



## Millennium Ecosystem Assessment

# New Generation of Environmental Policies – next steps

## Messages from the Millennium Ecosystem Assessment

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# New Generation of Environmental Policies – next steps

## **1: More from Less – Balancing resource use and maintaining ecosystems**

- § Sustainable consumption and production
- § Economic instruments

## **2: A ‘One Planet’ environmental policy**

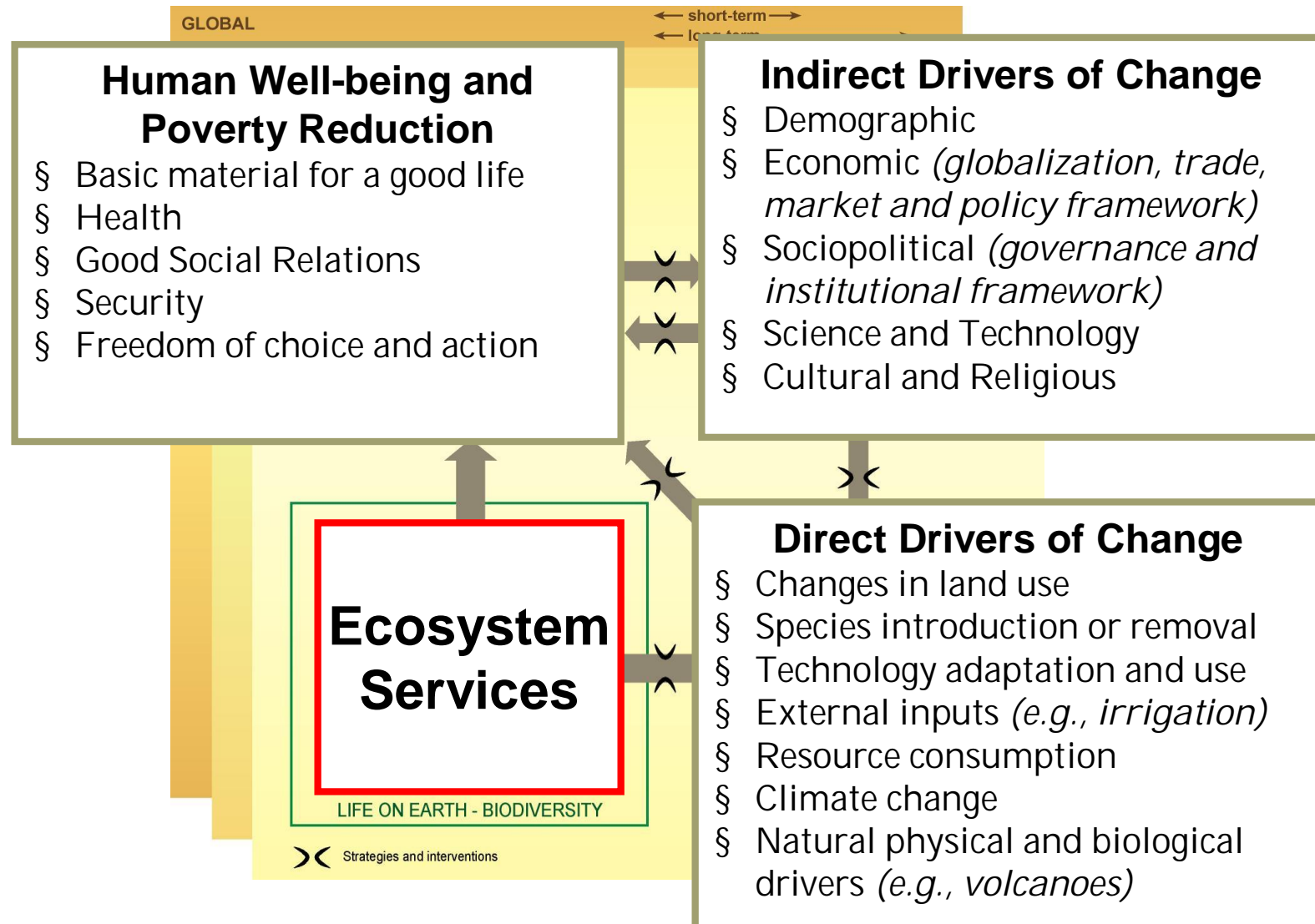
- § Integrate environmental considerations into EU foreign policies, development policies and poverty reduction strategies
- § Encourage the use of new environmental technologies, products and services
- § Promote the establishment of a permanent international environmental organization
- § Improve coherence and enhance synergies between the Multilateral Environment Agreements
- § Propose an international Panel on natural resources – to assess the scientific, technical and socio-economic information relevant for understanding the consequences of various material flows

# New Generation of Environmental Policies – next steps

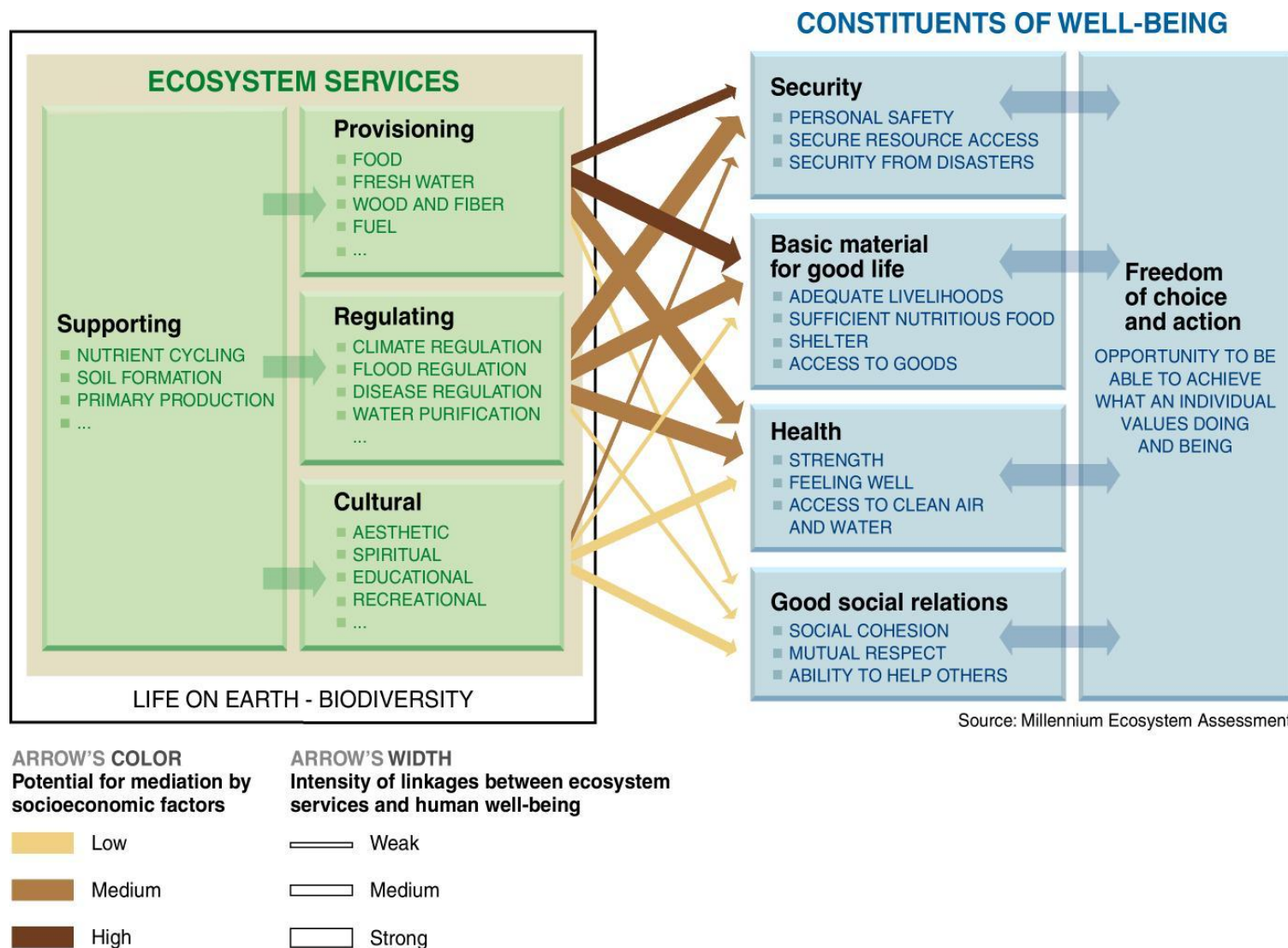
## **3. More effective decisions – Smart Survival Kit**

- § Economic incentives and incorporating environmental costs into prices
- § Phase-out environmentally damaging subsidies
- § Establish market mechanisms to support biodiversity
- § Taxation on energy and natural resources
  
- § Compensated by reduced income taxes and non-wage labor costs

# MA Framework – can be used to assess the sustainable use of natural resources



## Consequences of Ecosystem Change for Human Well-being

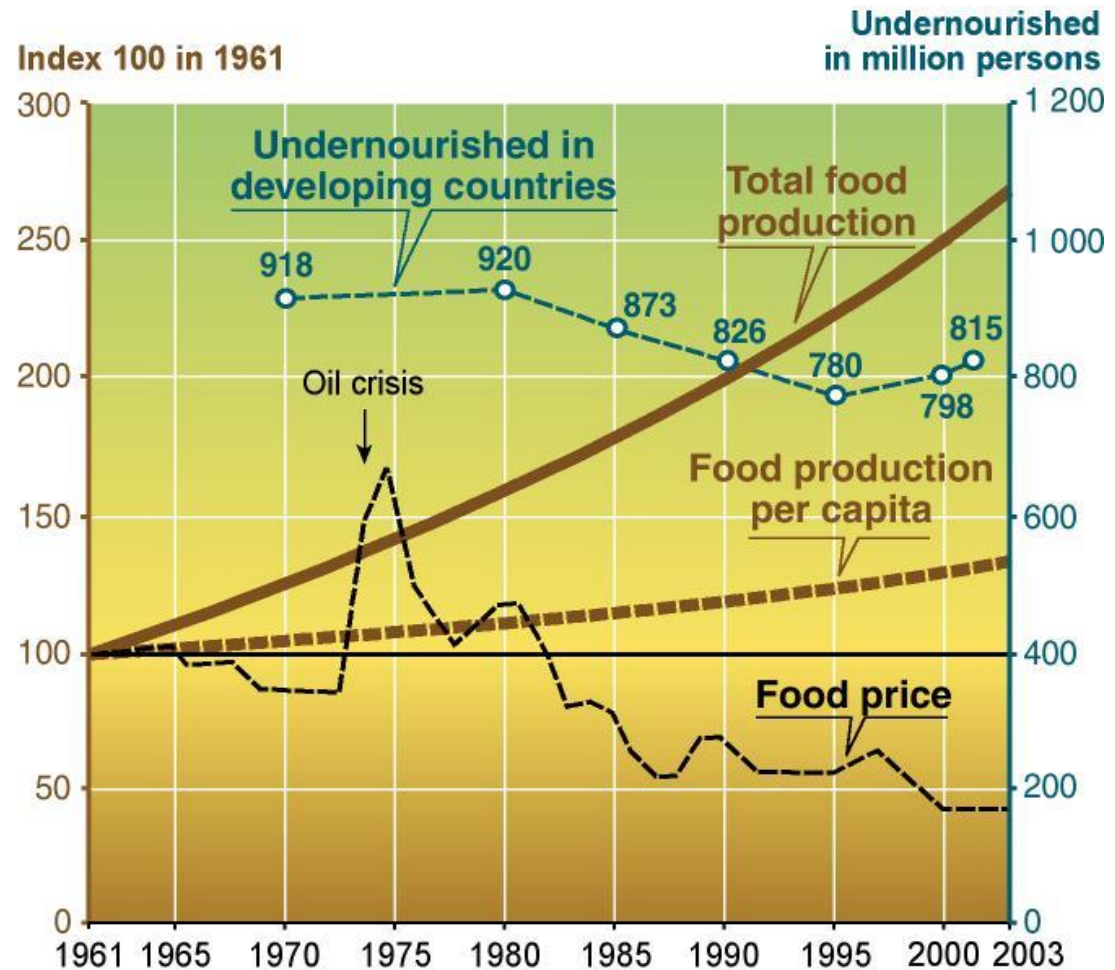


# Unprecedented Change

- Humans have made unprecedented changes to ecosystems in recent decades to meet growing demands for food, fresh water, fiber, and energy, *i.e., we have focused on provisioning services*
- These changes have helped to improve the lives of billions, but at the same time they weakened nature's ability to deliver other key services such as purification of air and water, protection from disasters, and the provision of medicines
- The pressures on ecosystems *(and natural resources)* will increase globally in coming decades unless human attitudes and actions change

# Changes to ecosystems have provided substantial benefits

- § Food production has more than doubled since 1960
- § Food production per capita has grown
- § Food price has fallen

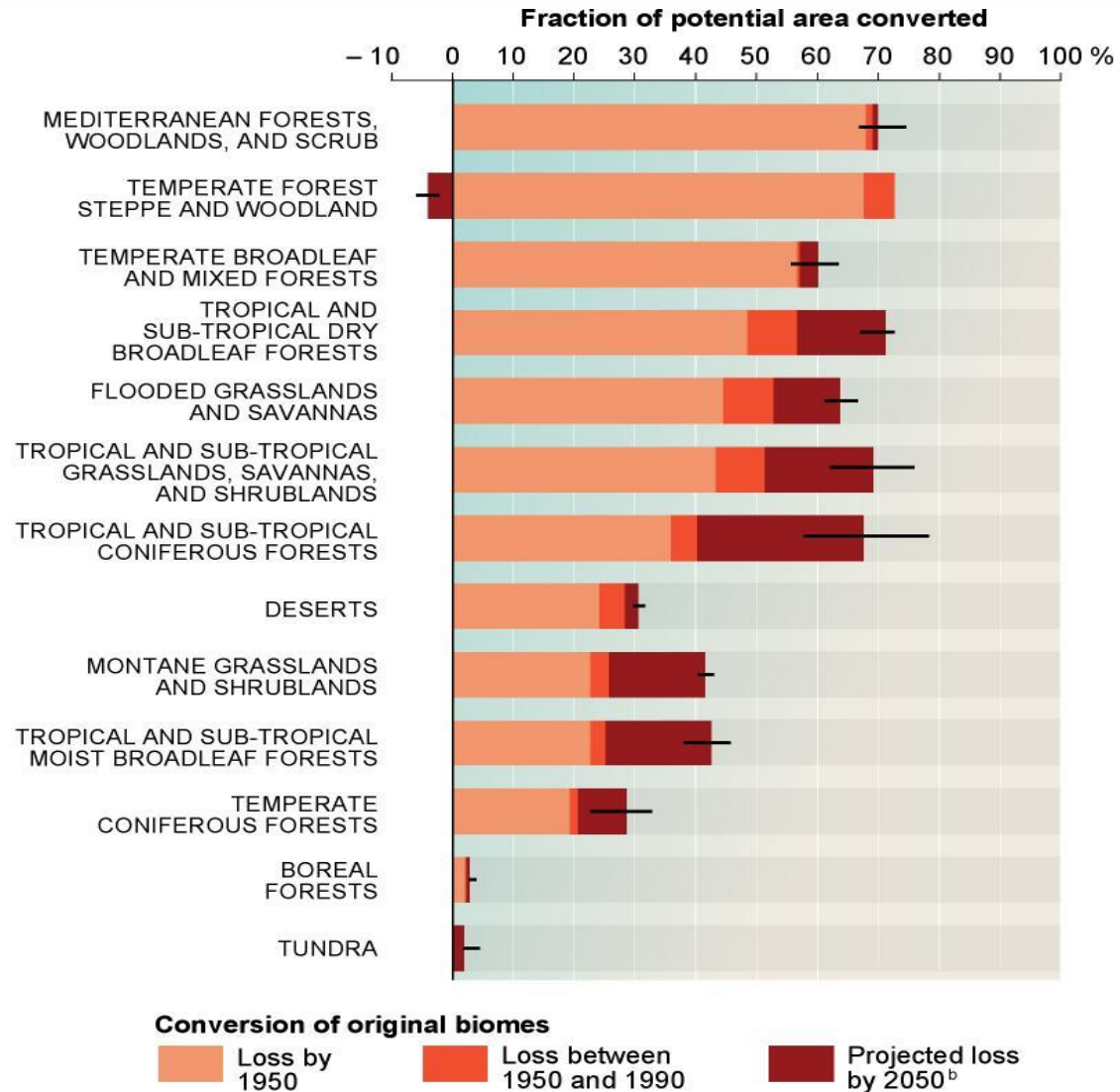


Sources: FAOSTATS, SOFI, Millennium Ecosystem Assessment

# Unprecedented change: Ecosystems

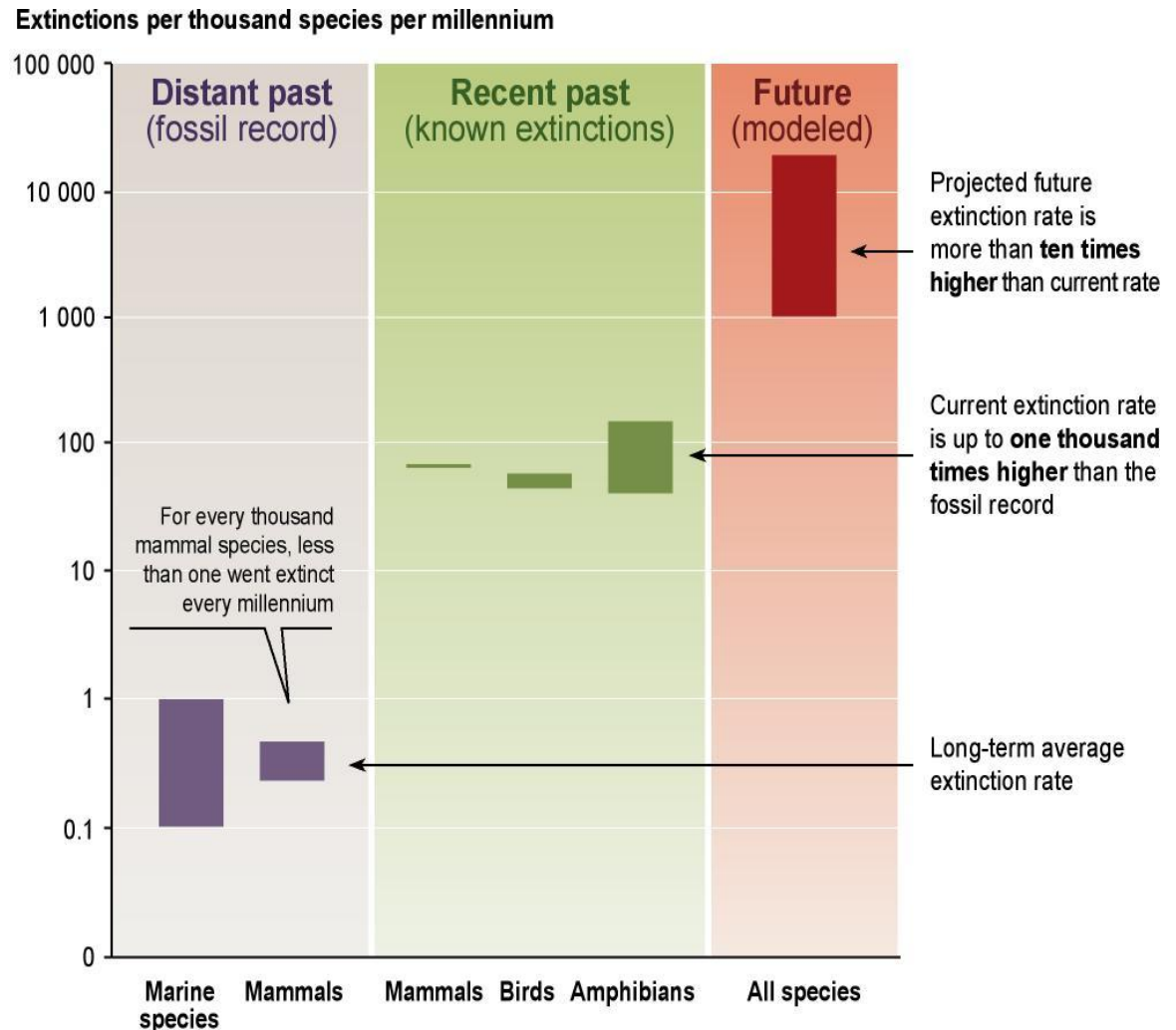
§ 5-10% of the area of five biomes was converted between 1950 and 1990

§ More than two thirds of the area of two biomes and more than half of the area of four others had been converted by 1990



# Species extinctions

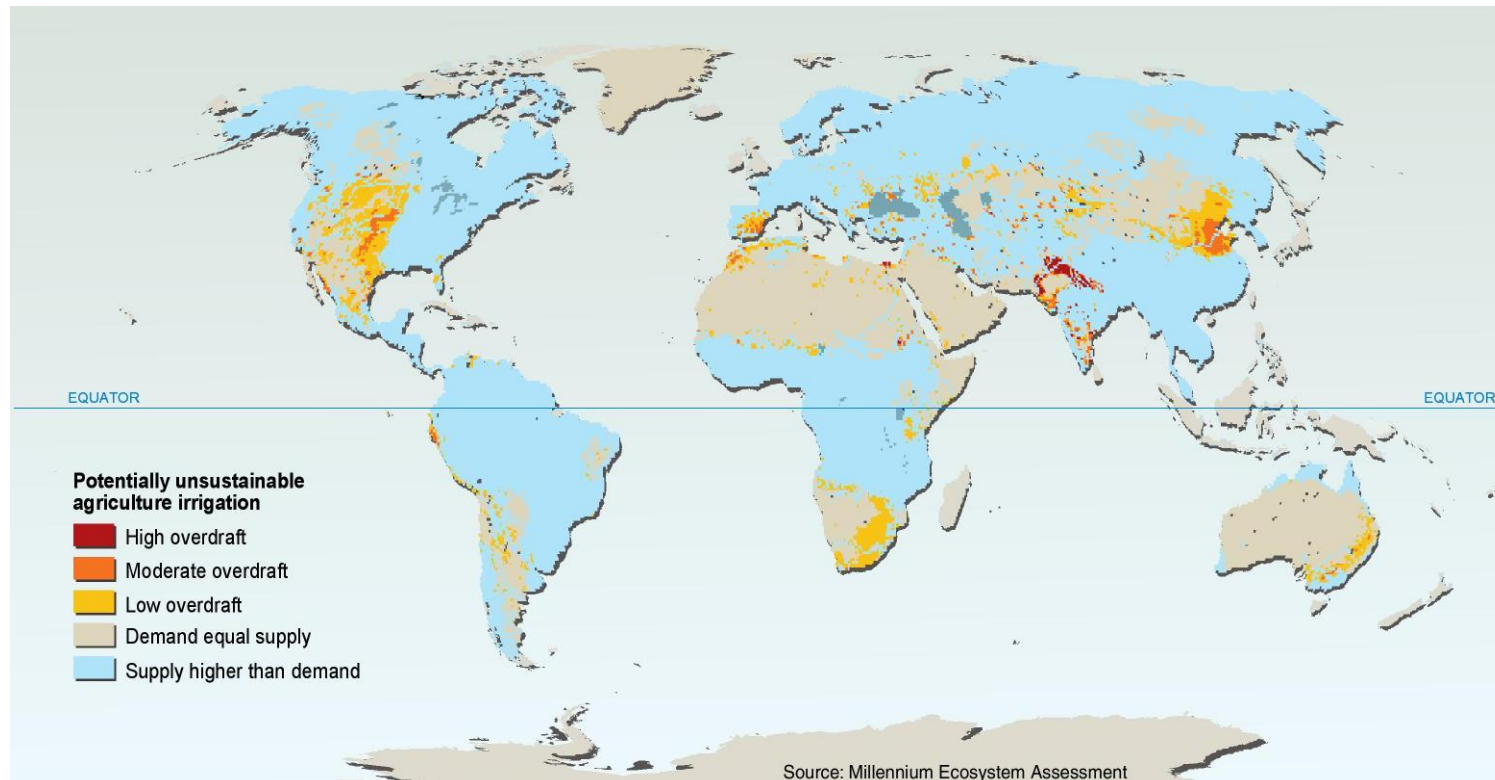
- Human activities have taken the planet to the edge of a massive wave of species extinctions, further threatening our own well-being



Source: Millennium Ecosystem Assessment

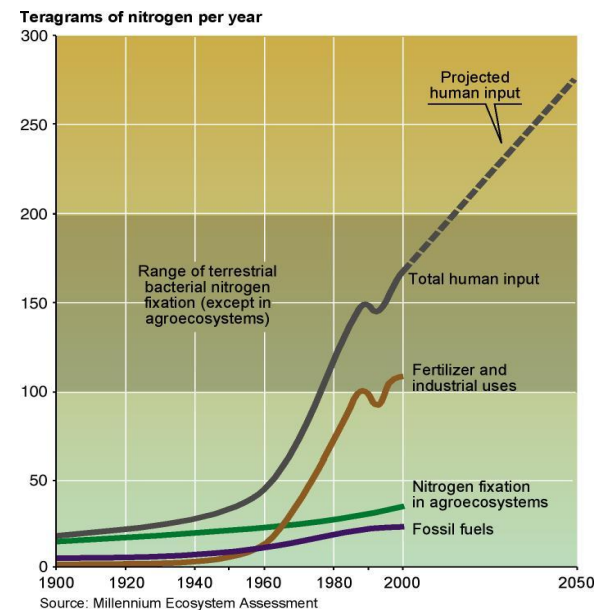
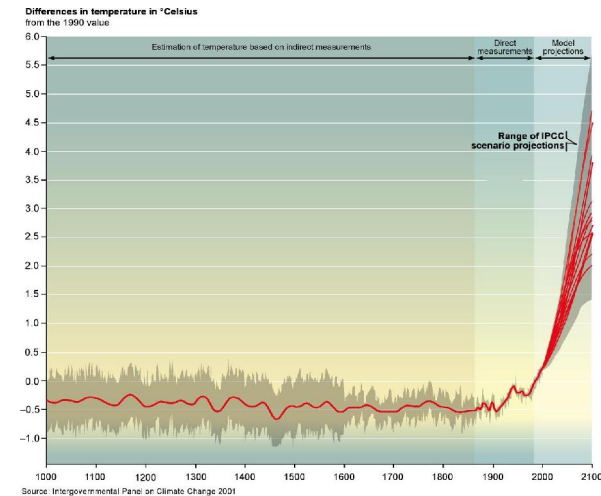
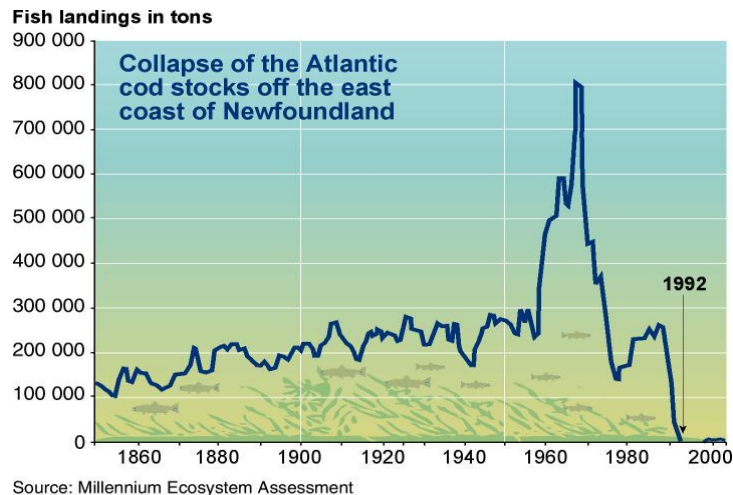
# Water

- § 5 to possibly 25% of global freshwater use exceeds long-term accessible supplies (*low to medium certainty*)
- § 15 - 35% of irrigation withdrawals exceed supply rates and are therefore unsustainable (*low to medium certainty*)



## Key Problems

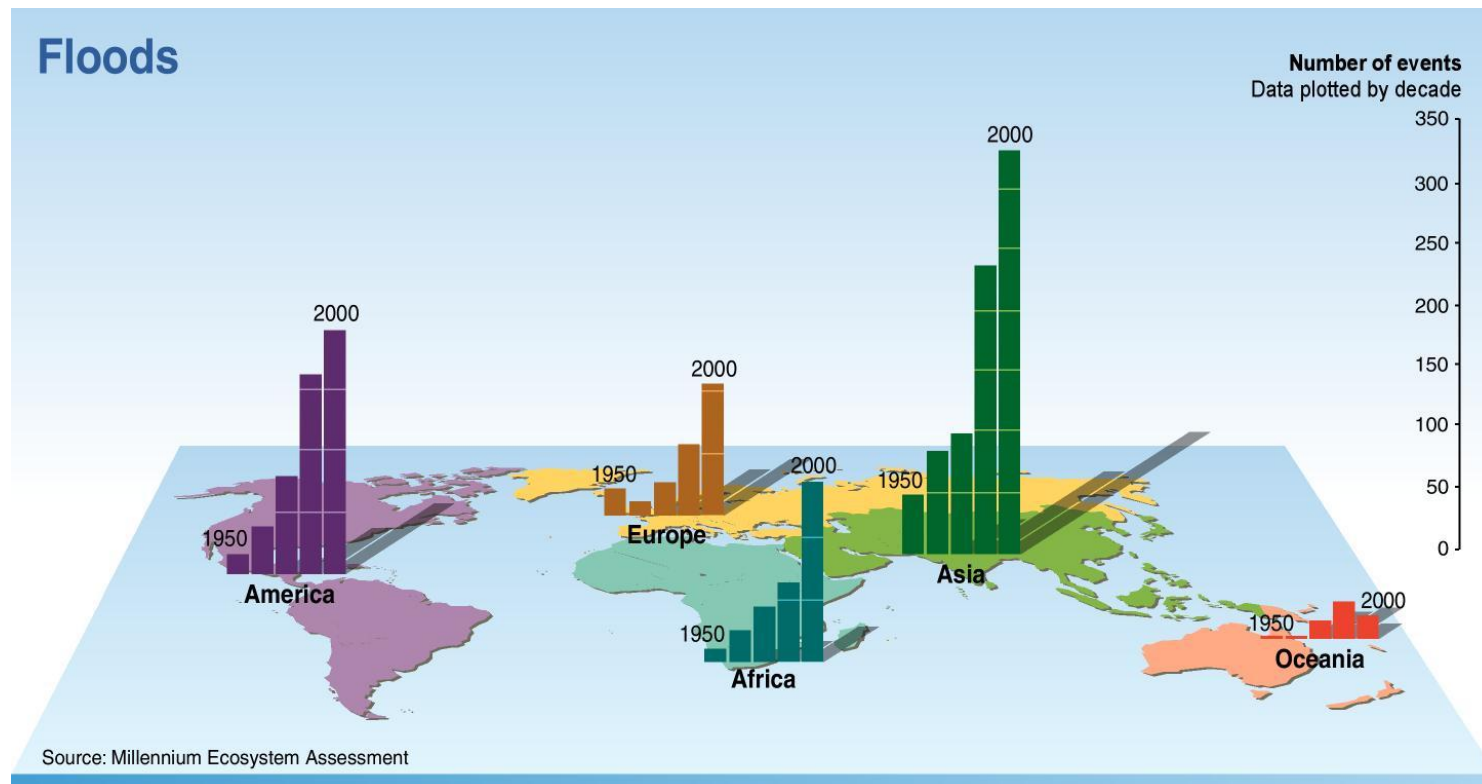
- **Outstanding problems include:**
  - dire state of many of the world's fish stocks
  - intense vulnerability of the 2 billion people living in dry regions to the loss of ecosystem services, including water supply
  - growing threat to ecosystems from climate change and nutrient pollution



# Regulating Services

## Natural hazard regulation

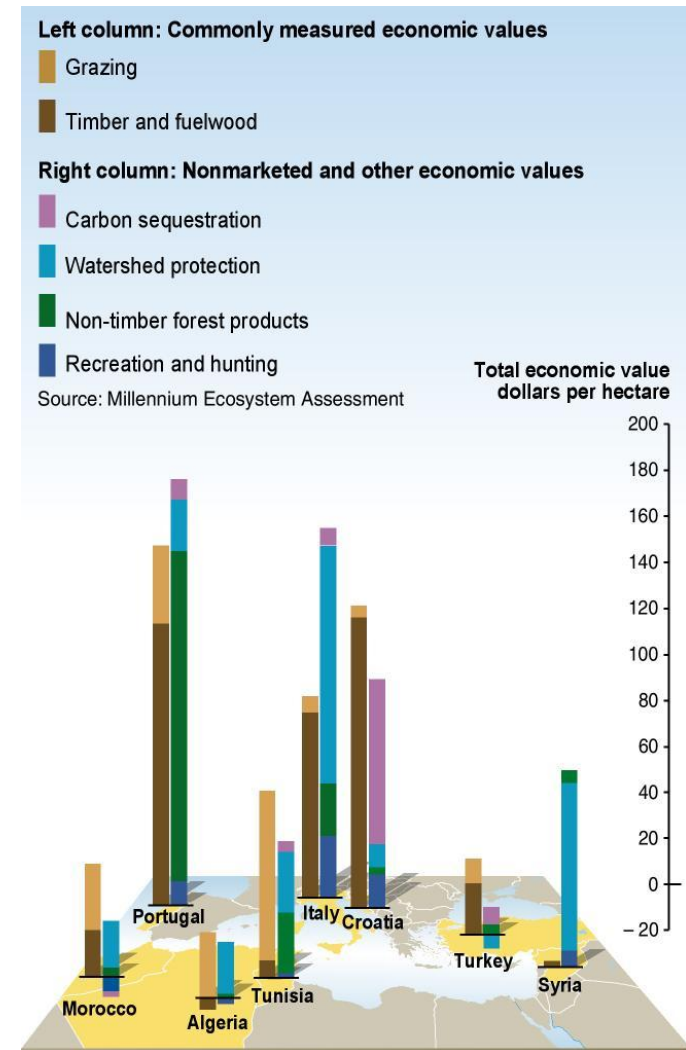
- § The capacity of ecosystems to buffer from extreme events has been reduced through loss of wetlands, forests, mangroves
- § People increasingly occupying regions exposed to extreme events



# Degradation of ecosystem services often causes significant harm to human well-being

- § Degradation tends to lead to the loss of non-marketed benefits from ecosystems
- § The economic value of these benefits is often high and sometimes higher than the marketed benefits

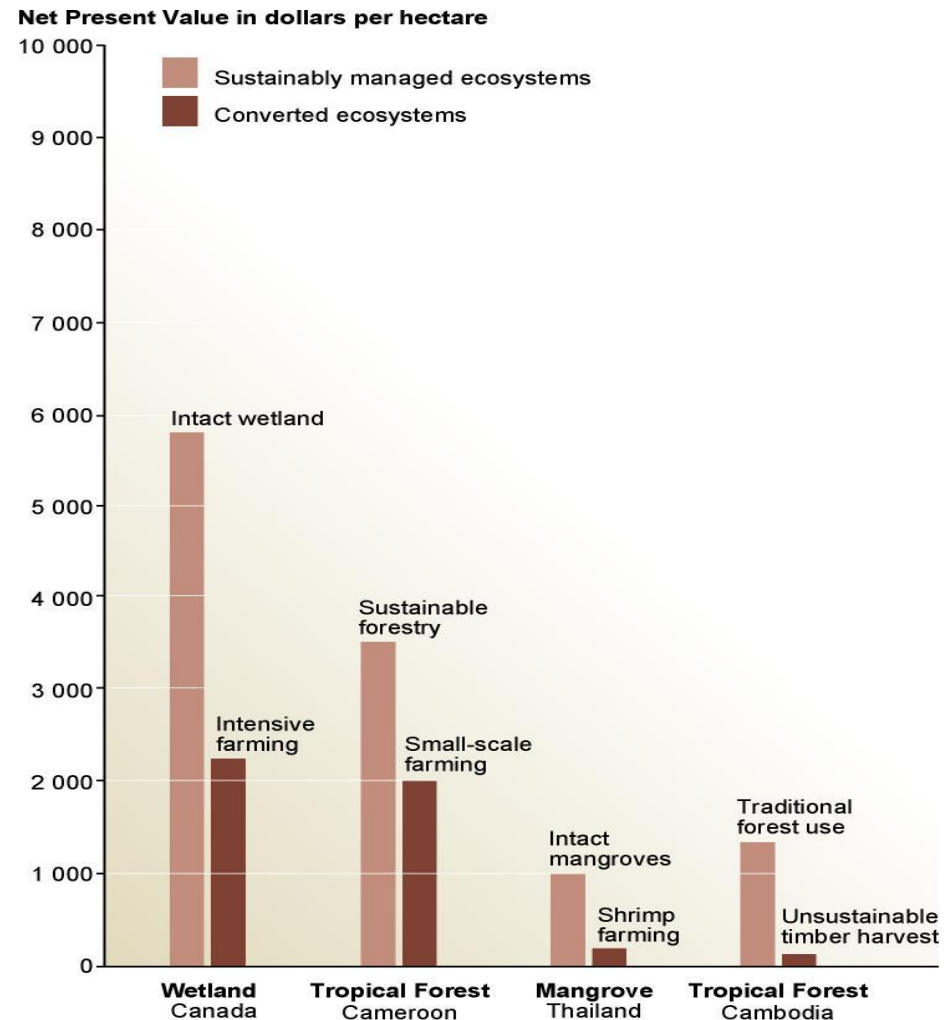
**Timber and fuelwood generally accounted for less than a third of total economic value of forests in eight Mediterranean countries.**



## Degradation of ecosystem services often causes significant harm to human well-being

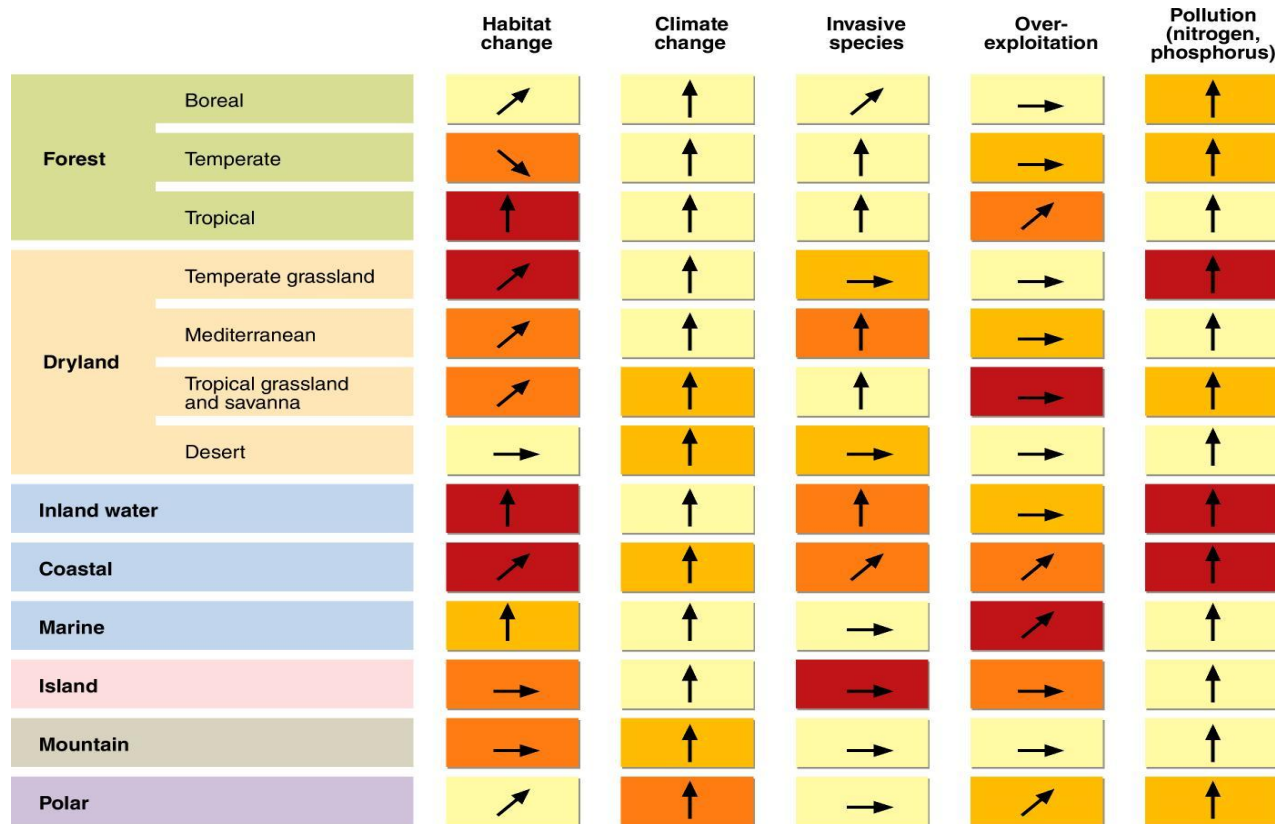
§ The total economic value associated with managing ecosystems more sustainably is often higher than the value associated with conversion

§ Conversion may still occur because private economic benefits are often greater for the converted system



Source: Millennium Ecosystem Assessment

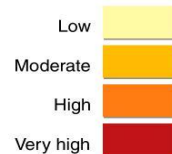
## Direct drivers growing in intensity – why the 2010 target will not be achieved



**Most direct drivers of degradation in ecosystem services remain constant or are growing in intensity in most ecosystems**

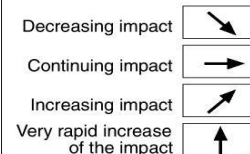
### RESULT OF PAST EVOLUTION

Driver's impact on biodiversity over the last century



### WHAT HAPPENS TODAY

Driver's actual trends



Source: Millennium Ecosystem Assessment

# What can we do about it?

## **Change the economic background to decision-making**

- § Make sure the value of all ecosystem services, not just those bought and sold in the market, are taken into account when making decisions
- § Remove subsidies to agriculture, fisheries, and energy that cause harm to people and the environment
- § Introduce payments to landowners in return for managing their lands in ways that protect ecosystem services, such as water quality and carbon storage, that are of value to society
- § Establish market mechanisms to reduce nutrient releases and carbon emissions in the most cost-effective way

# What can we do about it?

## **Improve policy, planning, and management**

- § Integrate decision-making between different departments and sectors, as well as international institutions, to ensure that policies are focused on protection of ecosystems
- § Include sound management of ecosystem services in all regional planning decisions and in the poverty reduction strategies being prepared by many developing countries
- § Empower marginalized groups to influence decisions affecting ecosystem services, and recognize in law local communities' ownership of natural resources
- § Establish additional protected areas, particularly in marine systems, and provide greater financial and management support to those that already exist – *but the design needs to take into consideration human-induced climate change*
- § Use all relevant forms of knowledge and information about ecosystems in decision-making, including the knowledge of local and indigenous groups

# What can we do about it?

## **Develop and use environment-friendly technology**

- § Invest in agricultural science and technology aimed at increasing food production with minimal harmful trade-offs
- § Restore degraded ecosystems
- § Promote technologies to increase energy efficiency and reduce greenhouse gas emissions

## **Influence individual behavior**

- § Provide public education on why and how to reduce consumption of threatened ecosystem services
- § Establish reliable certification systems to give people the choice to buy sustainably harvested products
- § Give people (all stakeholders) access to information about ecosystems and decisions affecting their services

## What can we do about it – energy and climate change

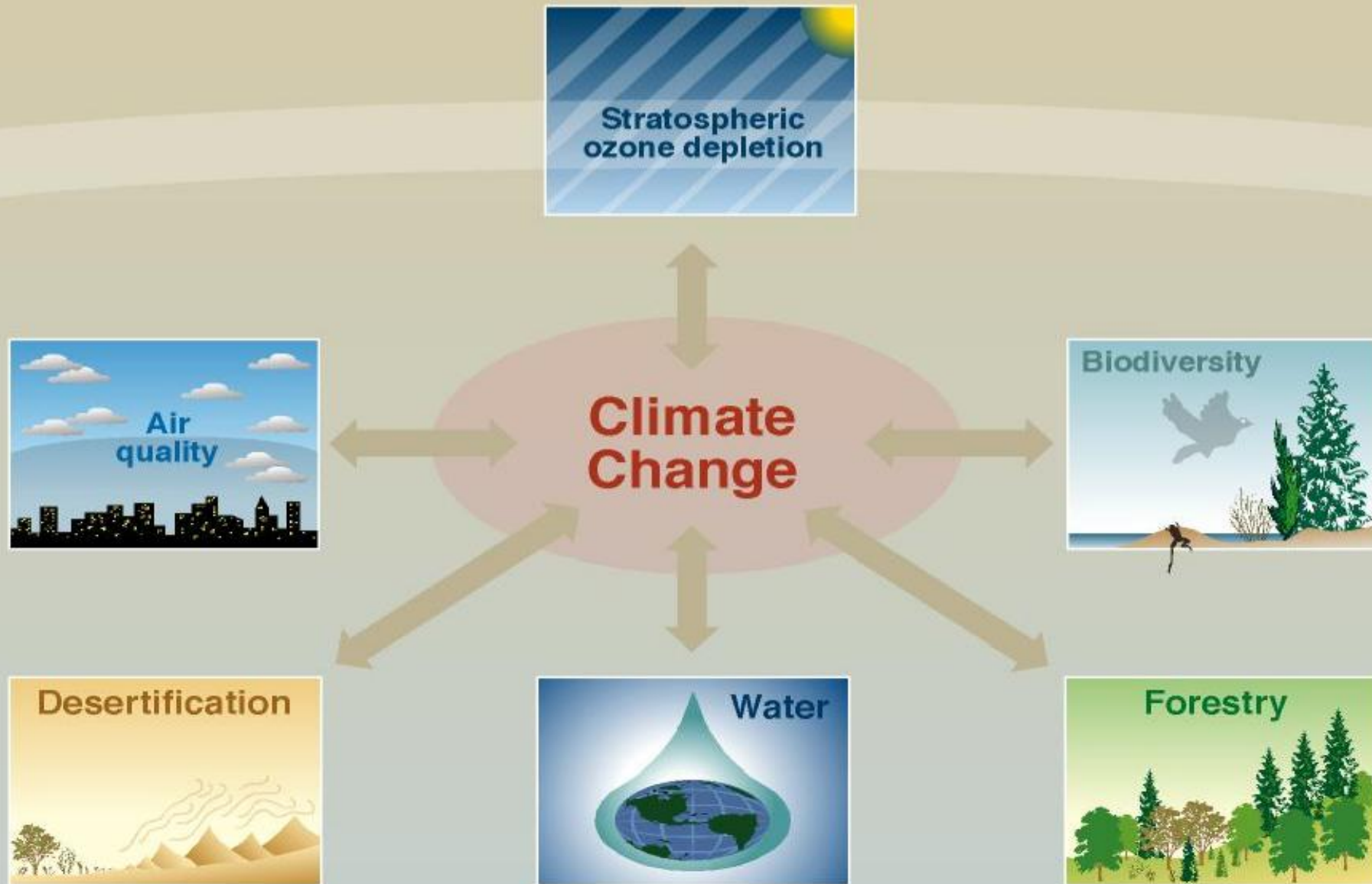
- A long-term stable global regulatory framework with differentiated responsibilities is needed to transition to a low-carbon economy
- A new financial instrument for carbon financing is needed which blends public and private sector financing, provides up-front capital, and can be used for both commercial and pre-commercial technologies
  - § Quick wins – e.g., end-use efficiency, rehabilitation of inefficient thermal power plants
  - § Long-term – e.g., commercialization of IGCC-CCS, advanced bio-energy, fuel-cell cars
- Market continuity is needed prior to a post-2012 agreement

# Synergies Across Conventions

## **Absolutely essential**

- **The issues addressed through the UNFCCC, CBD, CCD, Ramsar and CMS are all inter-related – see next slide**
- **There is a critical need to develop joint work programs among the Conventions**
  - § Identify synergies and trade-offs among issues
  - § Sectoral agencies within individual nations should also integrate their activities – too many stovepipes

## Linkages between climate change and other environmental issues



## Establish a UNEO to replace UNEP

- **One key question - why would a UNEO serve the environment-development agenda better than UNEP without increased funding and expert staffing**
  - § What are the functions that are needed that cannot be served by UNEP?
  - § Why is UNEP failing to provide the functions desired?
    - mandate, location, staff, funding, .....
  - § Would a UNEO improve coordination among all relevant international agencies (e.g., WB, UNDP, FAO, WHO, UNESCO, ..... ) who deal with environmental issues on a daily basis?

## International Panel on Natural Resources, ala IPCC

### **Key issues include:**

- **Scope** – what range of natural resource issues, e.g., does it include biodiversity
- **Governance structure**
  - § Intergovernmental – e.g., IPCC
  - § Non-governmental – e.g., MA
  - § Hybrid – intergovernmental with multi-stakeholder Bureau – e.g., IAASTD
- **Management structure**
- **Relationship to other assessment activities**
  - § IPCC, GEO, IAASTD, etc
- **Relationship with the Conventions**
  - § Independent
  - § Mandated by the Convention(s)
- **Spatial dimension**
  - § Global or multi-spatial

## IMoSEB consultation: Goal

**To establish an International Mechanism of Scientific Expertise on Biodiversity (IMoSEB) which would:**

- § **Provide *independant* scientific advice, on a *regular* basis to governments and other stakeholders**
- § **Be *intergovernmental***
- § **Involve all major *stakeholders* (NGOs, private sector, conventions, etc.)**
- § **Be *representative* of opinions, disciplines, geogr. regions**

**Why is an IMoSEB needed?**

**Because biodiversity loss threatens *ecosystem services and natural resources* which are key to *human well being*. Key expertise is missing to inform policy process.**

# IMoSEB consultation: Process

## Previous steps:

- **Call for an IMoSEB (J. Chirac, Paris conference, Jan 2005)**
- **International Steering Committee assembled (2 cochairs, M Loreau & A Oteng-Yeboah); Executive secretariat (France).**
- **Launched 18-month consultation in February 2006**

## Next steps:

- **On-going *studies* to assess the need for scientific expertise on biodiversity**
- **Organisation of *regional meetings* in all regions of the world to seek input for definition of needs for biodiversity expertise**

**Mid 2007: Final set of recommendations**

## The bottom line

- **We are spending Earth's natural capital, putting such strain on the natural functions of Earth that the ability of the planet's ecosystems to sustain future generations can no longer be taken for granted**
- **The degradation of ecosystem services could grow significantly worse during the first half of this century and would be a barrier to achieving the MDGs**
- **The future really is in our hands. We can reverse the degradation of many ecosystem services over the next 50 years, but the changes in policy and practice required are substantial and not currently underway**
- **The proposed New Generation of EU Environmental Policies are urgently needed**