Introduction to Monitoring of Changes

Paola Campus, European Science Foundation, France, pcampus@esf.org
The status of Planet Earth

In the last two Centuries our Planet has witnessed a number of critical changes, which progressively impacted the life of populations on a global scale.

**Human-Induced Changes**

- Industrial revolution
- Population increase
- Large-scale exploitation of natural resources
The status of Planet Earth
Hazards strike recursively our Planet

Paola Campus, ESF, Introduction to Monitoring of Changes, 3rd GEOSS Science and Technology Stakeholder Workshop, March 23-25, 2015, Norfolk, VA, USA
The status of our Planet Earth and Humanity under the threat of Global Change

The increase of world-wide communications in the last decades has increased the level of information about the threats associated to Global Change

But has this really increased awareness and resilience?
Resilience, sustainability and monitoring

How to increase resilience and support sustainable development?

A crucial step towards the development of an effective plan for increasing resilience and supporting sustainable development is based on the adoption of a comprehensive and interconnected monitoring of all the phaenomena and parameters which might help issue early warnings associated to significant environmental changes.

Paola Campus, ESF, Introduction to Monitoring of Changes, 3rd GEOSS Science and Technology Stakeholder Workshop, March 23-25, 2015, Norfolk, VA, USA.
Resilience and monitoring of changes
The issuance of early warnings is tightly related to the use of reliable networks having high operational standards and very low downtime.

All the available Global, Regional and Local networks should be used to achieve the following common targets:

1. Acquisition of high-quality data
2. Transmission of such data to operational centres in near-real time to assure a rapid analysis and identification of a risk increase.
Basic components for robust monitoring

1. Synergetic technologies and networks recording in real-time all the areas at risk on our Planet
2. Simultaneous data transmission to operational centres in near-real time
3. Optimized data analysis to rapidly identify a risk increase
4. Data sharing
Resilience and monitoring of changes

Pending questions and GEOSS

1. Which type of monitoring networks are available?
2. Which type of monitoring networks are missing?
3. What should be done to fill the gaps?
4. Is there any scattering/duplication in data monitoring?
5. How to reach an efficient integration/link of data coming from different networks?
6. How to standardize the level of data quality across the networks?
Resilience and monitoring of changes

Pending questions and GEOSS

Can GEOSS address the points above mentioned?

If yes, it would become easier to define the Essential Variables and the Key Indicators for each of the GEO Strategic Targets and develop a streamlined communication protocol with Policy Makers
Thank you