



GROUP ON
EARTH OBSERVATIONS



Data sharing within the GEO Geohazards Supersites global Network

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Chair of the Scientific Advisory Committee of the Geohazard
Supersites and Natural Laboratories initiative

The GEO-GSNL initiative

An international partnership aiming to improve, through an **Open Science** approach, **monitoring and research** on **seismic/volcanic** interest areas called **Supersites**, providing better **scientific information support for Disaster Risk Management**.

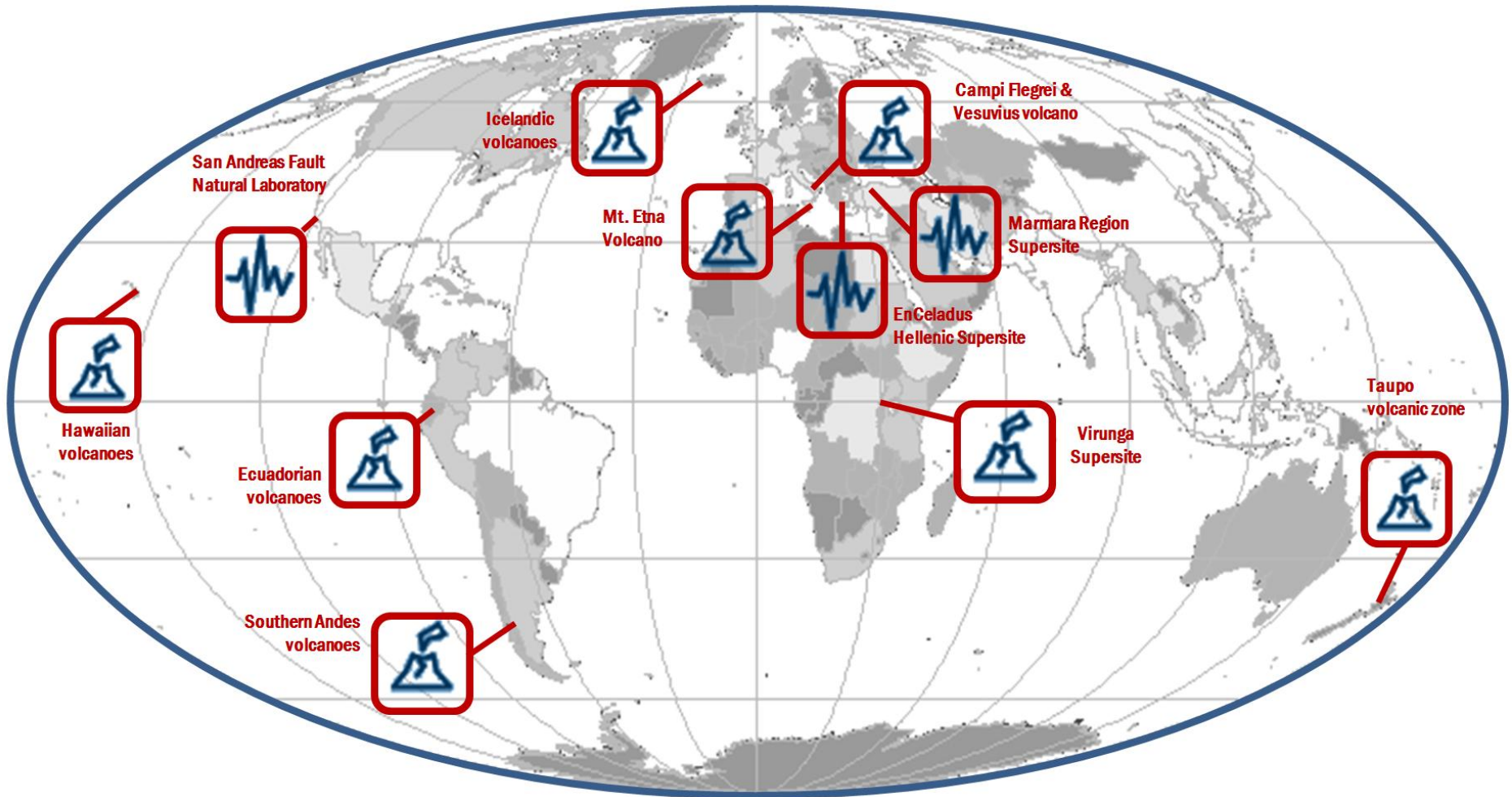
GSNL contributes to Priority 1 of the Sendai Framework for DRR.

The partnership

- The scientific community
- The in situ data providers
- The satellite data providers



The Supersite network

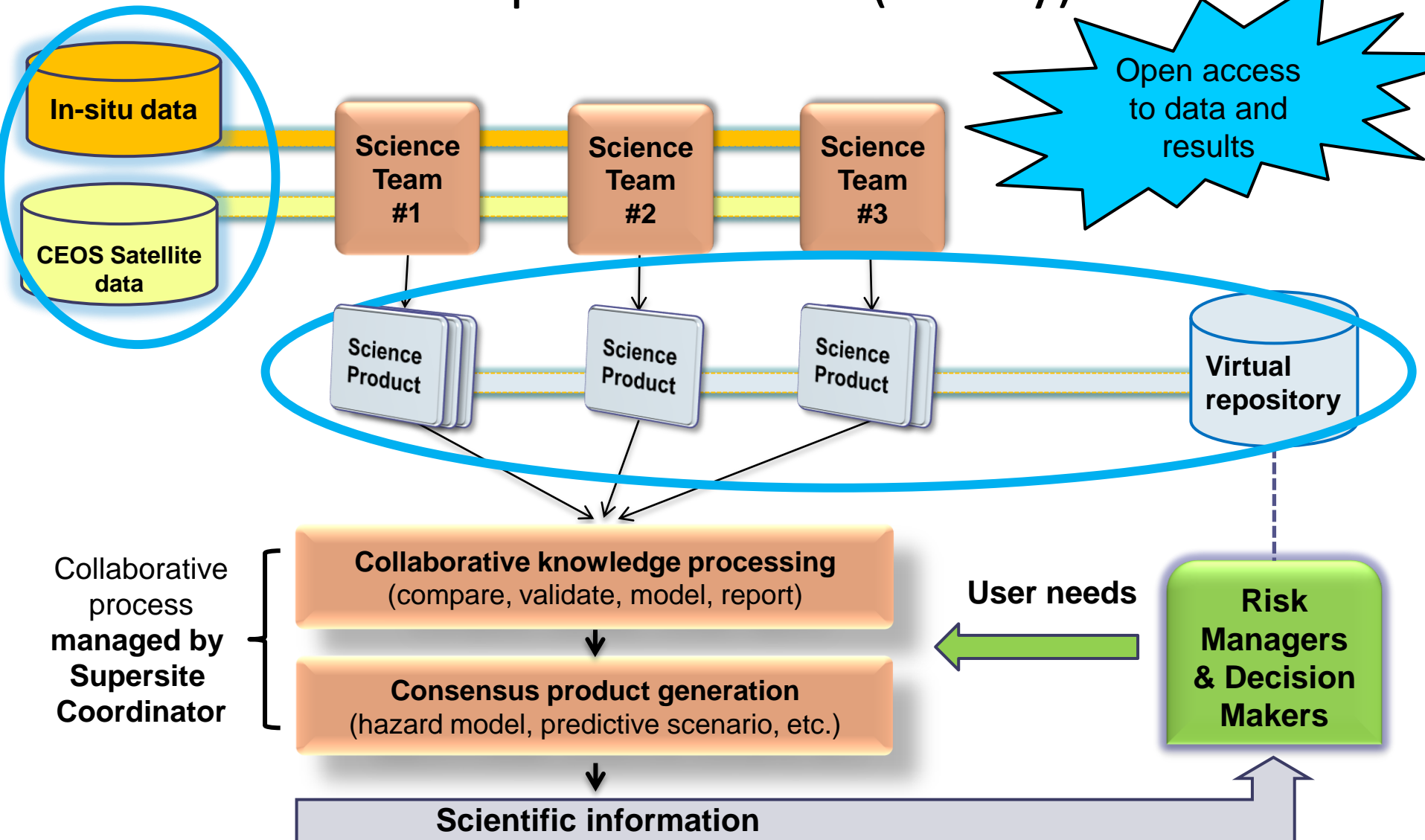


Permanent Supersites

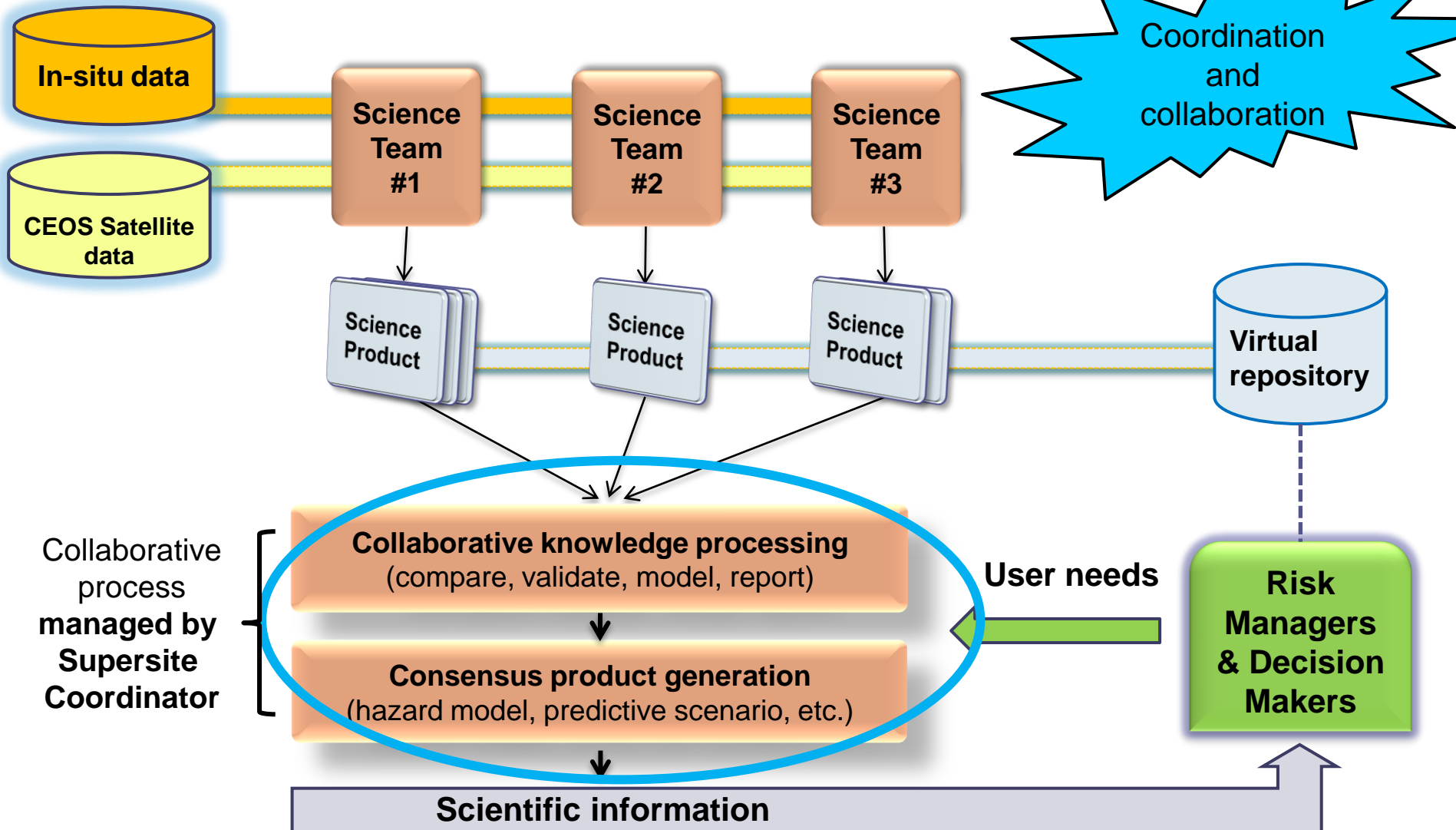
	Supersite	Coordinator	Institution
1	Hawaiian volcanoes	M. Poland	USGS-HVO, USA
2	Icelandic volcanoes	F. Sigmundsson,	Univ. of Iceland
3	Etna volcano	G. Puglisi	INGV - Italy
4	Campi Flegrei/Vesuvius	S. Borgstrom	INGV - Italy
5	Western North Anatolian Fault	S. Ergintav,	KOERI, Turkey
6	Taupo Volcano	I. Hamling	GNS Science, NZ
7	Ecuador volcanoes	P. Mothes	Inst. Geofísico, Ecuador
8	Corinth Gulf/Ionian Islands	A. Savvaidis	ITSAK, Greece
9	San Andreas Fault Nat. Lab.	C. Wicks	USGS, USA
10	Southern Andes volcanoes	L. Lara	SERNAGEOMIN, Chile
11	Virunga volcanoes	C. Balagizi	GVO, DR Congo

Supersites are managed by institutions which have a national mandate to provide scientific support to government DRM agencies

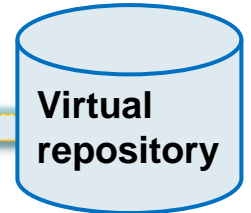
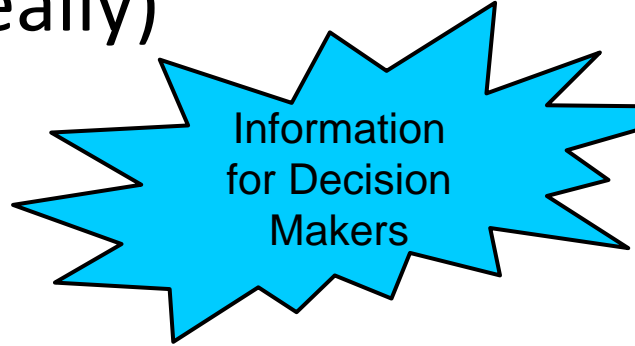
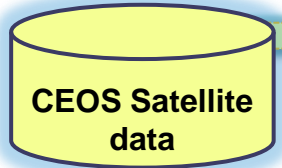
How a Supersite works (ideally)



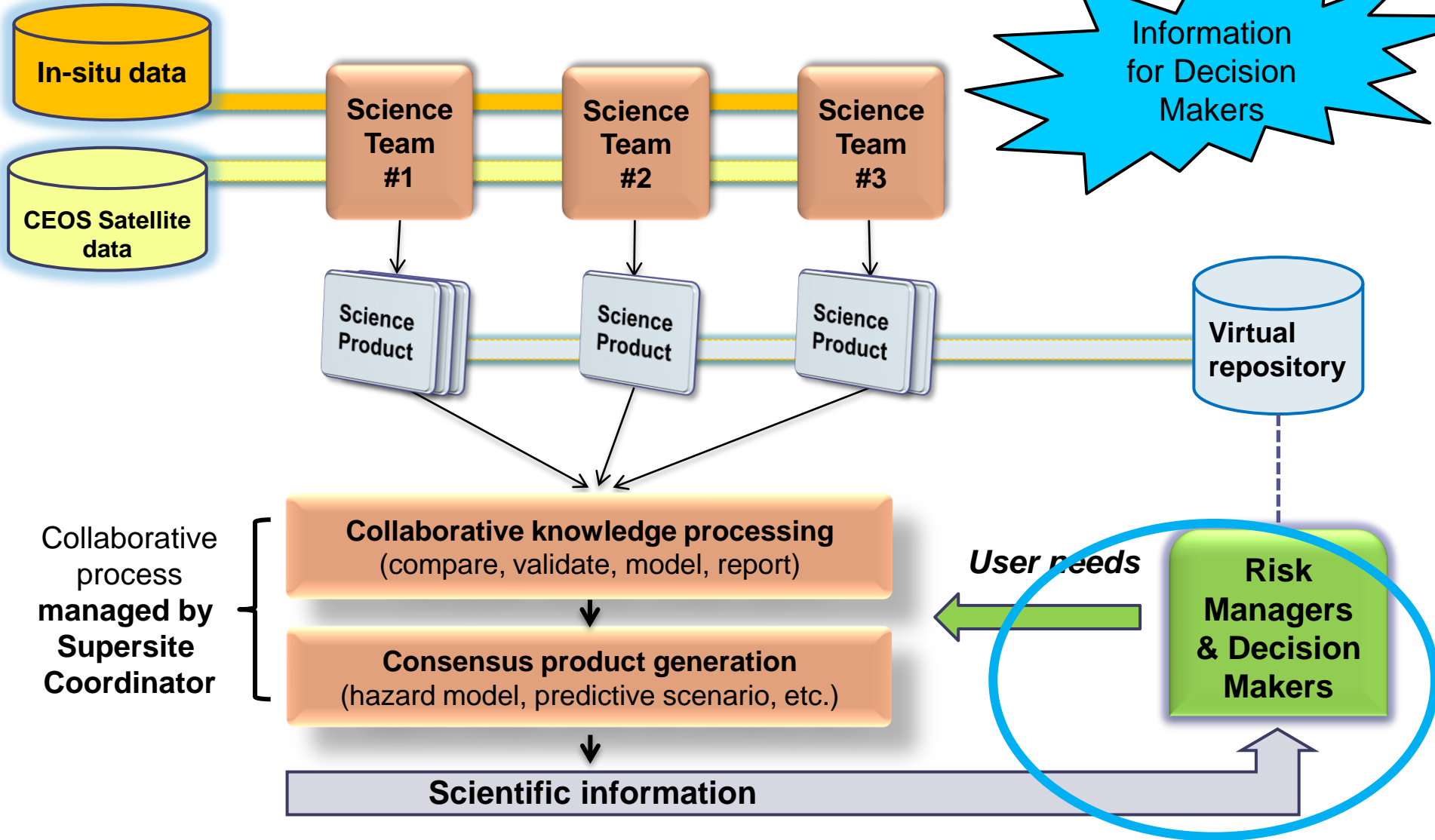
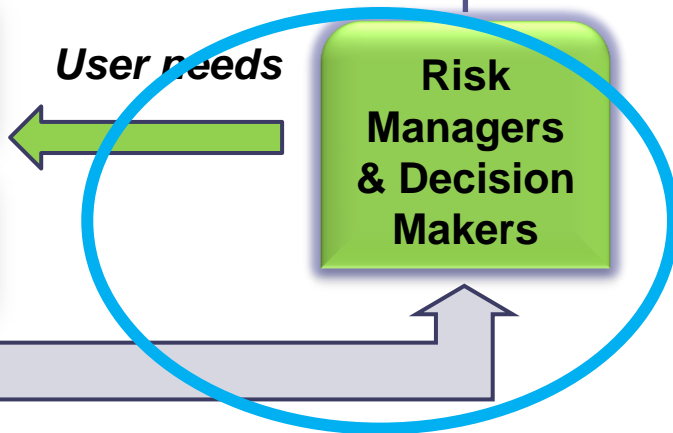
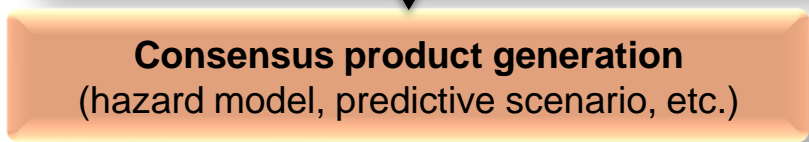
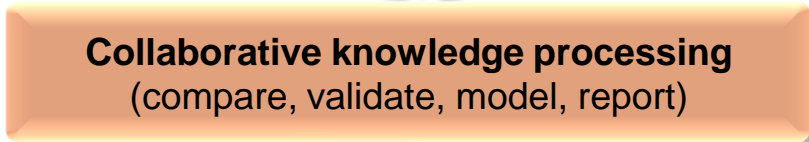
How a Supersite works (ideally)



How a Supersite works (ideally)



Collaborative process managed by Supersite Coordinator



Supersite Data Sharing

- Each Supersite community provides access to the local data and scientific results according to the general GSNL Data Policy Principles (see later)
- Supersites may use locally developed Data infrastructures or take advantage of larger community infrastructures made available by the GSNL partners (e.g. UNAVCO, EPOS, ESA-GEP)
- GSNL promotes open access also to scientific results (products), since these provide the most effective information support to decision makers
- Given the different local conditions at each Supersite, the Open Data sharing is a work in progress

GSNL Data Policy Principles

- Data, metadata and research products shall be encoded using widely accepted formats and **openly shared** online without cost (or at the cost of reproduction);
- All shared data should be accompanied by a **data licence**, and referred to by appropriate **Persistent Identifiers** to facilitate citation and attribution.
- Data, metadata and products should be **discoverable** through the GEOSS Portal;
- All shared data, metadata and products shall be **maintained and made available** for at least the duration of the Supersite, with minimum time delay.

GSNL successes

- While the Open Data Sharing is still not fully achieved for all data types at all Supersites, there is now a general awareness of the benefit of Open data and Open Science in general
- The GSNL initiative evolved from simply a way for scientists to access more EO data for their research, to a network of communities aiming to generate new scientific results to benefit DRM at the local scale
- For some Supersites the strong contributions from the international scientific community results also in a very effective local capacity building for hazard monitoring and assessment
- The well defined institutional role of each Supersite Coordinator in the national DRM frameworks provides a very effective way to ensure user uptake of scientific support products during both Disaster Prevention and Response

Way forward

- As more Open Data are provided for each Supersite, we need to ensure that they are all discoverable in GEOSS; presently this is prevented by the limited use of data infrastructures by the Supersites. We also need to increase the access to research results, beyond the geophysical data.
- We need to strengthen the coordination of the GSNL network with the GEO Data sharing working group and the GCI management
- Most Supersites are sustained by in kind resources. We need to find ways to ensure cash funding to the Supersites, at least for the development of further monitoring networks (e.g. for the Ecuador and Virunga Supersites which under-developed) and for the implementation of Data infrastructures able to guarantee easy digital data access

Supersite numbers

- ❖ Over **3500 satellite images** per year are provided by CEOS to the Supersites
- ❖ With over **30 volcanoes** Iceland has the largest Supersite
- ❖ Over **100 scientists** participate to the Supersite initiative
- ❖ **18 M€** was the direct funding obtained by the European Supersites
- ❖ Nearly **6 M€/year** is the value of the in-kind support by the GSNL partnership

