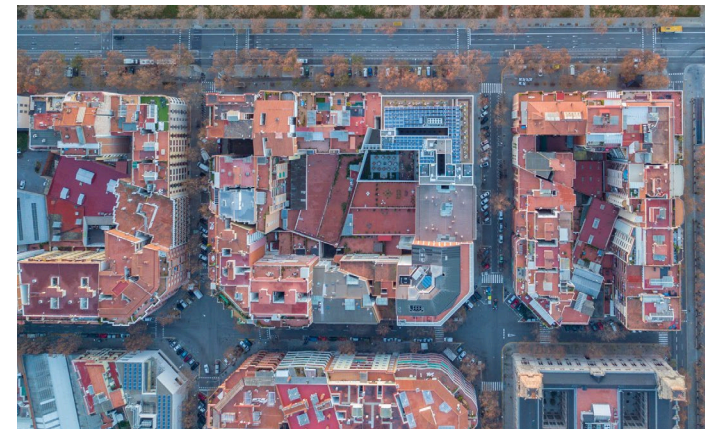


# Needs and expectations from different stakeholders to EO emission data

Summary from the final SEEDS Stakeholder workshop

Isadora Jiménez, Thaís Fontenelle, Lobelia Earth



Workshop

# Monitoring emissions from space

## Discussion Panel



### Facilitators:



**Isadora Jimenez**  
Lobelia Earth



**Leonor Tarrasón**  
NILU



**Thaís Fontenelle**  
Lobelia Earth

### Invited Panellists:



**Harbours and Port Cities**  
**Michael Rodrigues**  
TU Delft, Netherlands



**Data integration for Ports**  
**Jose Antonio Clemente**  
Project Manager | Software Architect  
Prodevelop



**Renaturing cities and  
Urban Planning**  
**Montse Hernandez**  
Head of Forest Management  
City of Zaragoza, Spain



**Emission Inventories at  
National Scale**  
**Loes van der Net**  
Emission Registration Advisor  
RIVM (National Institute for Public Health  
and the Environment – Netherlands)

# Stakeholder engagement



65

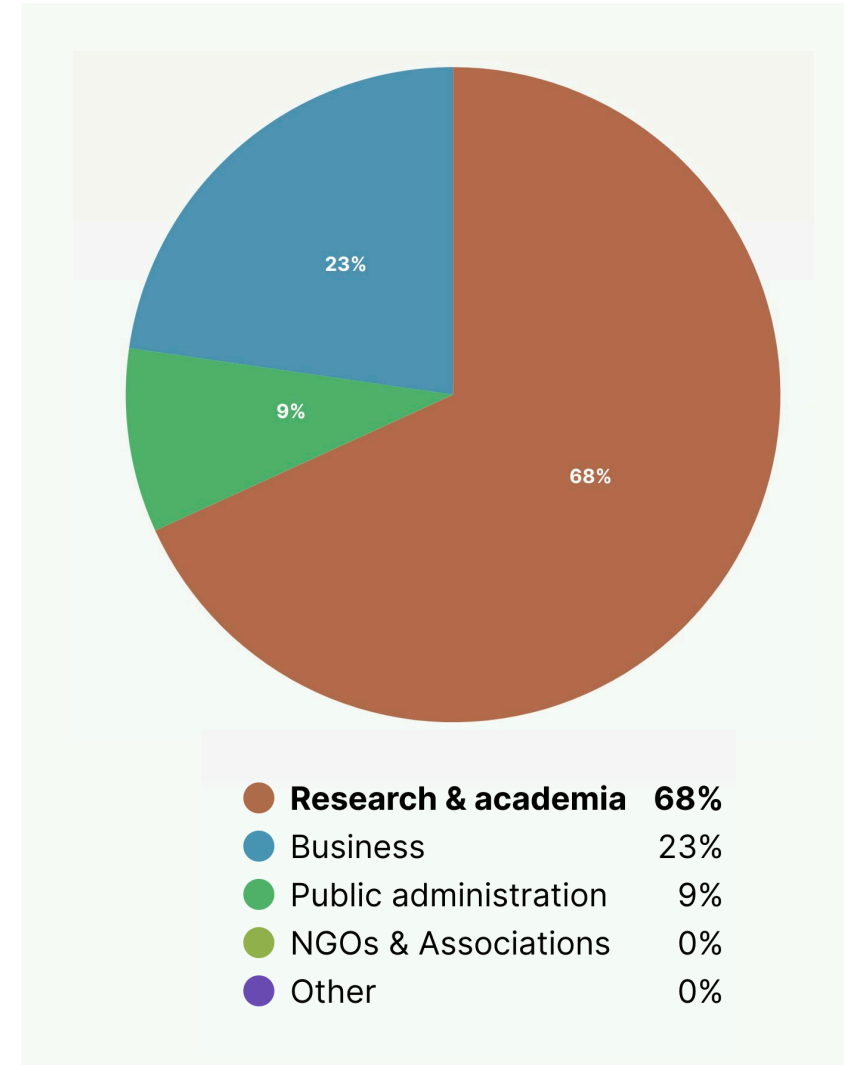
Registered participants

39

Connected attendees

22

Survey participants



# Stakeholders' interests



## At what spatial resolution do you work?

Multiple Choice Poll  21 votes  21 participants

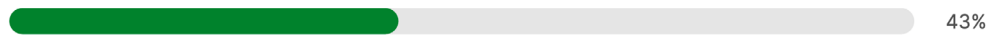
Facility level scale - 1 vote



Urban pattern scale - 13 votes



Regional scale - 9 votes



National scale - 7 votes



## Which of these type of emissions would be more interesting to you

Multiple Choice Poll  24 votes  24 participants

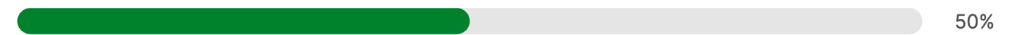
Traffic related emissions (NOx anthropogenic emissions) - 18 votes



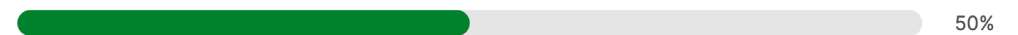
Industrial plume emissions (NOx anthropogenic emissions) - 16 votes



Biogenic emissions (NOx soil and BVOCs) - 12 votes



Fire emissions - 12 votes



# Stakeholders' interests



☰ Did you ever hear about the possibility of using satellite data to estimate pollutants emissions?

Multiple Choice Poll  24 votes  24 participants

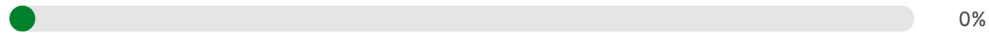
Never considered it - 0 votes



I considered but did not use - 16 votes



Tried to use but did not succeed - 0 votes



Yes I have used it - 8 votes



If you could have operational estimations of emissions from satellites.

What would you use them for?

- **Air quality modelling**
- **Benchmarking bottom-up data**
- Spatio-temporal analysis
- Find new big emitters
- Monitoring on low emission zones evolution

# Stakeholders' interests



Both  
near-real time  
and historical data

Temporal information at  
Annual > Other > Weekly > Monthly



Interest on annual timescales is surprising as the highest value of satellite data is to be able to see monthly and weekly temporal patterns!



# Benefits of using satellite imagery

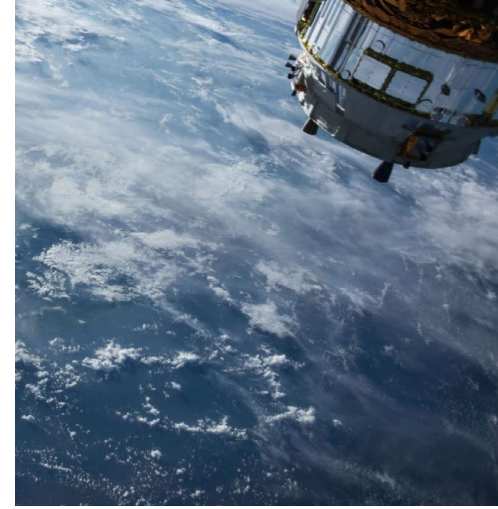
- Satellite data available for **free** (Sentinel missions, etc.)
- Availability of **long time series** for intercomparison
- Provide insights from **regions with scarce or nule in-situ data** (less developed countries, or maritime routes)
- **Common approach** for International reporting on emissions, coherent data across regions.
- **Identify areas** in need for specific interventions
- **Quantify impact** before and after interventions



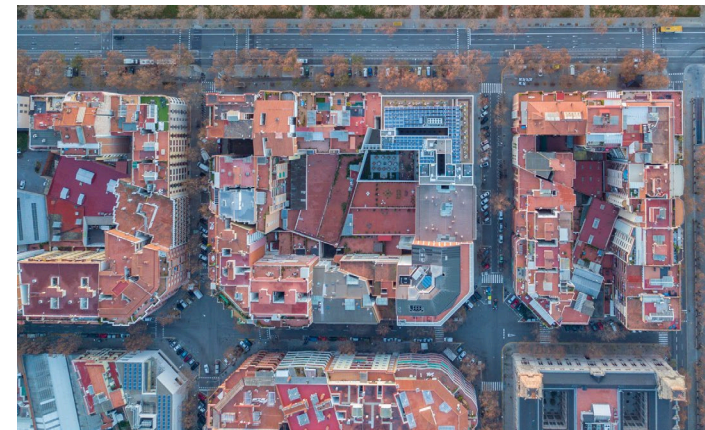
# Disadvantages / Areas for improvement in using satellite imagery

- **Coverage** is not always homogeneous, areas not monitored
- **Spatial resolution** too coarse for some applications
- One daily overpass **temporal frequency** not optimal
- Difficulty retrieving data, need for processed, **ready-to-use products**.
- **Huge uncertainty** in inversion modelling results, it is difficult to compare with emission inventories
- **Different definitions** between emission inventories and inverse modelling (e.g. Natural emissions)





# Main takeaways



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- 1 Beyond specific EU-funded projects**
- 2 Common approaches and guidelines
- 3 Need for a centralized knowledge hub
- 4 Intermediary providers role is key
- 5 Need for ready-to-use products

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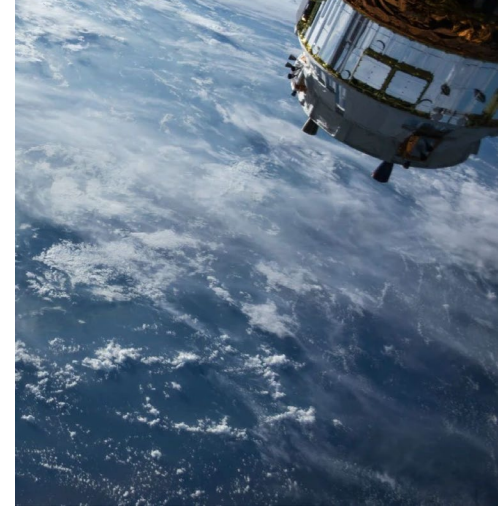
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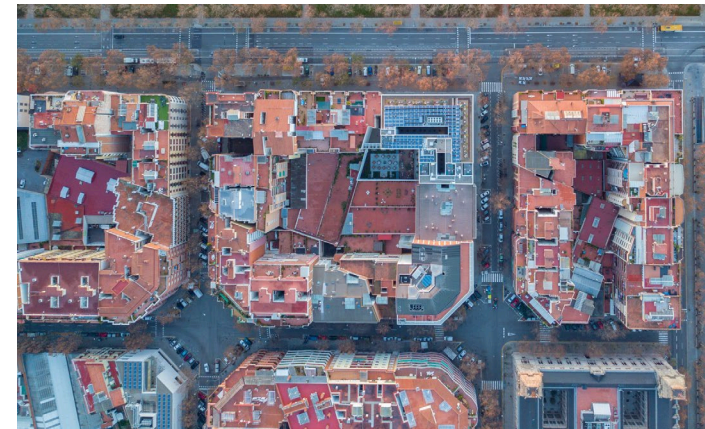


# Thanks!

Isadora Jiménez, Thaís Fontenelle, Lobelia Earth



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Final GA, 5th December 2023