The Cost of Policy Inaction

The case of not meeting the 2010 biodiversity target

Presentation
CBD COP 9-Side Event of UNEP-FI and FFI,
May 29, 2008, Bonn

Dr. Leon C. Braat

ALTERRA
WAGENINGEN UR

Based on Report

The Cost of Policy Inaction (May, 2008)

L. Braat & P. ten Brink (eds.)

with

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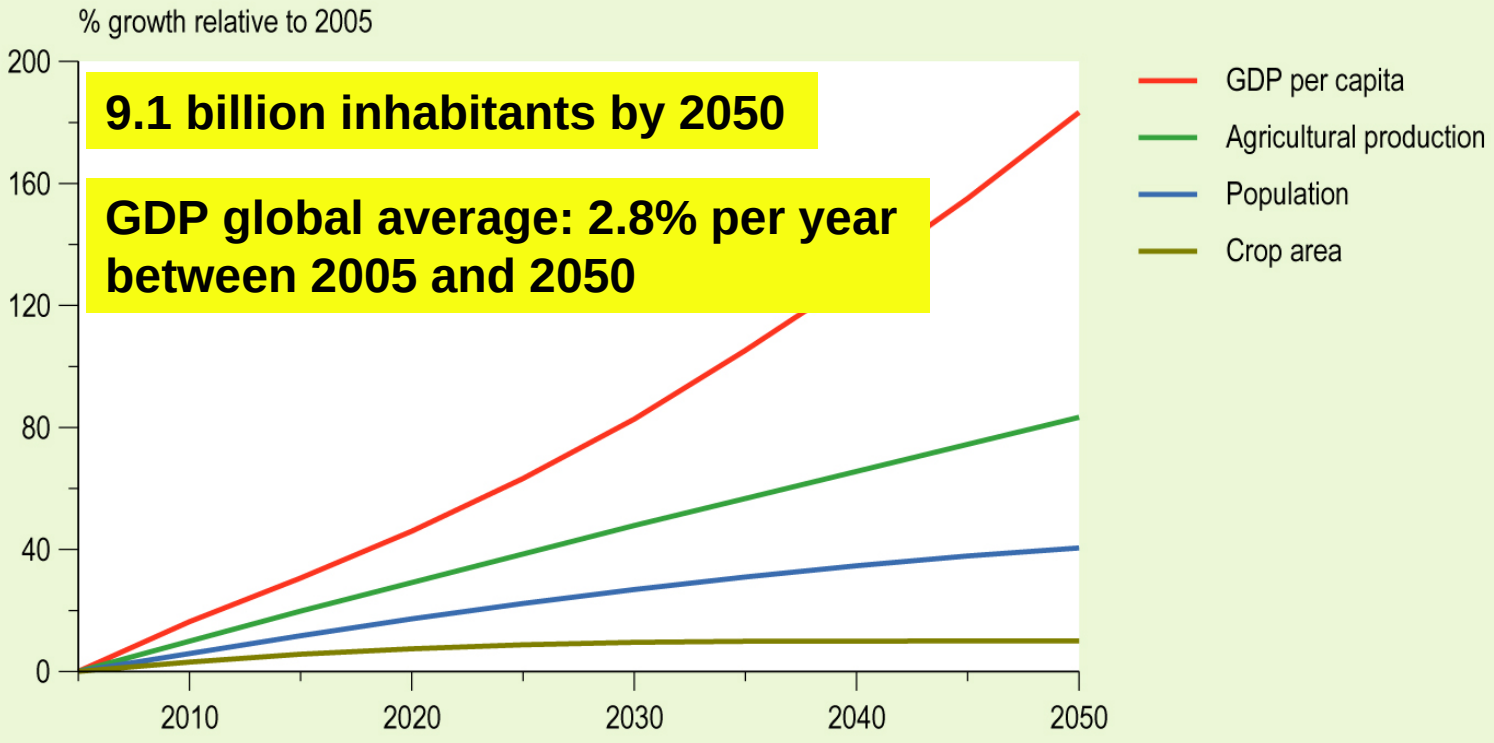
Wageningen / Brussels, May 2008

1. The OECD Baseline scenario and international policies

Expected growth population, GDP, agricultural production and crop area, baseline

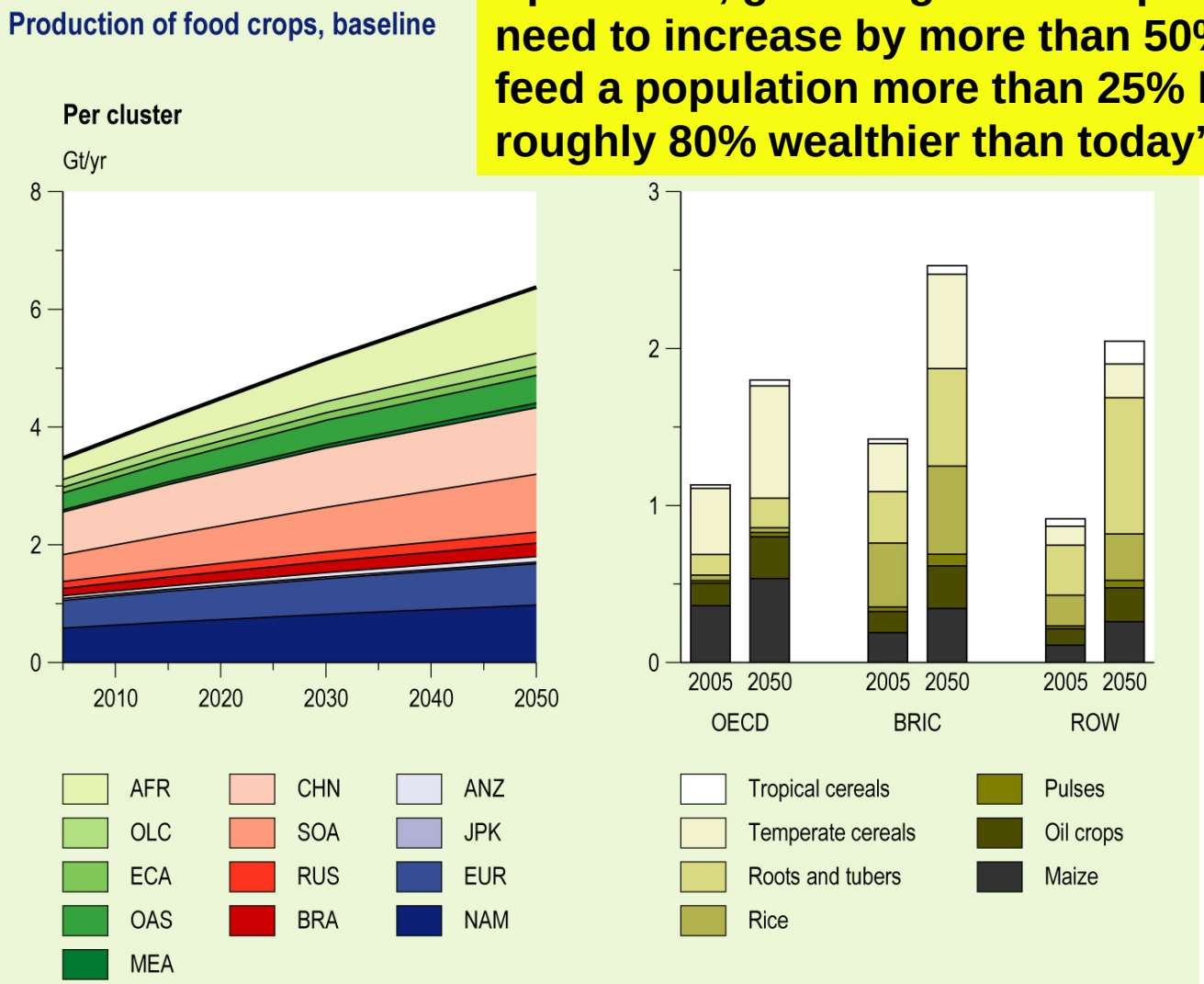


9.1 billion inhabitants by 2050

GDP global average: 2.8% per year between 2005 and 2050

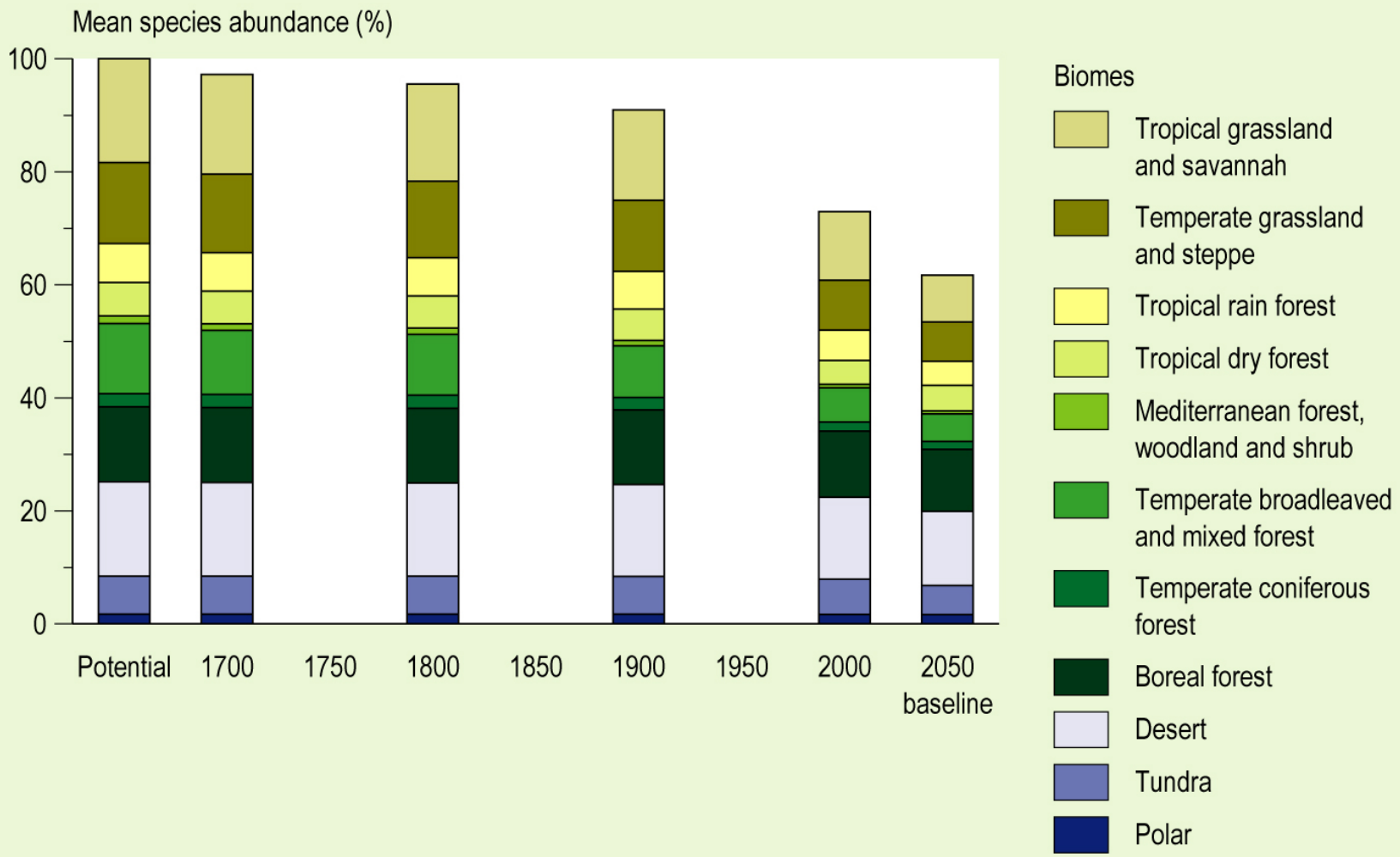
1. The OECD Baseline scenario and international policies

Up to 2030, global agricultural production will need to increase by more than 50% in order to feed a population more than 25% larger and roughly 80% wealthier than today's.



2. The Global Loss of Biodiversity

Historic and future development of global biodiversity



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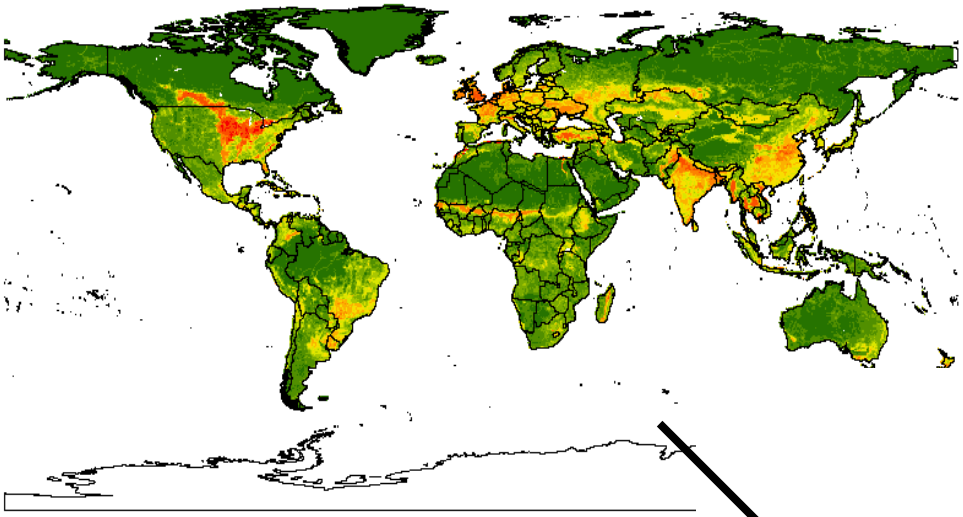
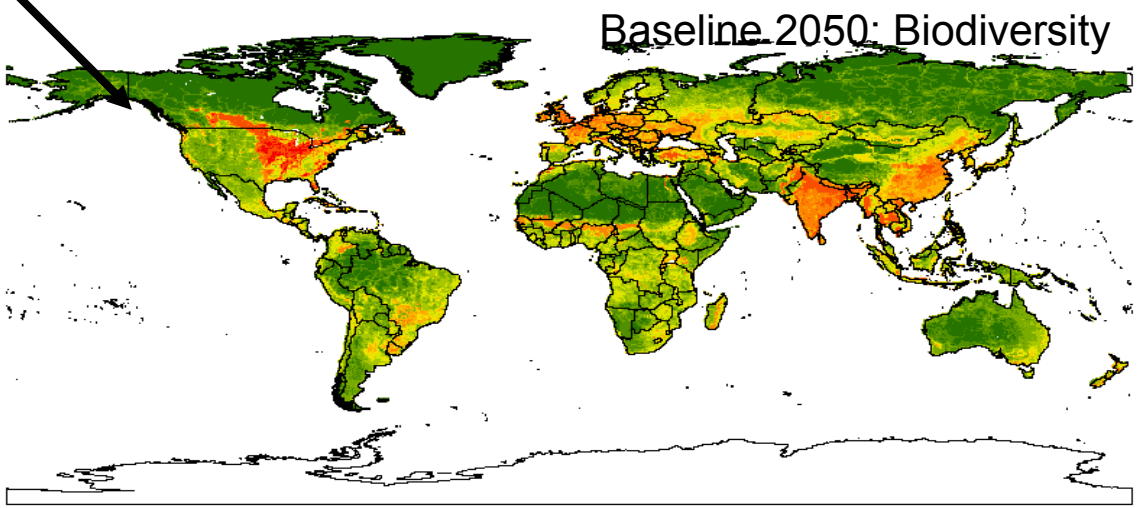


A bleeching world



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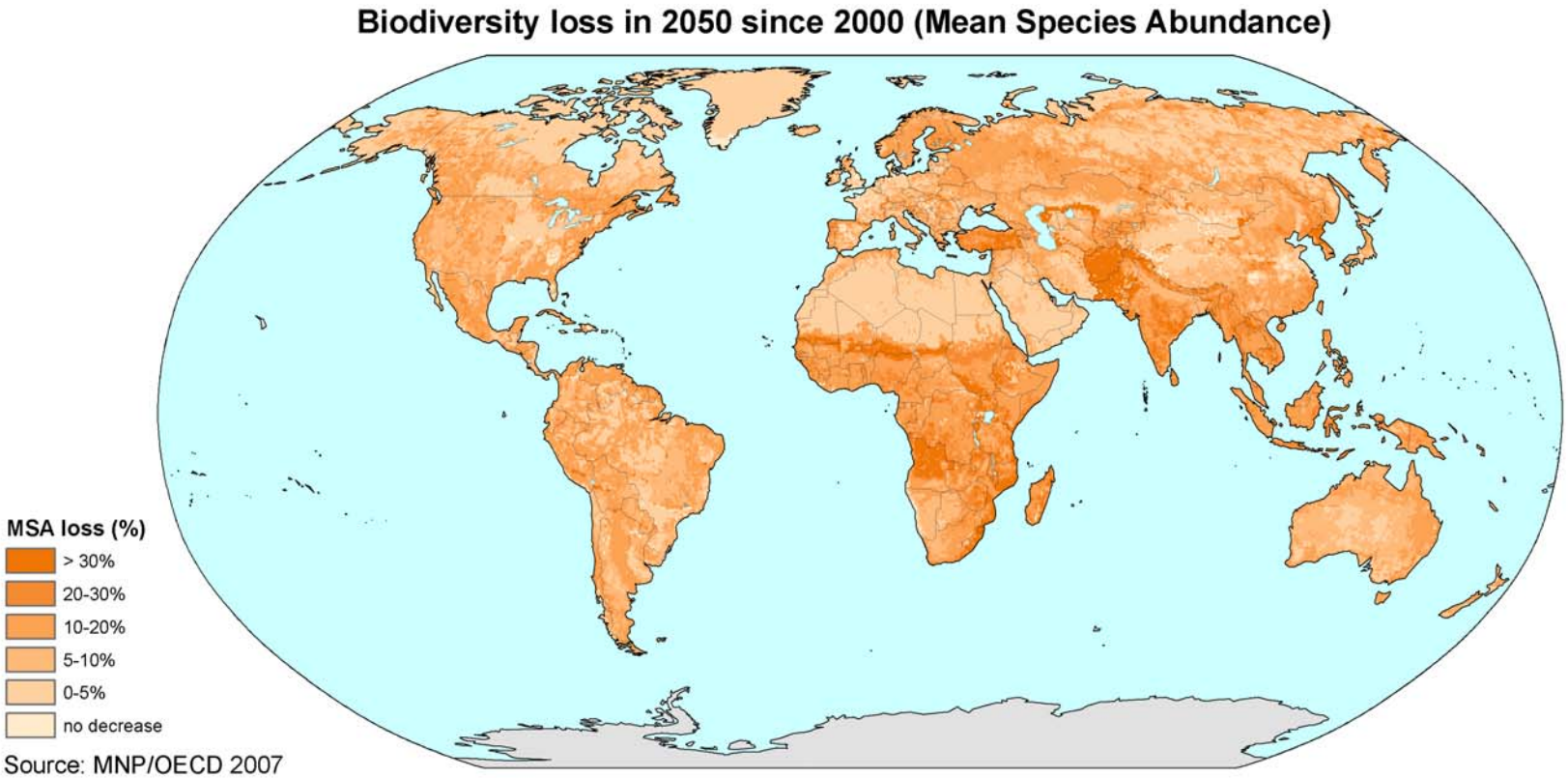
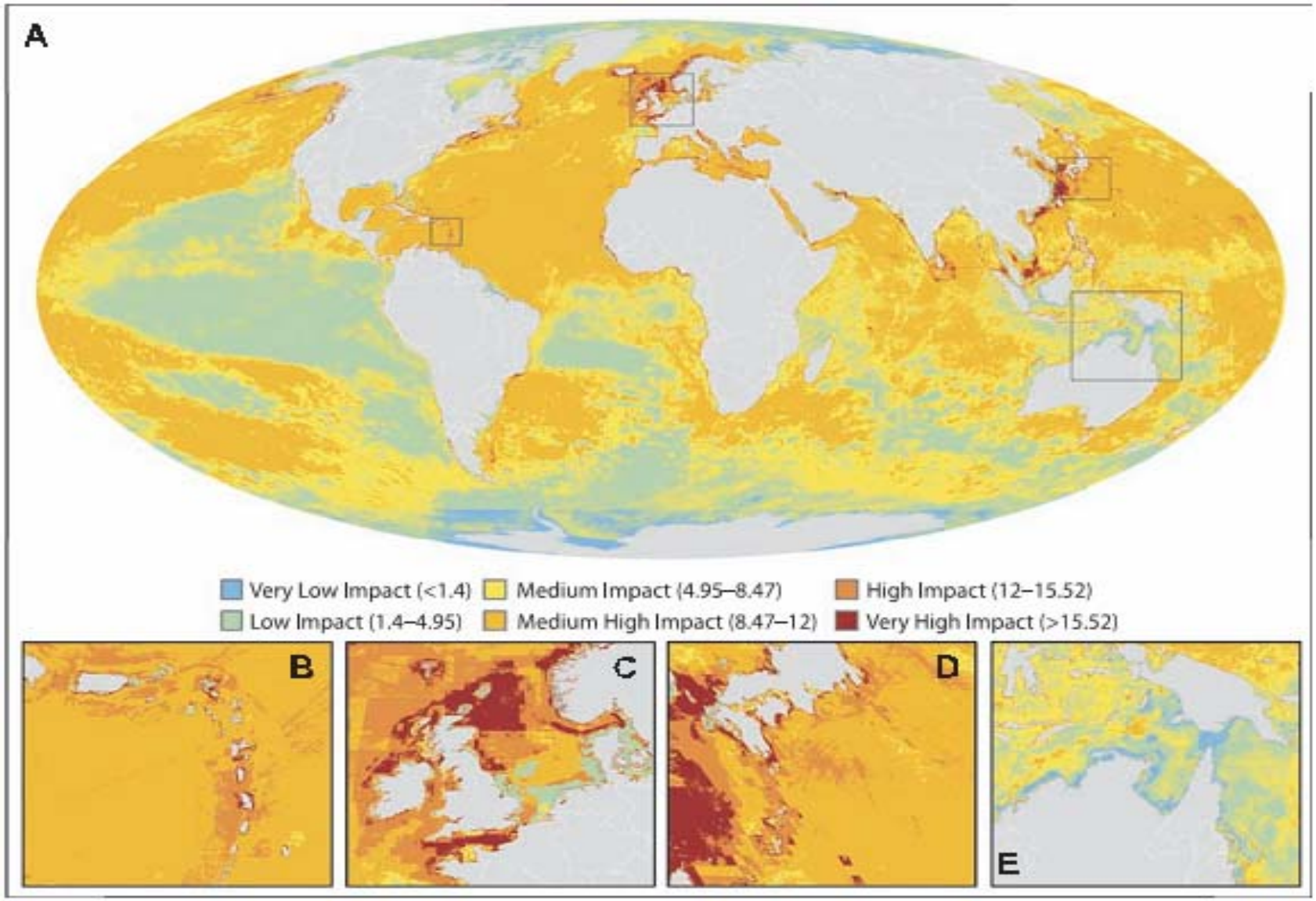


2. The Global Loss of Biodiversity

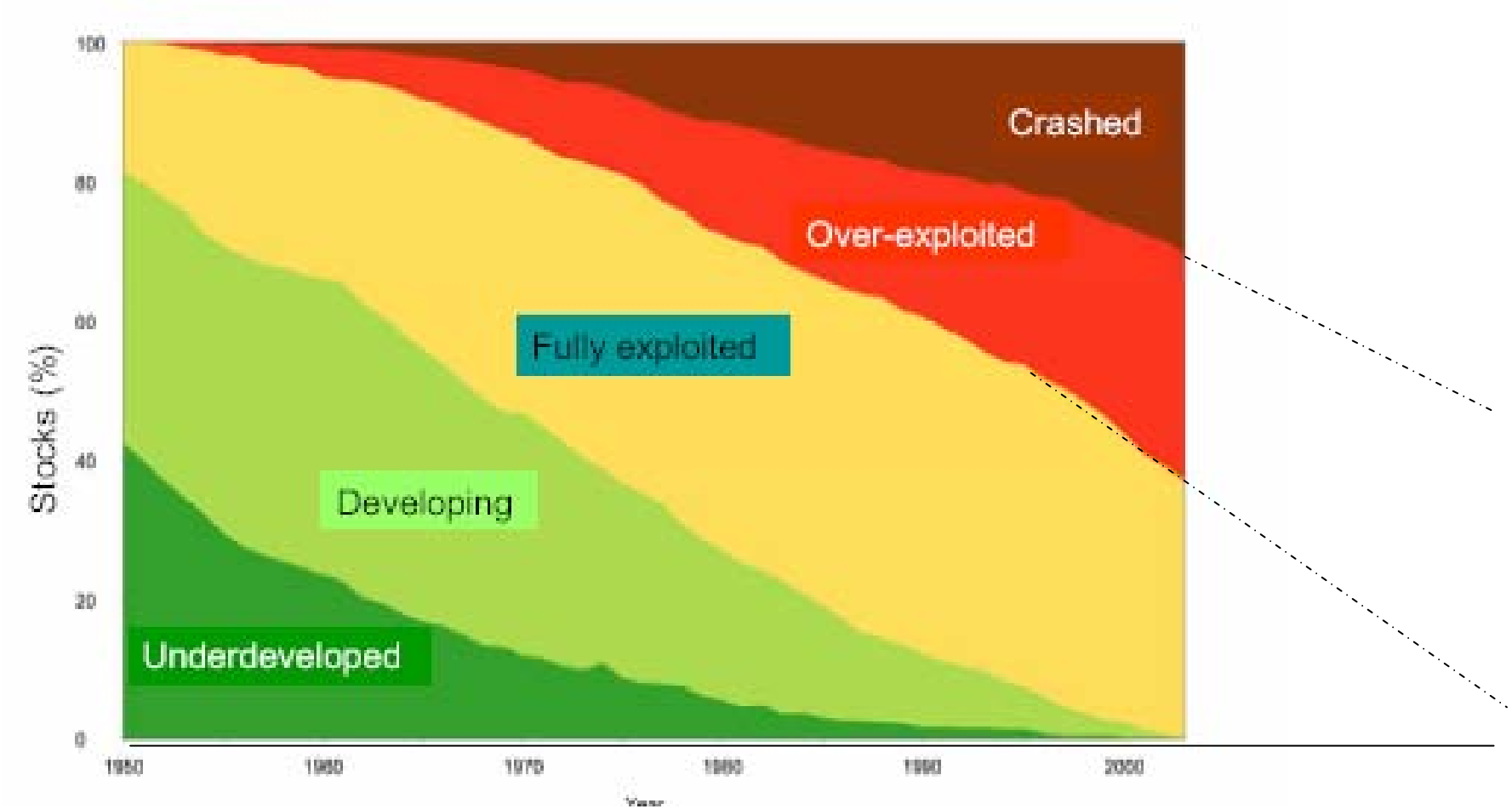
Anthropogenic impacts on Marine Ecosystems



Source: Salman Hussein presentation at the Workshop: ***The Economics of the Global Loss of Biological Diversity 5-6 March 2008, Brussels, Belgium***

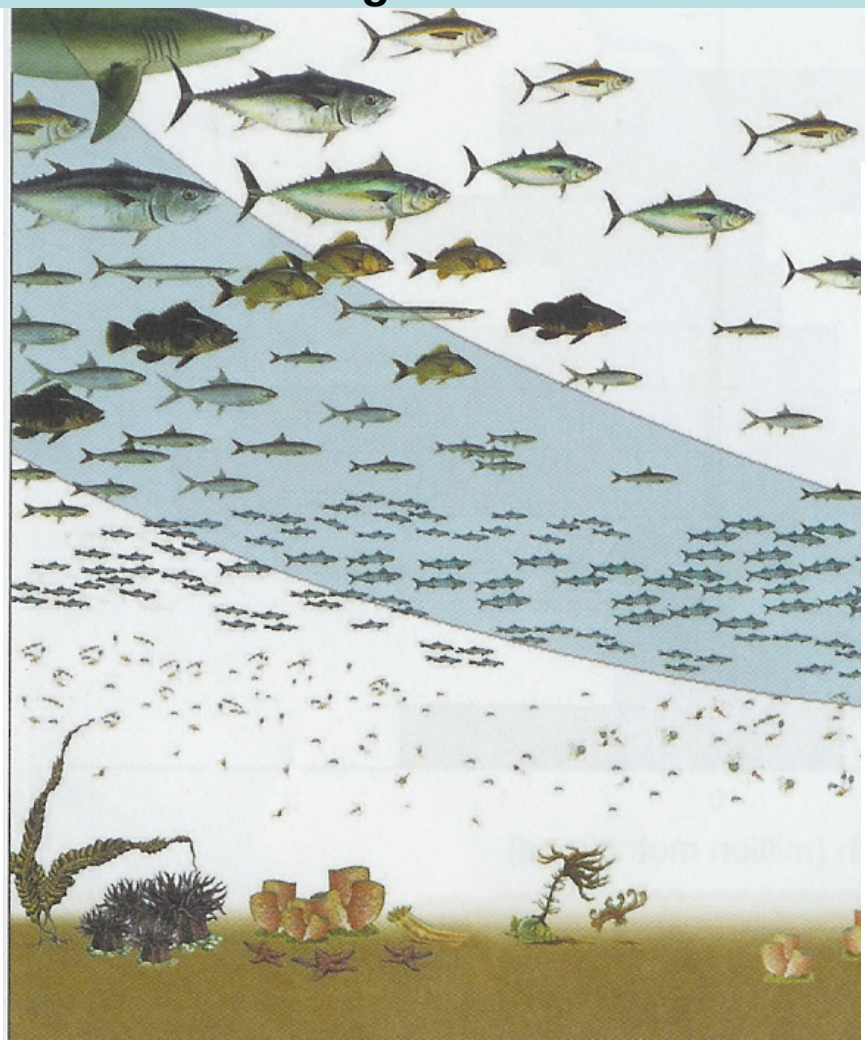
2. The Global Loss of Biodiversity

THE UNSUSTAINABILITY OF GLOBAL FISHERIES



2. The Global Loss of Biodiversity

We are fishing down the foodweb – going for ever smaller species



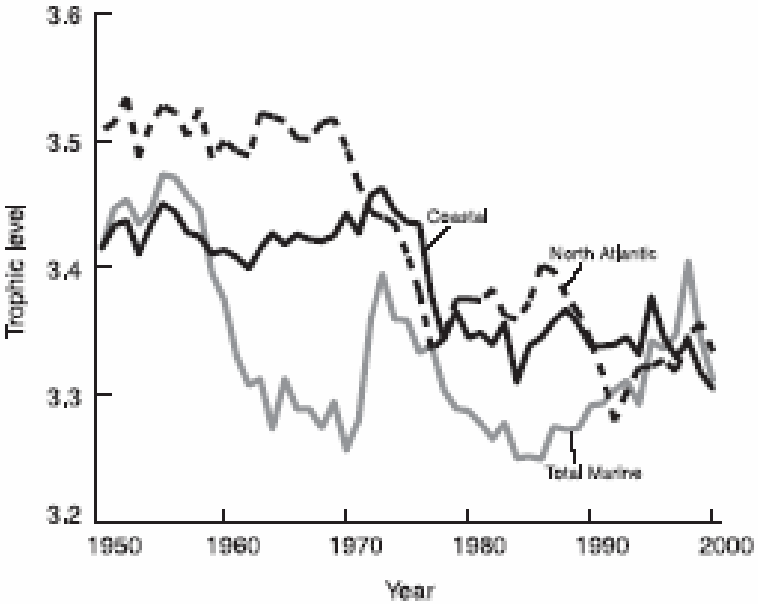


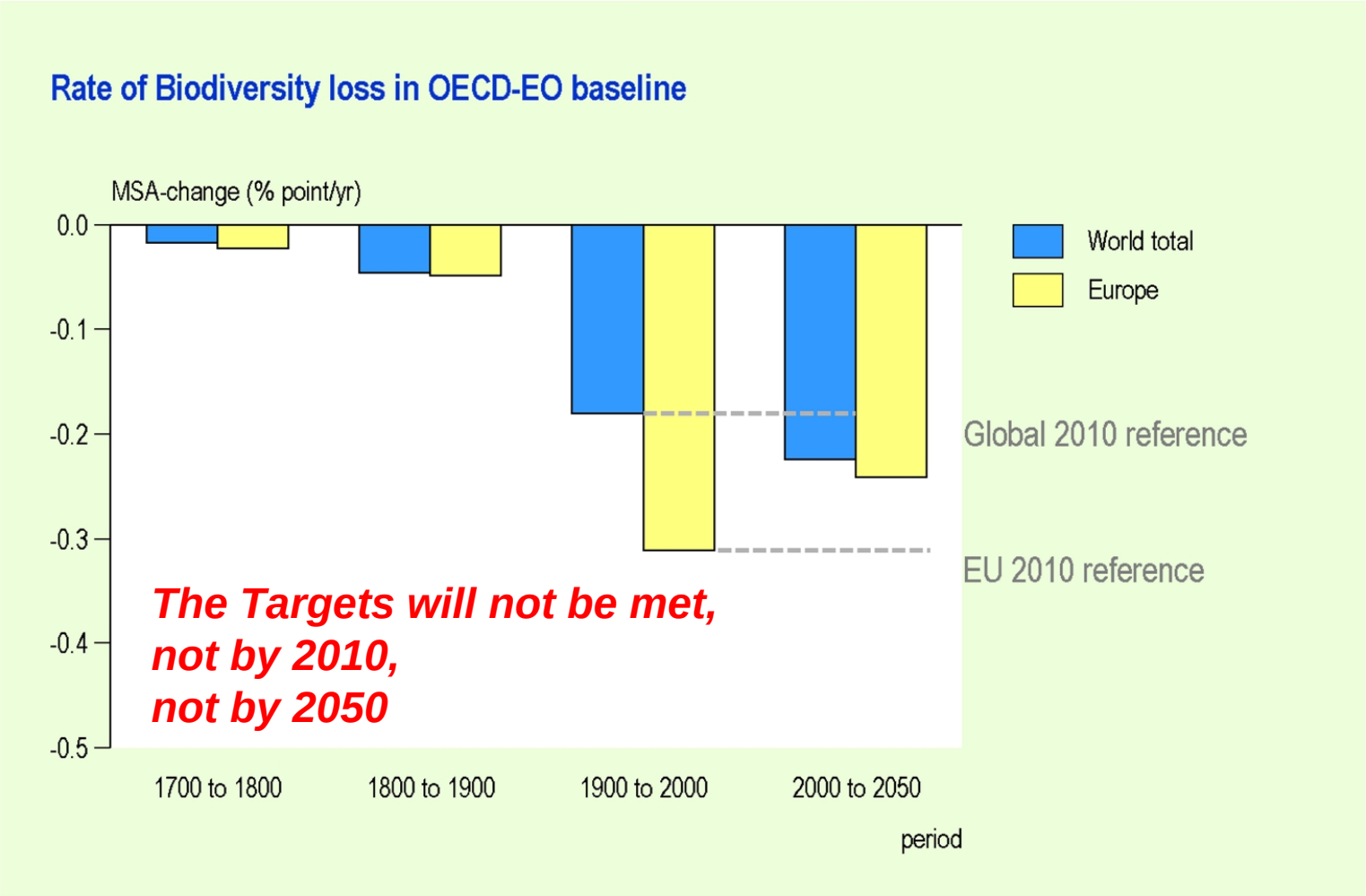
Figure 18.9. Changes in Trophic Level in North Atlantic and Coastal Areas at Less Than 200 Meters Depth, and Total Marine Landings, 1950–2000 (SAUP 2005)

We also log, plough, burn, convert, burn, polluteand hunt down ecosystems

Source: Ben ten Brink (MNP) presentation at the Workshop: ***The Economics of the Global Loss of Biological Diversity 5-6 March 2008, Brussels, Belgium. Original source: Pauly***

2. The Global Loss of Biodiversity

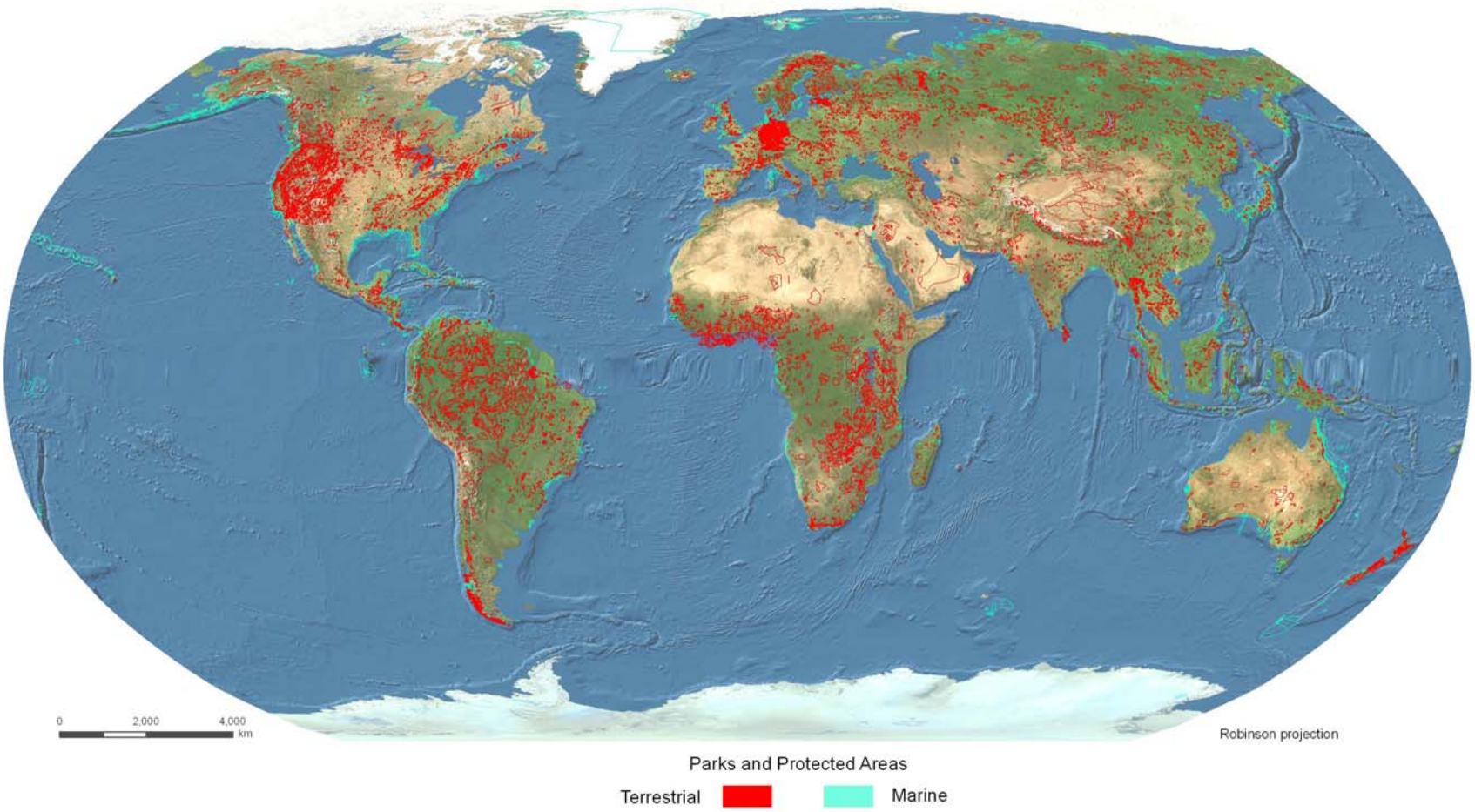
- the CBD global 2010 target: significantly reducing the rate of biodiversity loss
- the European Union 2010 target: halting the loss of biodiversity



Date: 21-mrt-2008

2. The Global Loss of Biodiversity

PARKS AND PROTECTED AREAS IN THE WORLD

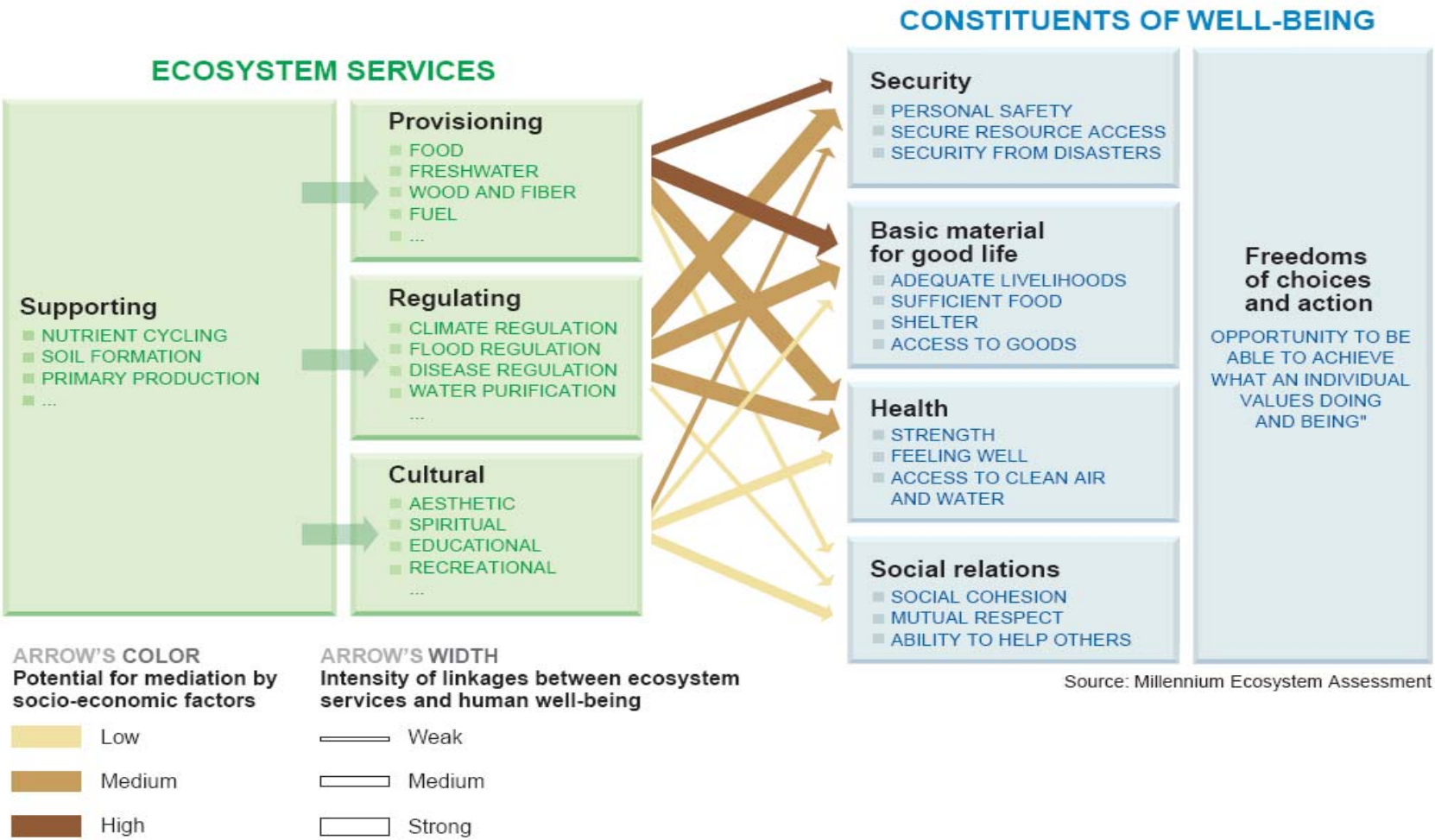


2. The Global Loss of Biodiversity

REMAINING GREAT APE POPULATION DISTRIBUTION

Source : Caldecott, J., Miles, L., eds (2005) World Atlas of Great Apes and their
at the UNEP World Conservation Monitoring Centre. University of Californi

3. Changes in Ecosystem Services due to loss of Biodiversity



Source: Millennium Ecosystem Assessment

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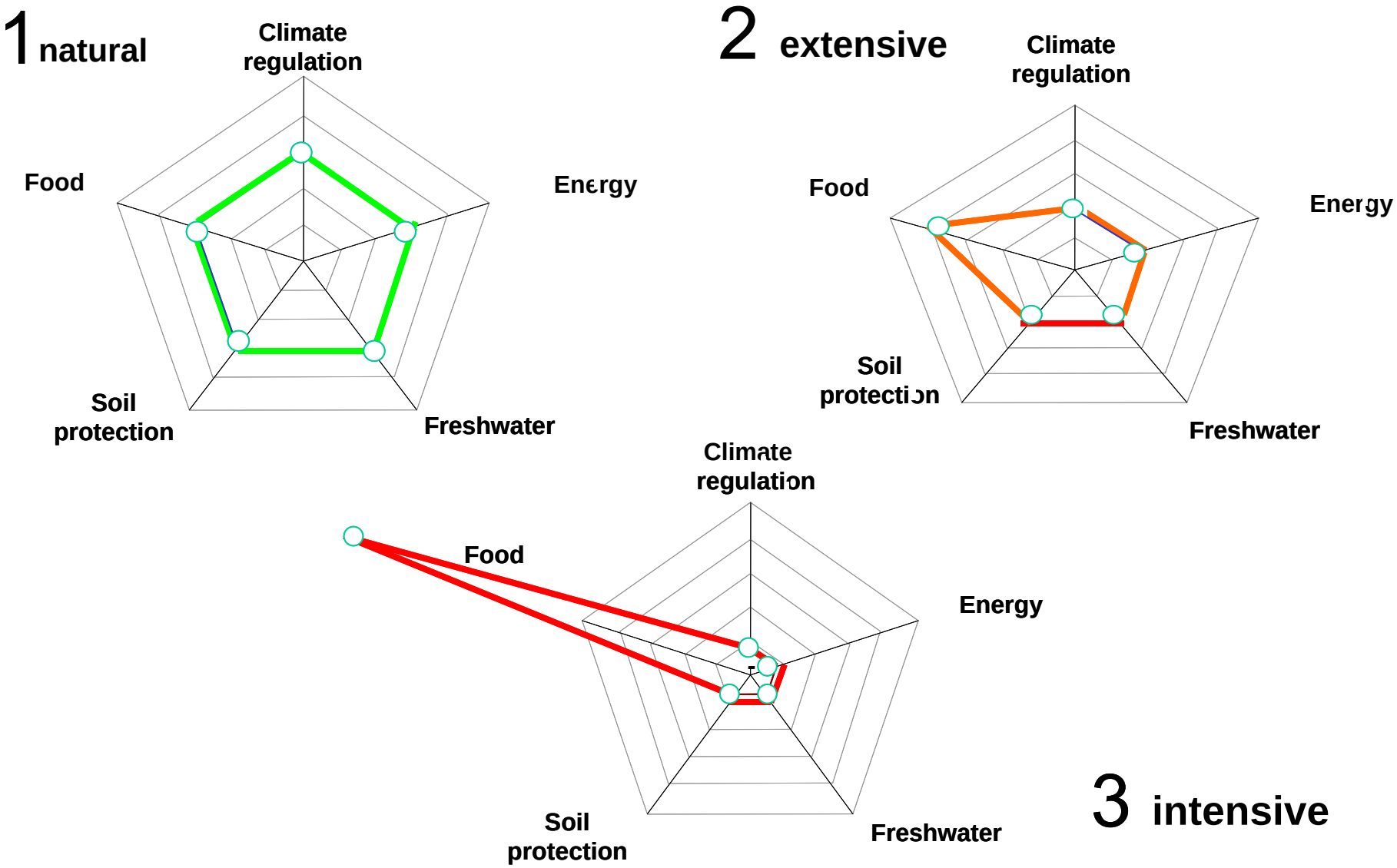

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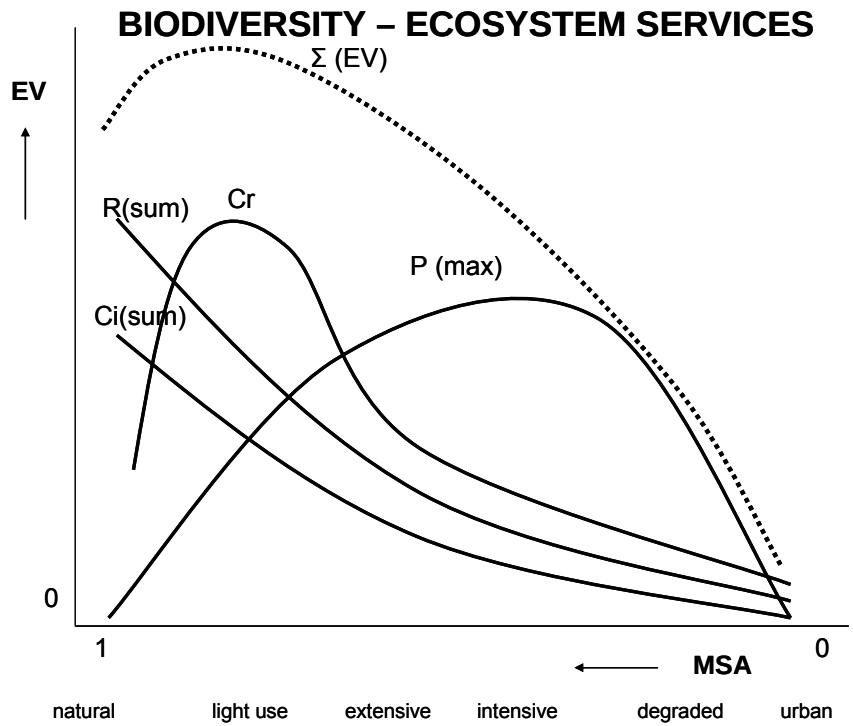


Provisioning services (P): 0 in a pristine ecosystem. EV, ecosystem service value, İncreases with intensity of use as biodiversity decreases (from 1 to 0). Adding labor, fertiliser, etc. will raise the gross benefits, and possibly the net.
Regulating services (R): capability drops more or less proportionally with the decrease of MSA along the range of land use types.
Cultural – recreation services (Cr): service value increases from low value at pristine systems to high values in accessible light use systems and drops to low values for degraded systems.
Cultural – Information services (Ci): Most of the other cultural ecosystem services and their values are a function of the information content which is generally decreases with the degree of conversion.

4. Changes in Economic value due to loss of Biodiversity

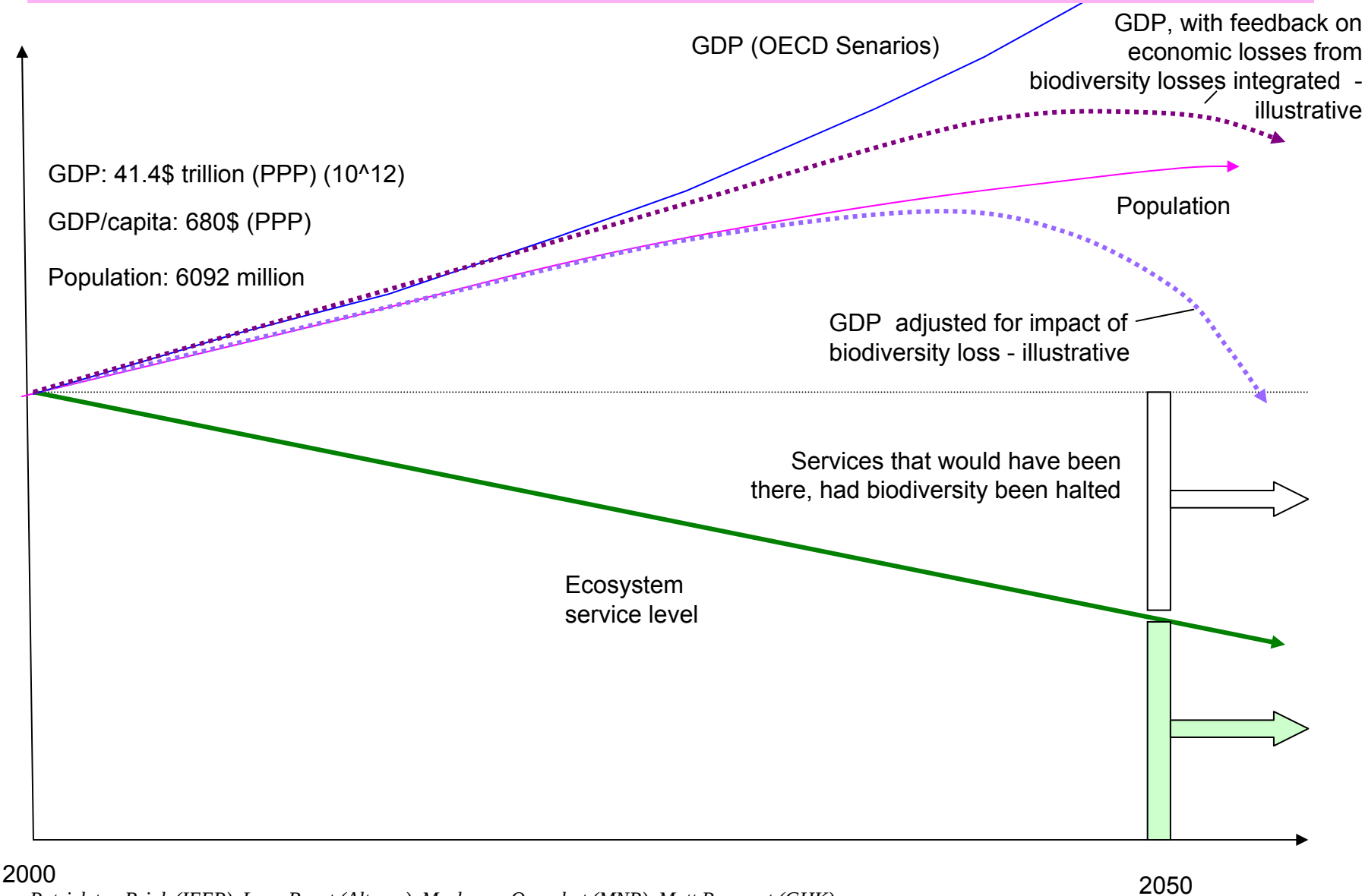
Land based ecosystems only
Excl. Polar & Desert Biome

2050 annual loss relative to 2000 In Billions of Euros

	Total	Food, fiber, fuel	Air quality maintenance	Soil quality maintenance	Climate regulation (i.e. carbon storage)	Water regulation, water purification and waste management	Cultural diversity, identity, heritage, Recreation & ecotourism
World Total (Land-based ecosystems*)	**-13938**	**192**	**-2019**	**-1856**	**-9093**	**-782**	**-303**
Natural areas	**-15578**	**-383**	**-2026**	**-1779**	**-10280**	**-748**	**-293**
Forest managed	**1852**	**184**	**208**	**166**	**1188**	**70**	**31**
Extensive Agriculture	**-1109**	**-256**	**-56**	**-50**	**-712**	**-23**	**-8**
Intensive Agriculture	**1303**	**746**	**38**	**41**	**448**	**21**	**6**
Woody biofuels	**381**	**29**	**33**	**30**	**270**	**15**	**2**
Cultivated grazing	**-786**	**-128**	**-217**	**-264**	**-6**	**-116**	**-41**

- **The loss of welfare in 2050 from the cumulative loss of ecosystem services of land based ecosystems between now and then amounts to $14 trillion Euros**
- **This is equivalent to 7% of projected global GDP for 2050.**
- **The loss grows with each year of biodiversity and ecosystem loss.**

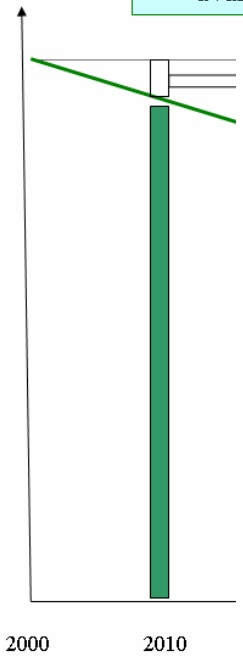
4. Changes in Economic value due to loss of Biodiversity



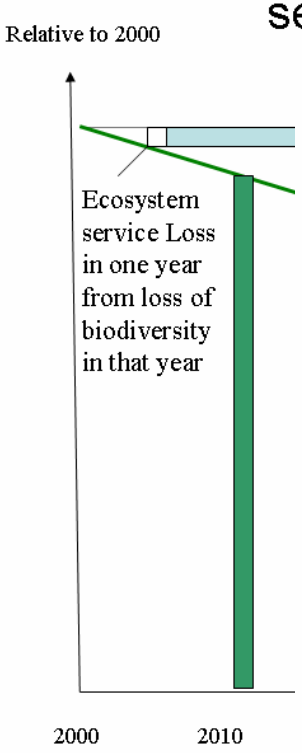
Source: Patrick ten Brink (IEEP), Leon Braat (Alterra), Mark van Ooorshot (MNP), Matt Rayment (GHK)

4. Changes in Economic value due to loss of Biodiversity

Annual Loss of economic value of ecosystem services that would have been available had biodiversity remained at 2000 levels. Estimate for 2050.



Valuation and Ecosystem service losses
A year's biodiversity loss leads to ecosystem services losses into the future: B



Valuation and Ecosystem service losses
Cumulative loss of Services from loss of biodiversity over the period 2000 to 2050 – C