

Examining the Socio-Economic Dimensions of Space Applications:

Some Pointers to Make GMES Sustainable?

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A growing corpus of OECD work on space applications

1. Ongoing studies with space / users communities:

- “Space Technologies and Food Security” (report in summer 2012)
- “Role of space technologies and ICT in the surveillance of global threats” (report in fall 2012 – 2 upcoming workshops in June and July)

2. An extensive body of work:

- “Space 2030 reports”: Results of futures project on the commercialisation of space: prospective study on space applications with long-term horizon at both national and international levels. Key recommendations on framework conditions (+100 organisations consulted);
- “Space technologies and climate change”: case studies reviewing applications on water management, marine resources, maritime transport ;
- “The space economy at a glance” with updated indicators on impacts of space applications (next in 2013).

- **OECD conference on space, 12 October 2012 in Paris:
“Role of space technologies in the surveillance of global threats”**

Potential demand for Earth observation applications across diverse scenarios (by 2030)

In a wide diversity of possible futures, the demand for Earth observation applications remains strong.

	Scenario 1 Smooth sailing	Scenario 2 Back to the future	Scenario 3 Stormy weather
Meteorology	High	High	High
Oceanography, climate change	High	Medium	Low
Precision farming	High	High	Medium
Fisheries	High	Medium	Medium
Forestry management	High	Medium	Medium
Exploration (e.g. oil, gas)	High	High	High
Urban planning	High	High	High
Natural disaster prevention and management	High	High	Medium
Defence / security	Medium	High	High
Treaty monitoring (e.g. environment, disarmament)	High	Medium	Medium

Source: OECD (2005), *Space 2030: Tackling society's challenges*, OECD Publishing, Paris

But are EO applications delivering « value for money »?

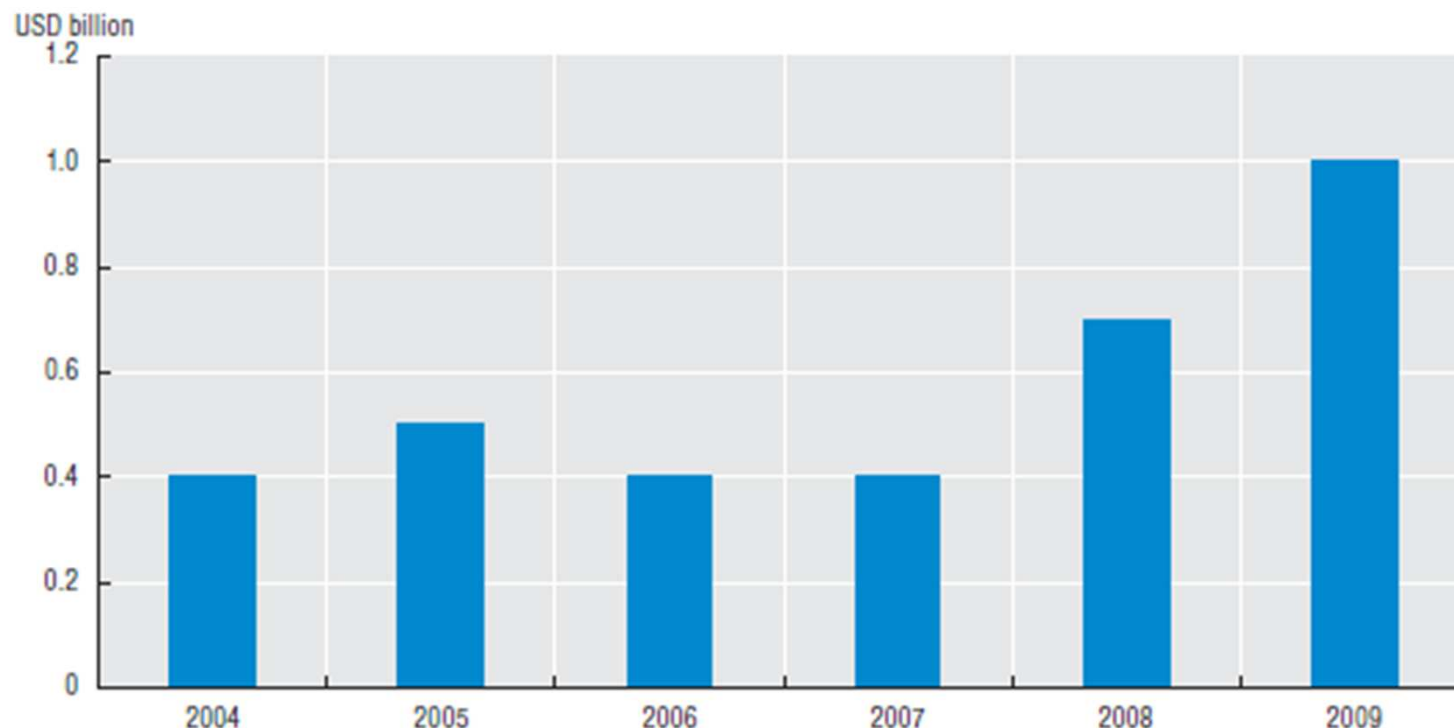
- A relatively recent issue... debatable in some cases

- Impacts of activities derived from imperatives:
 - Strategic / military
 - Prestige
 - R&D and industrial competitiveness
 - Profit
 - **Derived socio-economic impacts**

Commercial satellite earth observation market

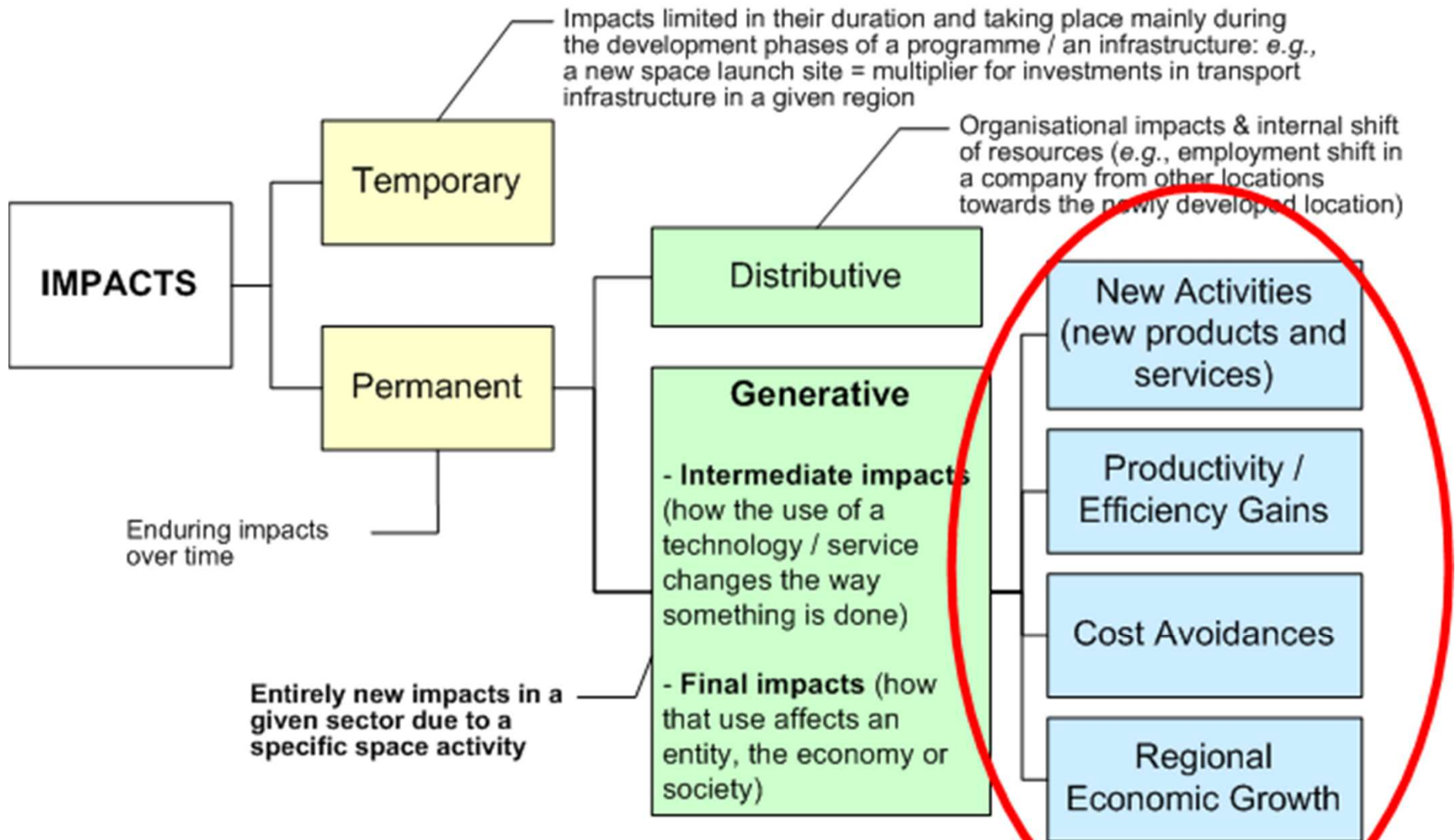
Commercial satellite earth observation represents a **niche market** valued at some USD 900 million to USD 1.2 billion (2009), relying mainly on institutional customers. These figures do not reflect the wide diversity of economic impacts...

Estimates of commercial remote sensing revenues, 2004-09



Source: Satellite Industry Association (2010).

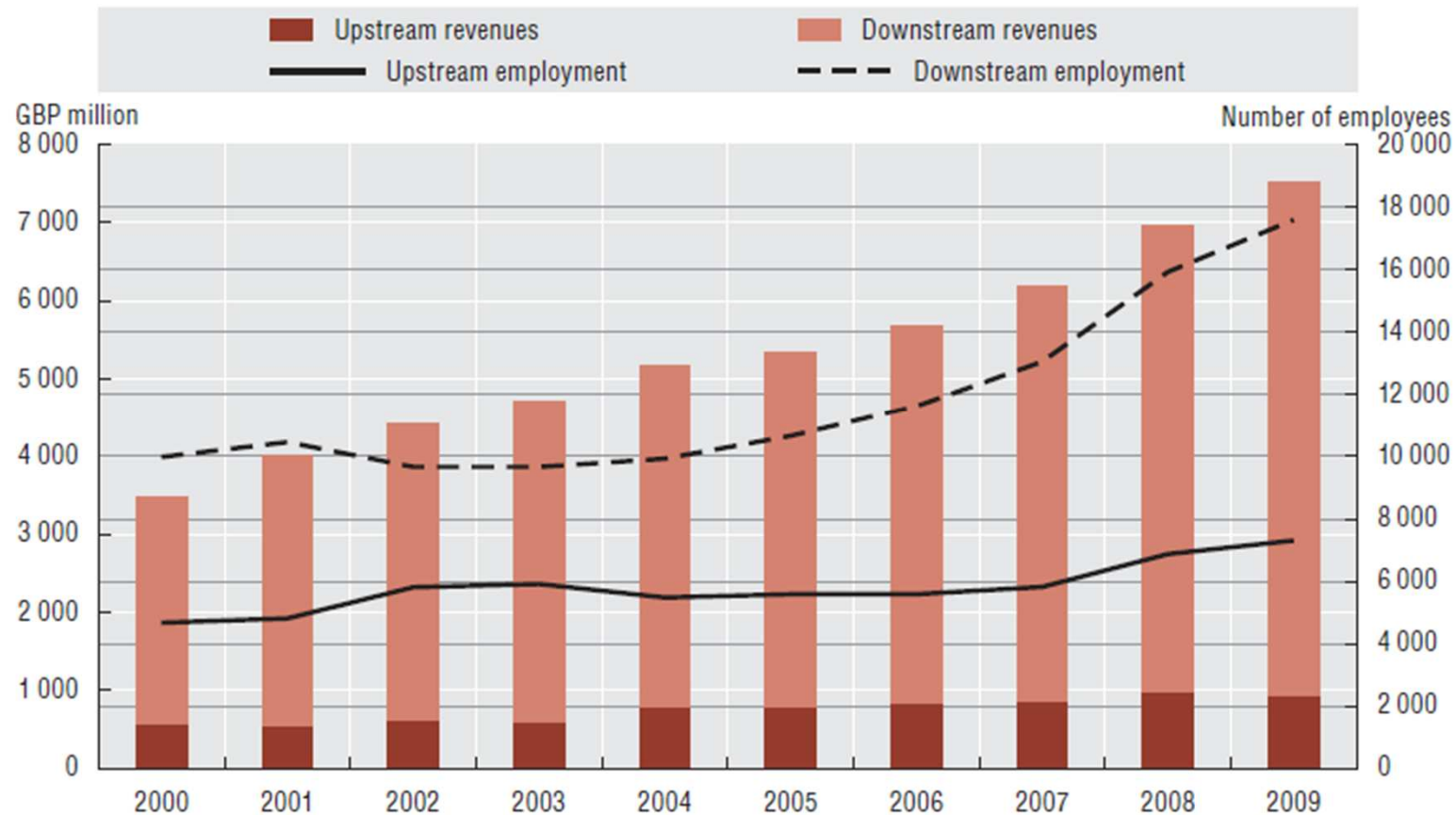
Diversity of potential socio-economic impacts when developing space-related applications



Source: OECD (2007), The Space Economy at a Glance

Downstream activities (applications) often much larger than upstream segment (manufacturing)

Revenues and employment in the UK space sector



Source: OECD (2011), *The space economy at a glance*, OECD Publishing, Paris

Five major avenues for growth

1. Increasing **diversity and (often institutional) markets** for downstream applications, particularly in exploiting earth observation data.
2. Increasing need for **global and regional surveillance** and monitoring of natural and socio-economic systems.
3. Growing need for **continuity of service** and a sustainable infrastructure of geospatial information (see cases of NOAA weather satellites in USA , ENVISAT in Europe).
4. Need to reach an **optimal level of systems' diversity** and redundancies for the sake of resilience.
5. Requirement for a minimum level of **critical mass via international cooperation or regional integration** as a pre-requisite for efficiency (economic and cost-efficiency , inter-operability, economies of scale and scope...)

Five major sets of challenges (fuelling the need for govt. action)

1. **Gaps** in existing EO systems (revisit time, adequate resolution & instruments, real-time reactivity, sustainability over decades).
2. **Processing** of large amounts of data and integration into useful information, archiving.
3. **Regulatory** considerations.
4. Clear and sustainable **data policies**.
5. Meeting the **daily needs** of very diverse users (and demonstrating cost-efficiencies!).

What to do to make GMES sustainable?

“Encourage the public use of the space infrastructure”

- I. **Aggregation of institutional demand** for well-defined space services across large geographical areas when possible (regional/local level can be appropriate)
- II. **Better financial footing:** when services demonstrated, users should pay a minimum to help cover the expenses of operations (*in Europe, some mechanisms exist for institutional users and are not used enough by regions: e.g., selected structural funds*)
- III. Clear “rules of the road” for private actors with supportive legal and regulatory environment. **At national / regional level: competitive & clear procurement rules.**

See recommendations in OECD (2005), *Space 2030: Tackling society's challenges*, OECD Publishing, Paris.

On your calendar...

❑ **Key OECD conference on space, 12 October:**

- “Role of space technologies in the surveillance of global threats”
OECD Space Conference, OECD Conference Centre in Paris

❑ **Selected 2012 OECD Reports:**

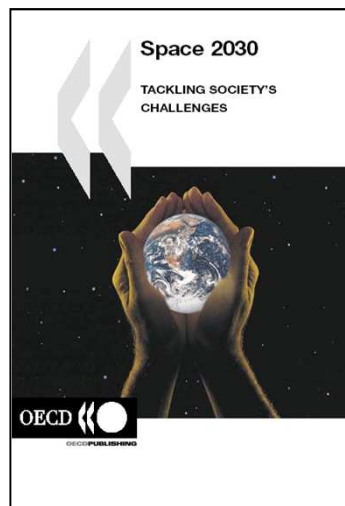
- OECD Handbook on Measuring the Space Economy (April)
- Space Technologies and Food Security (summer)
- Health of the Space Sector Report (fall)
- Working paper: Role of space technologies and ICT in the surveillance of global threats (fall)

OECD Reports on Space... so far



2004

Prospective



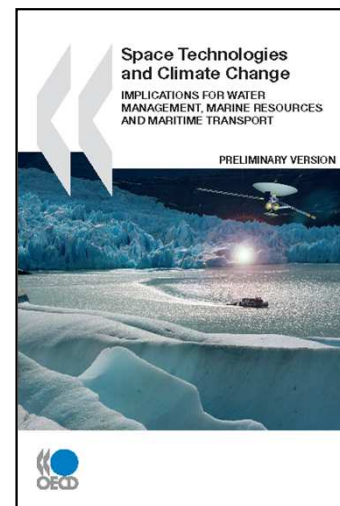
2005

Policy & Regulatory



**2007 & 2011
(next 2013)**

Economic Dimension



**2008
(next 2012)**

Socio-Economic Contributions



2012

Methodologies for indicators



Thank you for your attention.

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