



Leveraging the EO Services Industry for Sustainable Economic Development

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EARSC

European Association
of Remote Sensing
Companies



About EARSC

- Promote the EO services industry
- Help develop the market for these services
- Facilitate interaction between industry stakeholders

135+ members from 25 countries covering the whole Earth Observation value chain



Highlights from the 2023 EARSC Industry Survey



772

EO Companies

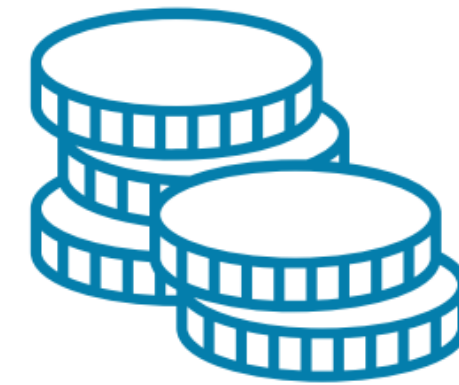
Up from 746 (+3.5%)
year on year



13796

Employees

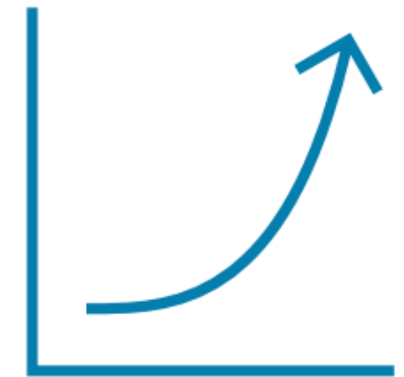
Up from 12085
(+14.2%)
year on year



€ 1.79b

Revenues

Up from €1.6b
(+10.9%)
year on year



7.5%

Growth rate

over the last 5 years

Overview of the Sentinel Benefits Study (SeBS)

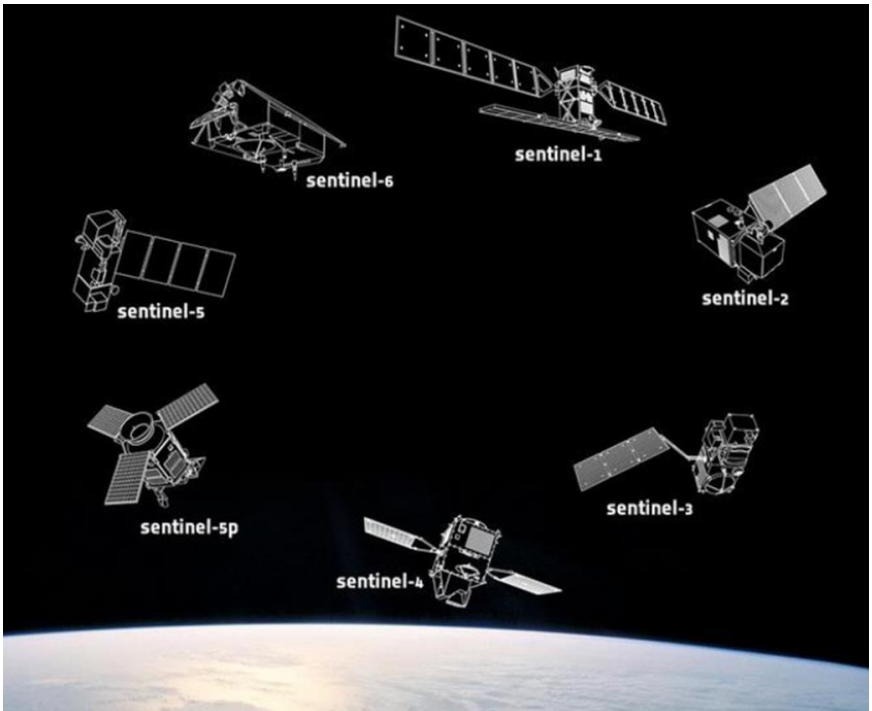
- ✓ SeBS uses a **bottom-up approach** – analysis of benefits from using Sentinel data developed as an alternative to wide-ranging, top-down cost-benefit studies.
- ✓ Analysed **over 30 selected cases** being sufficiently mature for a sound analysis with committed support throughout the user's organisation (whether public or private).
- ✓ Development of a **sound methodology** for measuring the value of EO and a rich portfolio of cases where the evaluation of the benefits has moved beyond “just” economics to include also benefits that cannot be easily monetized (environmental, regulatory etc).
- ✓ **Cross-cutting analyses**, leveraging on understandings developed within each case, leads to a rich set of further insights regarding organisation's adoption of the technology.
- ✓ A **Transversal analysis** shows that benefits are specific to each case (even if the application is the same).
 - The extrapolation of benefits from one case to another cannot be directly applied without due consideration of all boundary conditions.

Sentinel Benefits Study: Our Methodology

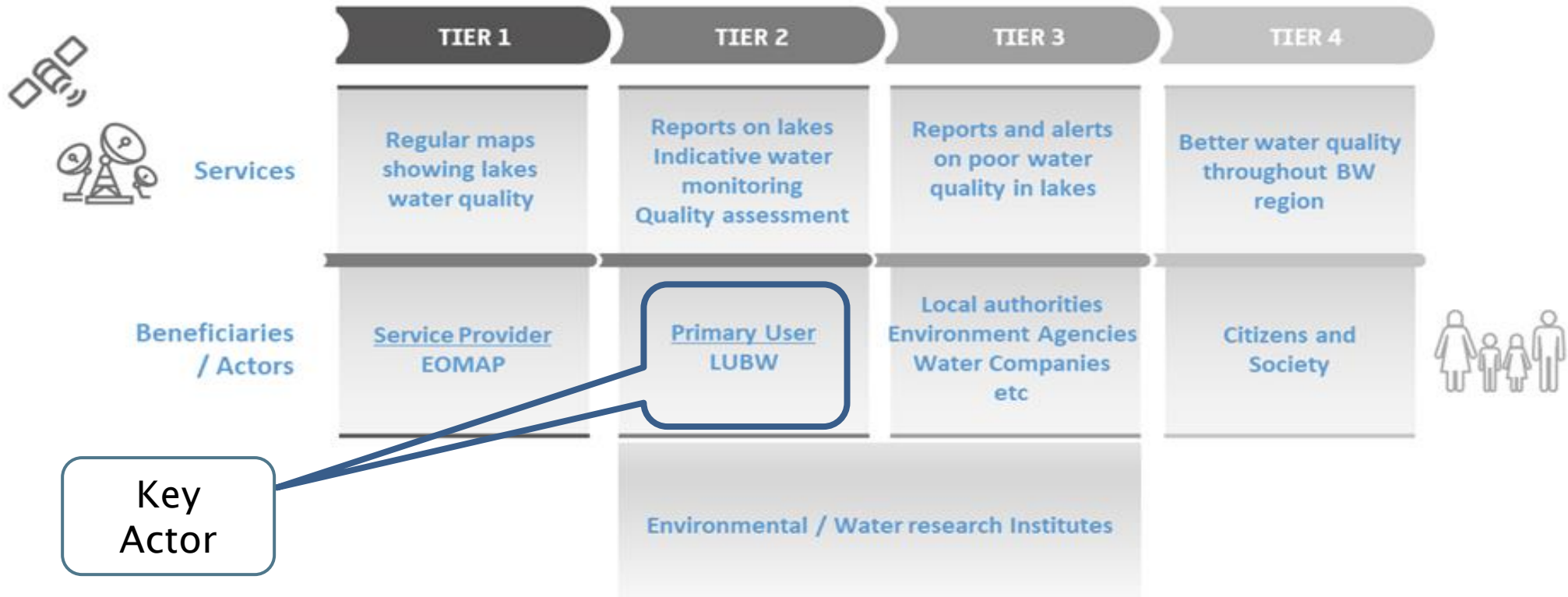
Value chain of actors in 4 tiers from supplier to citizens and society



Robust, tested methodology



Operational use of Sentinel data by a primary user



Benefits for each tier analysed across 6 dimensions of value

Total benefits

Economic Icon: Money, graph, coins	Environmental Icon: Leaf, globe, water	Innovation Icon: Lightbulb, rocket	Regulatory Icon: Gavel, checklist	Science & Tech Icon: Brain, atom	Societal Icon: People
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Anticipated Monetary Benefits: €4m – 7.8m pa across Germany

Winter Navigation in the Baltic Sea

- The variation in the severity of winters has a profound impact on the need for ice services for the Finnish economy.
- Finnish and Swedish icebreakers use 5–1 imagery, which replaced the use of helicopters, to help find the best routes through the ice.
- **Benefit for:**
 - Primary User: icebreakers
 - Beneficiaries: cargo ships, ferries, oil tankers, coast guard, navy
 - Secondary Beneficiaries: ports and harbors, dock workers
 - Citizens and the local economy can be sure that shops and petrol stations are well-stocked.

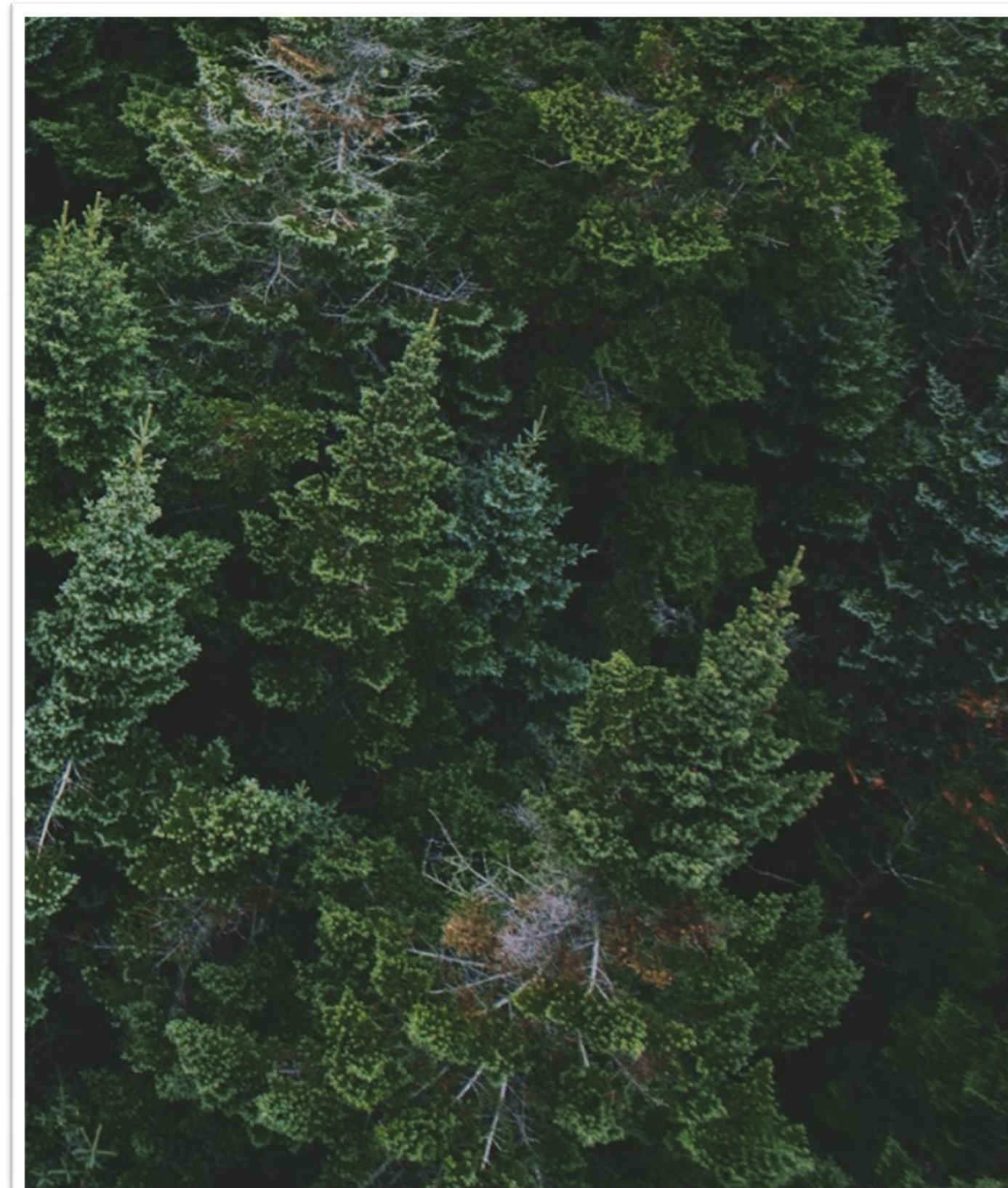
Overall economic benefit: €24.2–116.5m pa



Forestry Management in Sweden

- In tree clear-cuts for areas greater than three ha, forest owners are required to comply with specific regulations.
- Satellite imagery is used to monitor and process clear-cutting.
- Benefits are continuing to increase.
- **Benefit for:**
 - Primary User: Swedish Forestry Agency (SFA)
 - Secondary Beneficiaries: timber companies, sawmills
 - Citizens and the local economy receive environmental and social value from forest preservation.

Overall economic benefit: €16.0–21.5m pa



Ground Motion Monitoring in Norway

- The Norwegian Geological Survey has developed a service (InSAR Norway) using Sentinel-1 data to show movement of the ground across Norway.
- This is being used by the Norwegian Roads Authority (NPRA) to support the construction and management of roads.
- **Benefit for:**
 - Primary User: The NPRA is making use of InSAR Norway to allow better construction-related policies and regulations.
 - Beneficiaries: Road construction and engineering companies benefit from better planned and more efficiently executed projects.
 - Citizens and the local communities benefit from having fewer road closures and safer roads, with reduced risk of landslide and tsunamis impacting lives and properties.

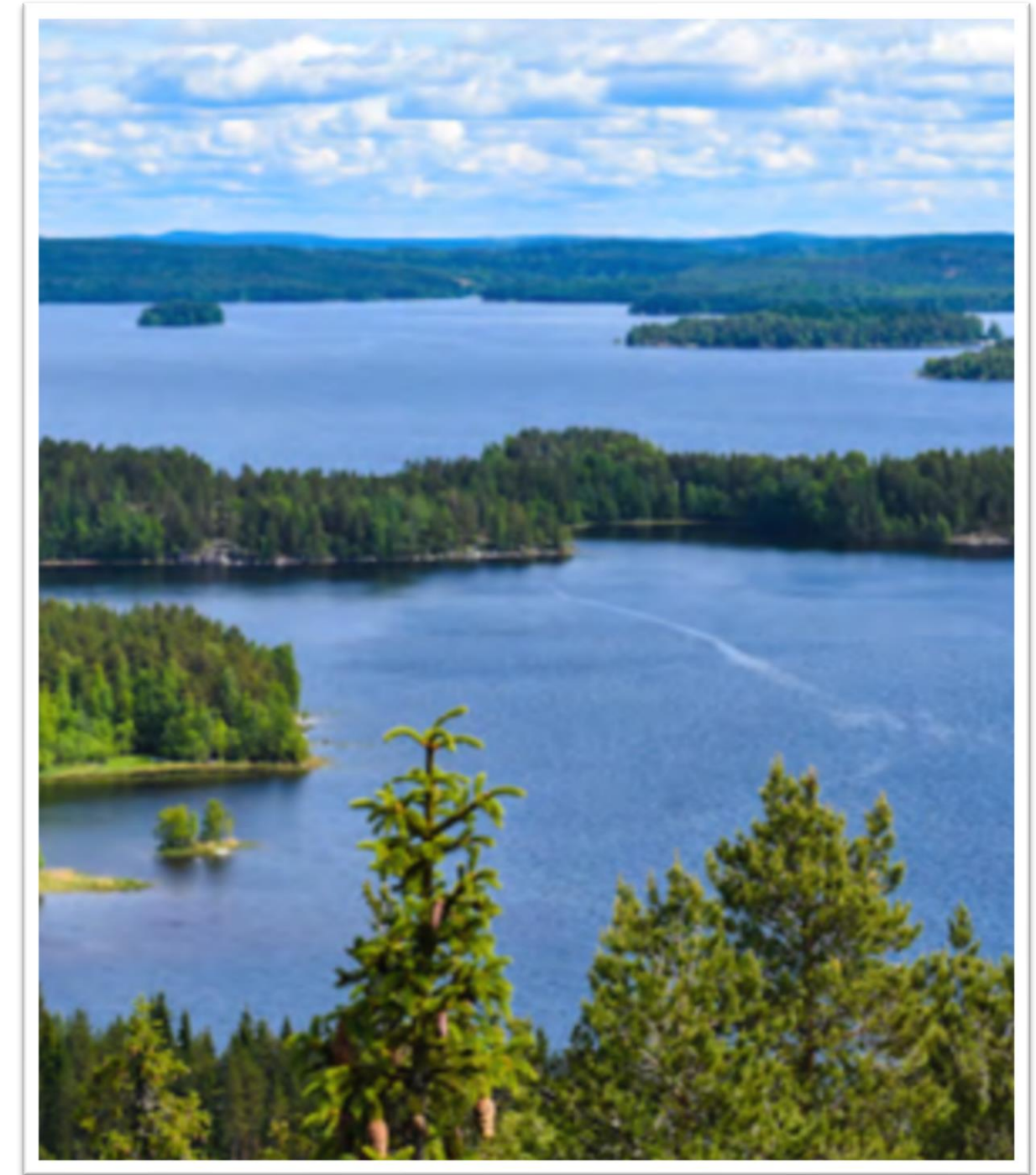
Overall economic benefit: €3.8–8.7m pa



Water Quality in Finland

- Sentinel-2 and Sentinel-3 data are being used to monitor water bodies in Finland to a degree that is not possible using traditional in-situ water sampling.
- This is being used by the Finnish environmental institute, as well as regional environmental agencies, known as ELY Centres.
- **Benefit for:**
 - Primary User: ELY Centres located in each of the regions of Finland
 - Beneficiaries: Ministries of the Environment and of Agriculture and Forestry have better access to information from ELY Centres, upon which they can base policy decisions.
 - Citizens and the local communities benefit from improved environmental conditions and water quality.

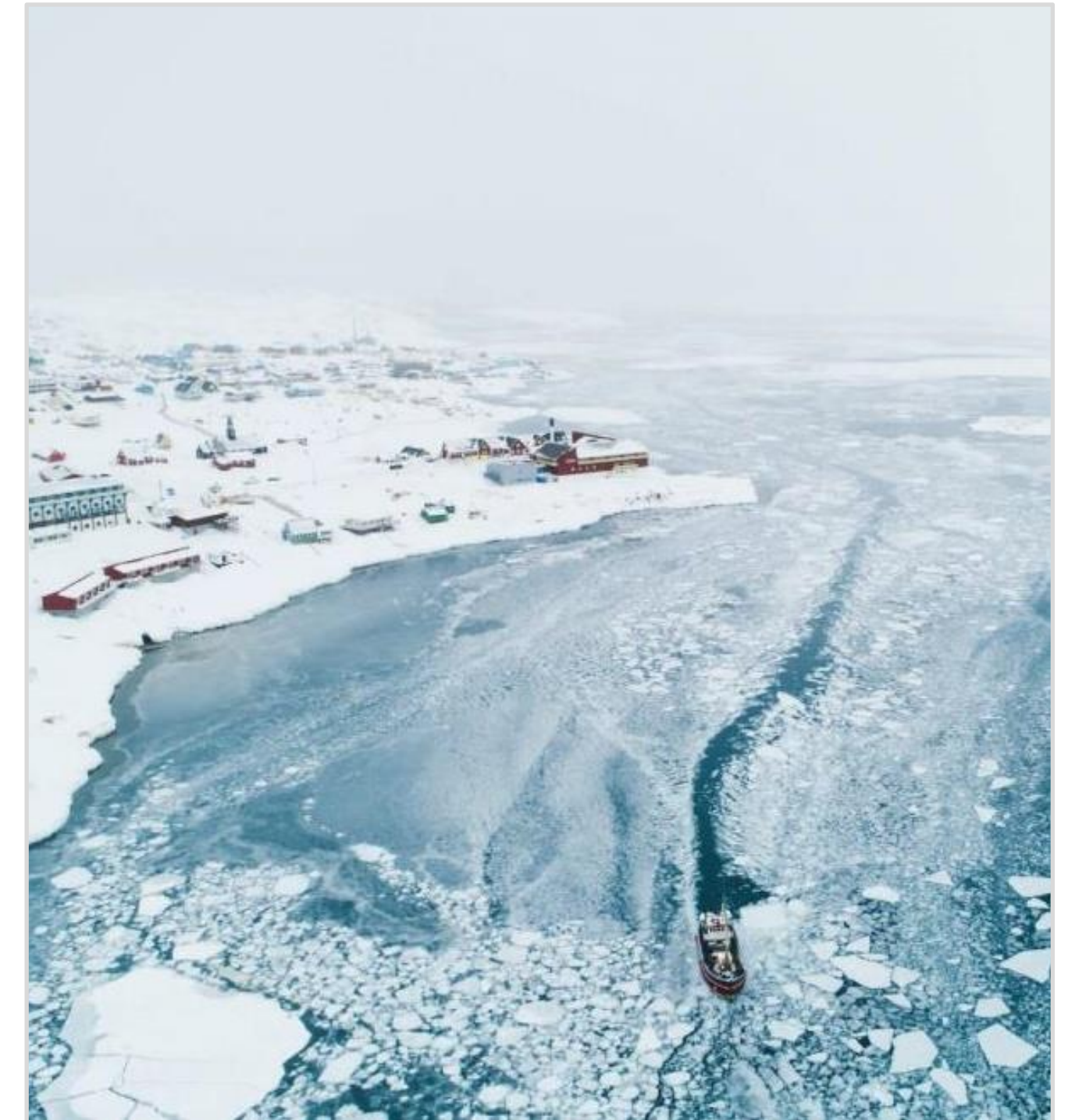
Overall economic benefit: €6.6–24.8m pa



Navigation through Sea Ice off Greenland

- Sea ice and icebergs pose a constant threat when shipping between villages and with Europe.
- Navigators need the latest information about locations of ice to navigate safely.
- Using Sentinel-1 data, frequent ice charts can be created for stakeholders.
- **Benefit for:**
 - Primary User: Royal Arctic Line and other direct users in transport
 - Beneficiaries: Businesses and the local economy
 - Citizens and the local communities benefit from assurance of stocked shops and no supply chain disruptions.

Overall economic benefit: €8.6–12.5m pa





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