

Sustainable Growth: a challenging area for ICT research




Michel Schouppe
European Commission
Information Society & Media Directorate-General
Unit ICT for Sustainable Growth

ENVIROINFO 2008, Lueneburg (DE), 11/09/2008

Growth Trends

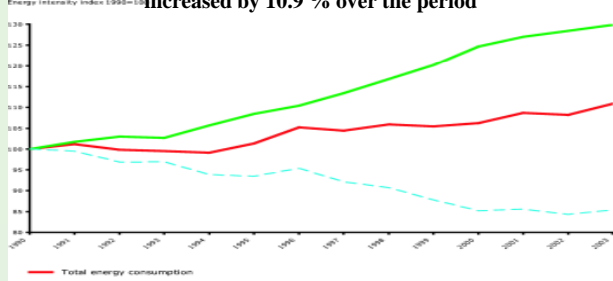
	1950	2000	1950~2000 30-year change
Human population (billions)	2,52	6,07	247 %
Registered vehicles (millions)	70	723	1,030 %
Oil consumption (million barrels per year)	3,800	27,635	727 %
Natural gas consumption (trillion ft ³ per year)	6,5	94,5	1,454 %
Coal consumption (million metric tons per year)	1,400	5,100	364 %
Electricity generation capacity (million kilowatts)	154	3,240	2,104 %
Corn (maize) production (million metric tons per year)	131	594	453 %
Wood pulp production (million metric tons per year)	12	171	1,425 %
Iron production (million metric tons per year)	134	580	433 %

Is this sustainable growth?



De-coupling of energy-use and GDP growth ? Not yet...

The energy intensity in the EU-25 fell at an average rate of 1.2 % per year from 1990 – 2003, but total energy consumption increased by 10.9 % over the period



Energy Intensity Index 1990=100

- Total energy consumption
- Gross domestic product at 1995 market prices
- Total energy intensity

In search of global green policies

A one-day European Policy Summit
on the occasion of Green Week (June 2008)
→ <http://www.friendsofeurope.org/Publications/tabid/458/Default.aspx>



Can we reconcile sustainability with global economic growth?

- "We need to move away from using GDP figures as a basic indicator"
- "We should tackle the quality of growth"
- "We need to preserve the environmental underpinnings of the economy"
- « We must show that the environmentally friendly way is not only nice but [also] profitable, or everything will collapse »
- « We believe climate is one of the biggest issues we face as a company but we also see it as an opportunity"
- « The Commission's environmental policy ... is also about projecting values on where we want our economies to go »

ONLY ONE EARTH
In search of global green policies
 A one-day European Policy Summit
 on the occasion of Green Week (June 2008)
<http://www.friendsofeurope.org/Publications/tabid/458/Default.aspx>

Conclusions

- The very concept of growth institutionalises ever-increasing emissions
- It is misleading to frame the issue in terms of "growth versus green"
 - Dealing with climate change and other sustainability issues will create growth and jobs
 - For the economy to grow in the long run, we have to take care of the environment now.
- People and organisation are confused
 - 800 different ethical and environmental labels!
- A mix of technologies and regulations would help
- Change of behaviour is primordial – still a long way to go.

European Commission and others

Policy context in Europe
Renewed SDS and Lisbon strategies

EU Council (June 2006):

- « *The **EU Sustainable Development Strategy (SDS)** and the **Lisbon Strategy** for growth and jobs complement each other.* »
- « *The SDS is primarily concerned with quality of life,... The Lisbon Strategy makes an essential contribution to the overarching objective of sustainable development... increasing competitiveness and economic growth and enhancing job creation.* »

European Commission and others

Policy context in Europe
Integrated climate and energy policy

Brussels European Council (8/9 March 2007)

- An **integrated climate and energy policy** is of vital importance
- EU leaders set **combined targets**:
 - Reduction of GHG emissions in the order of 20% by 2020 compared to 1990
 - 20% for renewable energy sources by 2020 compared to the present 6,5%
 - Saving 20 % of the EU's energy consumption compared to projections for 2020

European Commission and others

Policy context in Europe
EC green paper on adapting to climate change

"Adapting to climate change in Europe
Options for EU action"
 (COM(2007)354)

« *We need to fight the battle of climate change on **two fronts*** »
 (Environment Commissioner Stavros Dimas, June 2007)

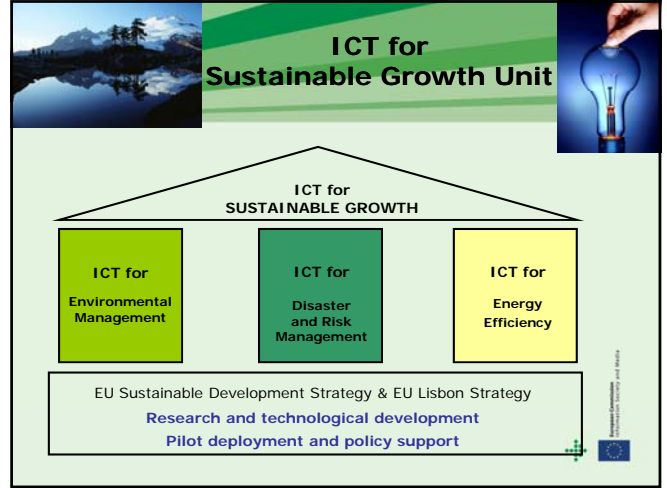
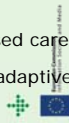
- To limit climate change by **reducing GHG emissions**
- To adapt to current and future climate change in order to **lessen the adverse impacts on people, the economy and the environment.**

European Commission and others

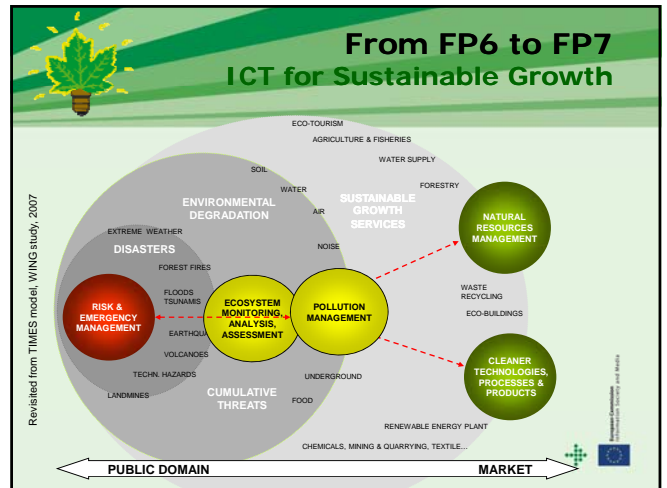
ICT should not only reduce its own footprint ...but also help reduce that of other sectors

Examples of ICT contributions to the **SDS challenges**:

- Sustainable **consumption and production**
- Better monitoring and **management of the environment**
- Better preparedness, mitigation, adaptation to climate change, environmental **threats, and disasters**
- Extension of **independent living**, increase of active participation of elderly people
- Improved **healthcare** systems, continuous personalised care
- Clean **mobility**, virtually accident-free, efficient and adaptive



ICT activities for Disaster Management



ICT for Sustainable Growth A multitude of dimensions

Mind mapping of the domain ICT for Research & Management
Source: FP7 e-learning activities, Science, 2007

ICT ENSURE an FP7 Support Action

COOPERATION

- Assessing ICT opportunities and risks for environmental sustainability
- Developing a comprehensive framework for the role of ICT in environmental sustainability
- Identifying areas showing major ICT prospects
- Detailed investigation of six or more application domains such as:

!!! ICT for ...

Energy consumption/efficiency Climate change
Eco-industrial applications, Industrial ecology Agriculture, Landscape and biodiversity
Personalised information services and quality of life
Sustainable urban development
Health and environmental risk management

ICT ENSURE an FP7 Support Action

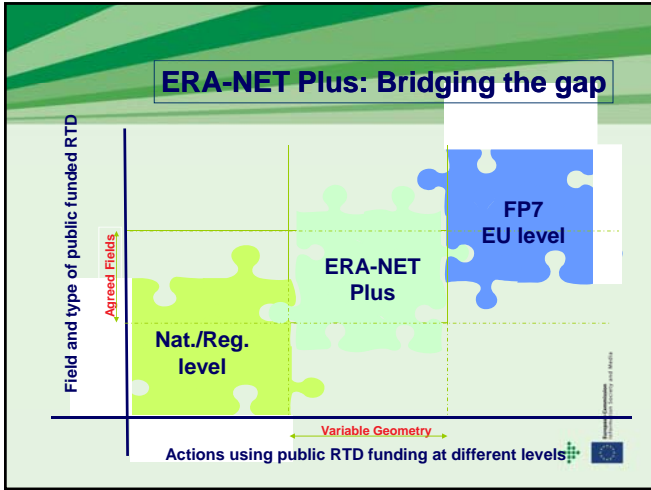
COOPERATION

- European platform in the field of *"ICT for Environmental Sustainability Research"*
- To better network and structure the various national and international environmental research programmes and communities
 - Thematic workshops
 - Community building
 - Survey and web-based **database & information system**
 - Contributions towards
 - SISE** (Single Information Space in Europe for the Environment)
 - ERA** (a European Research Area) in the field of ICT for Environmental Sustainability

Network of networks approach

Coordination of national programmes Overview "toolbox" FP7

ERA-NET	Like in FP6: Coordination of programmes ✓ MS agree and fund joint calls/programmes ✓ EU funding only for coordination	
ERA-NET Plus	New in FP7: To up of a single joint call ✓ MS contribute to a joint trans-national call 2/3 ✓ EU funding for research: 1/3 of the joint call	
Art. 169	Full integration of national programmes ✓ Scientific and financial: strong EU funding ✓ Single implementing structure	



Further Information & Contact

- **DG INFSO Unit "ICT for Sustainable Growth"**
INFSO-ICTforSG@ec.europa.eu
<http://ec.europa.eu/ictforsg>
- **Research on ICT for the Environment**
<http://cordis.europa.eu/ist/environment/projects.htm>
- **ICT2008 conference, Lyon (FR), 25-27/11/2008**
http://ec.europa.eu/information_society/events/ict/2008/index_en.htm
 - Two sessions on ICT for climate change mitigation/adaptation
- **ERA activities related to ICT: CISTRANA portal**
<http://www.cistrana.org>

Thank you for your attention !

Michel.Schouppe@ec.europa.eu



ICT for Sustainable Growth Unit
<http://cordis.europa.eu/fp7/ict/sustainable-growth/>