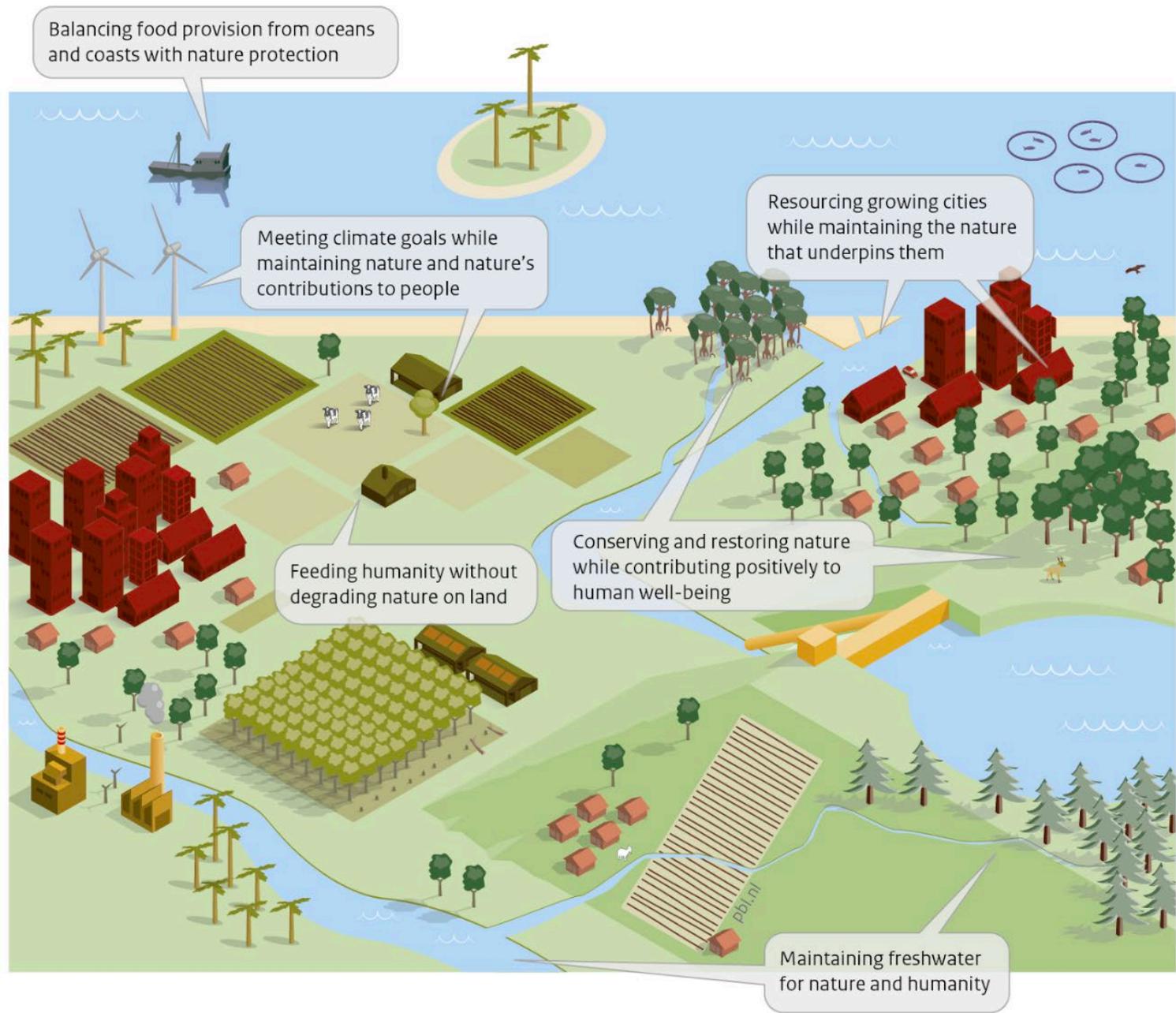


Online conference to seek input for the scoping process of the Nexus Assessment (30 September - 2 October 2019)

TOPIC 3 (FOOD)

Ana Paula Dutra Aguiar (SRC and INPE/CCST)

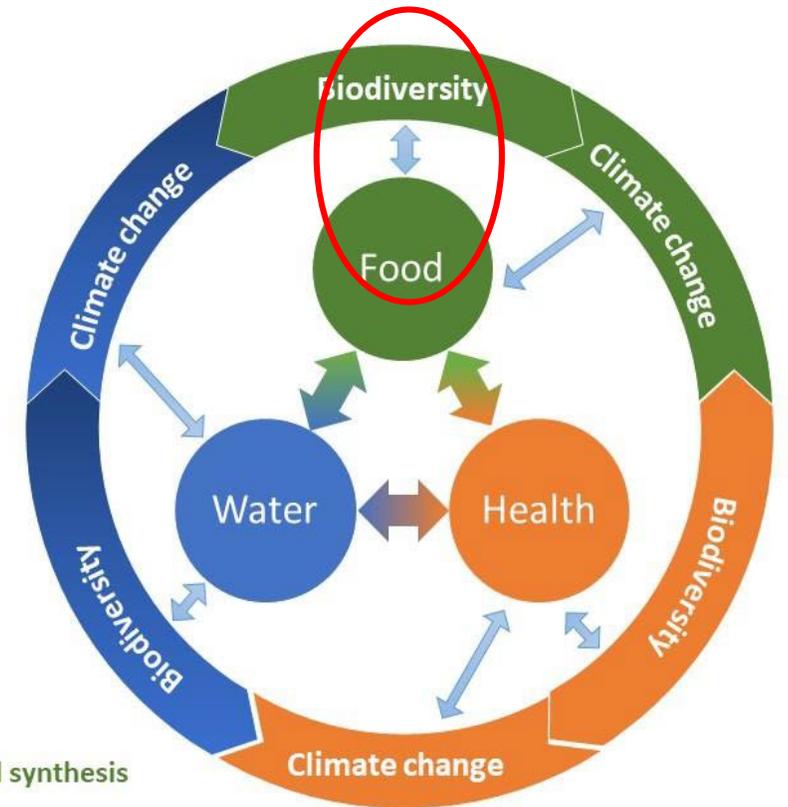


Topics

Part I: Nexus linkages related to food production: **problems and pathways**

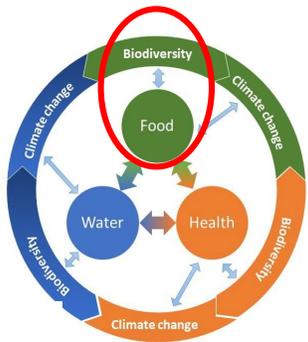
Part II - Nexus linkages related to food consumption and indirect drivers: **problems and pathways**

Part III: Synthesis and policy-relevant questions for the assessment



Day 1: **Water and linkages**
Day 2: **Health and linkages**
Day 3: **Food and linkages, and synthesis**

Part I: Nexus linkages related to food production



Nexus linkages: Agriculture expansion and biodiversity



Pathway elements:

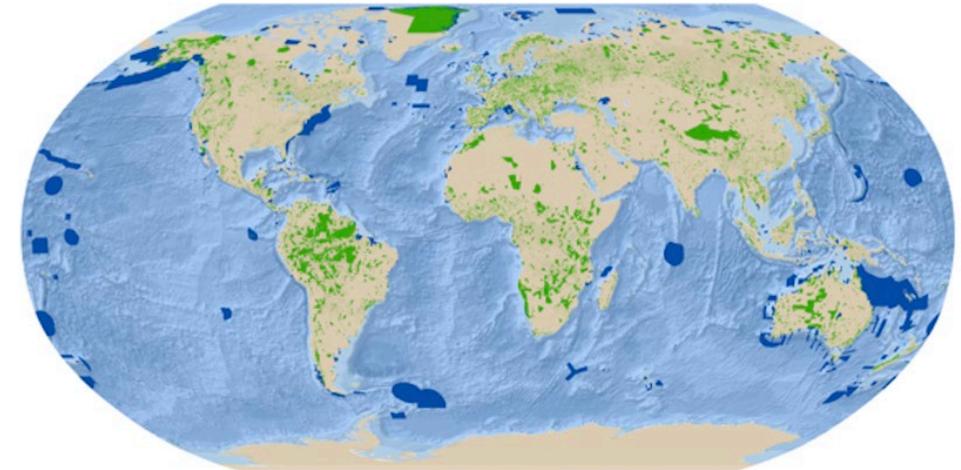
Halt deforestation

Promote restoration of degraded ecosystems

Extend and improve network of protected
areas

Promote agriculture intensification to produce
more food in less area

Decrease consumption and waste pressure

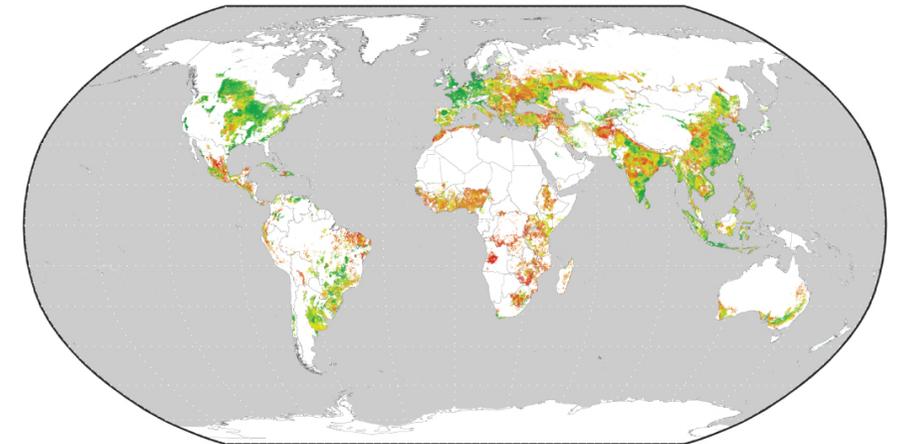


Source: IUCN and UNEP-WCMC (2016). The World Database on Protected Areas (WDPA) [On-line]. April 2016. Cambridge, UK: UNEP-WCMC. Available at www.protectedplanet.net



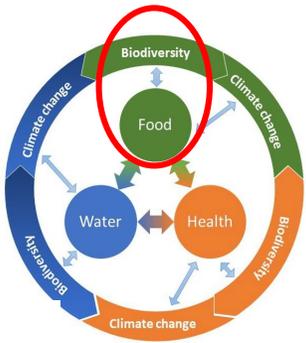
Terrestrial protected areas

Marine and coastal protected areas



Major cereals: attainable yield achieved (%)





Nexus linkages: Agriculture expansion and biodiversity



Pathway elements:

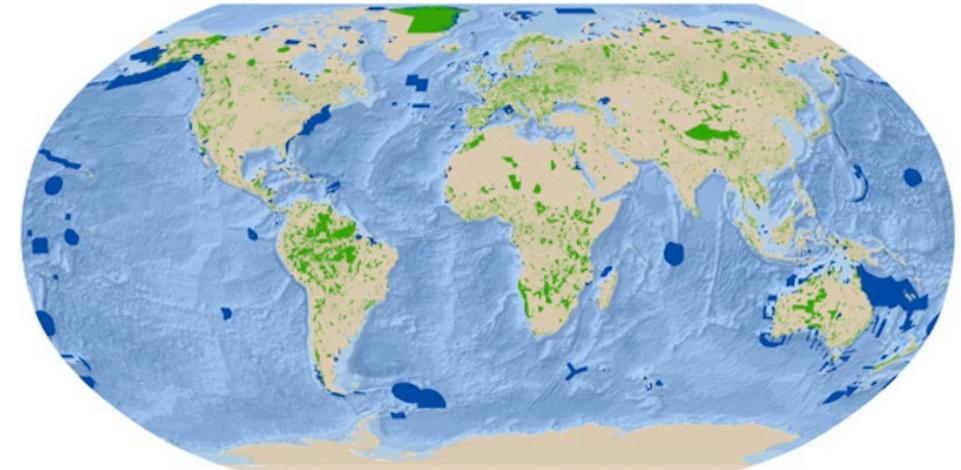
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Decrease consumption and waste pressure

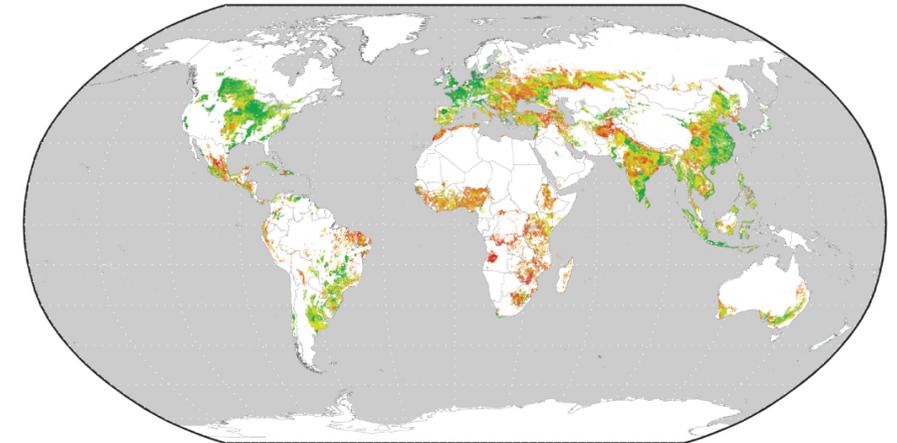


Source: IUCN and UNEP-WCMC (2016). The World Database on Protected Areas (WDPA) [On-line]. April 2016. Cambridge, UK: UNEP-WCMC. Available at www.protectedplanet.net



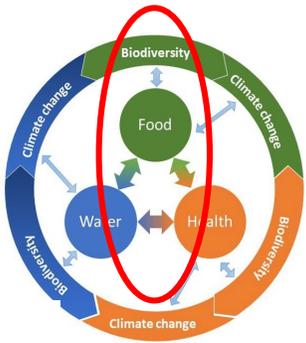
Terrestrial protected areas

Marine and coastal protected areas



Major cereals: attainable yield achieved (%)





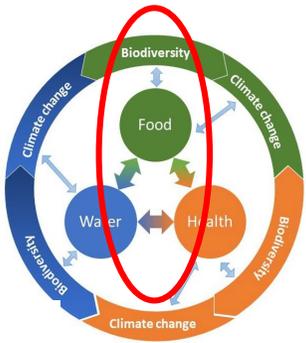
Nexus linkages:
Agriculture expansion/intensification and biodiversity

Pathway elements:

- Halt deforestation
- Extend and improve network of protected areas
- Promote agriculture intensification to produce more food in less area
- Decrease consumption and waste
- Promote restoration

Modernize agriculture to produce without harming biodiversity, water quality and health





Nexus linkages:
Agriculture
expansion/intensification
and biodiversity

Pathway elements:

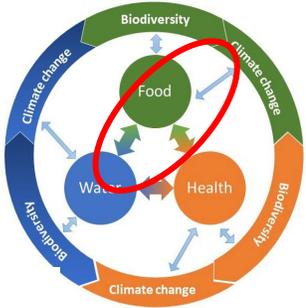
- Halt deforestation
- Extend and improve network of protected areas
- Promote agriculture intensification to produce more food in less area
- Decrease consumption and waste
- Promote restoration

Modernize agriculture to produce without harming biodiversity, water quality and health

Integrated land and water management



Photo 1: Aerial view of Bonneville Dam on the Columbia River (USA). (Photo Larinier)



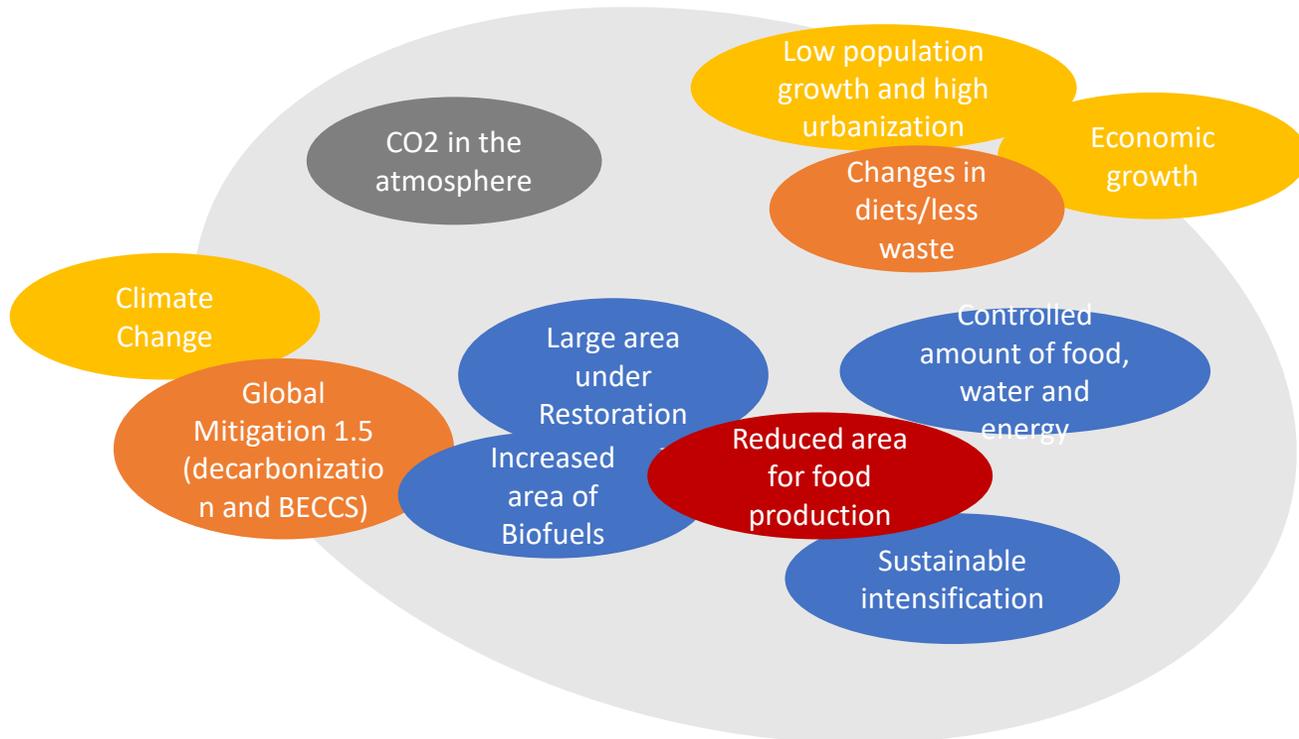
Nexus linkages: agriculture <-> climate change

CO2 emissions from agriculture and LUCC

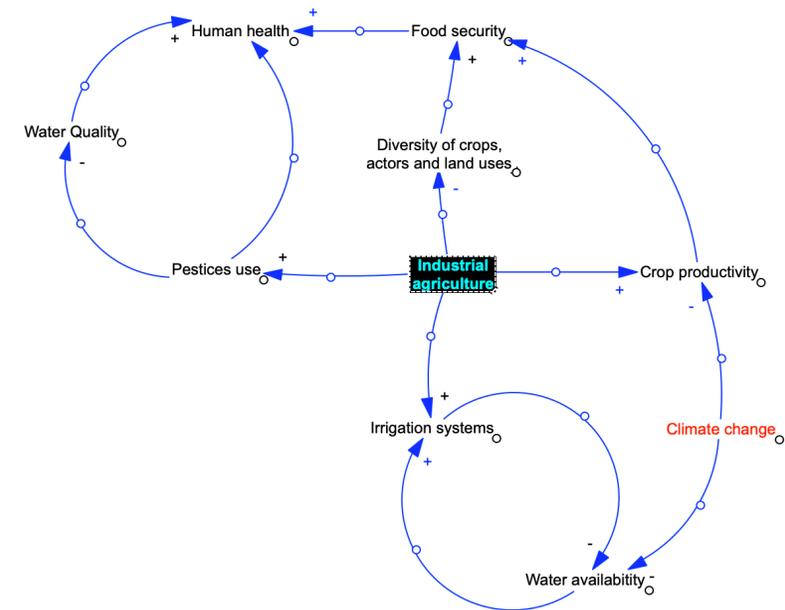


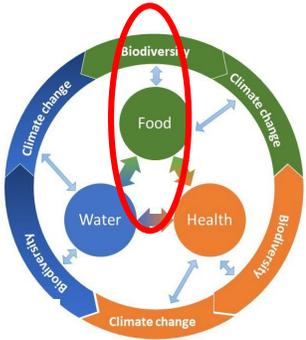
Land-based mitigation

Synthesis of SSP 1.9 scenarios



And water (irrigation and crop productivity)

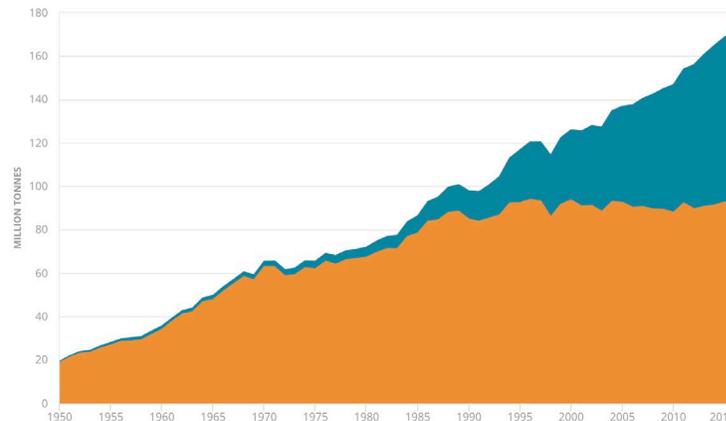




Nexus linkages: fisheries <-> biodiversity



Fish harvesting: ©FAO/Cote d'Ivoire



Legend: Capture production (orange), Aquaculture production (teal)

NOTE: Excludes aquatic mammals, crocodiles, alligators and caimans, seaweeds and other aquatic plants

Pathway elements:

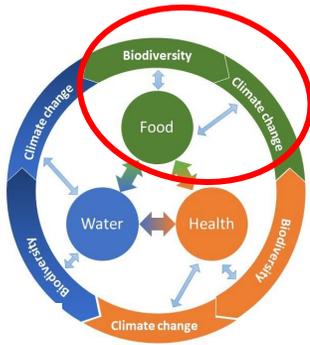
Conserving and/or restoring marine ecosystems, rebuilding overfished stocks.

Marine protected areas and halting illegal activities.

Ecological fisheries management (short term versus long term trade-offs on livelihoods and fish stocks)

Social participation and community engagement in decision-making and implementation.

Improve aquaculture practices.



Nexus linkages: fisheries <-> climate change

Pathway elements:

Conserving and/or restoring marine ecosystems, rebuilding overfished stocks (short term versus long term trade-offs on livelihoods and fish stocks).

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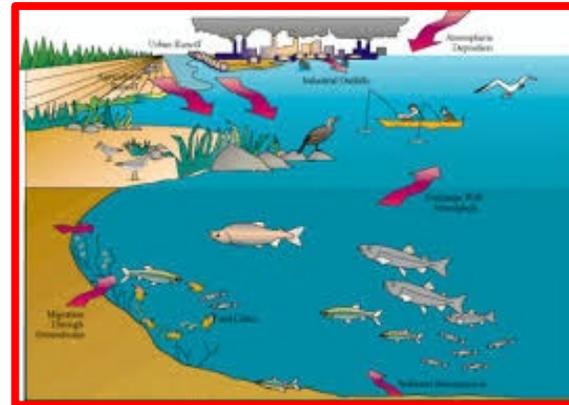
Improve aquaculture practices.

Climate change mitigation to reduce impacts.

Pollution (health impacts)



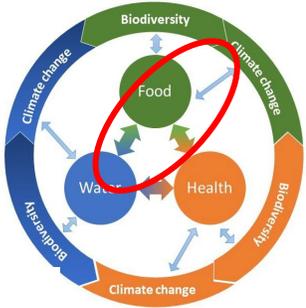
Photo 1: Aerial view of Bonneville Dam on the Columbia River (USA). (Photo Larinier)



The world's plastic problem is bigger than the ocean

November 13, 2018 11:46am GMT

Part II: Nexus linkages related to food consumption



Indirect drivers : linkages to biodiversity, health and climate change

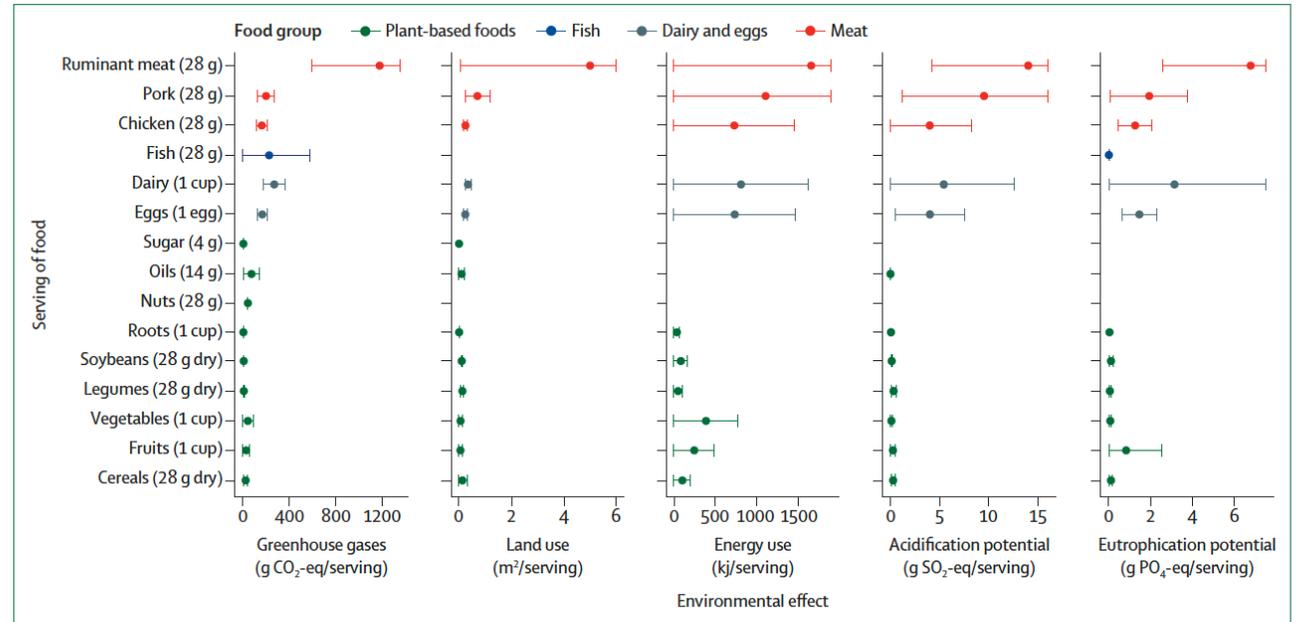
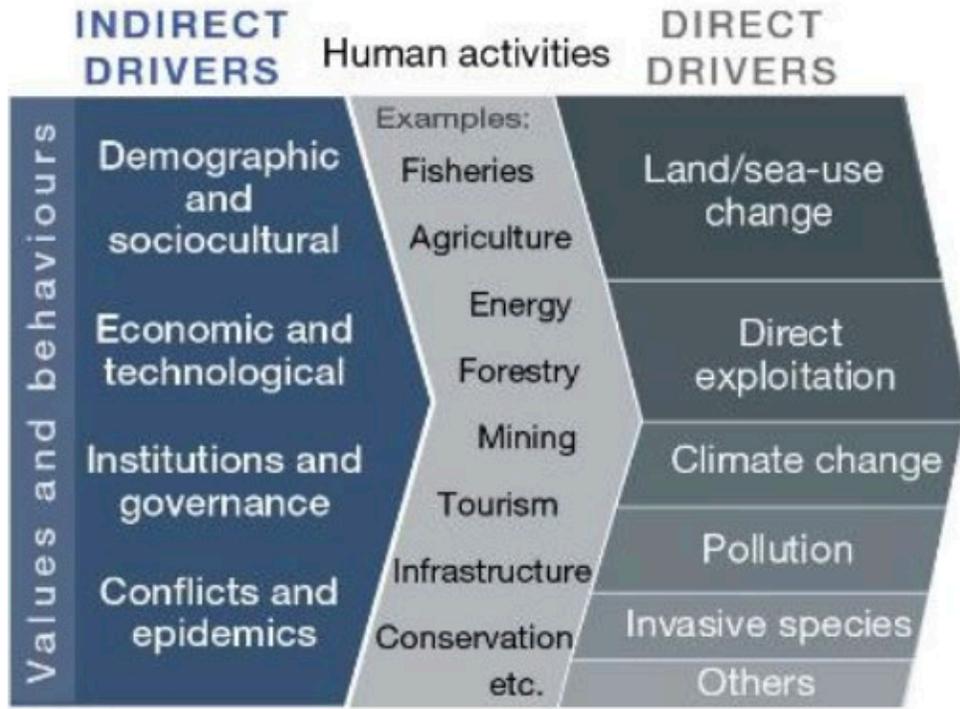
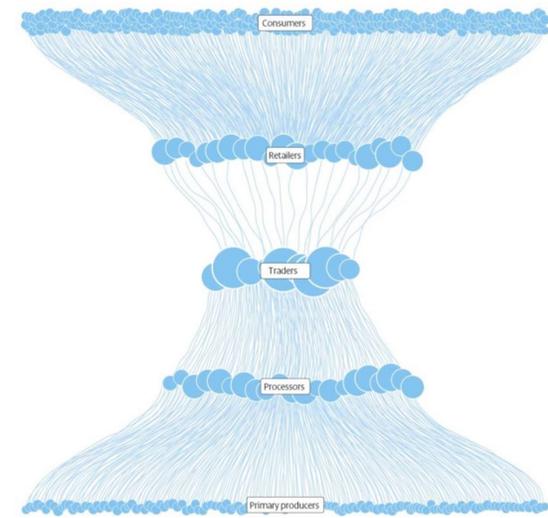
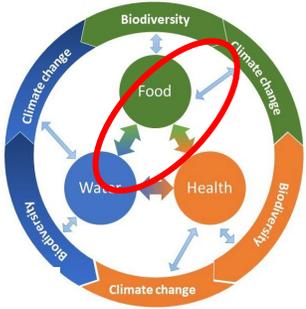
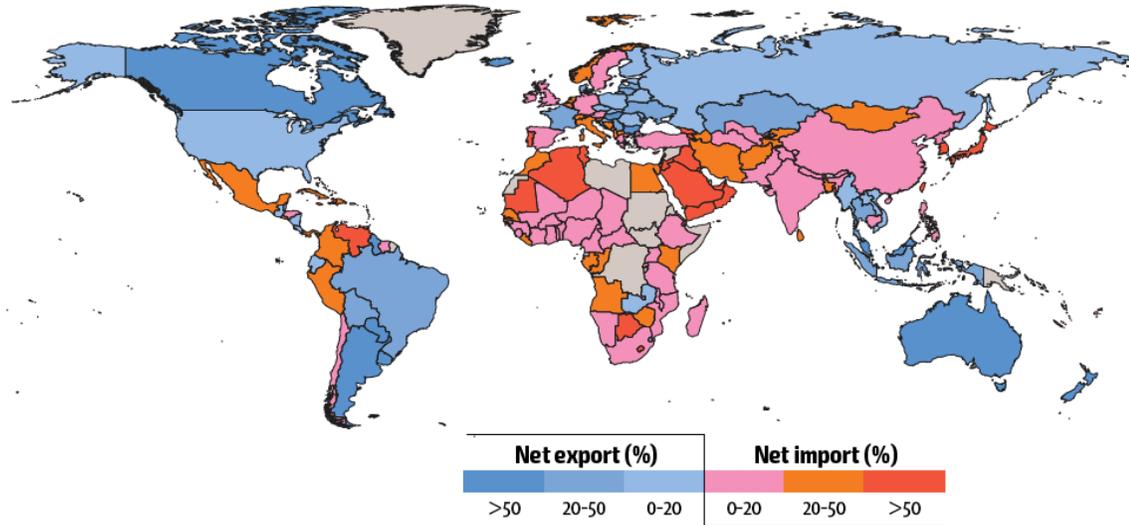


Figure 4: Environmental effects per serving of food produced
 Bars are mean (SD).⁵²¹⁶ Some results are missing for fish due to lack of data for some impact categories (eg, land use stemming from plant-based feeds in aquaculture). This was, however, accounted for in the global food systems modeling framework used in Section 3. CO₂=carbon dioxide. Eq=equivalent. PO₄=phosphate. SO₂=sulphur dioxide.

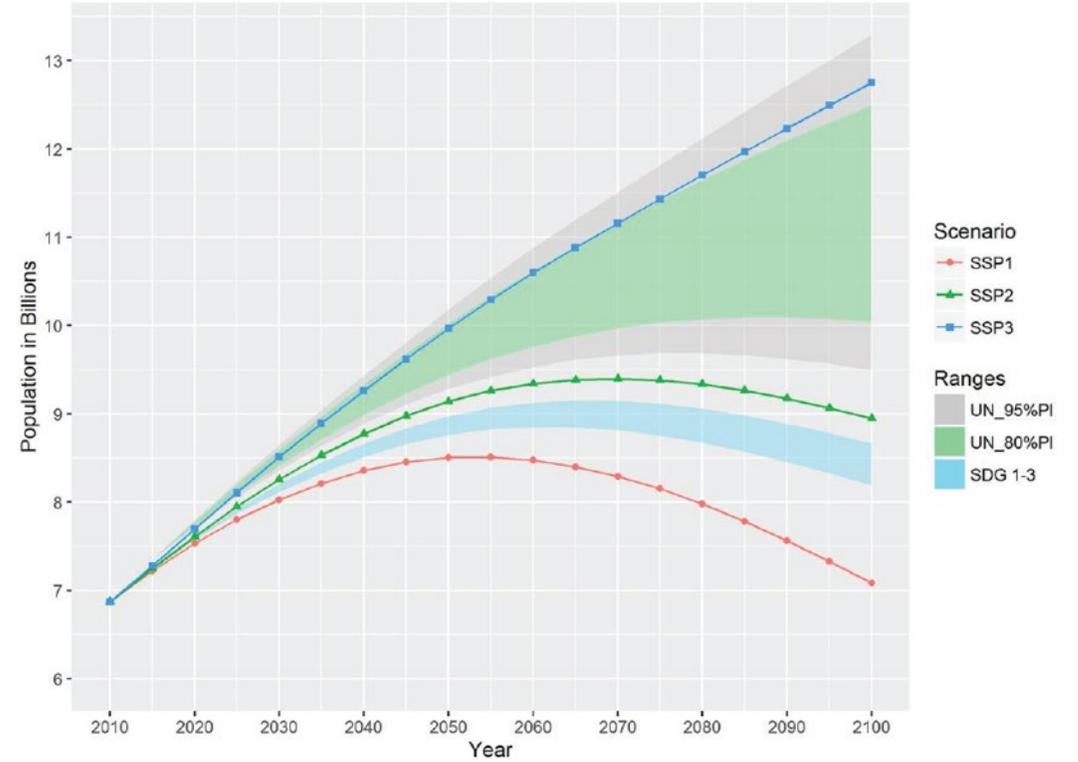


Indirect drivers to Food demand: linkages to biodiversity, health and climate change

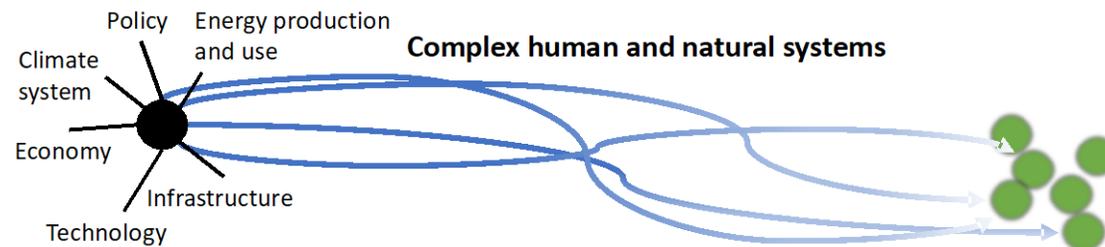
Figure 2.12 Percentage of net food imports in domestic food supply in total calories



Source: FAO Global Perspectives Studies, using 2011 food balance sheets from FAO, 2016a.



Part III: Synthesis and policy-relevant questions for the assessment



Examples of policy-relevant questions for the assessment

Which are the options for food production in different socioeconomic and how they affect biodiversity, climate change and health? How these options affect the involved actors (farmers, fishermen, corporations)?

Which are the land-based mitigation options in different socioeconomic contexts and which are their implications for biodiversity, climate change and health? How do they compare to other mitigation options (CCS, alternative energy sources, etc)?

Which are the options for alternative diets in different socioeconomic contexts and how they affect biodiversity, climate change and health? How do the global food trade system affects biodiversity, climate change and health?

Thank you!



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