

UBA-F&E-Vorhaben FKZ 3711 93 101

„Ressourceneffiziente Flächennutzung – Organisation eines  
Global Sustainable Land Use Standard GLOBALANDS“

# Nachhaltige Landnutzung: Anmerkungen zu einer globalen Frage

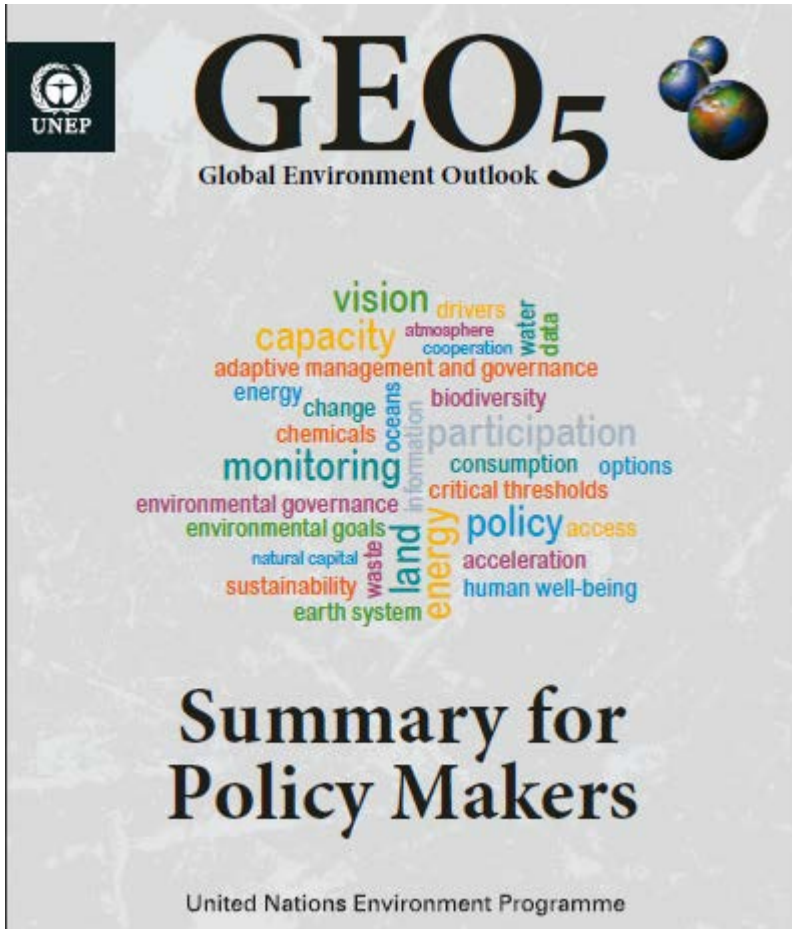
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Beitrag zur Tagung „Ökologische Grenzen ernst nehmen“  
der Ev. Akademie Tutzing, 19.-21.4.2012

# GEO: Globaler Umweltausblick

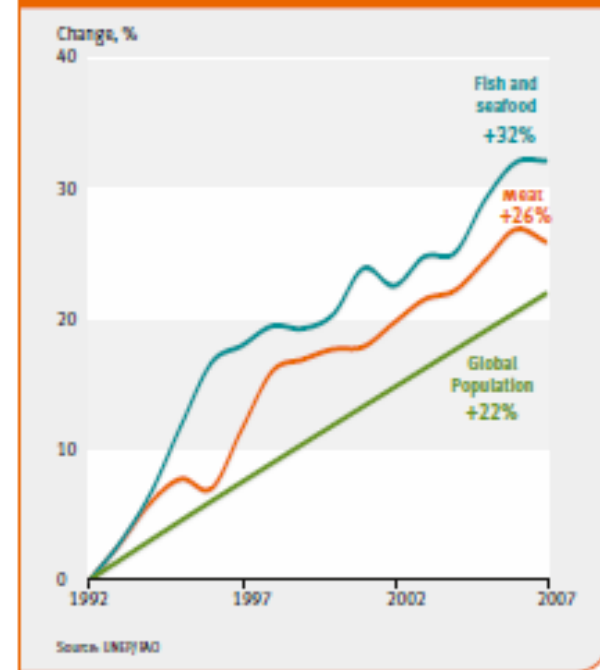


[http://www.unep.org/geo/pdfs/GEO5\\_SPM\\_English.pdf](http://www.unep.org/geo/pdfs/GEO5_SPM_English.pdf)

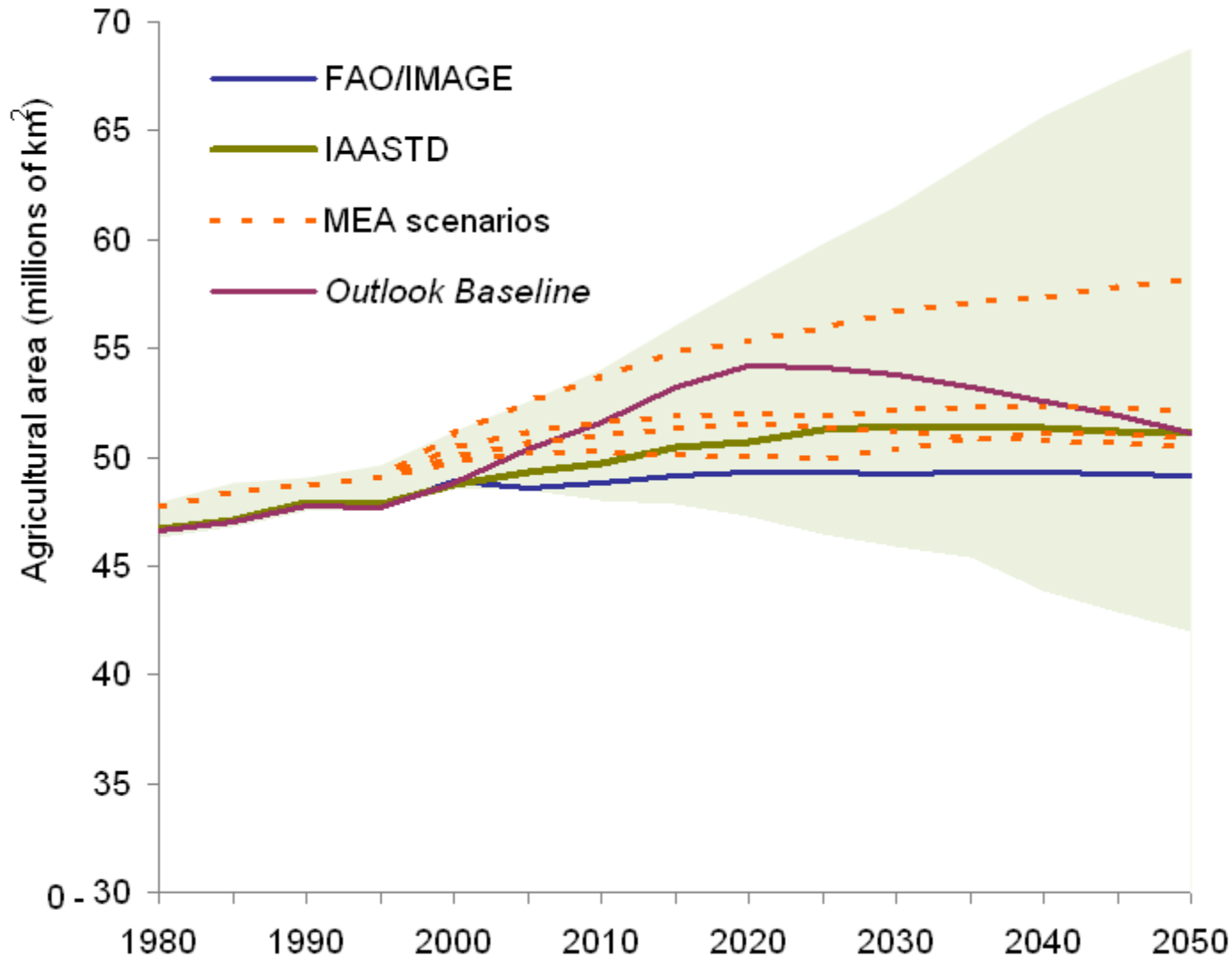
## ■ Land

The pressure on land resources has increased in recent years. Economic growth has come at the expense of natural resources and ecosystems, for example, due to perverse incentives, deforestation and forest degradation alone will likely cost the global

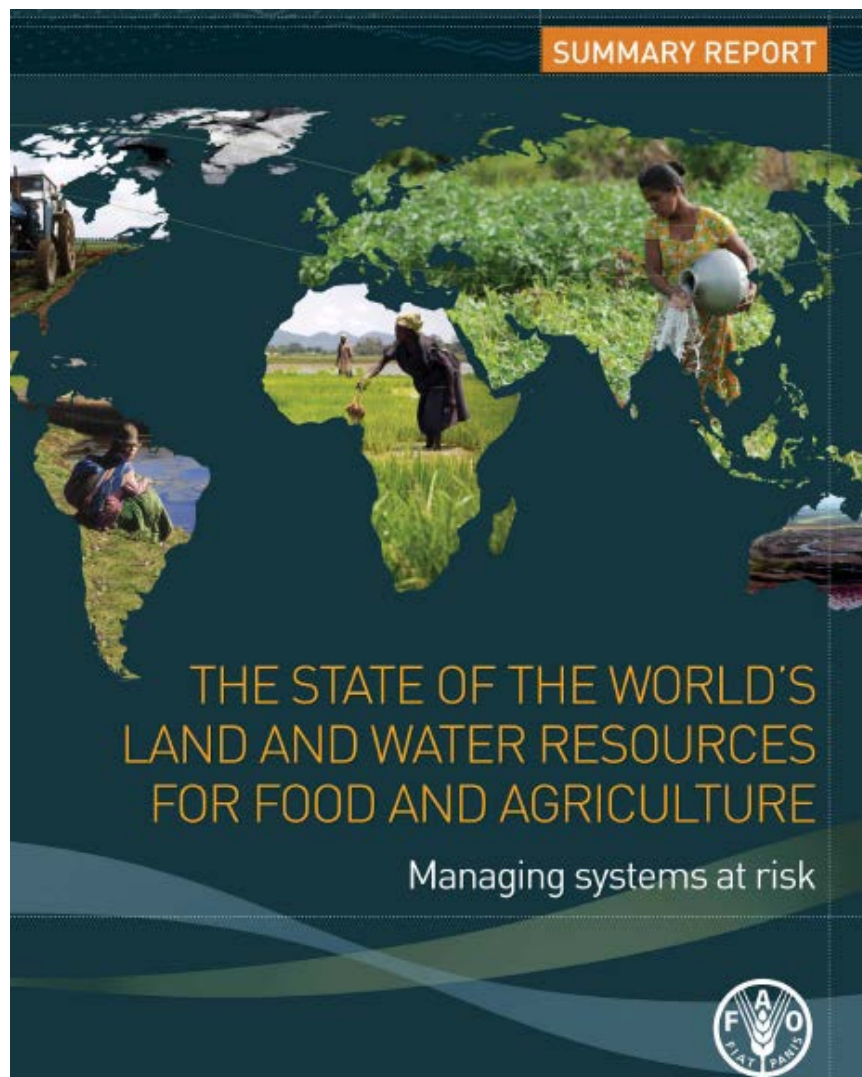
**Figure 3: Change in global population and in meat, fish and seafood supplies, 1992–2007**



# Globale Agrarflächen 1980-2050



# FAO: SOLAW

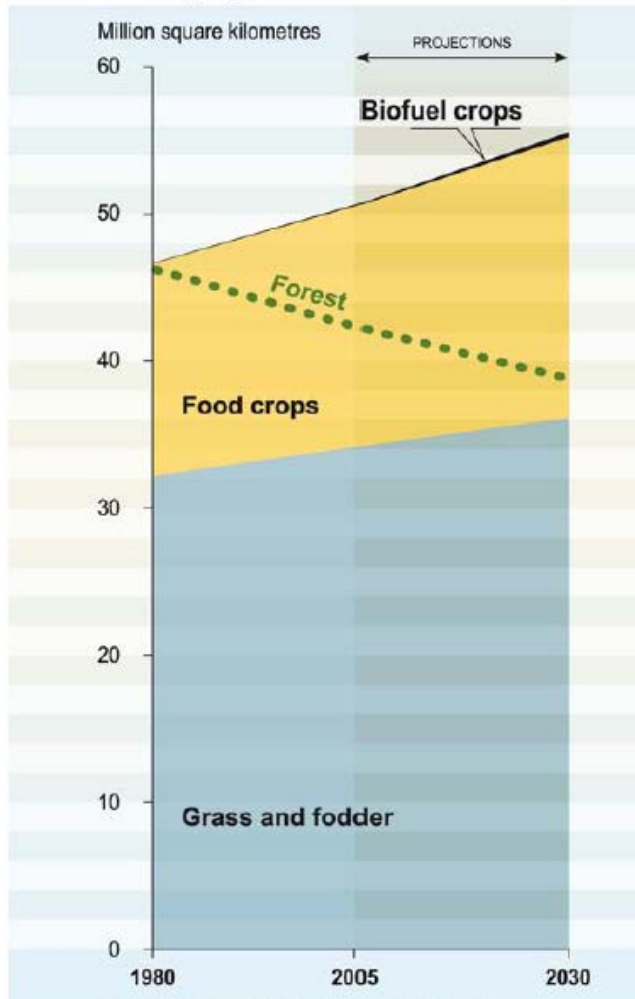


Global production systems	Cases or locations where systems are at risk	Risks
<b>RAINFED CROPPING Highlands</b>	Densely populated highlands in poor areas: Himalayas, Andes, Central American highlands, Rift Valley, Ethiopian plateau, Southern Africa.	Erosion, land degradation, reduced productivity of soil and water, increased intensity of flood events, accelerated out-migration, high prevalence of poverty and food insecurity.
<b>RAINFED CROPPING Semi-arid tropics</b>	Smallholder farming in Western, Eastern and Southern Africa savannah region and in Southern India; agro-pastoral systems in the Sahel, Horn of Africa and Western India.	Desertification, reduction of production potential, increased crop failures due to climate variability and temperatures, increased conflicts, high prevalence of poverty and food insecurity, out-migration.
<b>RAINFED CROPPING Subtropical</b>	Densely populated and intensively cultivated areas, concentrated mainly around the Mediterranean basin.	Desertification, reduction of production potential, increased crop failures, high prevalence of poverty and food insecurity, further land fragmentation, accelerated out-migration. Climate change is expected to affect these areas through reduced rainfall and river runoff, and increased occurrence of droughts and floods.
<b>RAINFED CROPPING Temperate</b>	Highly intensive agriculture in Western Europe.	Pollution of soils and aquifers leading to de-pollution costs, loss of biodiversity, degradation of freshwater ecosystems.
	Intensive farming in United States, Eastern China, Turkey, New Zealand, parts of India, Southern Africa, Brazil.	Pollution of soils and aquifers, loss of biodiversity, degradation of freshwater ecosystems, increased crop failure due to increased climate variability in places.
<b>IRRIGATED Rice-based systems</b>	Southeast and Eastern Asia.	Land abandonment, loss of buffer role of paddy land, increasing cost of land conservation, health hazards due to pollution, loss of cultural values of land.
	Sub-Saharan Africa, Madagascar, Western Africa, Eastern Africa.	Need for frequent rehabilitations, poor return on investment, stagnating productivity, large-scale land acquisition, land degradation.



# Food, feed, fuels?

Changing area of farmland



Mittelfristig dominant:  
Grünland für tierische  
Produktion.

Quelle: EEA 2010; FAO 2011

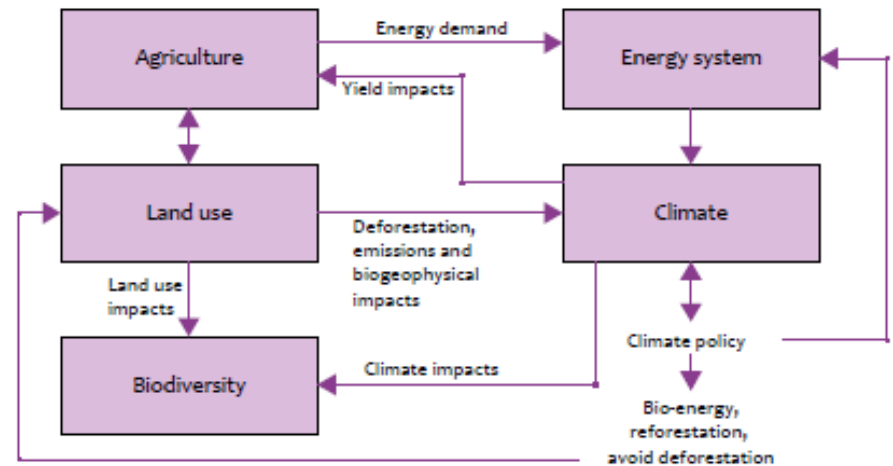


# PBL: Growing within Limits

## Growing within Limits



### Thematic relationships



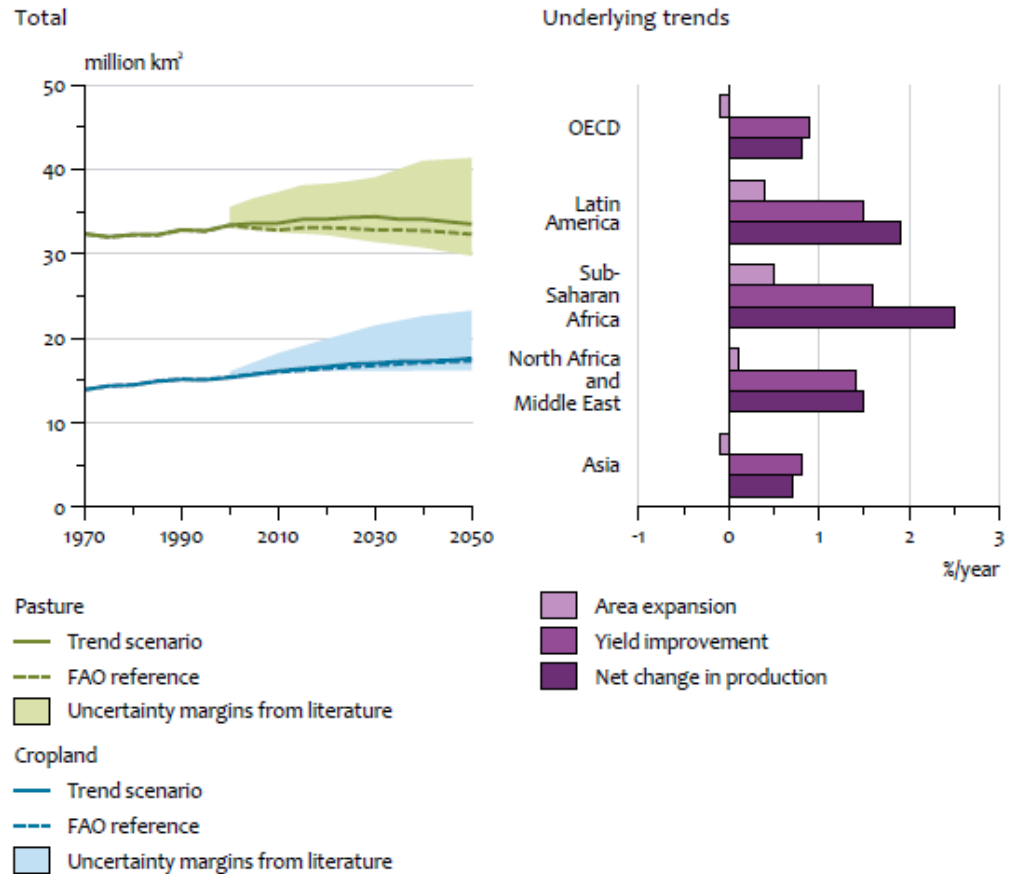
Thematic trade-offs and interlinkages.

Netherlands Environmental Assessment Agency



# PBL: Growing within Limits

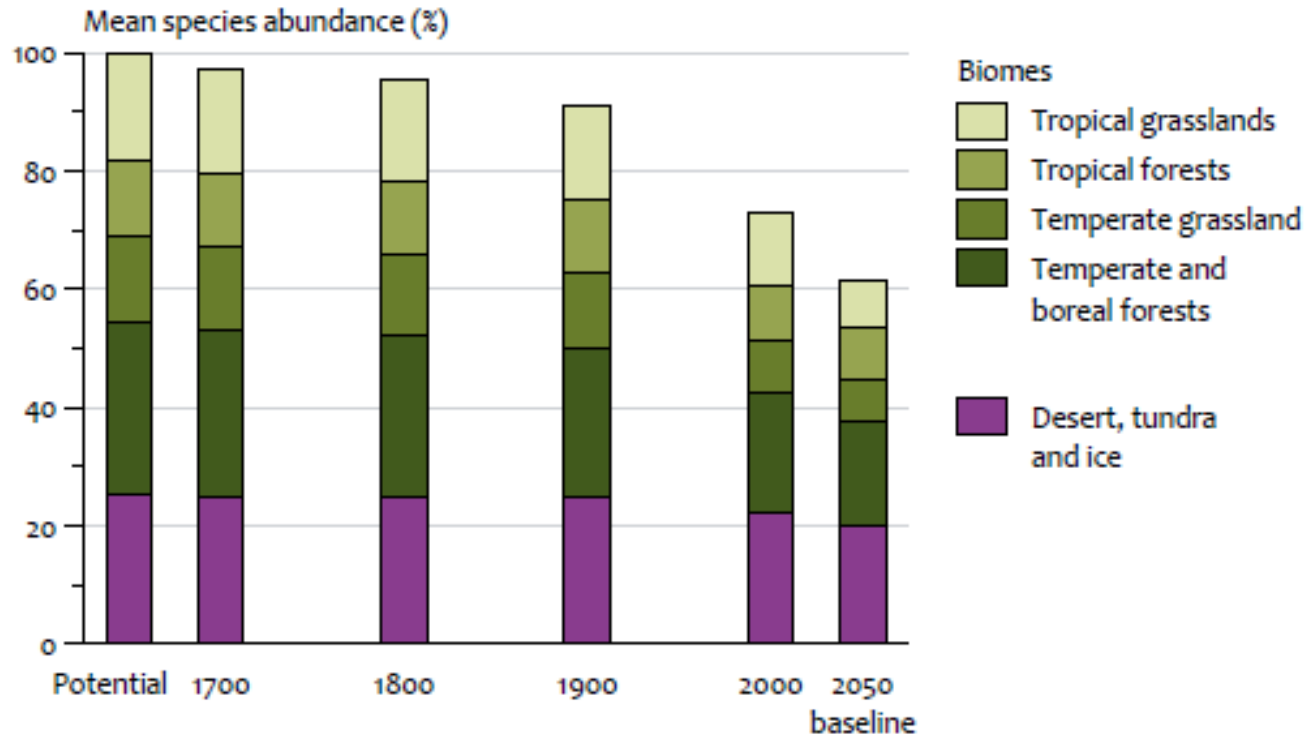
## Global land use, Trend scenario



Land use for food and feed production. Source: FAO (2006), IAASTD (2008), Van Vuuren et al. (2008b).

# PBL: Growing within Limits

## Global biodiversity



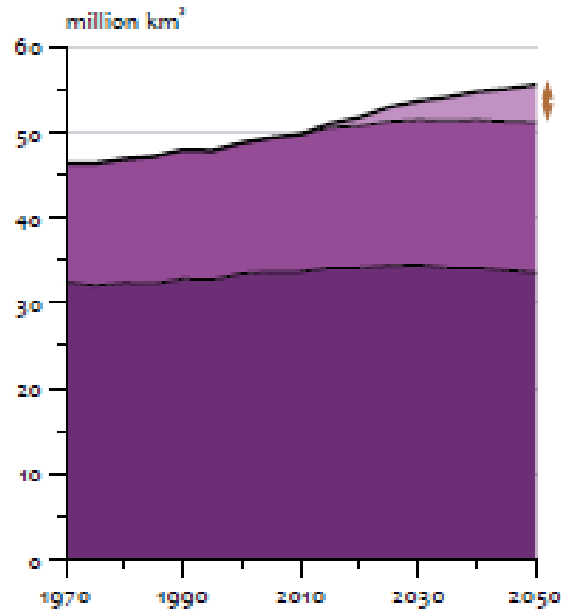
Historic and future development of original biodiversity. Source: Bakkes *et al.* (2008).



# PBL: Growing within Limits

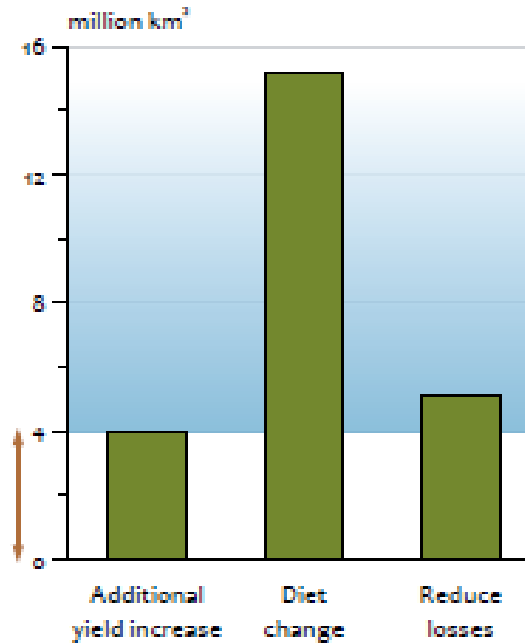
## Measures for land-use reduction

Agricultural land, Trend scenario



- Bio-energy
- Food crops
- Animal
- Expansion agricultural land from 2020

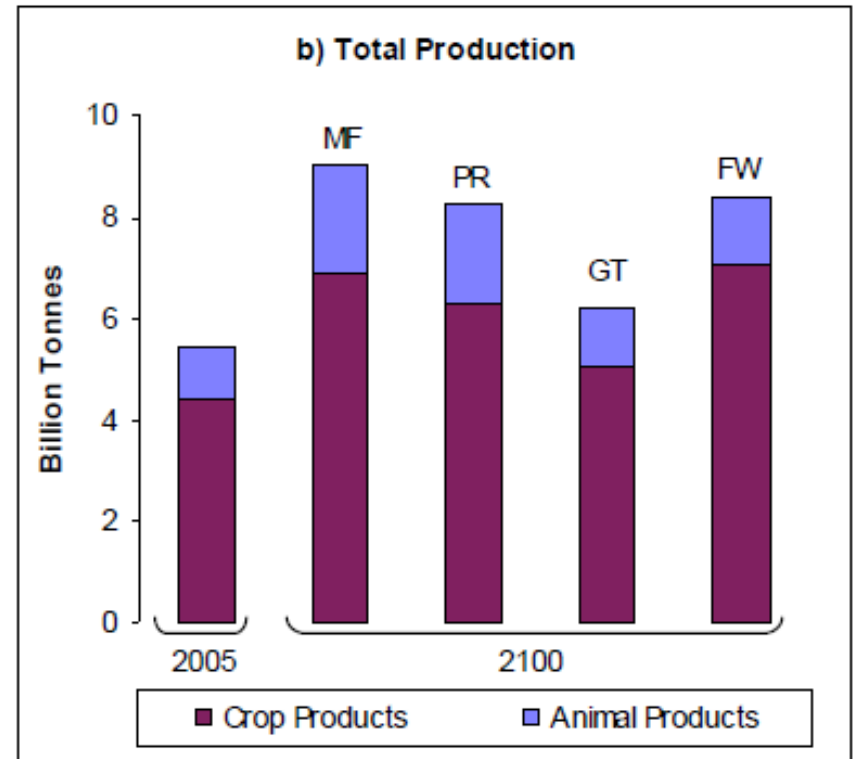
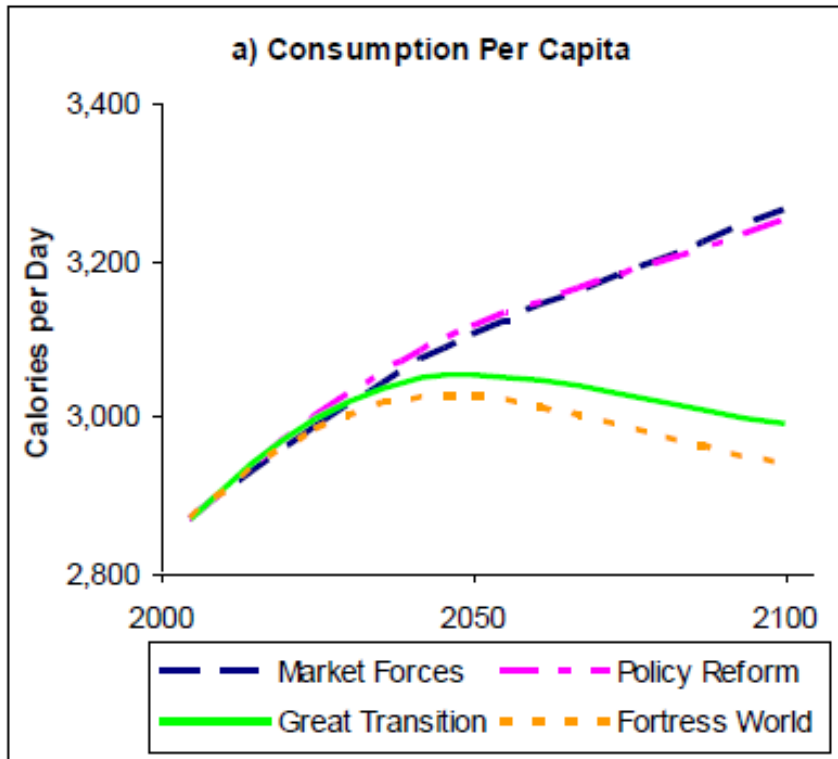
Reduction of land use



- Per measure
- Target halting biodiversity loss from 2020 (Challenge scenario)

Comparing policy goals and options.

# Tellus: The Great Transition



*Sustainability* 2010, 2, 2626-2651; doi:10.3390/su2082626

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Article

**The Century Ahead: Searching for Sustainability**

Paul D. Raskin \*, Christi Electris and Richard A. Rosen

# Ausblick

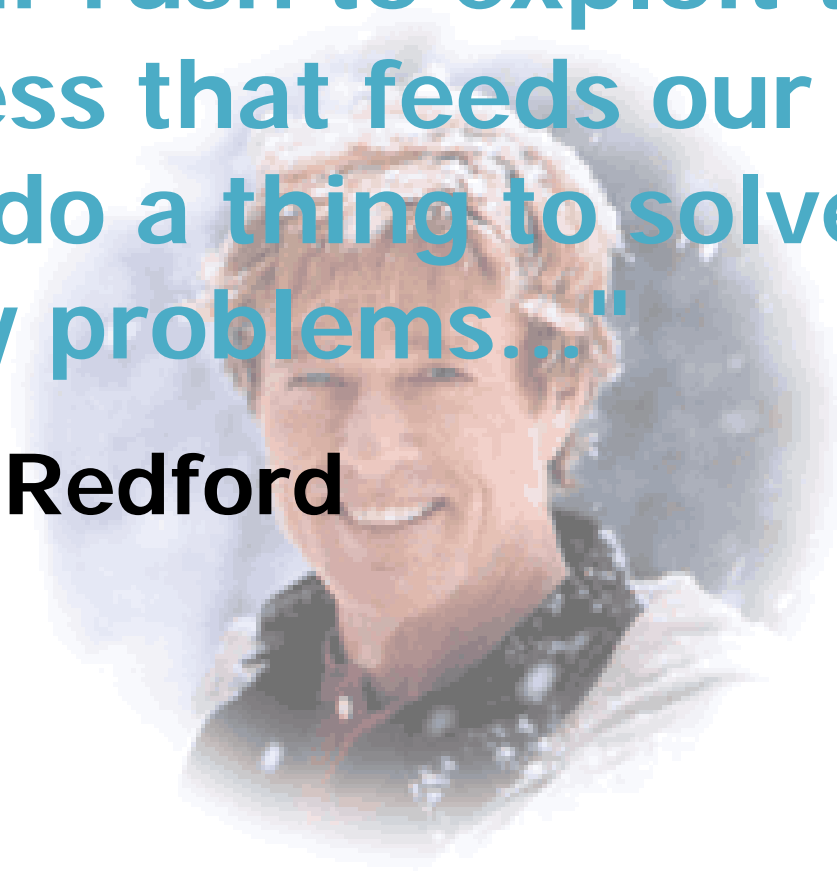


- Es gibt Hinweise, dass „begrenzte Flächen“ eine Frage der Perspektive (degradiert...) sind und die **statische** Fortschreibung wichtiger Treiber **falsch**
- UBA-Vorhaben GLOBALANDS stellt Frage „was und wie“ der nachhaltigen Landnutzung
- In Deutschland u.a. mit PIK und Universitäten, international Alterra und PBL, IIASA, JRC
- Erste Berichte im Sommer (August/Sept.)
- website [www.globalands.org](http://www.globalands.org) (ab Mai)
- Kontakt: [uf@iinas.org](mailto:uf@iinas.org)



"...their rush to exploit the wildness that feeds our souls won't do a thing to solve our energy problems..."

**Robert Redford**



und aus Dänemark...

**It may not be cost-effective  
to save the world,  
but we may decide to do so  
anyway.**

**Jørgen Nørgaard**

