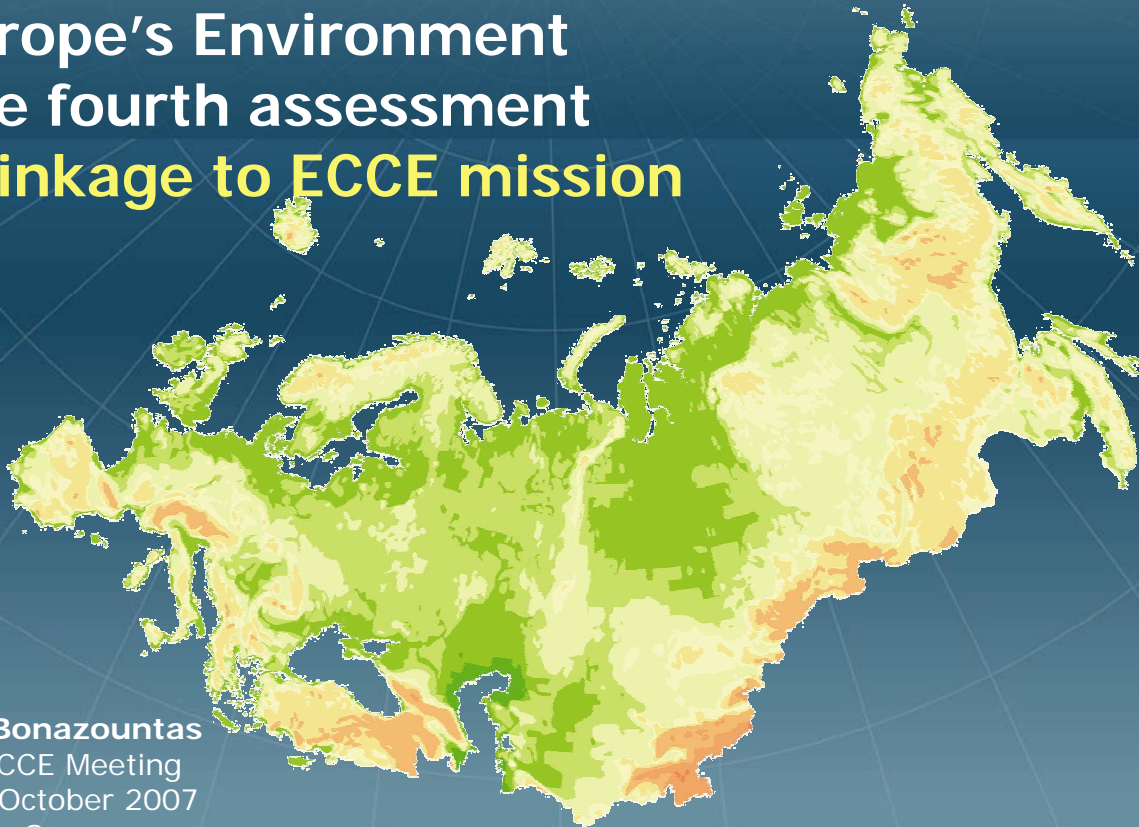


Europe's Environment The fourth assessment A linkage to ECCE mission



Marc Bonazountas
46th ECCE Meeting
19-20 October 2007
Athens, Greece



Outline

- The EEA 2007 report (Oct. 15th)
- The EU challenges & ECCE
- The EEA sectors & ECCE
- The EU countries & ECCE
- The next step with ECCE

Note

Material obtained from the EEA ppt as: A Member of the Scientific Management Committee/RWM (1.1.2007)



From Kiev to Belgrade

History

- The 'Environment for Europe' process: environmental challenges and their relationship to society
- 53 European countries, USA, Canada and Israel

The European Environment Agency prepared assessments for ministerial conferences in

- Sofia 1995,
- Århus 1998,
- Kiev 2003,

In Belgrade 2007 the fourth assessment was presented.



The fourth assessment presents ...

- the current state of the pan-European environment
- assessed in relation to social and economic change
- for use as a basis for policy development and implementation
- changes since Kiev

Can be used by ECCE members (opinion)

- In assessments and RTD
- For the ECCE's professional practice



53 countries and over 870 million people



Main messages & ECEE

1. **Environment**, health and the quality of life
2. **Climate change**
3. Biodiversity
4. **Marine and coastal** environments
5. **Sustainable consumption and production**
6. Sectoral drivers of environmental change



Environment, health and quality of life

AIR

- Pollutant emissions in WCE falling but still significant.
- Emissions in EECCA up by 10% or more

ECCE (+)

- Emission engineering
- Monitoring systems
- Impact assessments
- Regional strategies

Percentage change in emissions (2000–2004)			
Pollutant	WCE	SEE	EECCA
Nitrogen oxide (NO _x)	- 8.7 %	+ 5.7 %	+ 13.1 %
Sulphur dioxide (SO ₂)	- 19.6 %	+ 1.5 %	- 10.3 %
Volatile organic compounds (VOC)	- 13.6%	- 12.3 %	+ 11.2 %
Ammonia (NH ₃)	- 2.6 %	- 5.7 %	- 14.4 %
Ozone precursors	- 11.3 %	- 2.1 %	+ 11.5 %
Particulate matter (PM ₁₀)	- 9.7 %	+ 2.2 %	+ 12.6 %



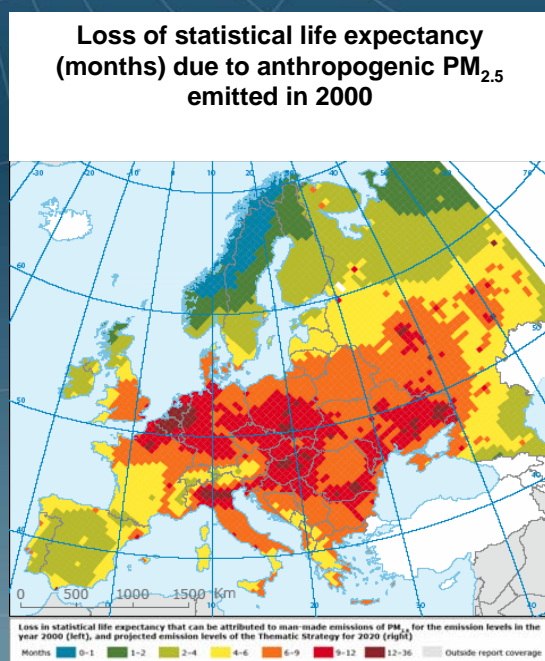
Environment, health and quality of life

AIR

- Particulate material and ozone caused 380,000 premature deaths in Europe in 2000
- Small particles remain main health threat in EECCA and SEE

ECCE (+)

- Impacts on health
- Impacts on civil works
- Impacts on nature



Environment, health and quality of life

WATER QUALITY

- More than 100 million people in the region lack access to safe drinking water or adequate sanitation
- In EECCA and SEE the quality of water supply and sanitation services has deteriorated continuously over the past 15 years.
- The rural population is affected more than urban citizens.
- Some improvement of water quality in rivers
- But some large rivers remain severely polluted

MONITORING

- Limited water quality data for EECCA and SEE - status and trends unclear

ECCE (+)

- Water resources & quality, WFD
- Rural & urban water supply (drinking, agriculture, industry)
- Waste water treatment & recycling
- Climatic impacts on water, droughts & floods
- Monitoring plans



Environment, health and quality of life

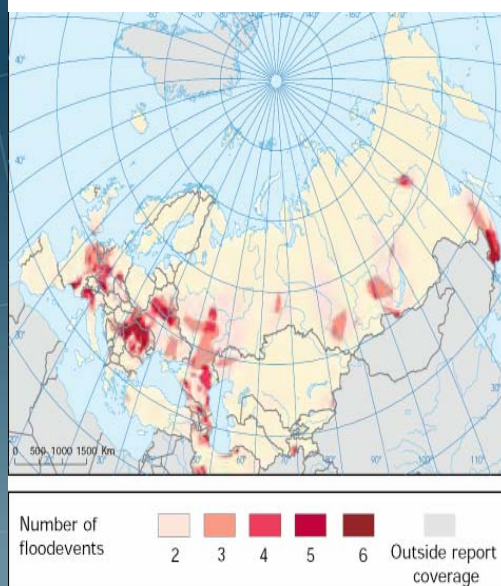
WATER QUANTITY

- One-third of the pan-European population lives in countries where water resources are under substantial pressure.
- Over the past five years, the region has suffered more than 100 major floods.

ECCE (+)

- WFD
- Regional WQ plans
- Monitoring systems
- IST/ICT technologies
- Non-EU, as Med-basin
- Eionet plans

River catchments affected by flooding
1998-2005

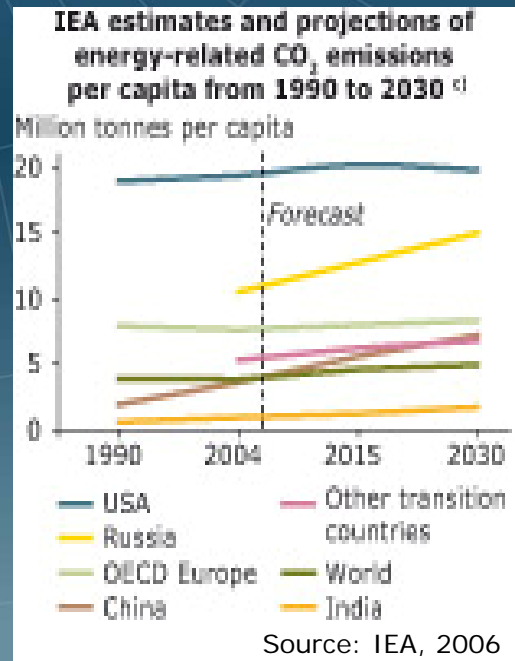


Climate change

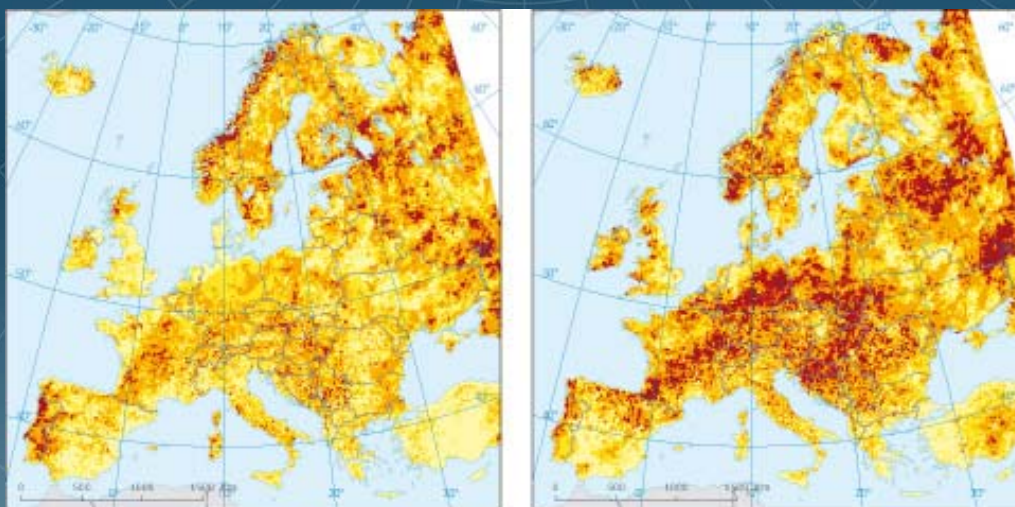
- Energy consumption and GHG emissions increasing
- Proposed EU target: 50% emission reduction globally by 2050

ECCE (-)

- Climatology & sea-level
- Water resources
- Agriculture
- Nature
- Energy & emission inventories



Climate change



Heat wave frequency for the periods 1961–1990 (left) and 2071–2100 (right)

Based on the IPCC-SRES A2 emission scenario and the DMI climate model



Climate change

- Environmental impacts: more extreme weather, rising sea level, shrinking ice cover
- Economic impacts: agriculture and tourism
- Adaptation measures needed even if emissions reduced

ECCE (-)

- EIAs (all type)
- Agriculture
- Emission technologies & inventories



Biodiversity

- More than 700 species in Europe threatened
- Habitat loss from urban development, road construction, agricultural intensification, land abandonment
- Invasive alien species
- Climate change will increase pressures on biodiversity in coastal, arctic and alpine areas

ECCE (-)

- EIS (roads, land, agriculture)
- Nature, WFD



Biodiversity loss

- Networks of protected areas being created, but their conservation status is insufficiently known
- Importance of sensitive agricultural and forestry areas with high nature value
- Target of halting biodiversity loss in 2010 will not be met.



Marine and coastal environments

- First general review of seas and coasts since 1995 (Dobris)
- Pressure from over-exploitation of resources and high coastal population densities
- Impacts aggravated by climate change
- Policy actions are reducing concentrations of toxic chemicals in western seas.
- Eutrophication in enclosed seas and sheltered waters
- Overfishing and illegal fishing – needs improved policies and stricter law enforcement
- Oil spills reducing, but significant oil pollution from sea transport and refineries

ECCE

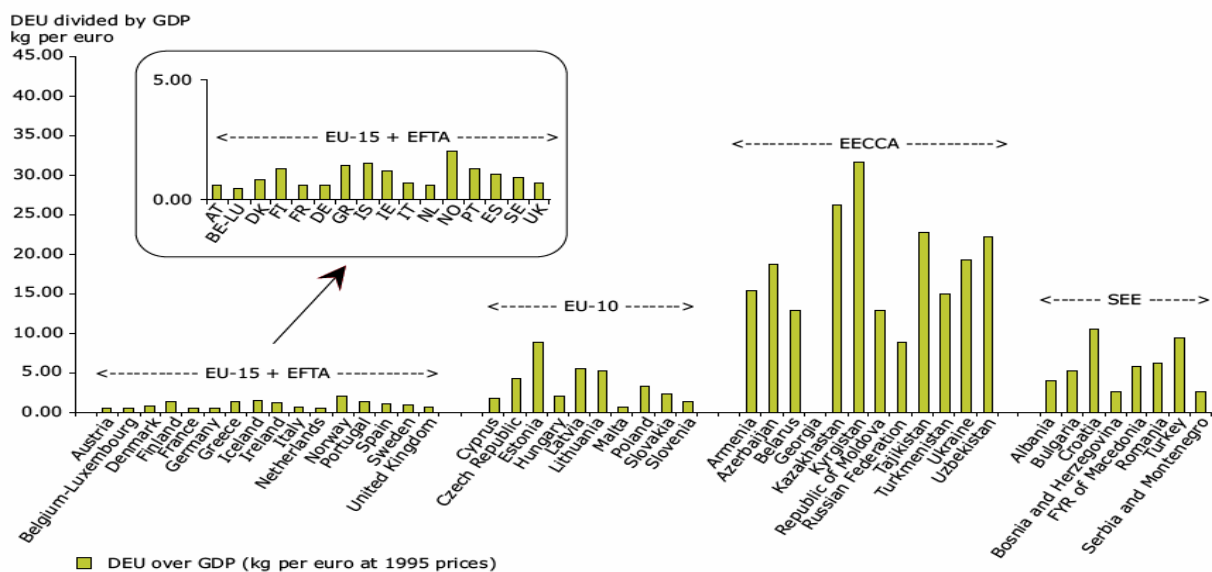
- Transport technologies and policies
- Civil engineering works and policies
- EIAs on marine and coasts
- Offshore exploitation & pollution (e.g., LNG, LPG, terminals)
- Mathematical modelling
- Sea level rise and planning



Sustainable consumption and production

Major regional differences in the efficiency of resource use

Figure 6.7 Domestic Extraction Used (DEU) over GDP, 2000

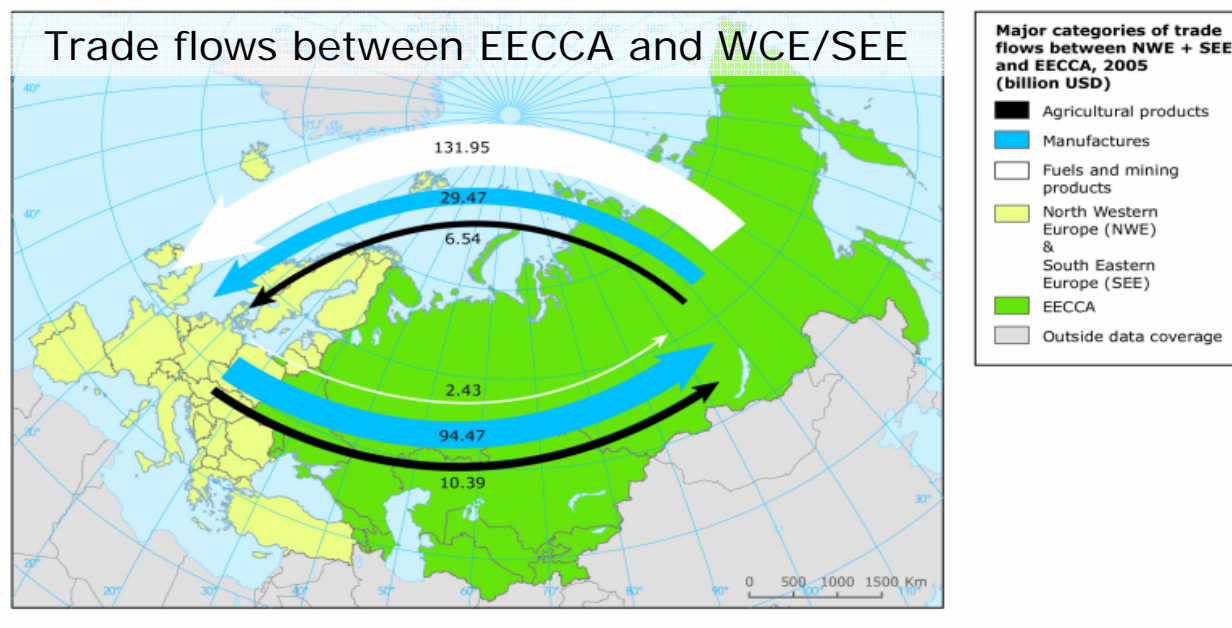


Sources: Wuppertal Institute, 2005; Eurostat, 2004; van der Voet et al., 2004; MOSUS, 2006.



Sustainable consumption and production

Trade flows between EECCA and WCE/SEE



Sustainable consumption and production

Policy development:

- On the policy agenda since 2003 (WSSD conference)
- Slow progress since Kiev
- Political process not converted into measurable results

Hazardous waste:

- Legacy of the past
- Policies developed but weak implementation

Some decoupling achieved:

- major differences in efficiency of resource use persist
- link between economic growth and energy consumption broken in many countries
- some decoupling not 'real'—shift of burden to other countries



Sustainable consumption and production

Key issues

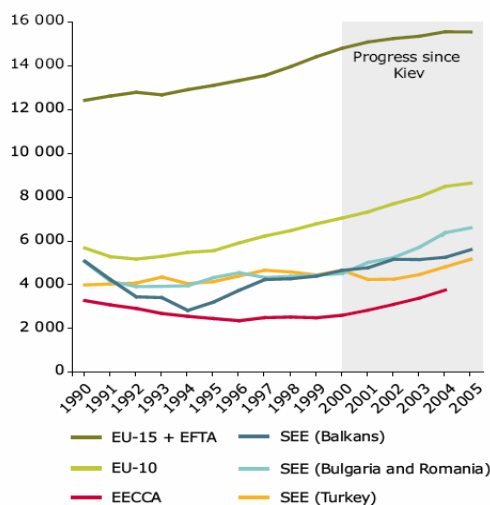
- Growing consumption causing *global* environmental impacts
- Greatest life-cycle environmental impacts from food and drink, private transport, housing
- Tourism and air transport future key impact areas

Waste generation is growing:

- Driven by increase in economic activity and consumption
- Municipal waste increasing by 2% annually, more in EECCA

Figure 6.11 Household expenditure per capita

Household consumption expenditure per capita in PPP
Constant year 2000 international dollars



Source: World Bank, 2007.



Sustainable consumption and production

ECCE (+)

- Key role
- Waste engineering & technologies
- Waste management & plans
- EIAs and LCAs
- Production & resource use
- Material recycling & transboundary
- Transport systems & sustainability
- Usage and zero emissions (e.g., heating & hot water)
- Municipal turn key & recovery



Sectoral drivers of environmental change

Transport: Transport energy consumption and the resulting CO₂ emissions per capita in WCE continue to be two to four times higher than in SEE and EECCA

Growing in WCE and SEE, falling in EECCA

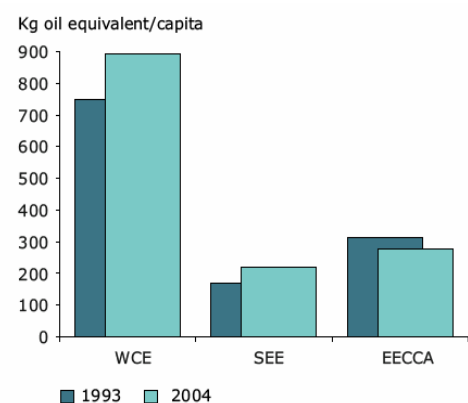
Energy: energy consumption and GHG emissions increasing despite energy efficiency improvements and more renewables

Agriculture: irrigated area increasing, showing continuing intensification and causing decline in water resources and quality

Tourism increasing demand for the most environmentally damaging transport modes: cars and air

ECCE: all

Transport energy consumption per capita by region 1993 and 2004



Note: Andorra, Liechtenstein, Monaco and San Marino not included.



Options for future action

- Promote implementation of **regional environmental agreements** (e.g. Black Sea, Caspian, Carpathian)
- Set clear, **realistic environmental targets** and **monitoring** mechanisms
- Strengthen governmental support for **education** on **sustainable development**
- Strengthen governmental support for **public participation** and **awareness**
- Expand existing **pan-European partnerships**;
- Continue regular assessments through a shared **environmental information system**
- Further develop **environmental indicators**

ECCE

- All, EU, Non-EU



Closure

1. The challenges are real
2. The environment era is coming back
3. IST/ICT are the linked to CE & the environment
4. The civil engineer is diversifying
5. The civil engineer has the broad "slepsis"
6. 50% of the challenges are related to CE
7. Let us have an "ECCE-Plan & Linkage"



Thank you !

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