

# Europe in the Future and the Contributions of Space

**European External Action Service  
11 January 2016  
Brussels**

Marco ALIBERTI<sup>1</sup>, Stefano FERRETTI<sup>1,2</sup>, Peter HULSROJ<sup>3</sup>, Arne LAHCEN<sup>1</sup>

<sup>1</sup> ESPI Resident Fellow

<sup>2</sup>ESA Space Policy Officer

<sup>3</sup>ESPI Director

## Outline

- **Project structure**
- **Space and society**
- **Global trends**
- **European challenges and Space**
- **Societal needs**
- **Governance**

## Why this Project ?

### **The world is changing:**

- Strong social, economic and political changes worldwide
- Societal needs and demand pull perspective. What role for Europe ?

### **Space is evolving:**

- New innovation dynamics
- Landscape is changing: new technologies, private actors, EU programs

### **Future challenges and opportunities for Europe:**

- How will societal needs be managed in the mid to long term ?
- Is Europe ready to govern these new processes ? What can be done ?

## The Future, Society and the Role of Space

### Looking ahead in time is difficult:

- Rapid evolution of the landscape, game changers
- Create a framework for understanding and manage change



Lunar reconnaissance orbiter, 2015

### A Historic Perspective: Space and Society

- Space has contributed to universal understanding, globalization and environmentalism
- Space addresses societal needs together with various actors and branches

### A Wider Focus: the link between society and science and technology

- Innovation paradigms are continuously optimised
- Dialectic relationship between technological and societal progress

## Global Trends

### Expanding and ageing population of empowered individuals

- urbanisation, mobility, technology diffusion, education, health care
- growth of the global middle class, reduced gender gap, “people power”

### Ever-more dynamic technological landscape

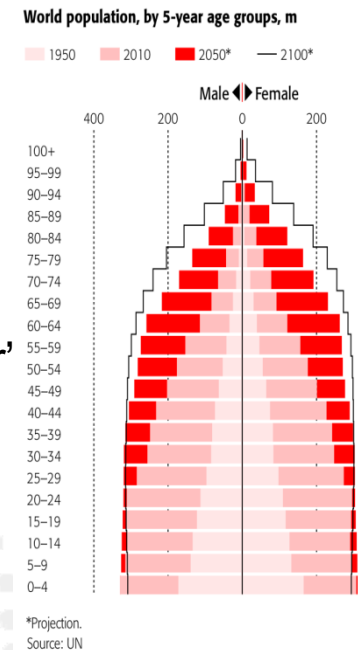
- Speeding up of scientific and technological innovation
- Convergence of technologies leading to societal paradigm shifts

### Increasing pressures on key resources in severe environmental conditions

- Growing demand for food, water and energy. Crossing planetary boundaries ?
- Potential negative trade-off and necessity for synergies

### Global Power shifts in a multipolar world

- Shift of geo-political/economic barycenter to dynamic Asia ?
- Multipolarisation, no hegemonic power. What governance ?
- Inter-state and intra-state security hurdles



## Space Contributions to European Challenges

### A new role for Space ?

- Creation of Space programs addressing EU societal needs
- Innovative downstream services integrating Space and social data

### Space as an essential tool for life on Earth

- Sustainable development, Smart Cities, Connectivity and Big Data
- Mobility: integrated and green transportation systems, hypersonic point to point travel

### Space spin-in and Space spin-off

- e-health
- Key Enabling Technologies, Human machine interactions



## Europe's global role

### Climate change

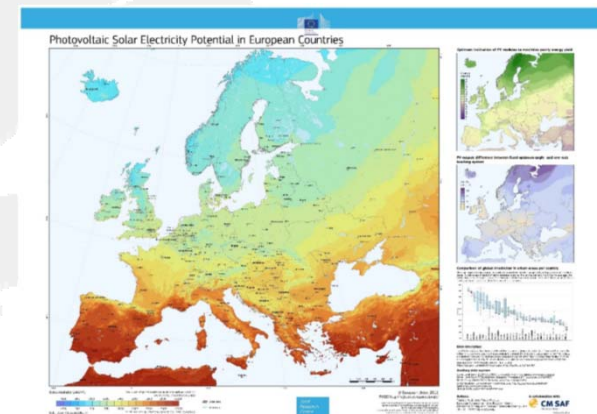
- European leading role in emissions monitoring
- The “Clean-Energy Moonshot” approach ?

### Energy and Infrastructures

- Full exploitation of renewable energy sources
- Infrastructures planning and sustainable development

### Earthquakes

- Innovative techniques for predictive analyses
- Global coverage services



## Europe's Tools to Seize the Future

### How to gauge societal needs?

- Virtual observatories
- Advocacy groups
- Social Media



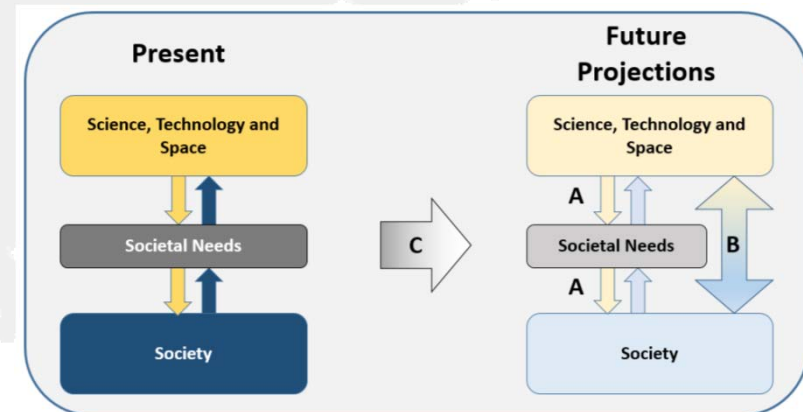
Integrating societal needs mapping

### How to address societal needs?

- Establishment of societal spending priorities
- Mutually enforcing public-private approaches
- Dialogue mechanisms to qualify and establish preference patterns among societal needs

### • How to make European society Future-proof?

- Innovation Europe
- Innovative Innovation Ecosystems
- Education system





## Conclusion

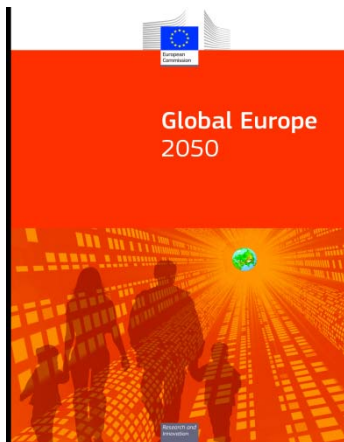
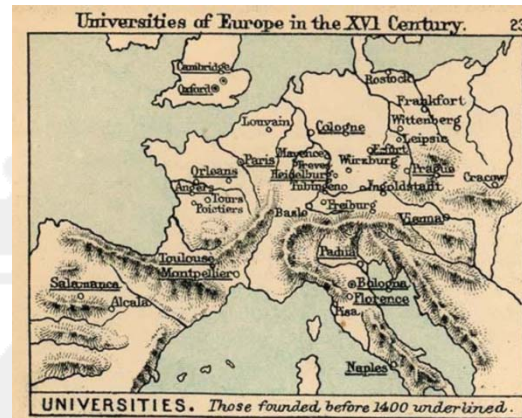
- The main relevant players and stakeholders in the European space community (and beyond) should establish dialogue and governance mechanisms to exploit the full potential of space for humanity in the future
- Societal needs should be identified, collected and monitored by public actors, involving all parts of society
- Europe should invest to foster productive innovation ecosystems, including Space programmes addressing societal needs.



European Commission

## Preparing the Commission for future opportunities

Foresight network fiches 2030  
Working document



# Thank you for your attention!

**“Your task is not to foresee the future, but to enable it.” - Antoine de Saint-Exupéry**

