

SIXTH ASSESSMENT REPORT
Working Group II – Impacts, Adaptation and Vulnerability

ipcc

Climate change 2022: Impacts, adaptation and vulnerability

An Ocean Focus

H.O. Pörtner, Co-Chair IPCC WGII, and WGII Author Team
(Co-Chair of IPCC-IPBES workshop report on Climate and Biodiversity)



Ocean Image Bank/M. Curnock, S. Baldwin, CC BY-NC-ND 2.0; Y. Ishida/UNDP T. Leste CC BY-ND 2.0

1

SIXTH ASSESSMENT REPORT
Working Group II – Impacts, Adaptation and Vulnerability

ipcc



WGII: Guiding AMBITION in Mitigation and Adaptation, setting LONG TERM GLOBAL GOALS ... for protecting ecosystems, biodiversity, human society, landscapes, and the (bio)economy

IPCC 6th Assessment Cycle: 3 Special Reports, WGI + II + III AR6 released between October 2018 and March 2022

2

What is already happening ...

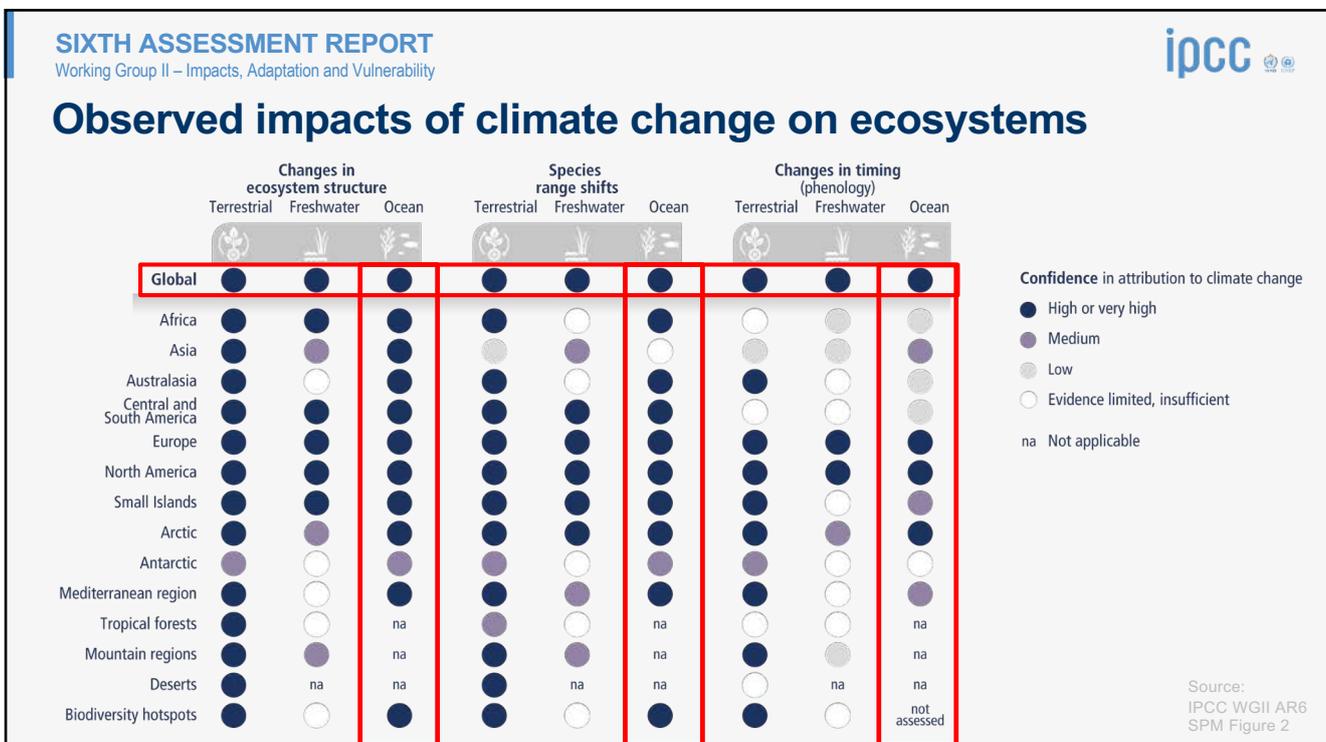
Human pressure on biodiversity is increasing constantly. At the same time conservation efforts have not been sufficient to stem the loss of biodiversity on a global scale.

Human caused climate change is increasingly threatening nature and its contributions to people, causing:

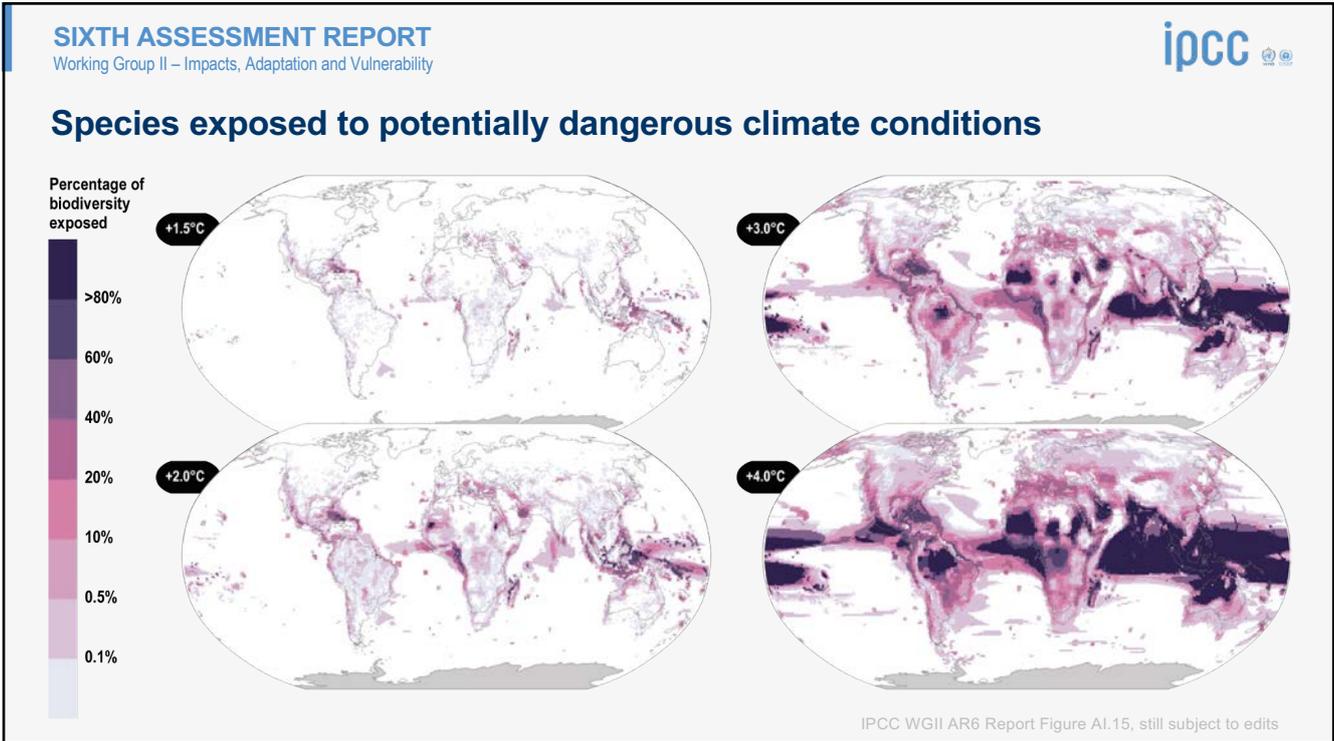


[Unsplash.com, Facebook/ Help Save the Wildlife and Bushlands in Campbelltown, Madeleine Nicolas / images.eu.eu]

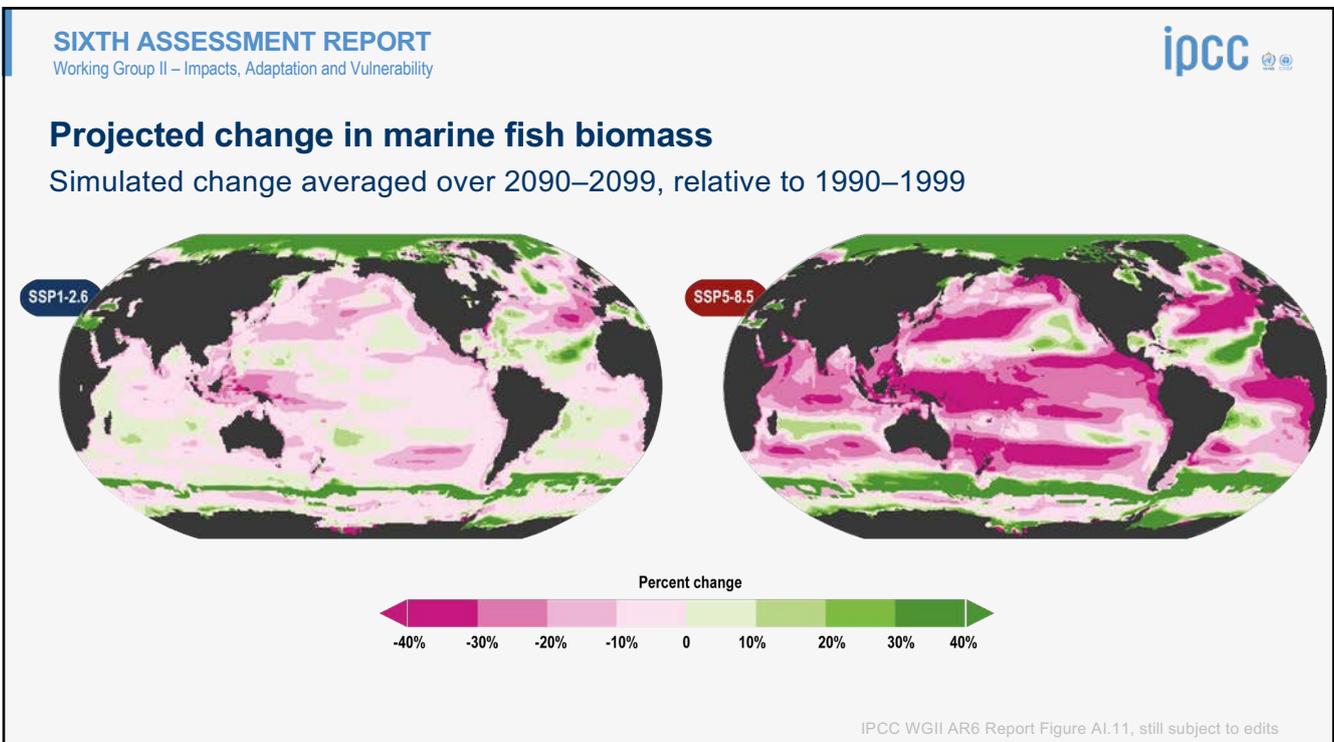
3



4



5



6



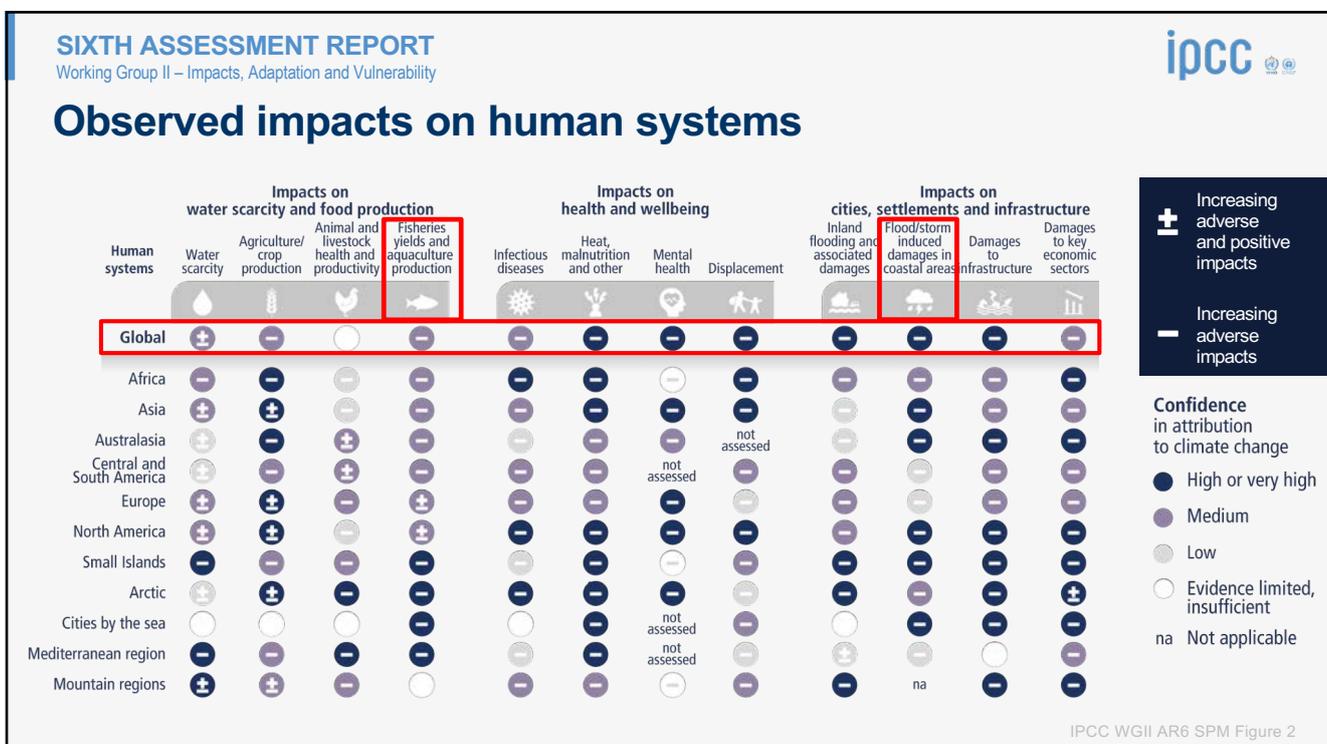
ipcc 

Climate change is affecting the lives of billions of people, despite efforts to adapt

... for example, through high intensity cyclones, sea level rise, heavy rainfall, drought

NLRC via IFRC CC BY-NC 2.0

7



8

SIXTH ASSESSMENT REPORT
Working Group II – Impacts, Adaptation and Vulnerability

ipcc

Nature's crucial services at risk in a warming world



Pollination



COASTAL PROTECTION



TOURISM/RECREATION



FOOD SOURCE



HEALTH



Water filtration



Clean air



CLIMATE REGULATION

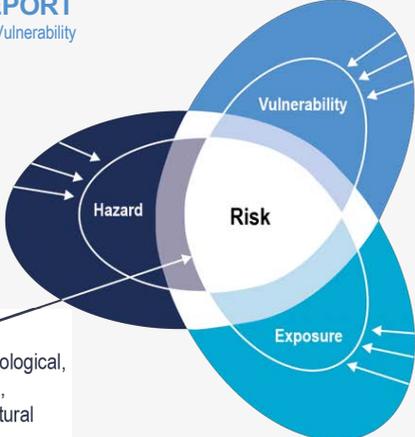
Ocean Image Bank/ S. Wolfe, D. Poursanidis; FAO/K. Arrigo, Unsplash, A. Fassio/CIFOR CC BY-NC-ND 2.0

9

SIXTH ASSESSMENT REPORT
Working Group II – Impacts, Adaptation and Vulnerability

ipcc

Evaluating risks



Risk

The IPCC concept of risk

Climate action entails risk reduction by adaptation and mitigation considering limits to adaptation

Limits to Adaptation

- E.g. physical, ecological, technological, economic, political, institutional, psychological, and/or socio-cultural

Level of added impacts/risks

	Very high	Purple: Very high probability of severe impacts/ risks and the presence of significant irreversibility or the persistence of climate-related hazards, combined with persistence of climate-related hazards, combined with limited ability to adapt due to the nature of the hazard or impacts/risks.
	High	Red: Significant and widespread impacts/risks.
	Moderate	Yellow: Impacts/risks are detectable and attributable to climate change with at least medium confidence.
	Undetectable	White: Impacts/risks are undetectable.

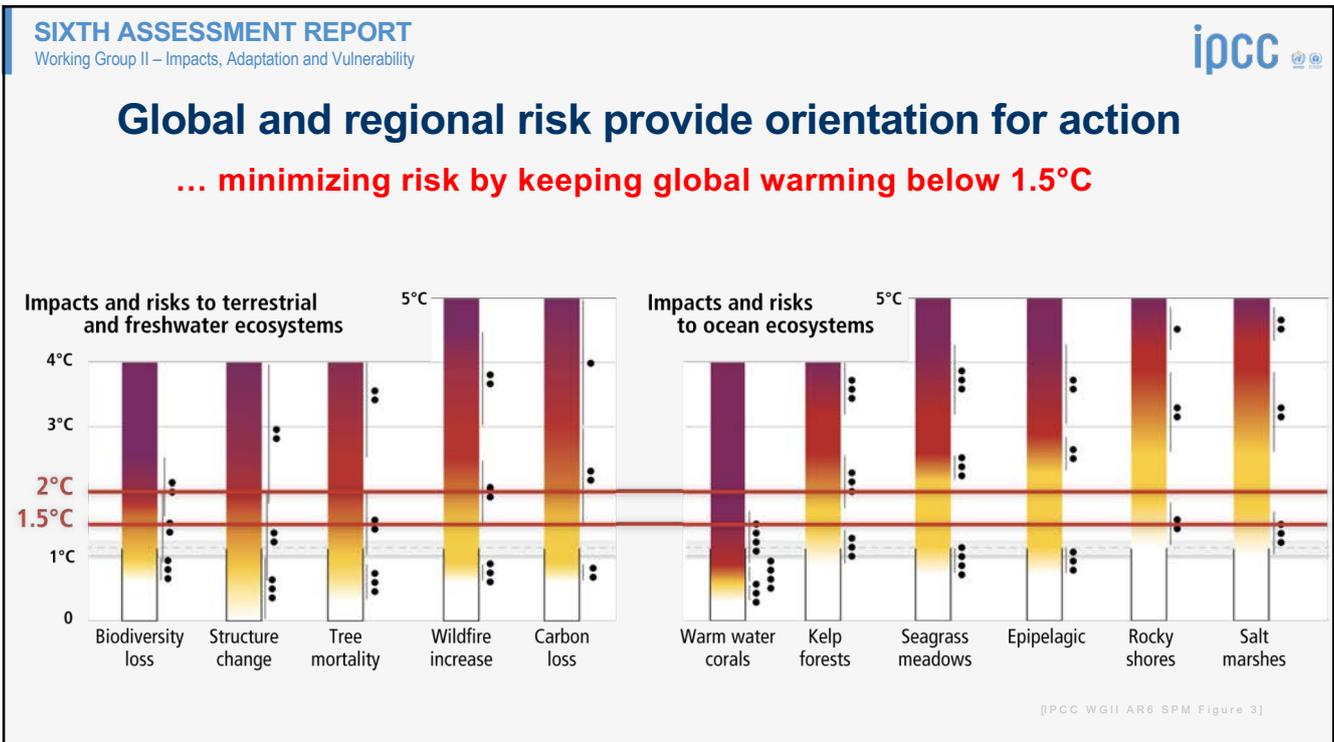
Confidence level for transition

- = Very high
- = High
- = Medium
- = Low
- | = Transition range

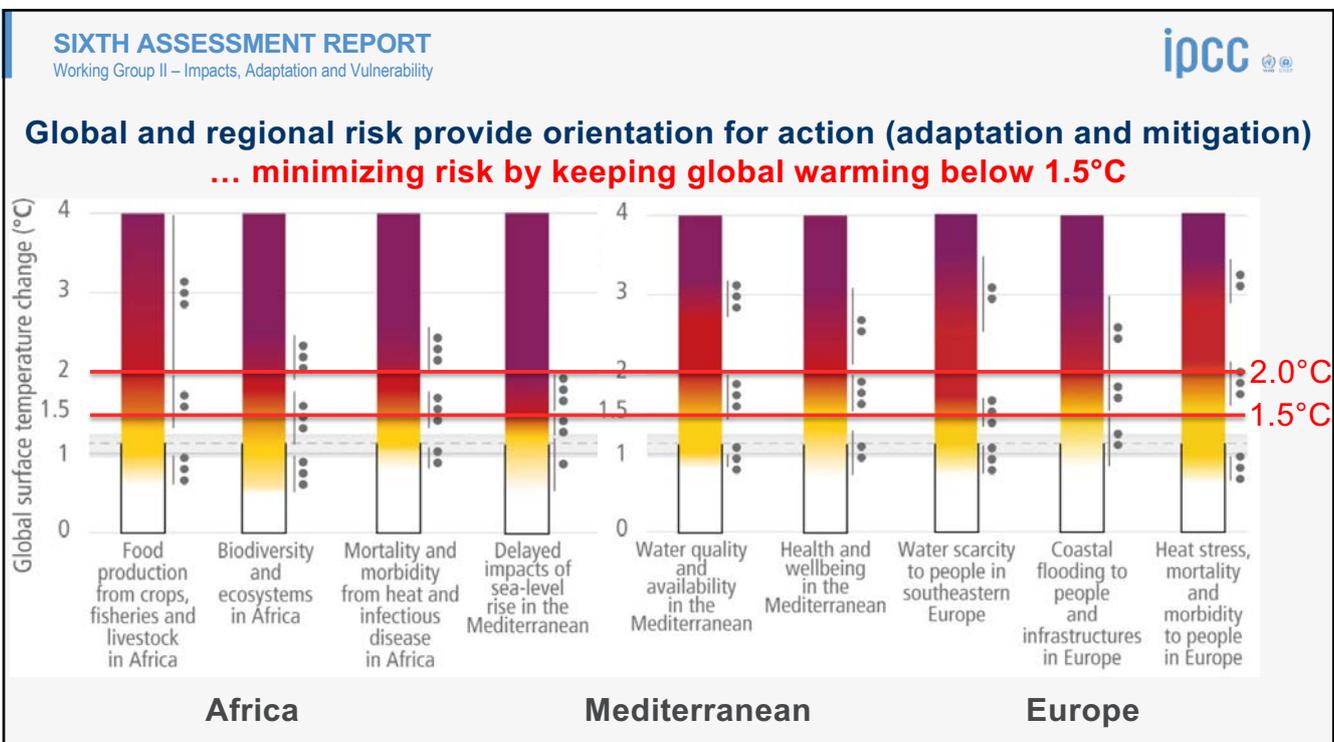
****see figure caption for definition**

[IPCC SROCC, WGII AR6]

10



11



12



ipcc 

3.3 – 3.6 billion people live in hotspots of high vulnerability to climate change.

Vulnerable population groups in most vulnerable regions have the most urgent need for adaptation

A. Erlangga/CIFOR-ICRAF CC BY-NC-ND 2.0

13

SIXTH ASSESSMENT REPORT
Working Group II – Impacts, Adaptation and Vulnerability

ipcc 

Five System Transitions in Adaptation



Land, ocean, coastal and freshwater ecosystems



Urban, rural and infrastructure



Energy



Industry

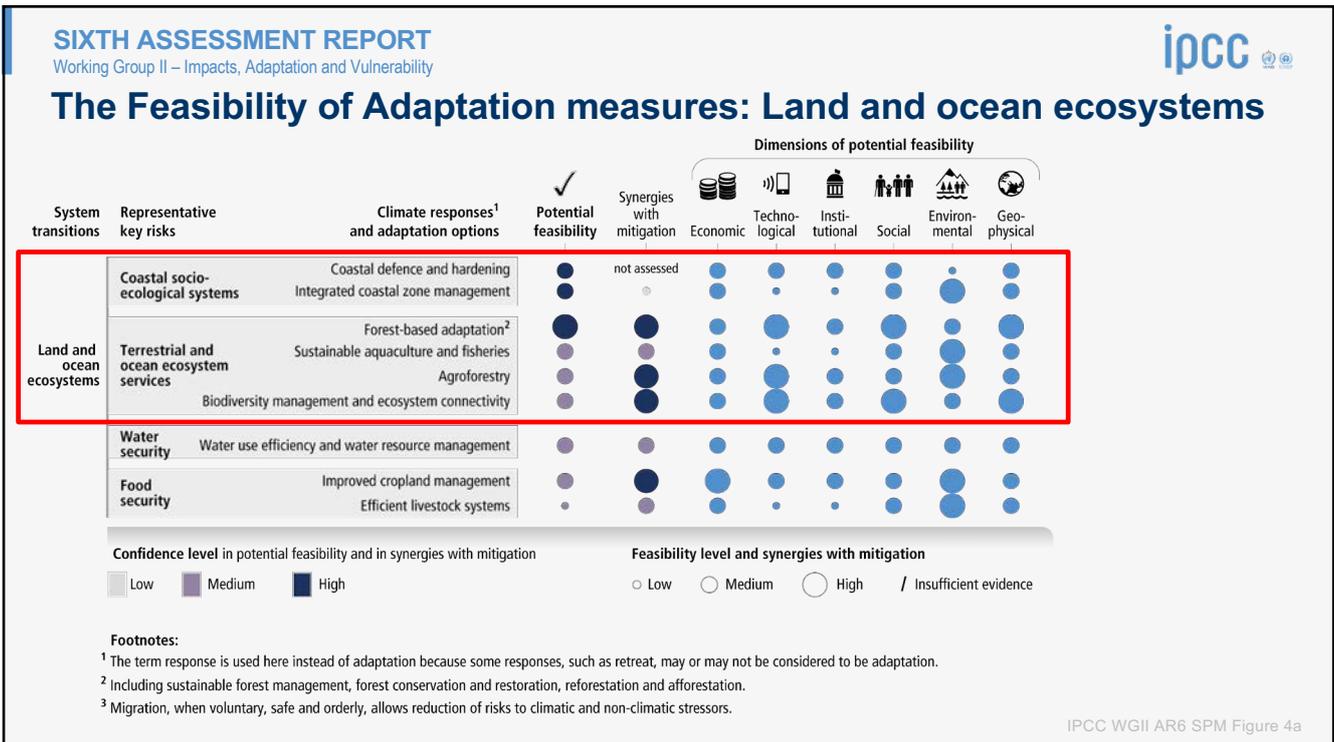


Society

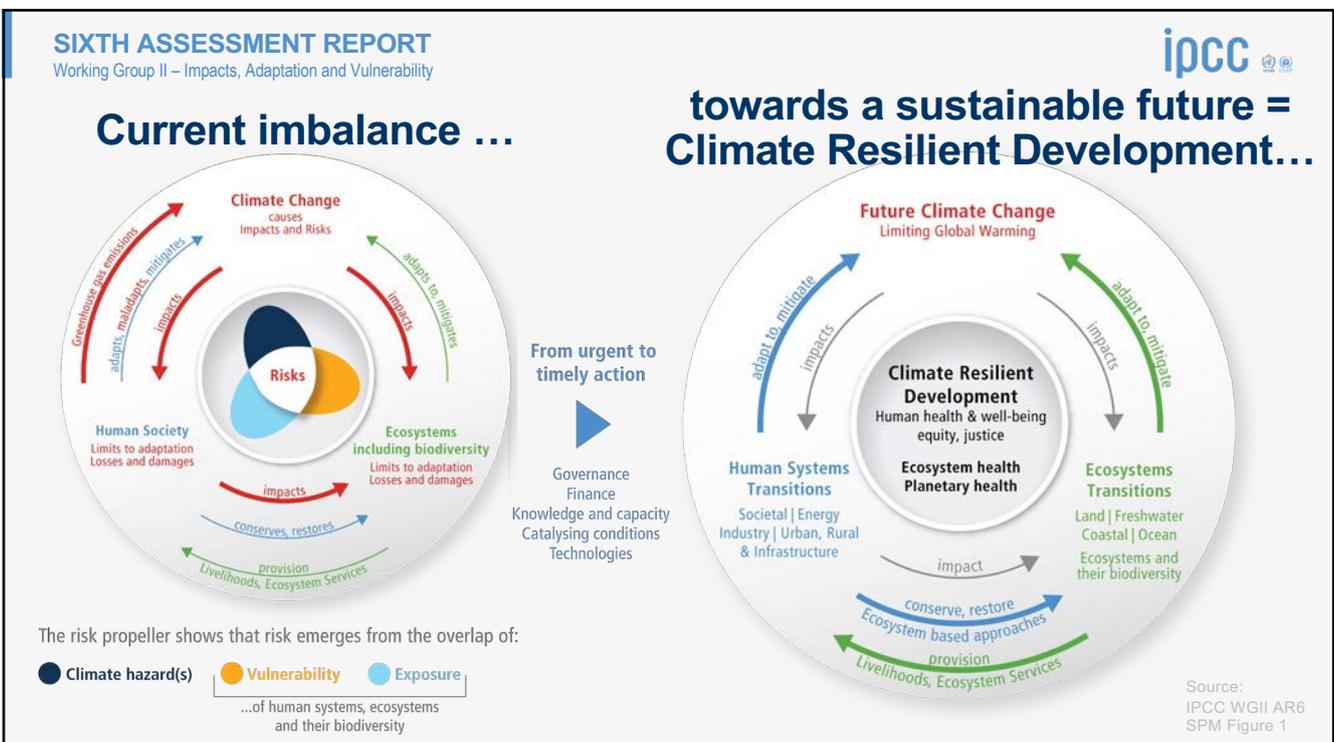
- Make possible the adaptation required for human health and well being; economic and social resilience; ecosystem health and planetary health
- Have mitigation co-benefits and are important for achieving the low global warming levels that would avoid many limits to adaptation

P. Baum, NASA, F. Dantz, M. Jozwiak/Unsplash, UN Photo/O. Abdisalan Flickr CC BY-NC-ND 2.0

14



15



16

ipbes-ipcc Co-Sponsored Workshop Report on Biodiversity and Climate Change

Integrating conservation, climate and societal actions: spatial planning

Treating climate, biodiversity, and human society as coupled systems is key to successful outcomes.

To be successful, conservation and climate actions would go hand in hand across landscapes, in cities and rural areas, taking people's needs into consideration, for maximized benefits for climate, biodiversity and humans.

Corridors and mosaic of natural habitats enable climate migration:

- 1 Forest ecosystems
- 2 Savannah ecosystems
- 3 Mountain slopes
- 4 Ocean ecosystems

Corridors connect the mosaic of natural habitats in shared spaces with reservoirs of nature in intact spaces.

...effectively conserving ecosystems on 30 to 50% of land and ocean

17

ipcc
INTERGOVERNMENTAL PANEL ON climate change

Climate Change 2022
Impacts, Adaptation and Vulnerability

Working Group II Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change

WMO UNEP

“ The science is clear. Any further delay in concerted global action will miss a brief and rapidly closing window to secure a liveable future. This report offers solutions to the world. However, it is getting late!

ipcc
INTERGOVERNMENTAL PANEL ON climate change

WMO UNEP

18

SIXTH ASSESSMENT REPORT
Working Group II – Impacts, Adaptation and Vulnerability



Thank you!

IPCC Working Group II Author Team



@IPCC_CH
#IPCCReport



@IPCC



@IPCC



linkedin.com/
company/ipcc

For more information: IPCC Secretariat: ipcc-sec@wmo.int IPCC Press Office: ipcc-media@wmo.int Visit ipcc.ch