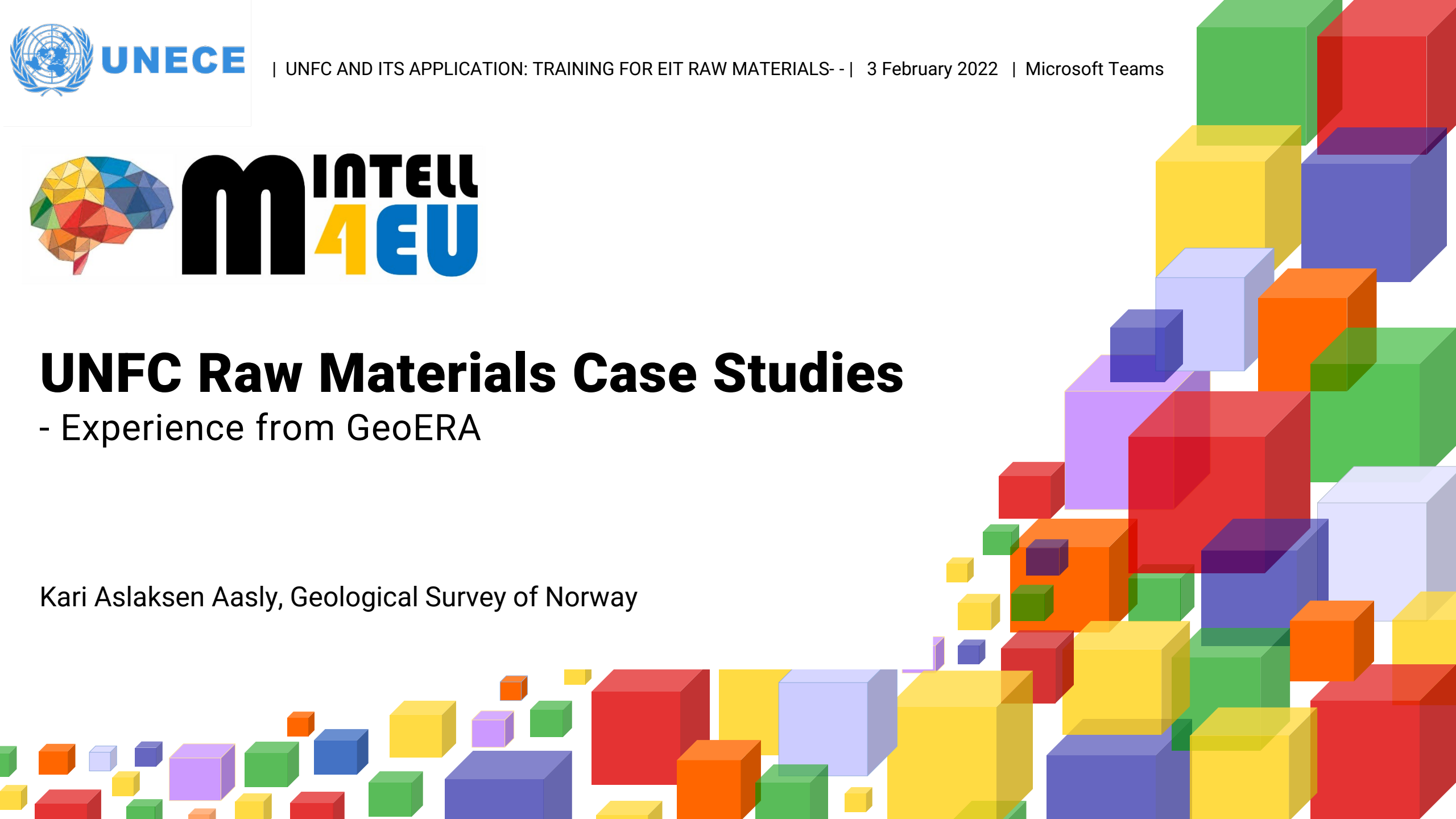




UNFC Raw Materials Case Studies

- Experience from GeoERA

Kari Aslaksen Aasly, Geological Survey of Norway



Outline



- About MINTELL4EU
- Why UNFC in MINTELL4EU
- What did we do?
- What have we learned?
- Recommendations



MINTELL4EU in brief

Mineral Intelligence for Europe

- 27 partners from 25 countries
- Total budget of €2.86 million.
- Build on previous and cooperated with parallel projects:
 - ProMine
 - EuroGeoSource
 - Minerals4EU
 - EURare
 - ProSUM
 - SCREEN
 - MICA
 - ORAMA
 - RESEERVE
 - Etc.



Comparable and reliable Raw Materials data

- **Minerals Inventory (31 countries):**
 - Mineral occurrences
 - Mines
 - Aims at full automated 'harvesting' system
- **Electronic Minerals Yearbook:**
 - Production data (2004 to 2019) 40 countries
 - Trade (export & import) data (2004 to 2018) 36 countries
 - Resource and Reserve estimations, 20 countries
- **Pilot testing UNFC on Raw Materials**
 - 19 test cases, 13 commodities, nine countries
 - Challenges and recommendations
- **Sharing data, e.g. with Raw Materials Information System (RMIS)**



MIN4EU



EGDI



Why UNFC in MINTELL4EU?

There is a need for a harmonised system for sustainable resource management in Europe

- Geological surveys need a tool that can be used to manage a country's resources and potential resources.
- The society (at national and European level) needs a tool for resource awareness, foresight and policy formulation, for safeguarding and manageability
- The system must be manageable for the geological surveys

UNFC in MINTELL4EU



- **Test if the European geological surveys will be able to use UNFC** as a tool to evaluate a country's known and potential resources across variable levels of knowledge.
- Show if the application of UNFC can provide better harmonization of mineral resource data nationally and across Europe



Mintell4EU UNFC Pilot Case Studies



Mintell4EU UNFC Case Studies

- Issuing Organisation
- National, aggregated
- National, site
- Regional, aggregated
- Regional, site
- Site, site



Pilot studies



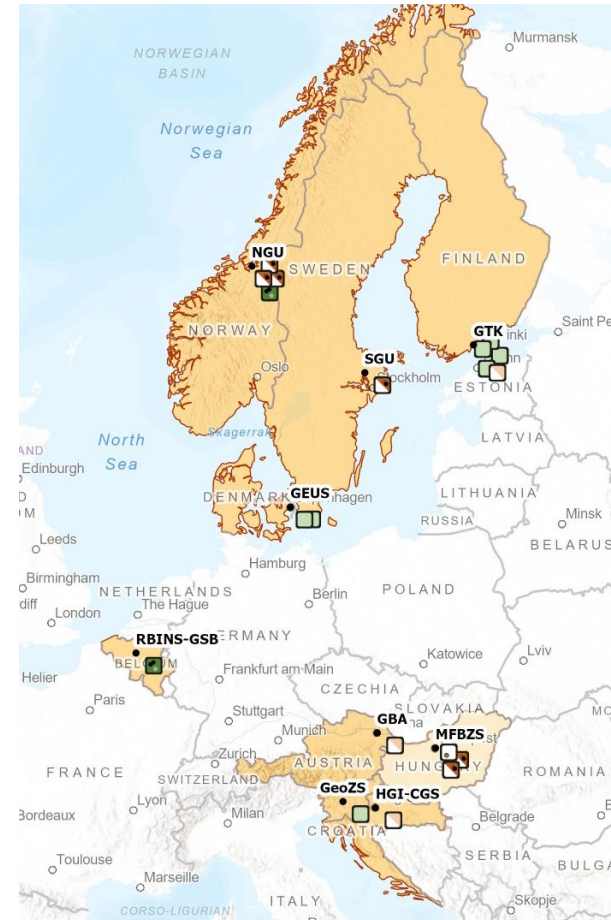
N: National, aggregated (8)
n: National, site (3)
R: Regional, aggregated (3)
r: Regional, site (4)
S: Site, site (1)

| Country | Gold | Copper | Cobalt | Manganese | REE | Phosphate | Carbonates | Graphite | Aggregates | Natural stone | Peat | Gypsum | Perlite | # |
|----------|------|--------|--------|-----------|-----|-----------|------------|----------|------------|---------------|------|--------|---------|----|
| Austria | | | | | | | | | R | | | | | 1 |
| Belgium | | | | | | n | | | | | | | | 1 |
| Croatia | | | | | | | | | R | | | | | 1 |
| Denmark | | | | | | | N | | N | | | | | 2 |
| Finland | N | N | N | | | | | N | | | R | | | 5 |
| Hungary | | | | [S] | | | | | | | | [r] | [r] | 3 |
| Norway | | | | | | n | | r | r | r | | | | 4 |
| Slovenia | | | | | | | | | N | | | | | 1 |
| Sweden | | | | | | r | | | | | | | | 1 |
| # | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 5 | 1 | 1 | 1 | 1 | 19 |



Challenges identified in MINTELL4EU

- Data gaps
- Inconsistent use
- Poor quality data
- Inconsistent results



The pilot studies show:



- A large variance in how evaluators quantified resources, interpreted the EFG criteria, and presented their results.
- Data confidentiality issues affected the case study work and results, and some accompanying geospatial datasets case studies could not be disclosed because they contained granular (i.e., per-site level) data.
- In many cases relevant information was known to exist but inaccessible to the Geological Survey Organisations issuing the case studies, making it challenging to apply the UNFC.



Recommendations



- National and international policy frameworks are needed to overcome poor data availability and sharing
- Data compilation and classification procedures and UNFC reporting templates must be developed to improve quality and facilitate automation
- Extensive training is required to overcome the lack of a common understanding of the UNFC system and make the results more transparent, comparable and reliable
- Relevant EFG data needs to be collected and made available in suitable interoperable format



The use of the UNFC as an international standard for resource classification will make it possible to compare and aggregate resource project data across countries on a Pan-European level.





EDGI:

<https://www.europe-geology.eu/>

GeoERA MINTELL4EU:

<https://geoera.eu/projects/mintell4eu7/>

Thank you!

Kari Aslaksen Aasly
Head of Section, Mineral Resources
GEOLOGICAL SURVEY OF NORWAY
Date 3 | 2 | 2022



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