Sharing and updating scientific perspectives

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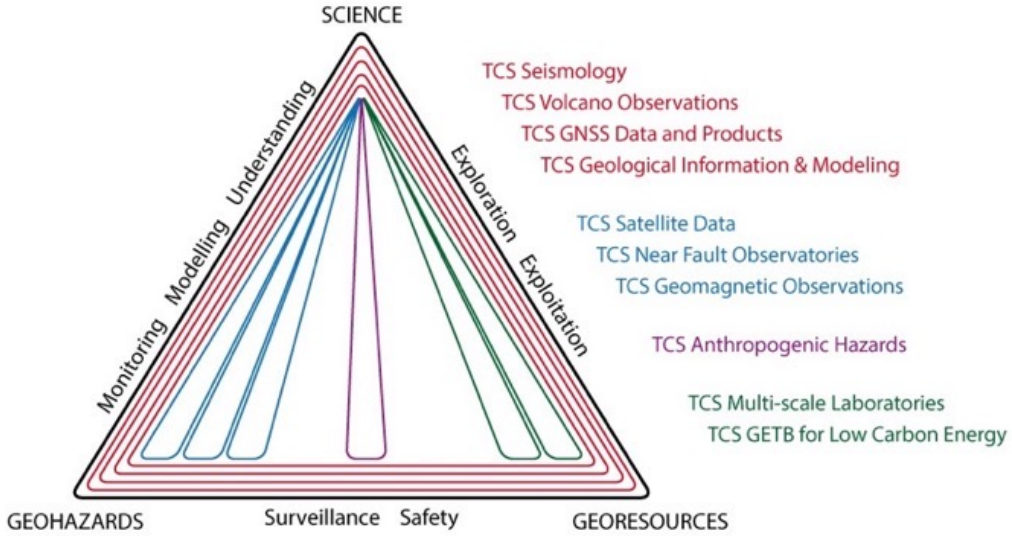
EPOS
EUROPEANPLATEOBSERVINGSYSTEM

The EPOS SP project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 871121

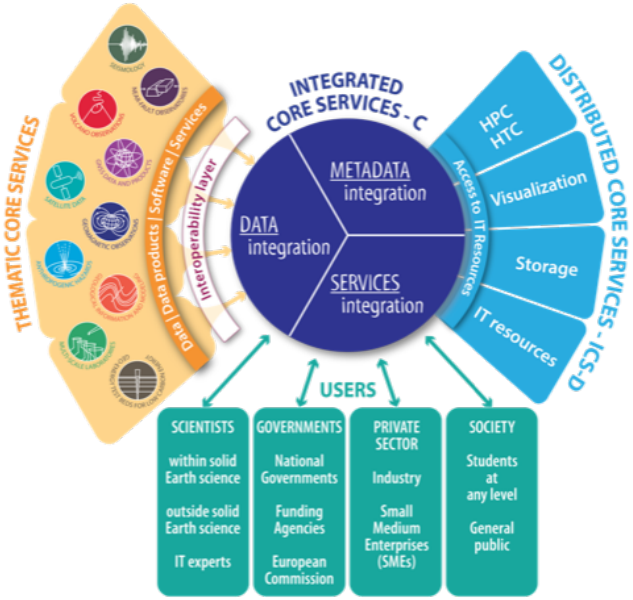
EPOS Vision

To ensure sustainable and universal use and re-use of multidisciplinary solid Earth science data and products fostering state-of-the-art reaserch and innovation.



EPOS Mission

To establish a sustainable and long-term access to solid Earth science data and services integrating diverse European Research Infrastructures under a common federated framework



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EPOS Approach to Long-Term Sustainability

- **Scientific Excellence**
  - ❖ Scientific perspectives
  - ❖ Scientific Impact
  - ❖ Science for society
  - ❖ Innovation

- **Sustainable operation**
  - ❖ RI key elements:
    - ✓ ECO
    - ✓ ICS-C
    - ✓ TCS
  - ❖ Technical readiness for operation (POT outcomes)
  - ❖ Effective Governance
  - ❖ interactions with users and stakeholders

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Landscape Analysis: Scientific Perspectives

Parameters to be used in the analysis

- **Providing access to solid Earth science data, products, software, and services (DDSS) to enable scientific research and serendipity**
  1. Number of DDSS elements entering in operational phase after validation and testing (POT)
  2. Number of Services declared in the Cost Book
  3. Number of new DDSS made available through ICS-C
- **Fostering multidisciplinary use of solid Earth science data (DDSS)**
  1. Monitoring integrated use of data
  2. Access to services for multidisciplinary use of data
- **Enabling cross-disciplinary use of solid Earth science data and products for Earth science**
  3. Data and services shared with ENV RIs
  4. Data shared with Space Agencies and EOS
- **Contributing to progress in hazard assessment and risk mitigation**
  5. Data and Services for hazards & Risk
  6. Data and Services for Anthropogenic Hazards

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Landscape Analysis: Scientific Perspectives

Parameters to be used in the analysis

- **Fostering the implementation of services for society**
  1) DDSS for forecasting and predictability
  2) Early Warning and Alert: test beds and information
- **Strengthening Computational Earth Science (CES)**
  3) Services for CES (ICS-D): access to HPC
  4) New products for fast hazard scenarios
  5) Engagement in Digital Twins and Digital Earth initiatives
- **Contributing to IT Innovation and FAIR Data Management**
  6) New services for MEDATA management
  7) Existing plans for FAIR data management
  8) Existing (shared) data management plans
- **Strengthening international collaborations and global dimension of research in SES**
  9) Assessing EPOS participation in global initiatives (GEO,..
  10) New frameworks for TNA
- **Training and dissemination on Solid Earth Science**
  11) Existing Training plan and FAIR training material
  12) Communication Plan adopted and implemented

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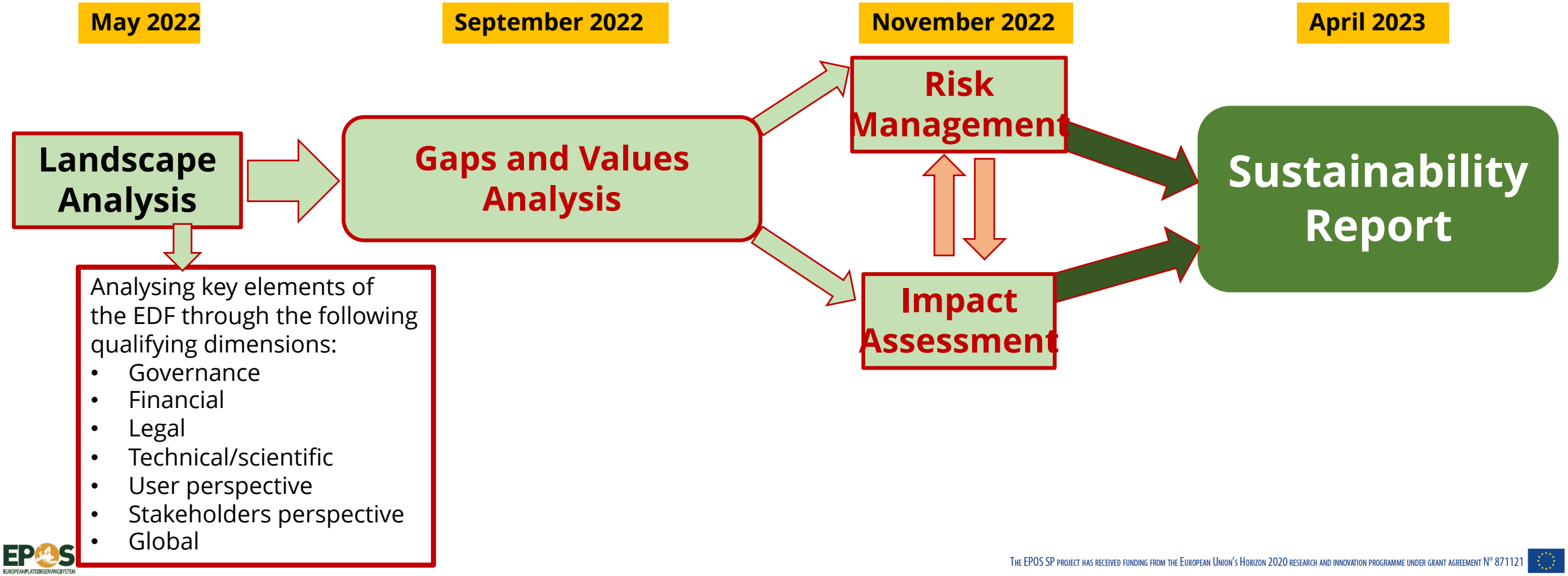
EPOS Roadmap to Long-Term Sustainability

- EPOS SP mail deliverable: Long-Term Sustainability Report
- From construction to sustainable operation of the RI addressing Long-Term Sustainability



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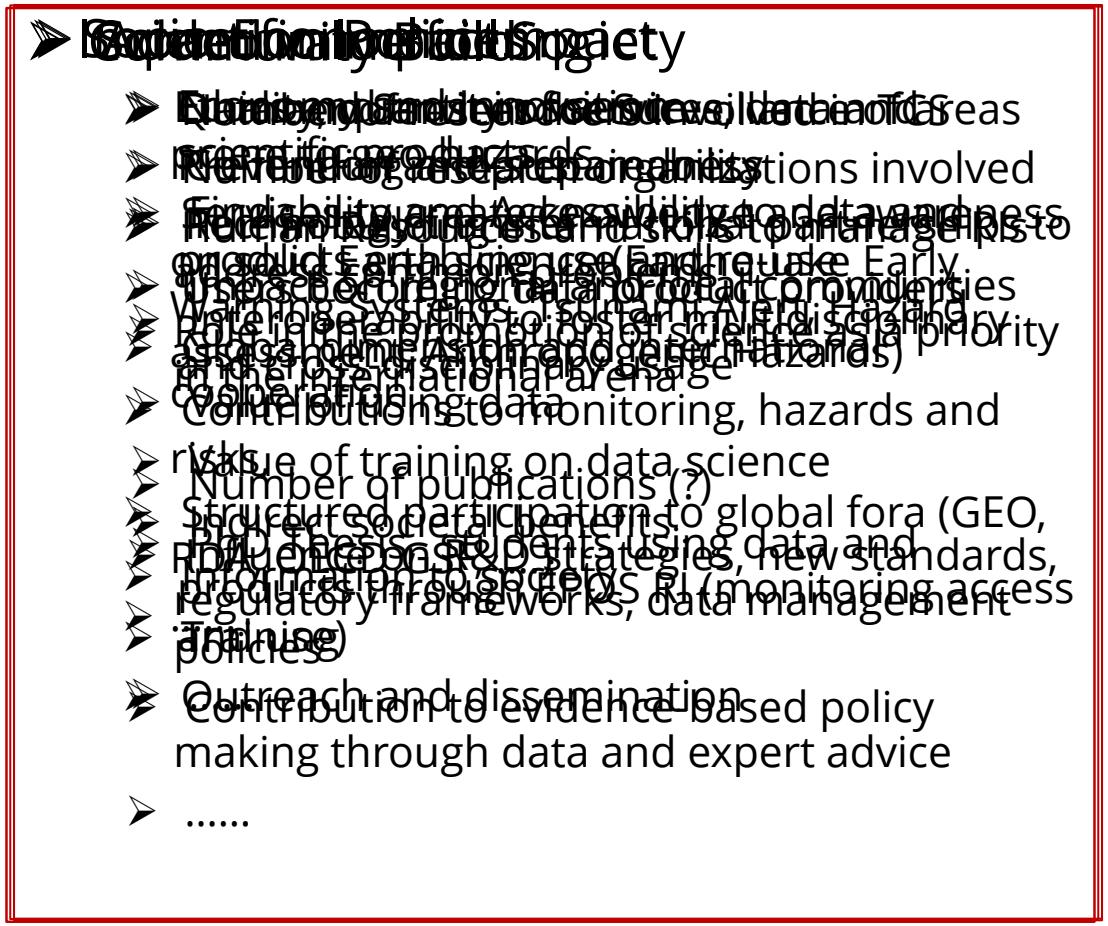
Scientific Impact

RI's impact assessment is not a silver bullet or be a sporadic initiative

Impact assessment in specific areas

Impact Areas

- Scientific Impact
- Community Building
- Added value for Society
- Socio-Economic Impact
- Impact on Policies



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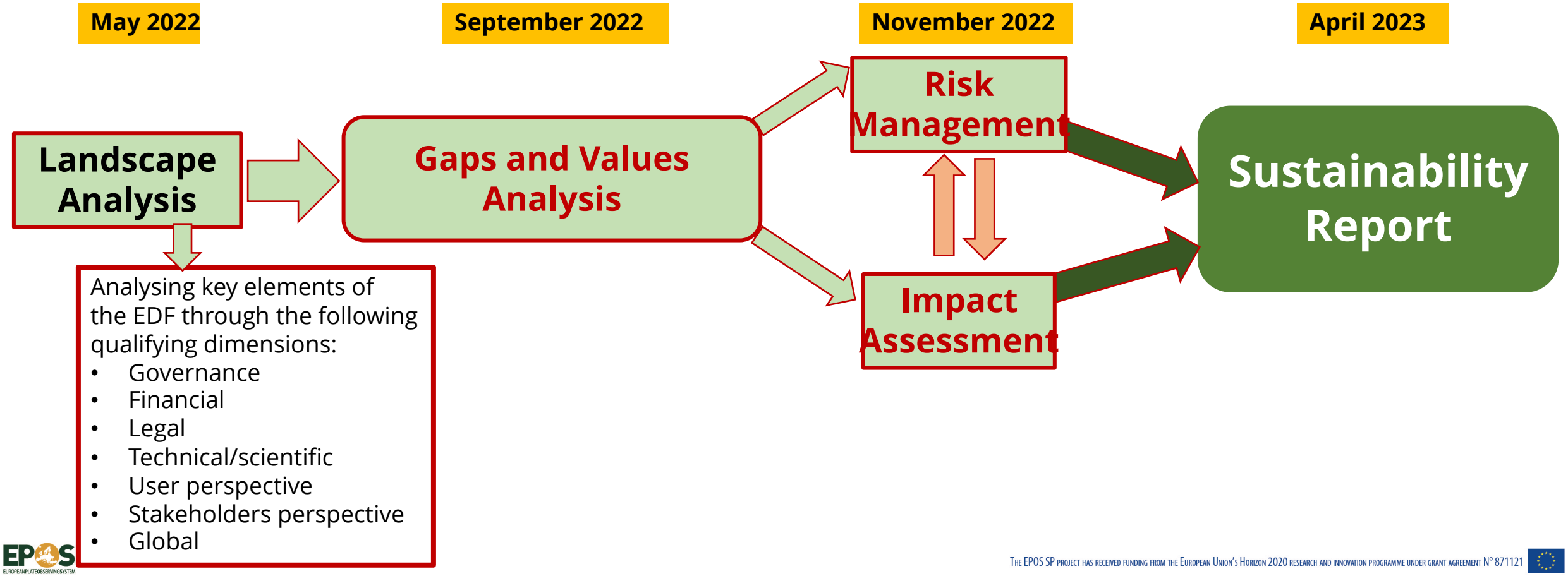
Connections between Impact and Risks

- Risk Management Policy relies on Risk Register, mitigation and contingency actions
- Evolution of Risks depends on gaps and added values, but also on the evolving nature of impacts



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Science for society: moving beyond 2022

- Impact on science is the driver for contributing to a science for society
- Use of aggregated data sets
- Fast supercomputing (Cheese projects) and near-real time applications to emergency management (Digital Twins: DT-GEO, GEO-INQUIRE)
- National Research Infrastructures have been deployed to monitor areas prone to natural and anthropogenic hazards: EPOS can provide new scientific products and tools to improve monitoring and use of aggregated data sets
- Structuring the communities (Near-Fault Observatories, Tsunami,...) to provide new products and services to foster hazard assessment
- New services for geo-hazards, Anthropogenic Hazards and multi-hazards
- Interactions with public and private stakeholders

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Innovation

- Common interpretation of Innovation (ESFRI):
  - RI-Industry cooperation (supplier vs user)
  - Technology Infrastructures and Technology Transfer
  - Grand Societal Challenges
  - Role of intermediaries (Industrial Liaison Officers)
- Innovation refers to renewing, changing or creating more effective processes, products or ways of doing things
  - We need to find a way to demonstrate our contribution to innovation
- Innovation in data science and FAIR data management (sustainable operation and shared solutions and tools)

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Toward a science program

- The EPOS scientific perspectives are proved to be still valid and comprehensive
- The gap and added values analyses of Scientific Perspectives will provide important implications to define the user strategy
- The outcomes of the Pilot Operational Testing have to provide clear indications for readiness of sustainable technical operation
- Assessing Scientific Impact and associated risks is fundamental to identifies key specific objectives of the EPOS RI.
- All this will allow EPOS ERIC to identify key objectives:
  - Operating a portfolio of integrated services that meet the data needs of scientists at European scale
  - Community driven service uptake, support standards development, and connect with global experts in SES
  - EPOS Core Services and Data Providers share solutions to govern the provision and the creation of new scientific products (also using Computational Earth Science)
  - Fostering use of multidisciplinary data and services in SES and cross-disciplinary applications with other domains
  - Connections with science users in academia and industry to EPOS open, integrated service network

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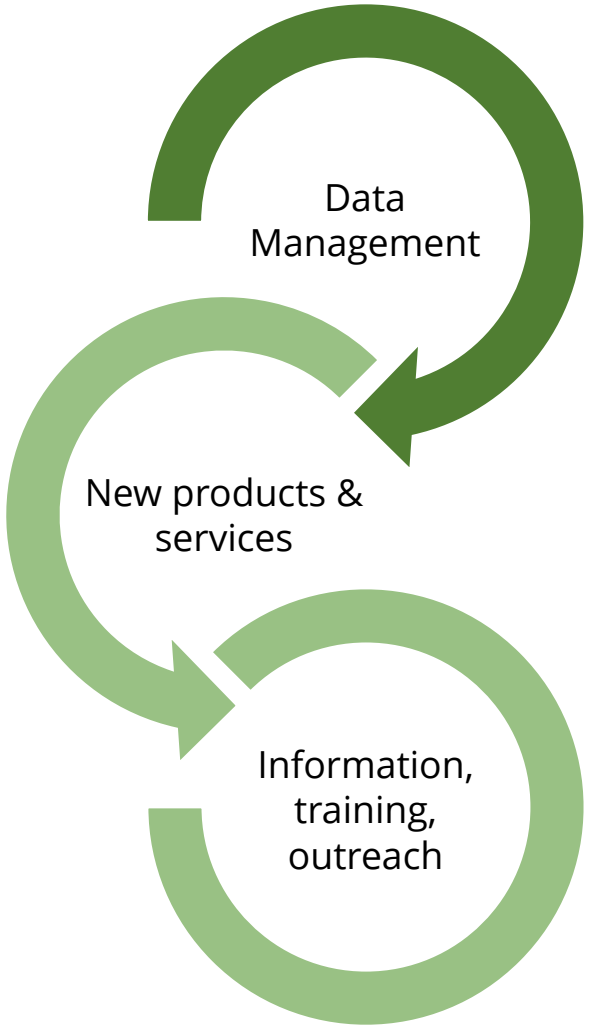
Innovation Chain



Innovation refers to renewing, changing or creating more effective processes, products or ways of doing things

- Sustainable management to Find, Access, use and Re-use
- New products and discoveries by using aggregated multidisciplinary datasets
- Testbeds for alert, early-warning, geo-hazards, risks
- Training and outreach
- Delivering scientific information to non-scientists
- Computational Earth Science Applications (HPC, HTC, Artificial Intelligence)

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Website

Newsletter

Social Media

Thank You

Users engagement
Stakeholders interactions
global visibility
Solid Legal framework
Technical readiness
Financial viability
Effective Governance

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