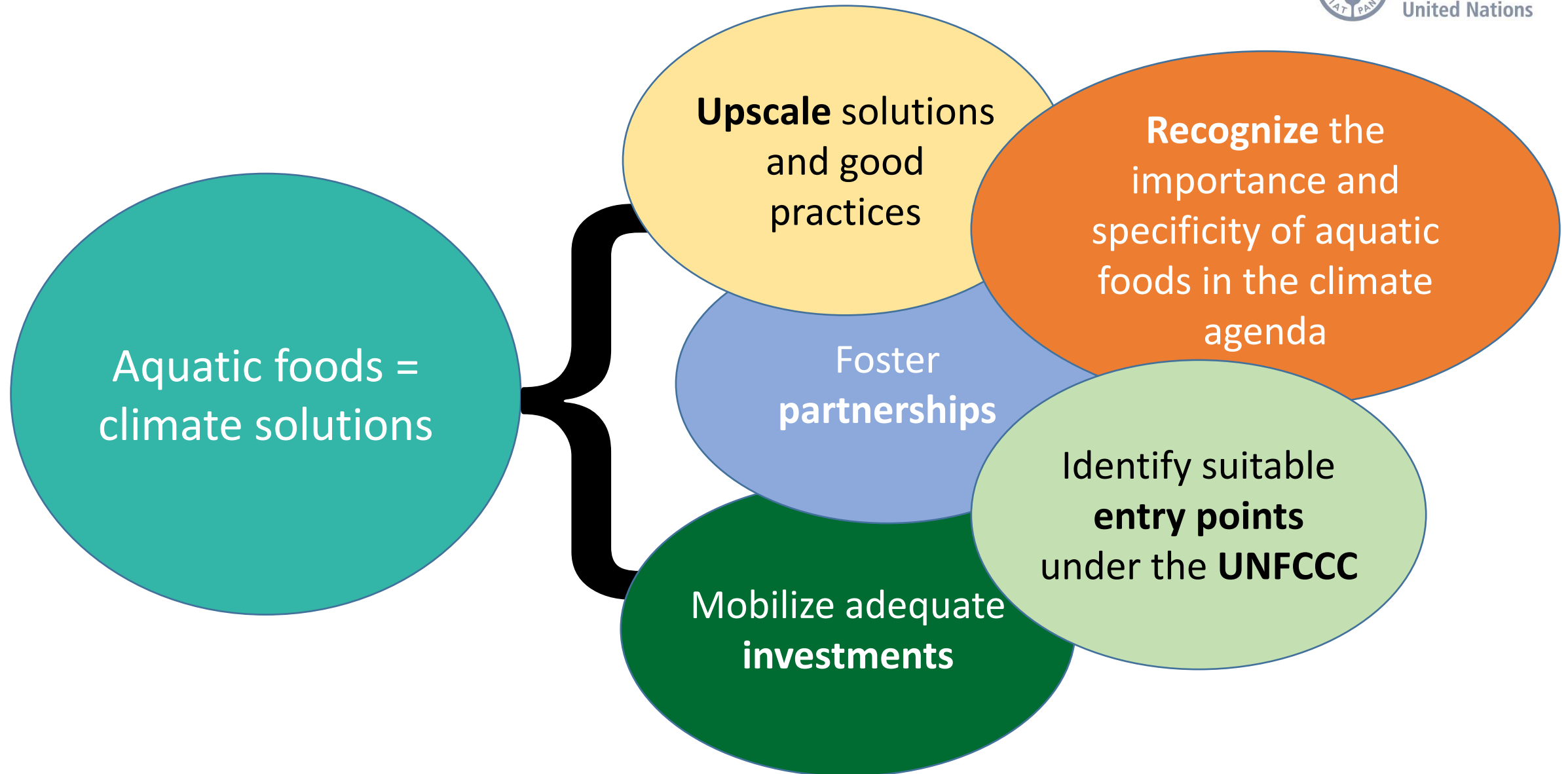
### OBJECTIVE 3

Upgraded value chains ensure the social, economic and environmental viability of aquatic food systems.



### Novel technologies

- Carbon efficiency
- Low environmental impact
- Economic boost of small-scale fishers







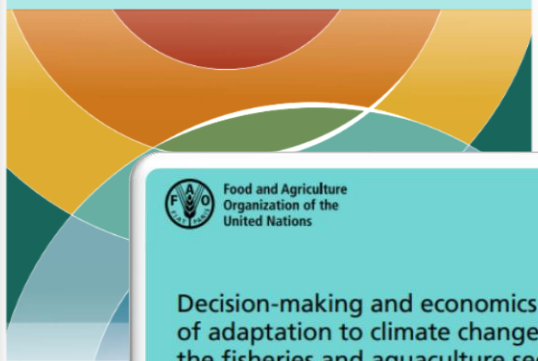
Food and Agriculture Organization of the United Nations

FAO FISHERIES AND AQUACULTURE TECHNICAL PAPER

627

### Impacts of climate change on fisheries and aquaculture

Synthesis of current knowledge, adaptation and mitigation options



Food and Agriculture Organization of the United Nations

FAO FISHERIES AND AQUACULTURE TECHNICAL PAPER

650

### Decision-making and economics of adaptation to climate change in the fisheries and aquaculture sector



Building resilience to climate change and disaster risks for small-scale fisheries communities

A human-rights-based approach to the implementation of Chapter 9 of the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication



Food and Agriculture Organization of the United Nations

### ADDRESSING AGRICULTURE, FORESTRY AND FISHERIES IN NATIONAL ADAPTATION PLANS

[ Supplementary guidelines ]



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### THE SMALL-SCALE FISHERIES AND ENERGY NEXUS

Opportunities for renewable energy interventions



Food and Agriculture Organization of the United Nations

### ADDRESSING FISHERIES AND AQUACULTURE IN NATIONAL ADAPTATION PLANS

[ Supplement to the UNFCCC NAP Technical Guidelines ]



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### Adaptive management of fisheries in response to climate change



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626

### Quantifying and mitigating greenhouse gas emissions from global aquaculture





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# Thank you for your attention





United Nations  
Climate Change Secretariat

An underwater photograph of a coral reef with various types of coral in shades of white, cream, and light brown, set against a clear blue water background. A semi-transparent grey box is overlaid on the center of the image.

# Breakout Group Discussion

# Breakout Group Discussions



United Nations  
Climate Change Secretariat

**Coastal ecosystem  
restoration including  
blue carbon**

**Fisheries and food  
security**

**Overarching  
(both topics)**

## Housekeeping

- **Participants will divide into five groups (10–20 people per group) for each group to discuss the guiding questions.**
- **Each breakout will assemble around a flip chart. The moderator and participants will stand around the flip chart.**
- **Participants will have a chance to discuss both topics.**
- **From 16:00, Participants will change groups for a second round of breakout discussions.**



**Coastal ecosystem  
restoration including  
blue carbon**

- 1. How can Parties strengthen recognition of coastal ecosystems as assets, to increase investments, and improve processes to protect and restore them?**
- 2. How can Parties further include blue carbon ecosystems (i.e., mangroves, seagrass and saltmarshes, among others) as part of their mitigation strategy and what are the key data/knowledge gaps that prevent Parties from doing so?**

## Fisheries and food security

- 3. How can Parties develop sustainable and equitable aquatic food production that are also inclusive, nature-positive and resilient?**
- 4. How can Parties support decarbonisation along the value chains of aquatic food systems (e.g., technology efficiency, replacement of fish-based feed ingredients, production closer to the final market, reduced reliance on fossil fuel)?**



**Overarching  
(both topics)**

- 5. How can Parties engage with coastal communities, including Indigenous Peoples, to align direct benefits with better management of coastal ecosystems?**
- 6. How can Parties create an enabling environment (e.g. policy, regulation, information, capacity), especially to attract resilient investments for both topical areas?**

# Breakout Group Discussions



United Nations  
Climate Change Secretariat

**Coastal ecosystem  
restoration including  
blue carbon**

	<b>Moderator</b>	<b>Rapporteur</b>
1	Loreley Picourt Ocean & Climate Platform	Tom Hickey Pew
2	Kilaparti Ramakrishna Woods Hole Oceanographic Institution (WHOI)	Marina Antonopoulou, World Wide Fund for Nature (WWF) Emirates, UAE
3	Martin Sommerkorn World Wide Fund for Nature (WWF) Arctic	Jill Hamilton Conservation International (CI)
4	Lisa Schindler Murray Rare	Beatriz Marchado Granziera The Nature Conservancy (TNC)
5	Ambrosio Yobanolo del Real Co-chair of the Technology Executive Committee (TEC)	Luz Gil, The Nature Conservancy (TNC)



# Breakout Group Discussions



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## Fisheries and food security

	Moderator	Rapporteur
1	Tarub Bahri Food and Agriculture Organization (FAO)	Marine Lecerf Ocean & Climate Platform
2	Pauli Merriman World Wide Fund for Nature (WWF)	Matt Frost Plymouth Marine Laboratory (PML)
3	Jessie Turner Ocean Acidification Alliance (SOA)	Mitchell Lennan One Ocean Hub
4	Mark Haver, BlueGreen Generation	Whitney Berry Ocean Conservancy
5	Karly Kelso Environment Defense Fund (EDF)	Katie Thiessen YOUNGO



**United Nations**  
Framework Convention on  
Climate Change

# Wrap- up Day 1

## Mailing List

**Ocean and Climate Change  
Dialogue 2023**

**Day 1**

