



IMPETUS

Leveraging the power of remote sensing for the implementation of climate change adaptation and mitigation in Europe

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UiT The Arctic University of Norway

ESA Living Planet Symposium

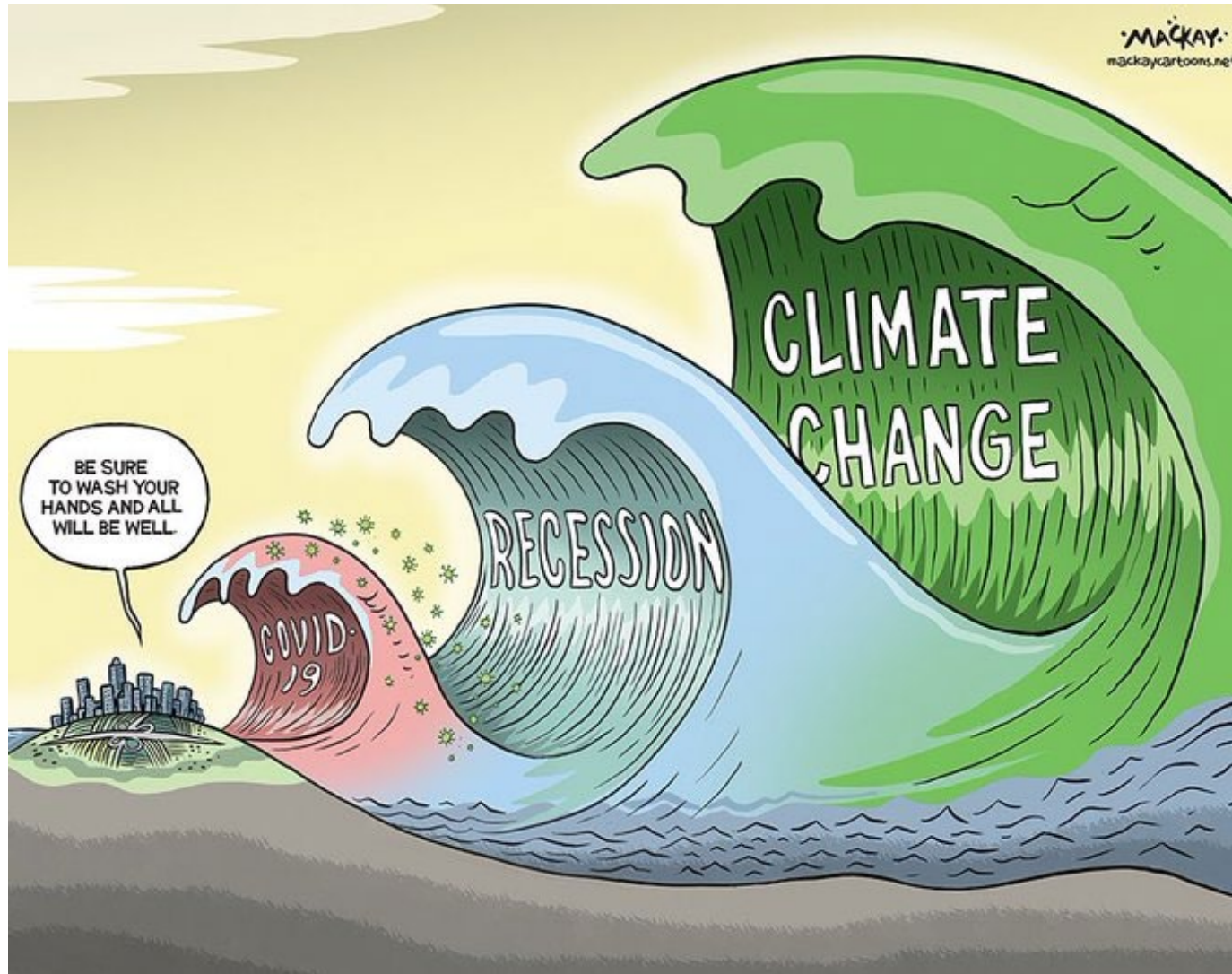
Bonn, 25 May 2022



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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101037084. Funded in the EU Horizon 2020 Green Deal call



93%
of Europeans
consider climate change
a serious problem

2015-2020
the hottest years on
record

**Adaptation &
mitigation**
is key strategy

Cartoon: Graeme MacKay,
mackaycartoons.net

The EU strategy for climate change adaptation and mitigation

Better informed
decision-making

Action to protect
communities and
the planet

Supporting
vulnerable sectors
and businesses



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Turning climate commitments into action



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The IMPETUS project:

*Dynamic information management approach
for the implementation of climate resilient
adaptation packages in European regions*



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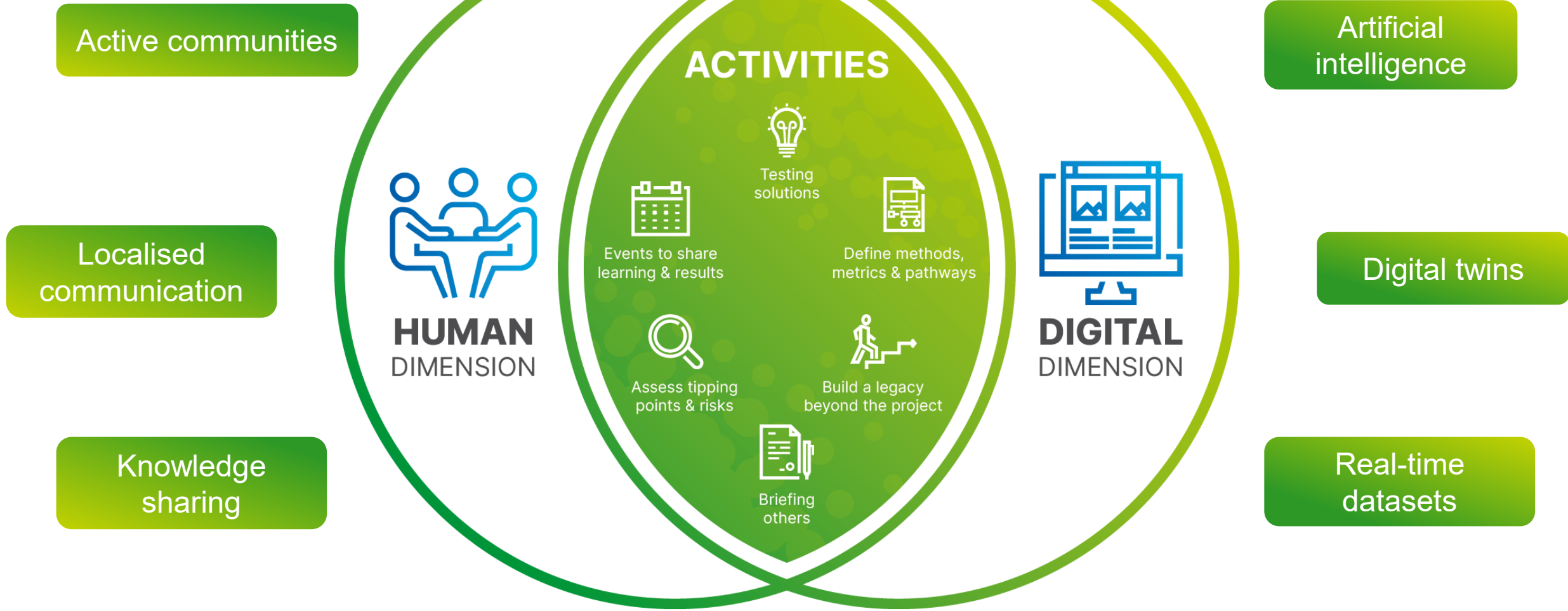
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Supporting vulnerable sectors and businesses - more resilience

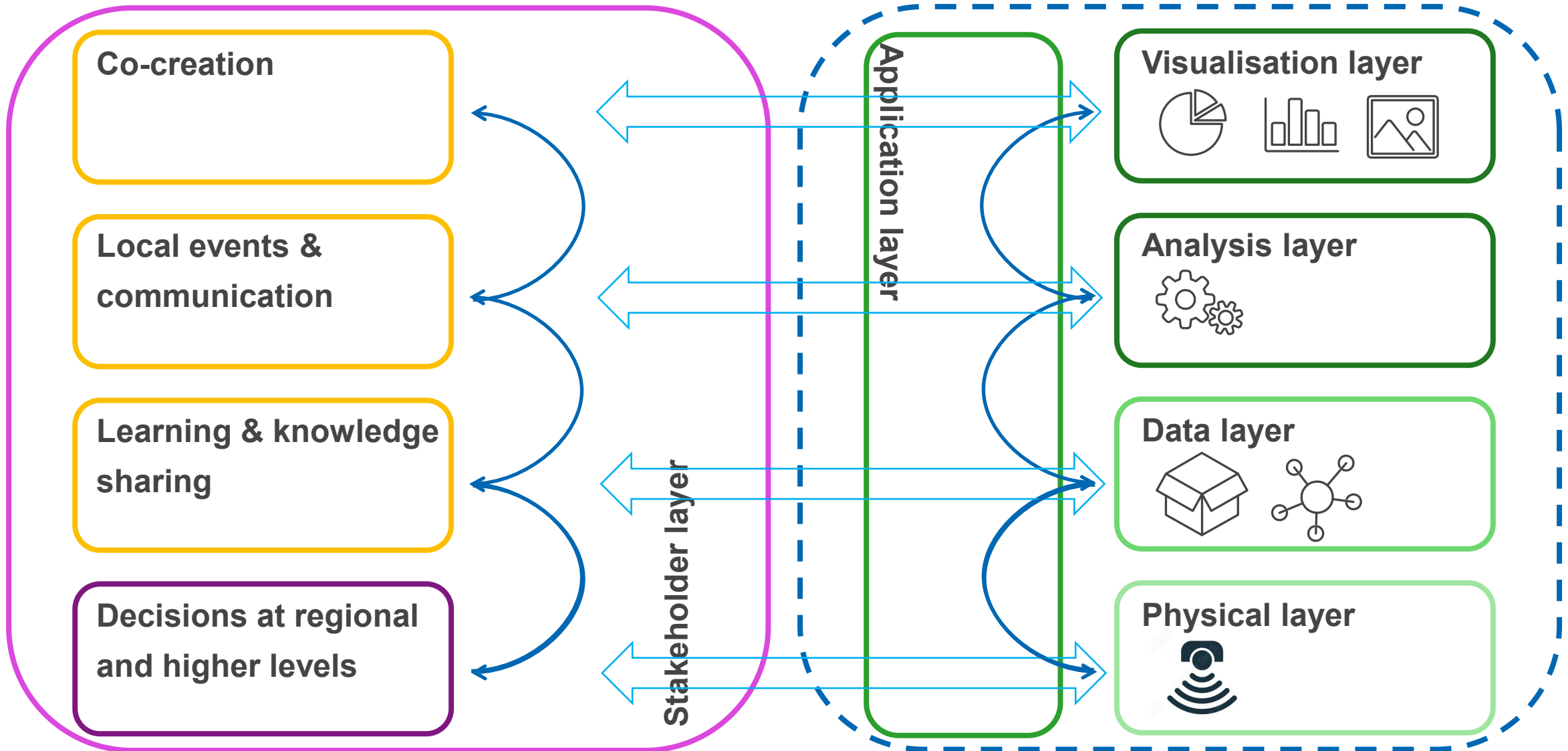
- Navigating challenges**
to livelihoods & assets at risk
- Developing a transition for Economy and Ecology**
- Implementing innovation**
technical & non-technical



Boosting knowledge about resilience – the heart of IMPETUS



Resilience knowledge boosters design



The solution: overall approach

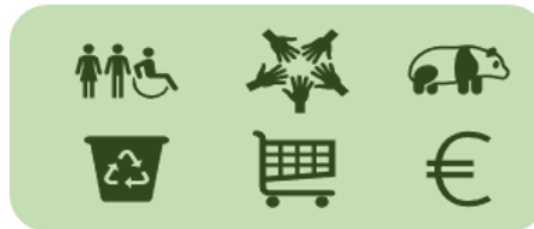
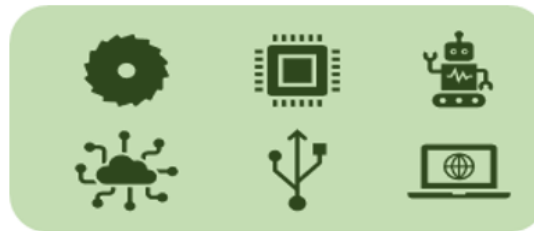
Resilience Knowledge Boosters

Local & regional



Quintuple Helix
stakeholders

Design | co-create | monitor
| adjust | (re)design



Adaptation pathways

Policy responses and solution portfolio



Innovation Packages

One per each demo-site

- **Synergetic with KCS** and other social concerns.
- **Risk assessment and cost-benefit analyses.**
- **Sustainable**, stakeholder-agreed.
- **Socially relevant**, elicits behavioural change.
- **Dynamic management** for impact assessment and fast rectification.

Open data space | Transboundary RKBs for multiple governance levels

'Resilience Knowledge Boosters' in more detail

European & International Climate Adaptation Strategy



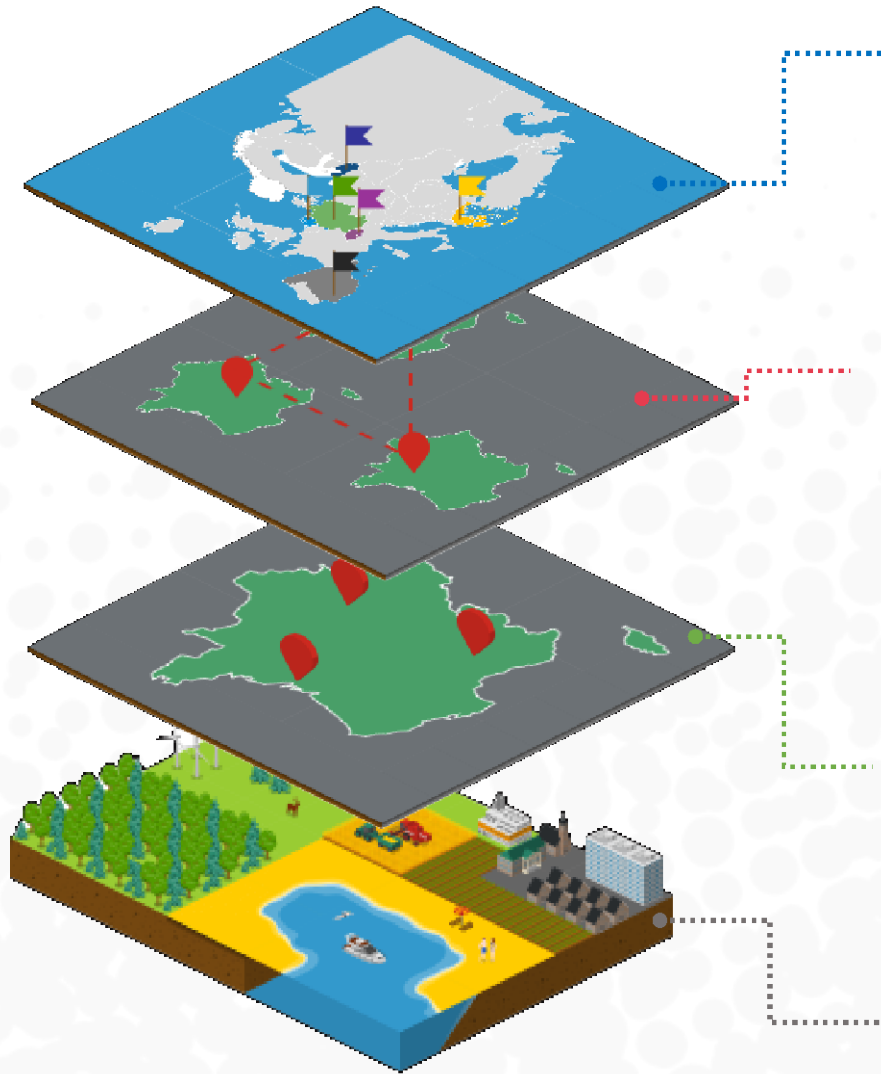
National & Transboundary Climate Adaptation Strategy



Regional Climate Adaptation Strategy



Local Climate Adaptation Strategy

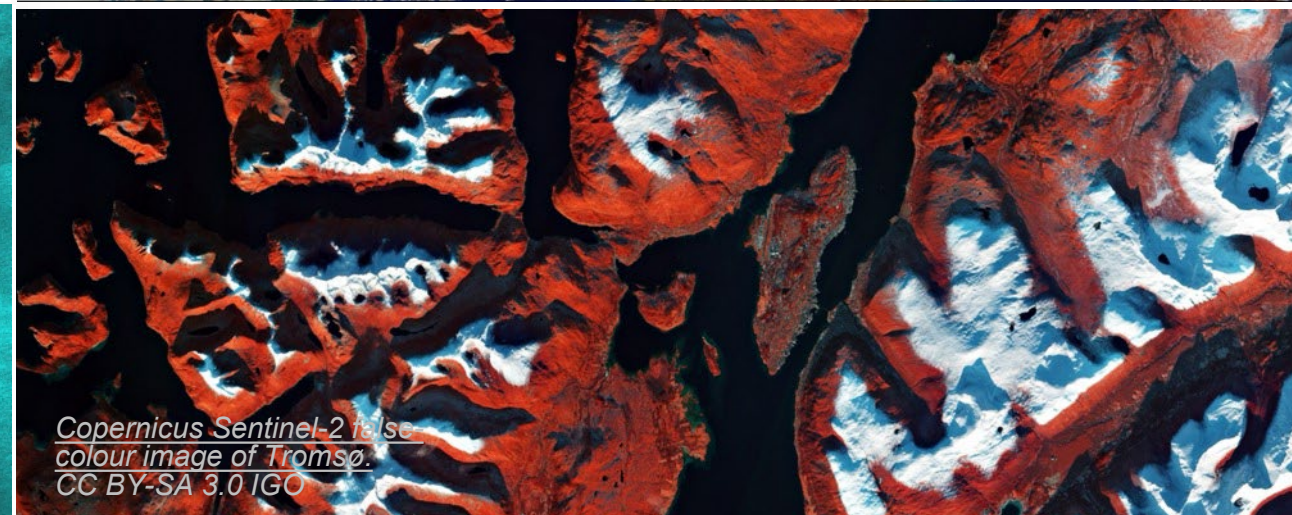
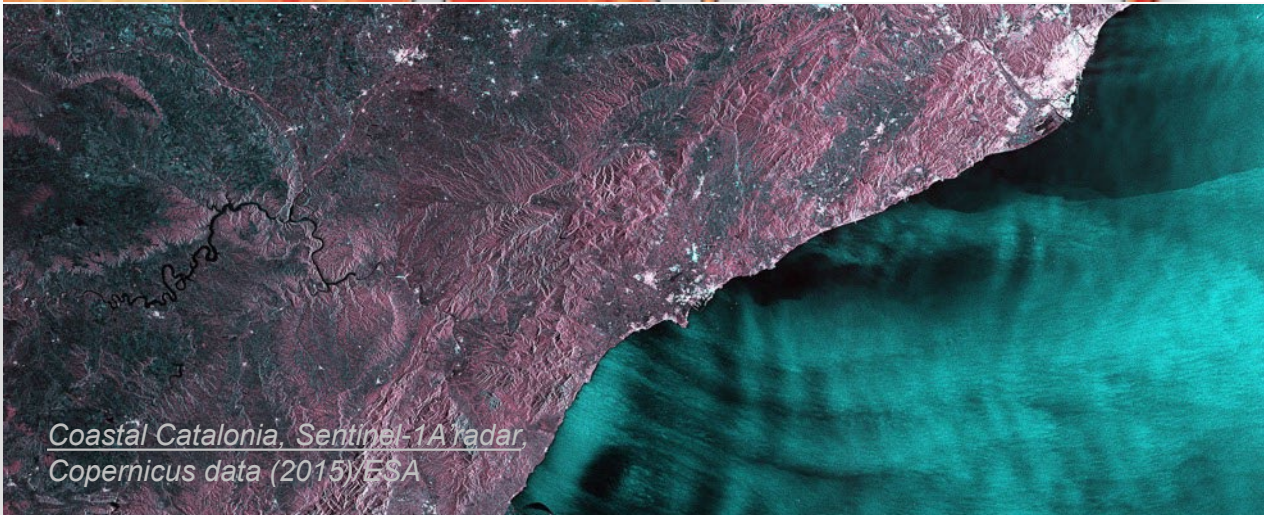
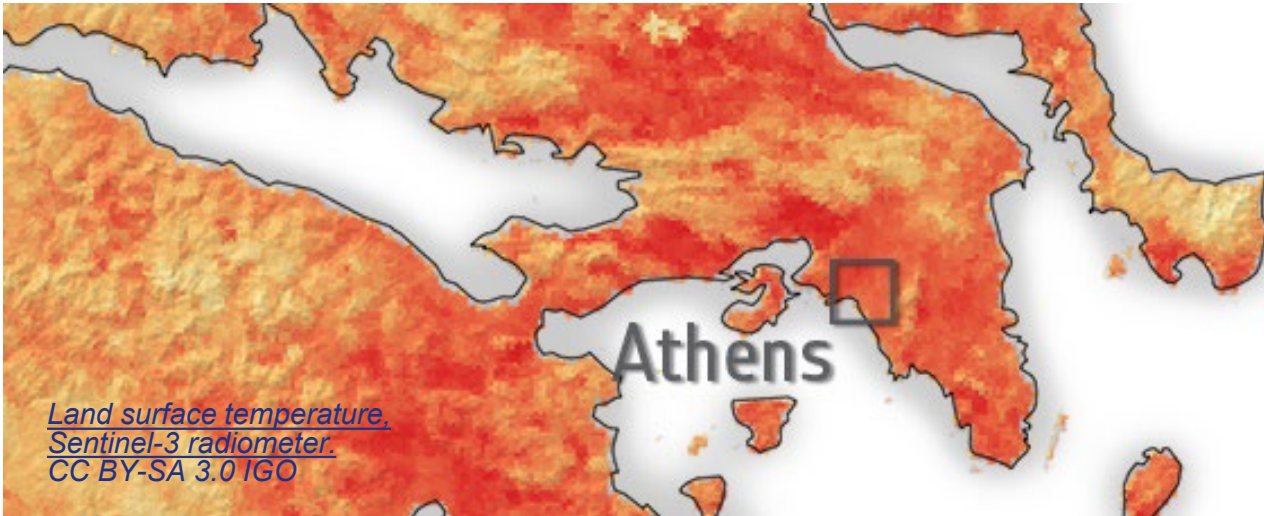


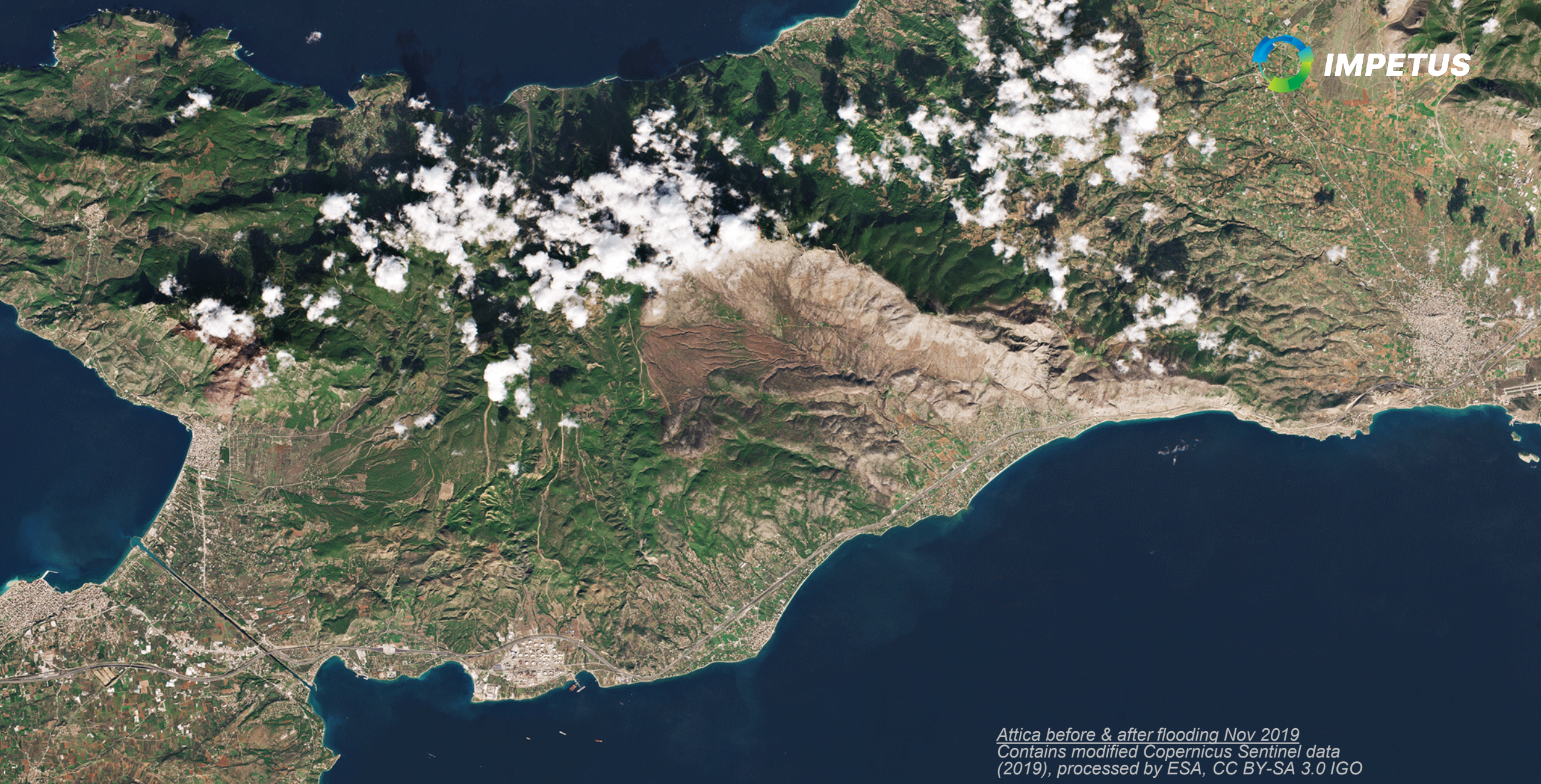
- European & International strategic goals
- Transboundary RKBs, Innovation packages & adaptation pathways
- Knowledge-base of Evidence, Good practices
- Cross-national impact assessment models and solutions
- Quintuple Helix stakeholder participation

UPSCALING | FEDERATED RKBs

- Local-regional RKBs for decision-making
- Regional Economic Schemes
- Implementation of R&I solutions
- Specific innovation Packages & Adaptation Pathways
- Risk Assessment models and tools
- Consensus decisions, win-win solutions
- Quintuple Helix stakeholder participation

Benefits of remote sensing





*Attica before & after flooding Nov 2019
Contains modified Copernicus Sentinel data
(2019), processed by ESA, CC BY-SA 3.0 IGO*

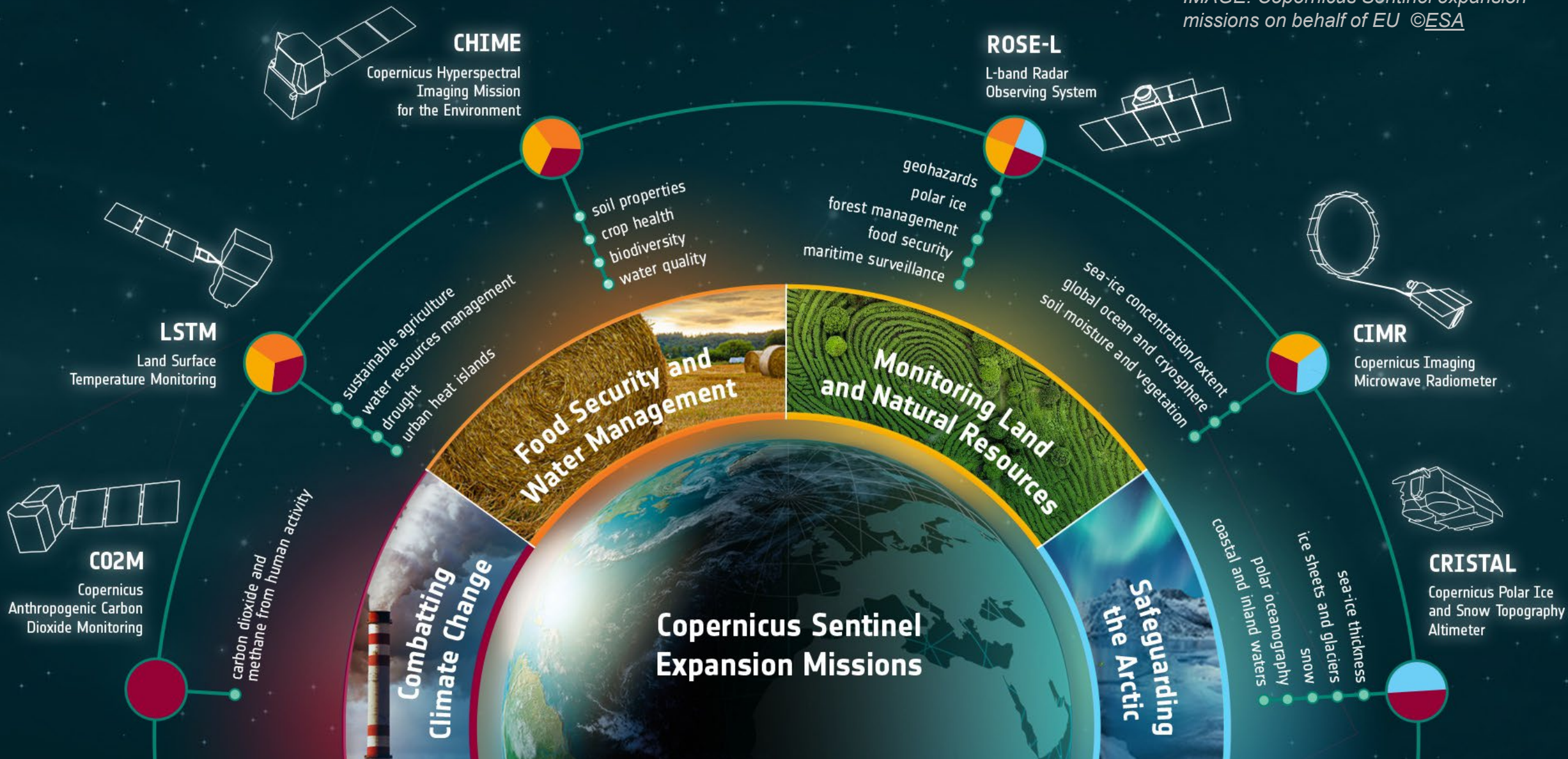


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UiT Norges
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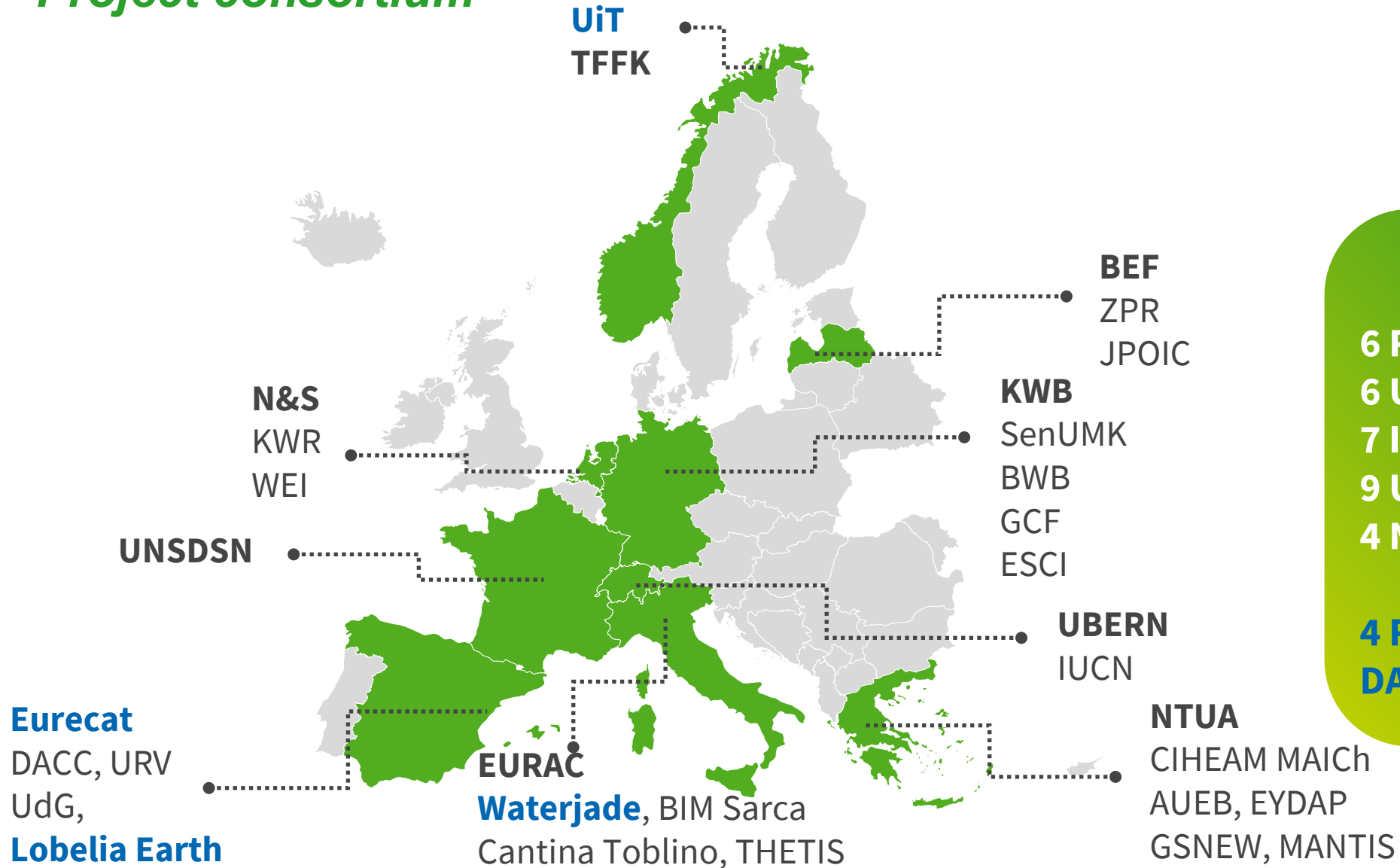
Climate adaptation & mitigation in all EU biogeographical regions

-  **Arctic**
Troms & Finnmark, NO
-  **Atlantic**
Zeeland & Rijnmond, NL
-  **Boreal**
Zemgale region, LV
-  **Coastal**
Catalonia, ES
-  **Continental**
Berlin metropolitan region, DE
-  **Mediterranean**
Attica region, GR
-  **Mountainous**
Valle dei Laghi, IT



-  Sea level rise
-  Flooding risk
-  Water scarcity
-  Marine storms
-  Fires
-  Biodiversity loss
-  Health diseases
-  Temperature increase
-  Avalanche increase
-  Extreme storms

Project consortium



6 RTOs
6 Universities
7 Industrial Actors
9 Utilities & Authorities
4 NGO & Associations

4 REMOTE SENSING / DATA SPECIALISTS



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Thank you

Any questions?

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