

MinLand

Mineral Resources in Sustainable Land-Use Planning

Coordinated by Geological Survey of Sweden – Ronald Arvidsson

22 Partners

Industry
Land Use Authorities
Mining Inspectorates
NGOs
Mineral Policy Experts



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Photo: R Arvidsson, Kristineberg Mine, Sweden



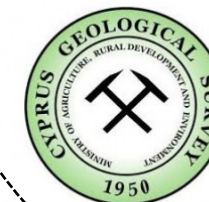
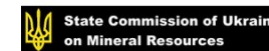


MinLand Team Partners and Third Parties

Coordinator

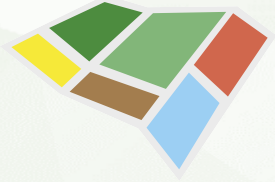


Third Parties



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Why MinLand? Large Competition for Land

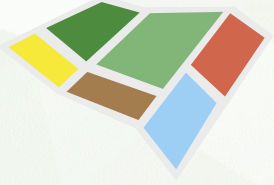


Linking Mineral Policies with Land Use Policies
Securing access to land for Prospecting and Mining within
EU

Prospecting

Mining
Skouriotissa mine
Cyprus
2700BC still mining
Mix secondary and
primary extraction





Which mineral raw materials?

Gold

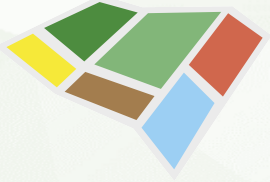
REE

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Metals
Industrial Minerals
Construction Minerals

Cu





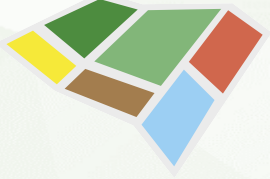
In short MinLand Goals

- Link mineral policy and land-use policy
- Safeguarding of minerals in land use
 - Ensure access for the future
 - Ensure that industry can pull through from prospecting until final permitting stage
- Systems approach – data-to –permitting-to-mining

Four objectives

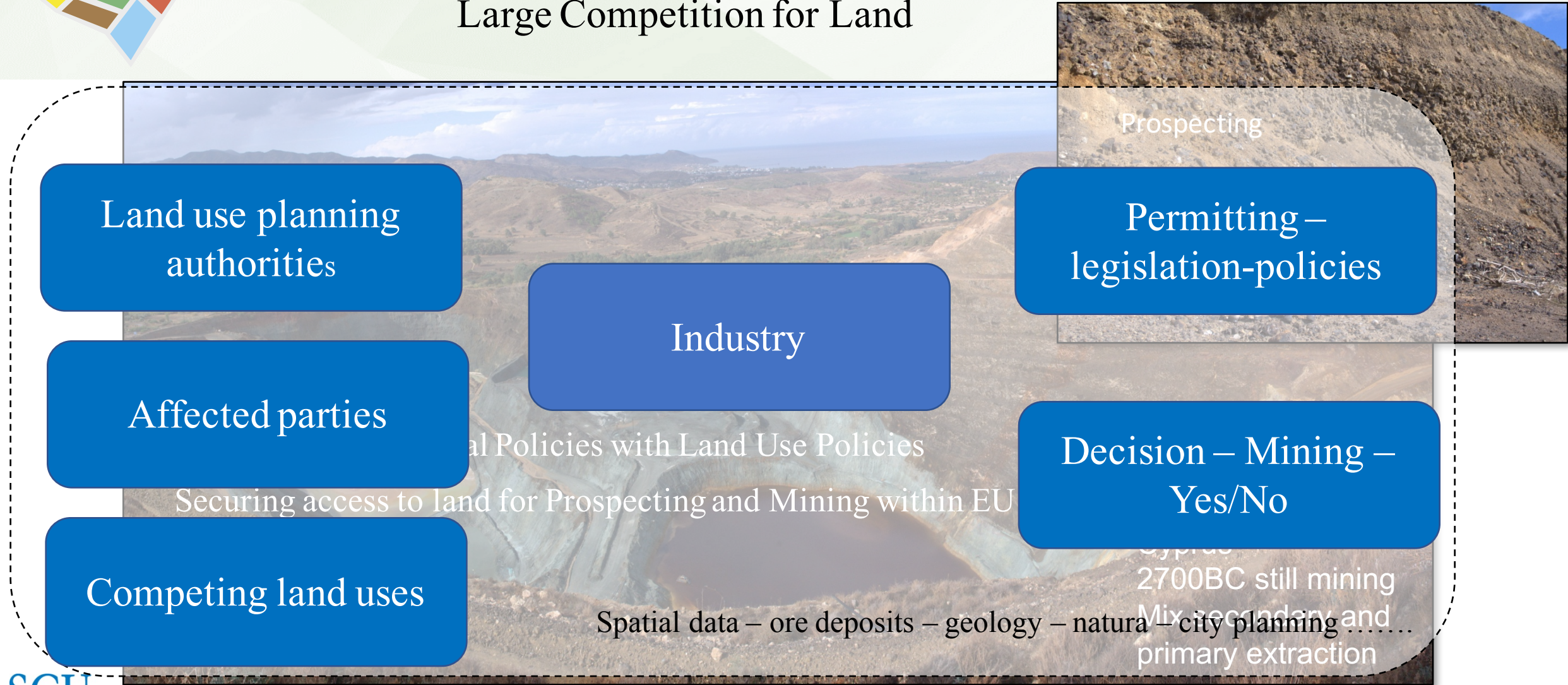
- Knowledge repository
- Facilitate minerals and lu policy
- Strengthen a transparent lu practice
- Foster networking

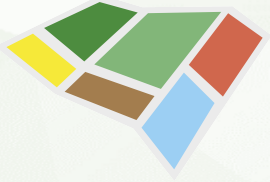




MinLand components

Large Competition for Land





Conditions

Legal systems, e.g.,

- Common law
- Civil law

Permitting processes for mineral extraction

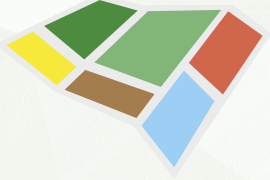
Land use decisions at different administrative levels

In code
or due to legal practice
or due to decision at administrative level

National level
Regions – Federal states
Municipalities

Metals
Industrial Minerals
Construction Minerals





Minland Tools

Database

legislation
policies

Case studies

Network

- EU
- Regional and national
- Dissemination level
- Clustering EU H2020

Workshops

- regional
 - EU level
- Consultations
Dissemination

Analysis

Valorisation and
evaluation
Policies
SLO

Safeguarding and
logical framework
for natural
resources

Peer Learning

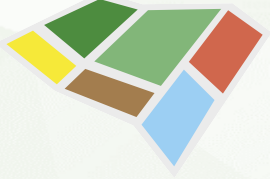
Framework

Commitment
and trust

Engagement and
learning

Diffusion and
upscaling





Systems with components of case law

- Northwestern Europe – mineral LU often integrated into permitting

Systems – civil law prevail

- Continental Europe – land use fixed

Ireland

- municipal level – towns
- minerals at need

Sweden

- mix municipal lu plans - towns
- Specific lu like minerals, value nature – decided first at need governments instrument

Finland

- municipal plans – towns
- regional plans

Norway

- municipal level - towns
- Mineral lu – several level

Portugal

- Mineral lu included in lu plans

Greece

- Mineral lu into lu plans

Austria

- Lu plans – federal states

Spain

- Regions – lu plans

Italy

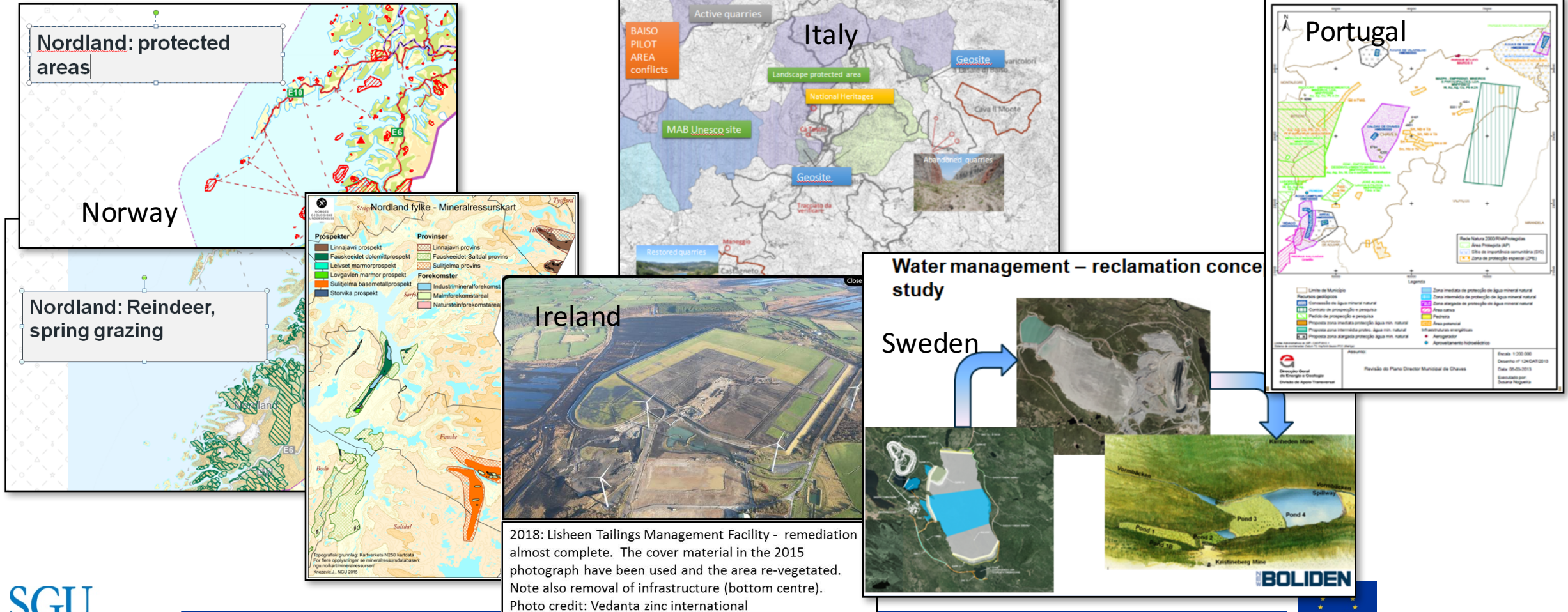
- Regions

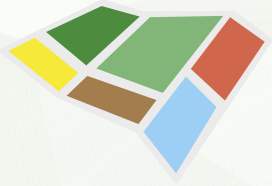
Poland

- Local level



Input – legislation, policies and real world mining land use cases from eleven European Mining Countries





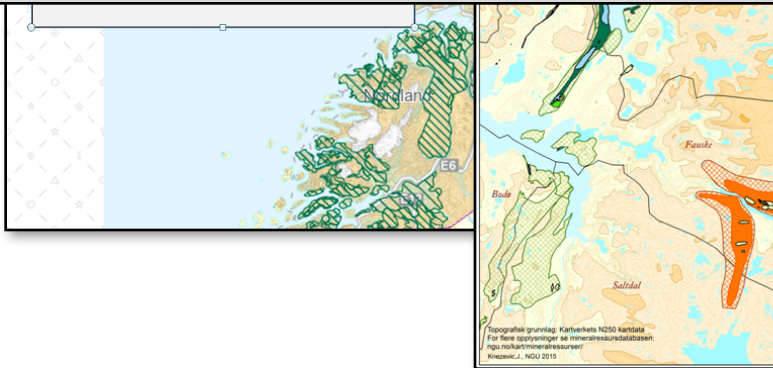
Input – legislation, policies and real world mining land use cases from eleven European Mining Countries

Sweden – three cases

Mertainen

Boliden

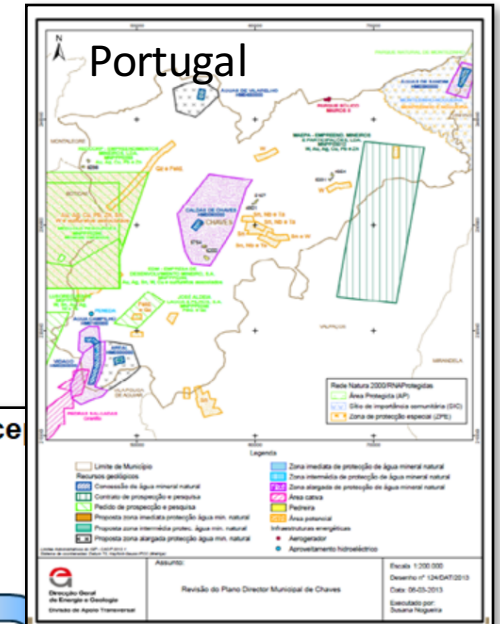
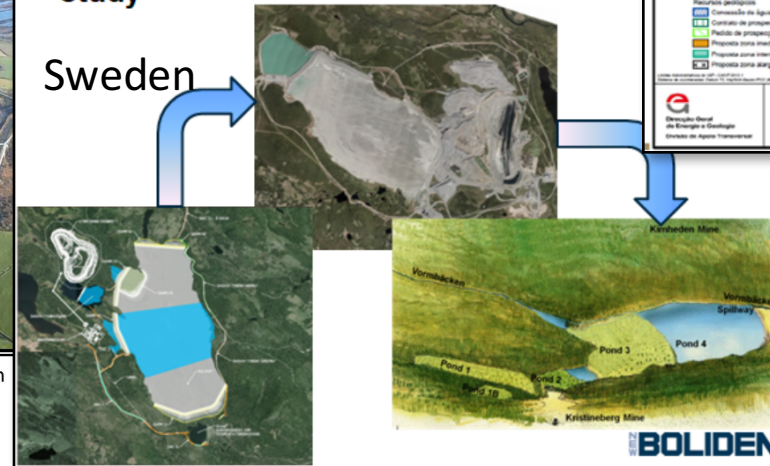
Fäbodlidsjärn

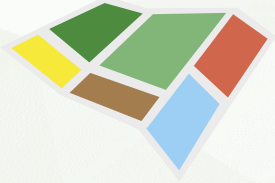


2018: Lisheen Tailings Management Facility - remediation almost complete. The cover material in the 2015 photograph have been used and the area re-vegetated. Note also removal of infrastructure (bottom centre). Photo credit: Vedanta zinc international

Water management – reclamation conce study

Sweden





Local Workshops highlights

Nordic Workshop – Umeå

Sweden, Norway, Finland, Austria

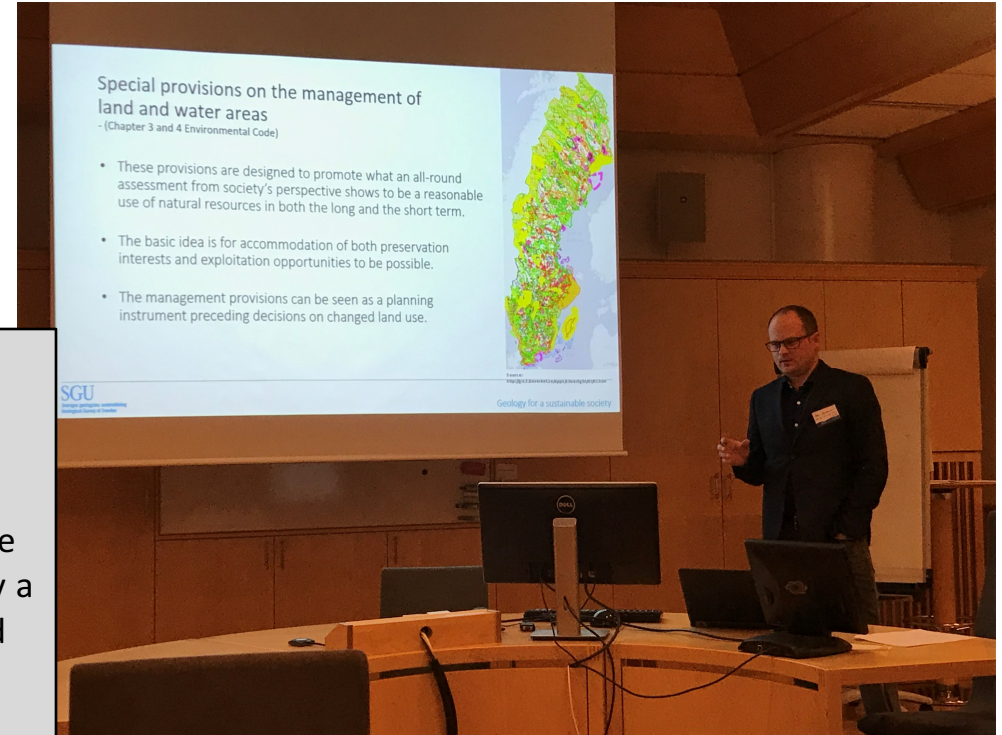
Three main areas were discussed

- Policy – minerals and land use
- Permitting
- Stakeholder, mitigation of impacts, transparency

Protect a mineral deposit at a time when value is known to a certain degree

Protect large enough area – usually the exact delineation of the deposit is only a small portion of the total area covered by the deposit.

Another aspect is when the deposit may be developed to becoming a mine then the mine demands a larger area than the deposit.





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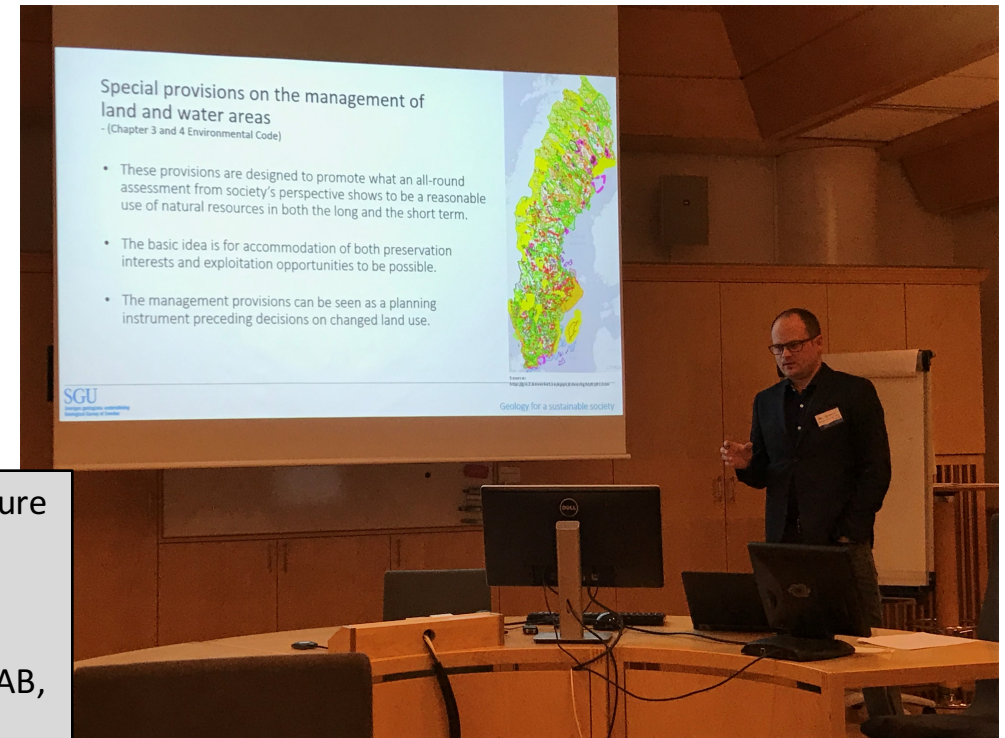
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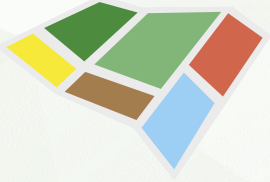
Mitigation of impact on sensitive nature

LKAB, Boliden

Stakeholder interactions, Boliden, LKAB, Botnia Exploration

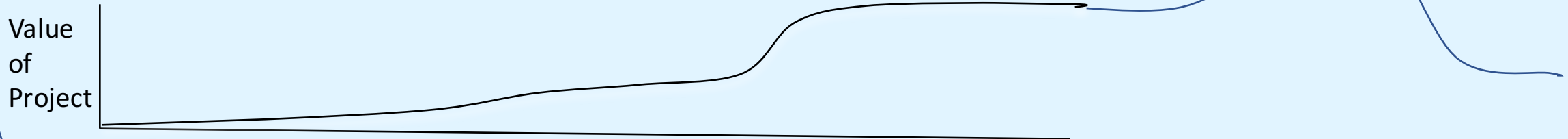
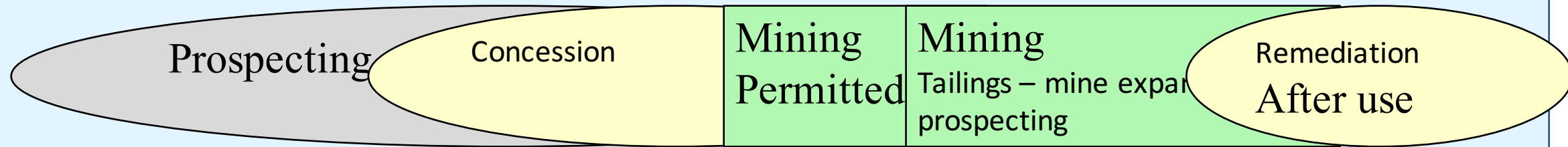
Sami reindeer herders, other local population, NGOs (conservation)





Land use – an integral part of permitting and extraction

Framework – data – policies legislation



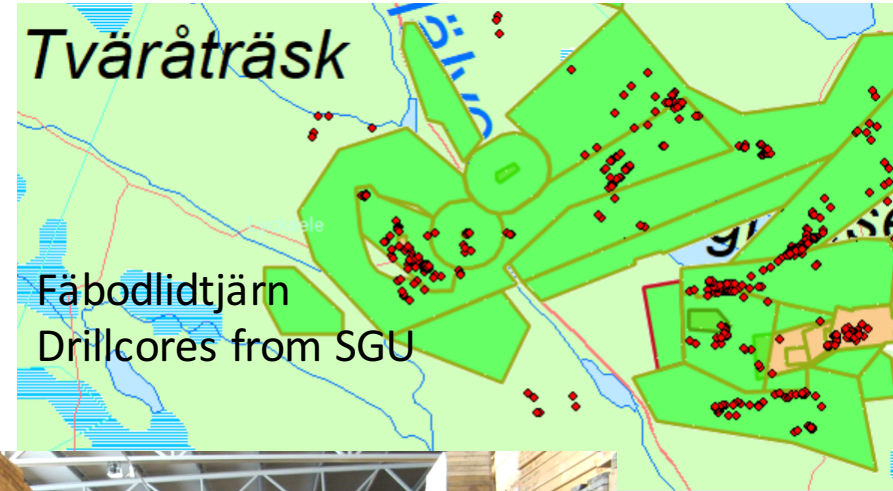
Policies and strategies for connecting Minerals into LU and permits

Supporting mechanisms

for improvement of use of mineral raw materials – Sweden, Finland, Norway, Ireland, Portugal,

Available geological information

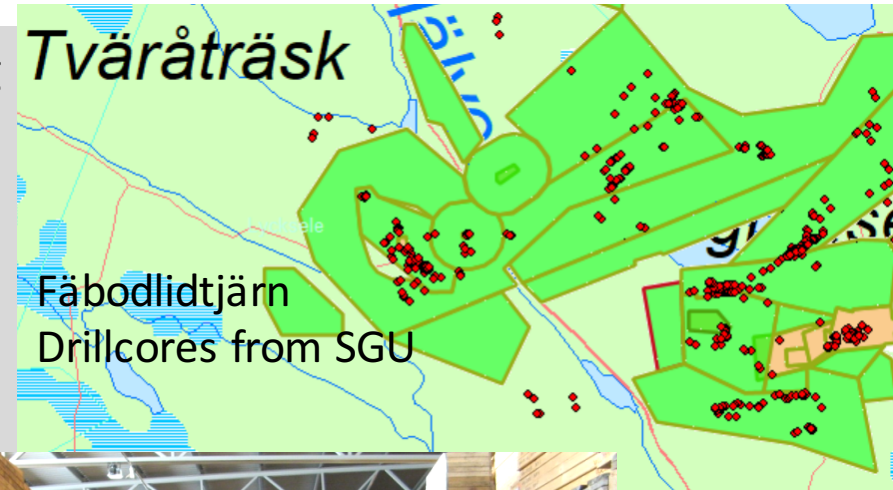
Available lu data
Guidelines regarding lu and permitting system

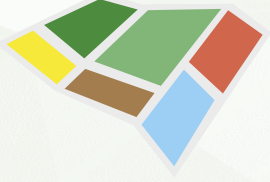


Policies and strategies for connecting Minerals into LU and permits

Political decisions - necessary condition for mining

- Legislative and practice frameworks
- Supporting infrastructure
- Flexible land use planning
- Political decisions
- High level of competence





MinLand Product

Guideline on Mining and Land Use

**HowTo– Land Use
and Mineral
Exploration and
Extraction**

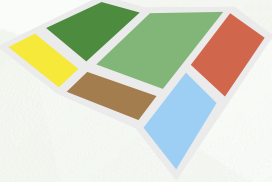
**Knowledge Base
Policies and
legislation**

**Good Practice
Recommendations**



**Metals
Industrial minerals
Construction minerals**





End Product Optimised Land Use



We must find ways to coexist