



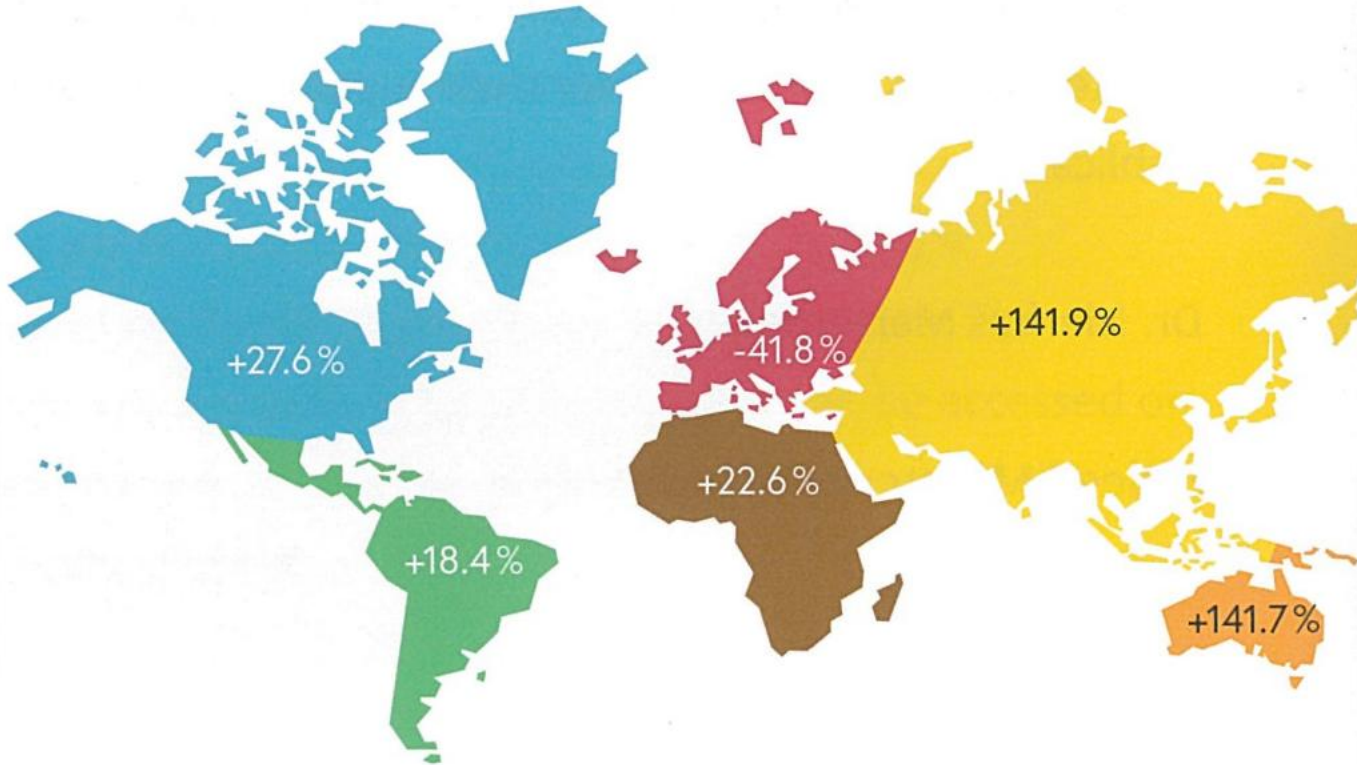
Resources are not enough: Collaboration, Geoscience, and European Resilience

Julie Hollis, Secretary General,
EuroGeoSurveys

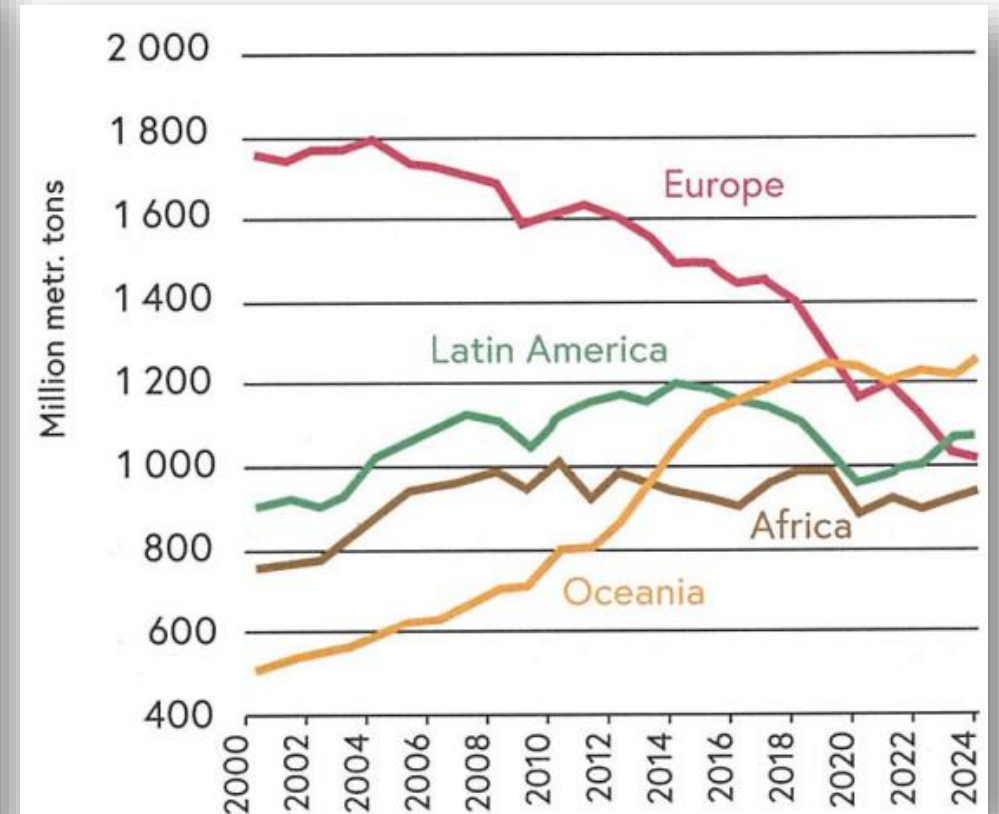
1. We don't have enough resources

Long decline in European mining (and exploration)

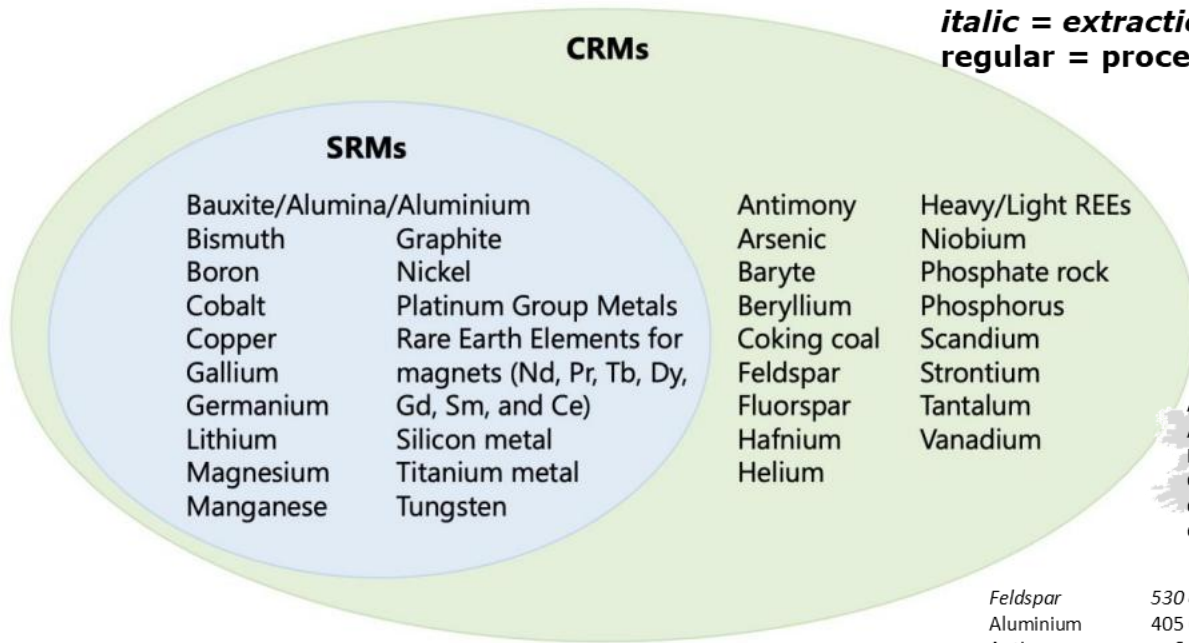
Δ 2000/2024 – Declining production rates only in Europe since 2000



World Mining Data 2026

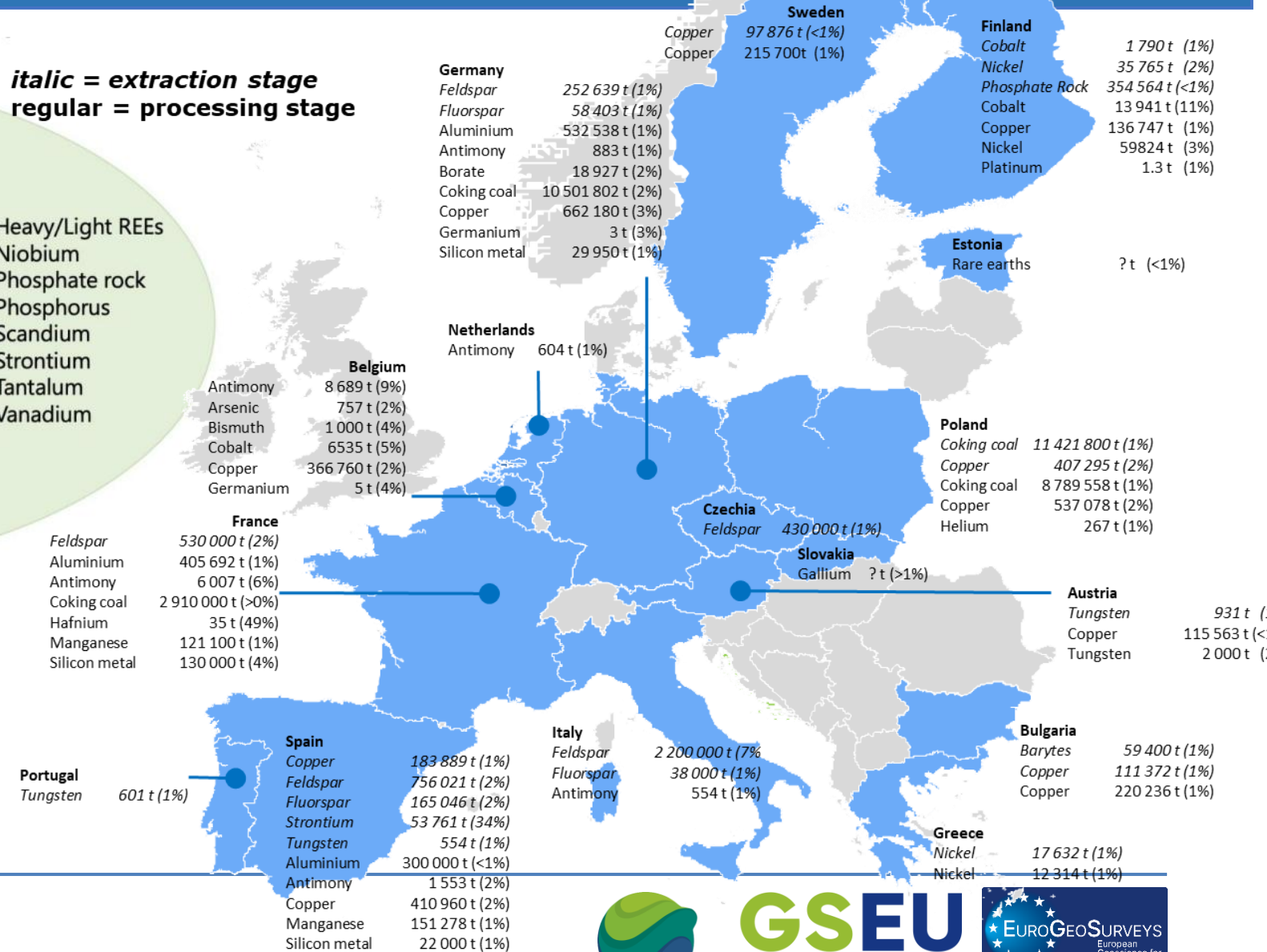


EU share of global mining production



italic = extraction stage
regular = processing stage

EU share of global metals production only a few % but consumption ~25-30%



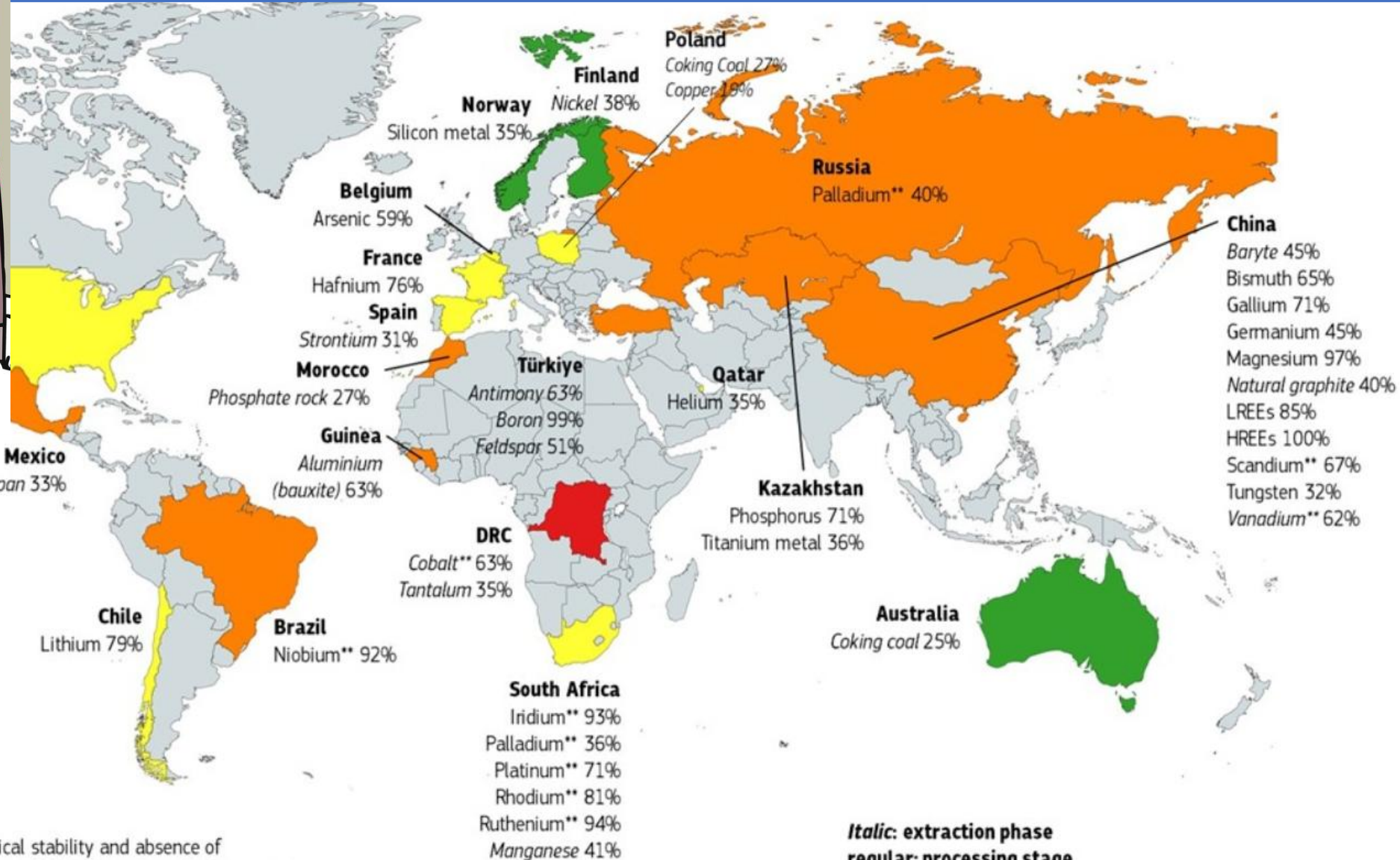
EU Critical Raw Materials dependencies



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Level of governance (based on average of six **Worldwide Governance Indicators***, 2021)

- High (1.25 to 2.5)
- Medium (0.1 to 1.24)
- Low (-1.24 to 0)
- Very low (-1.25 to -2.5)



* Including: Voice and accountability; Political stability and absence of violence/terrorism; Government effectiveness; Rule of law; Control of corruption

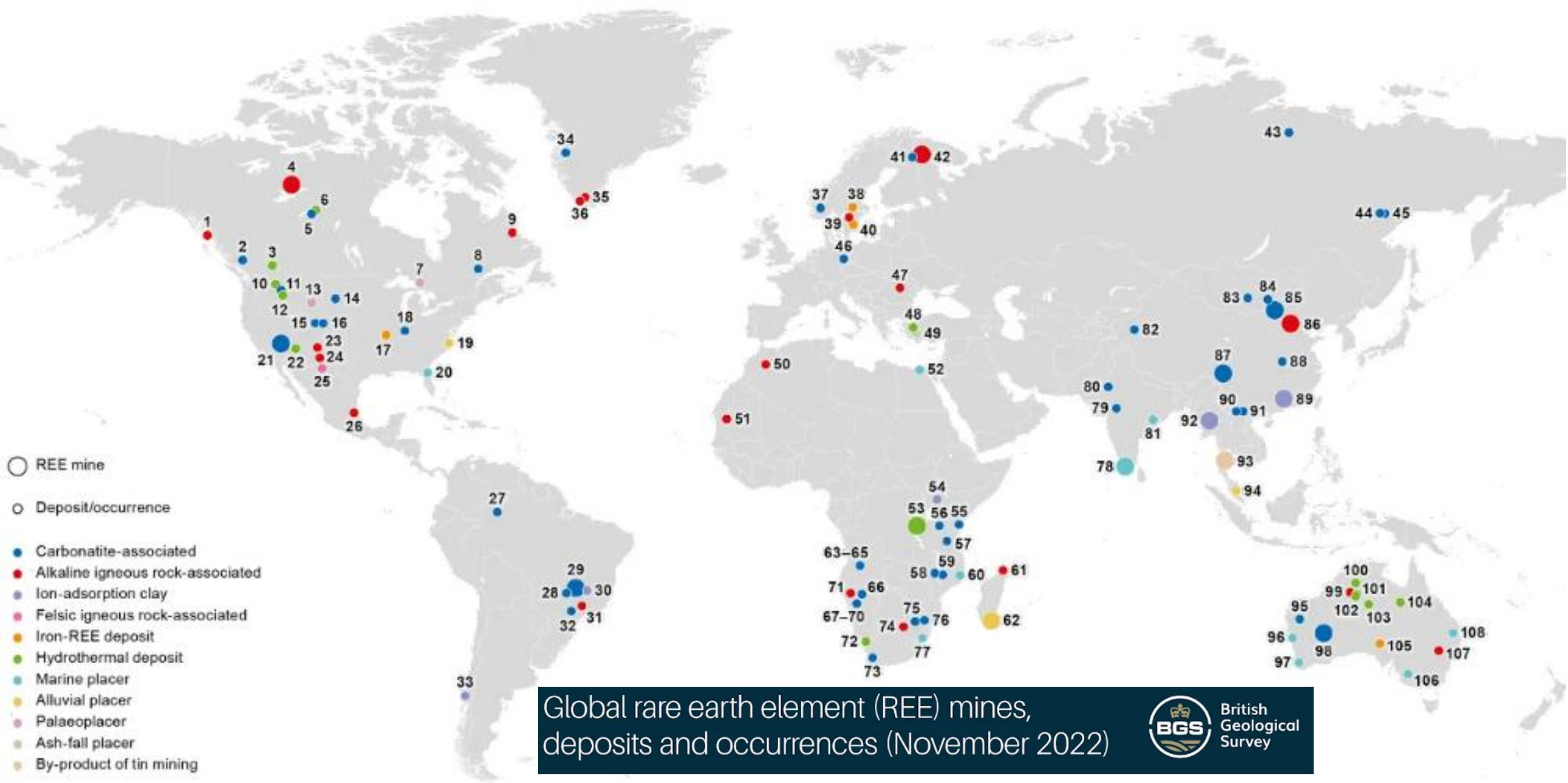
Italic: extraction phase
regular: processing stage
****** share of global production

Covid
Tariffs
Market manipulation
Brexit
War
Nationalism
Resource competition

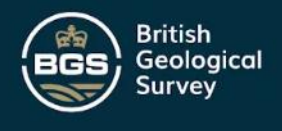
2. Resources alone don't create resilience



cobalt
copper
lithium
gold
diamonds
tin
tantalum
uranium
manganese



Global rare earth element (REE) mines, deposits and occurrences (November 2022)



Discovery
Permitting
Social licence
Finance
Mining
Processing
Refining
Transport
Access to market
Resilience to market control

3. Resilience is not enough
unless tied to an end goal



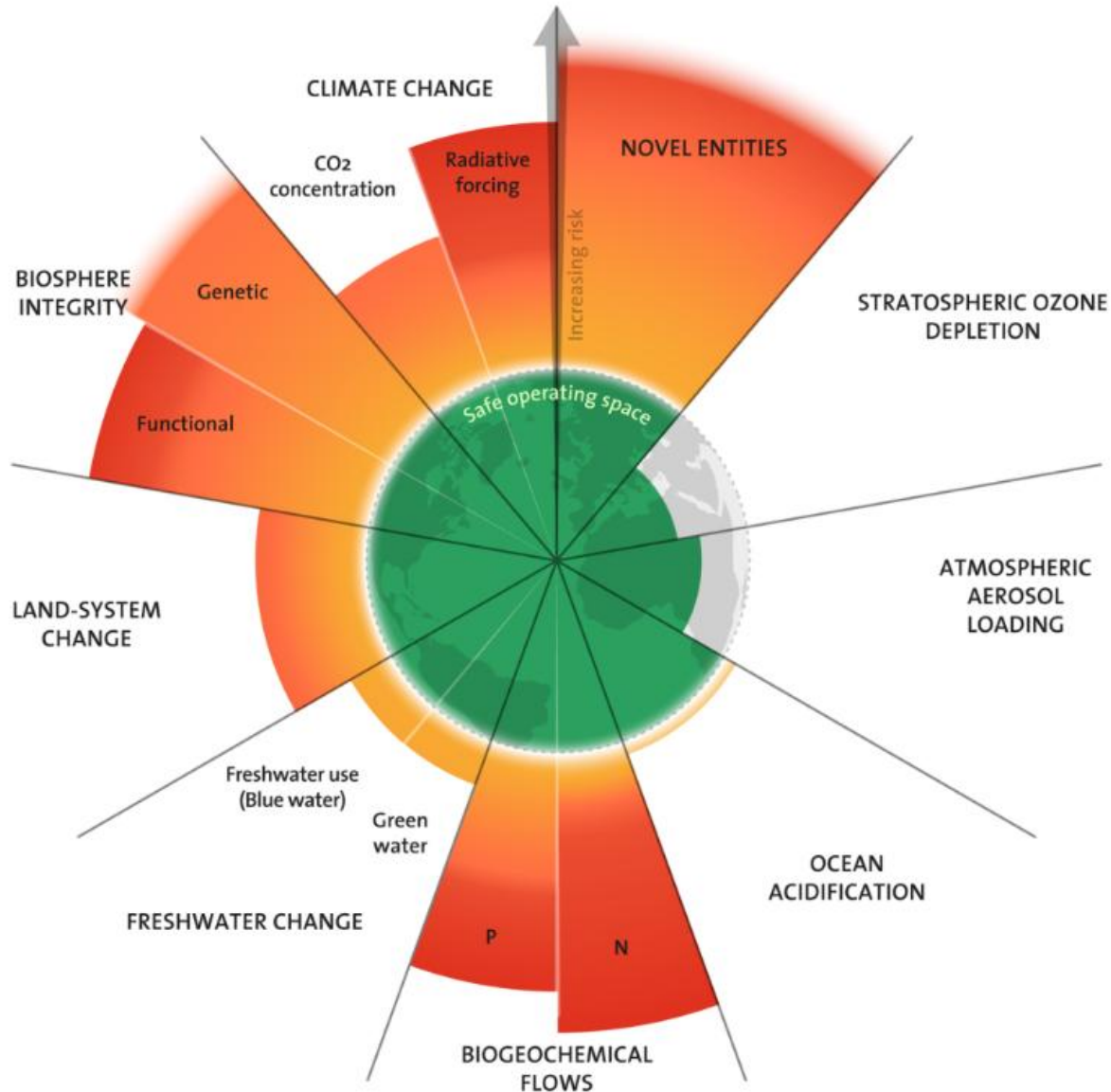
Why are we doing it?

US–Aust Framework For Securing of Supply in the Mining & Processing of Critical Minerals & REE



- “encourage energy exploration and production on Federal lands and waters, including on the Outer Continental Shelf
- eliminate the ‘electric vehicle (EV) mandate’
- identify those agency actions that impose an undue burden on the identification, development, or use of domestic energy resources ... oil, natural gas, coal, hydropower, biofuels, critical mineral, and nuclear energy resources”

End goals?



The evolution of the planetary boundaries framework. Licenced under CC BY-NC-ND 3.0 (Credit: Azote for Stockholm Resilience Centre, Stockholm University. Based on Sakschewski and Caesar et al. 2025, Richardson et al. 2023, Steffen et al. 2015, and Rockström et al. 2009).



Path dependencies



"WE KEEP FRANK AROUND, BECAUSE IF THERE'S A POWER FAILURE HE'S THE ONLY ONE WHO CAN STILL DO ANYTHING!"

EU Critical Raw Materials dependencies

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European Court of Auditors report – international partnerships

The EU has signed **14 strategic partnerships on RM over the last 5 years**, 7 of them in countries with low governance scores. **Imports from these partner countries fell between 2020 and 2024** for around half of the RM examined.

Recommendation 2

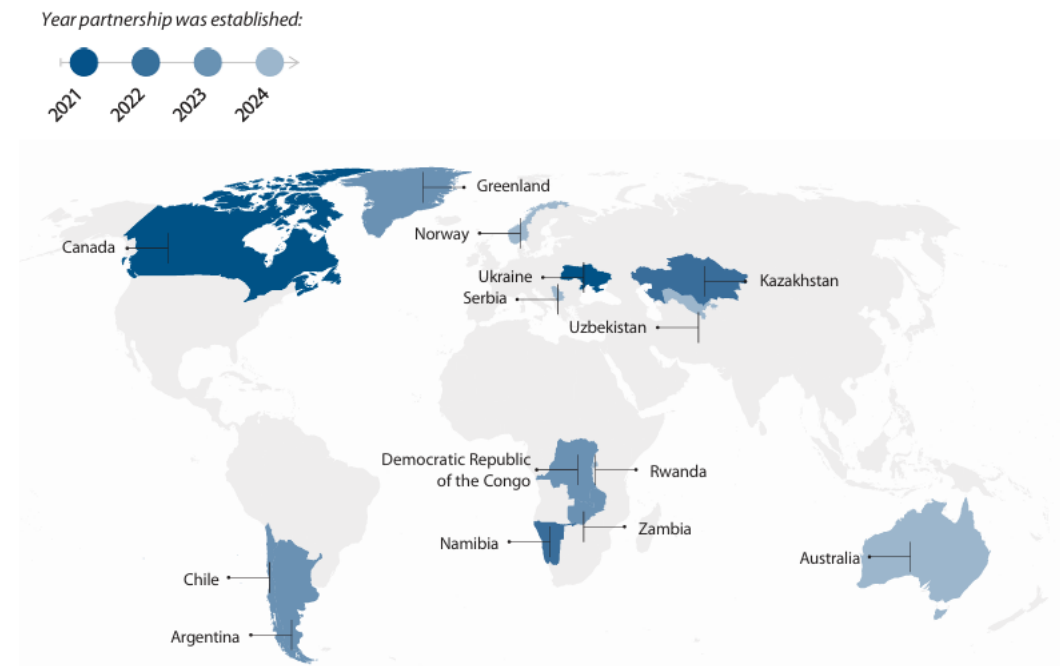
Ensure that efforts to diversify imports lead to more secure supply of critical raw materials

The Commission should:

- analyse the impact of EU trade agreements with critical raw materials-relevant provisions, to determine whether these agreements lead to a more secure supply of critical raw materials to the EU and, based on this, improve future agreements;
- regularly assess strategic partnerships to determine the contribution they make to supply of critical raw materials to the EU and identify successful initiatives that can be replicated to better support the implementation of all such partnerships.

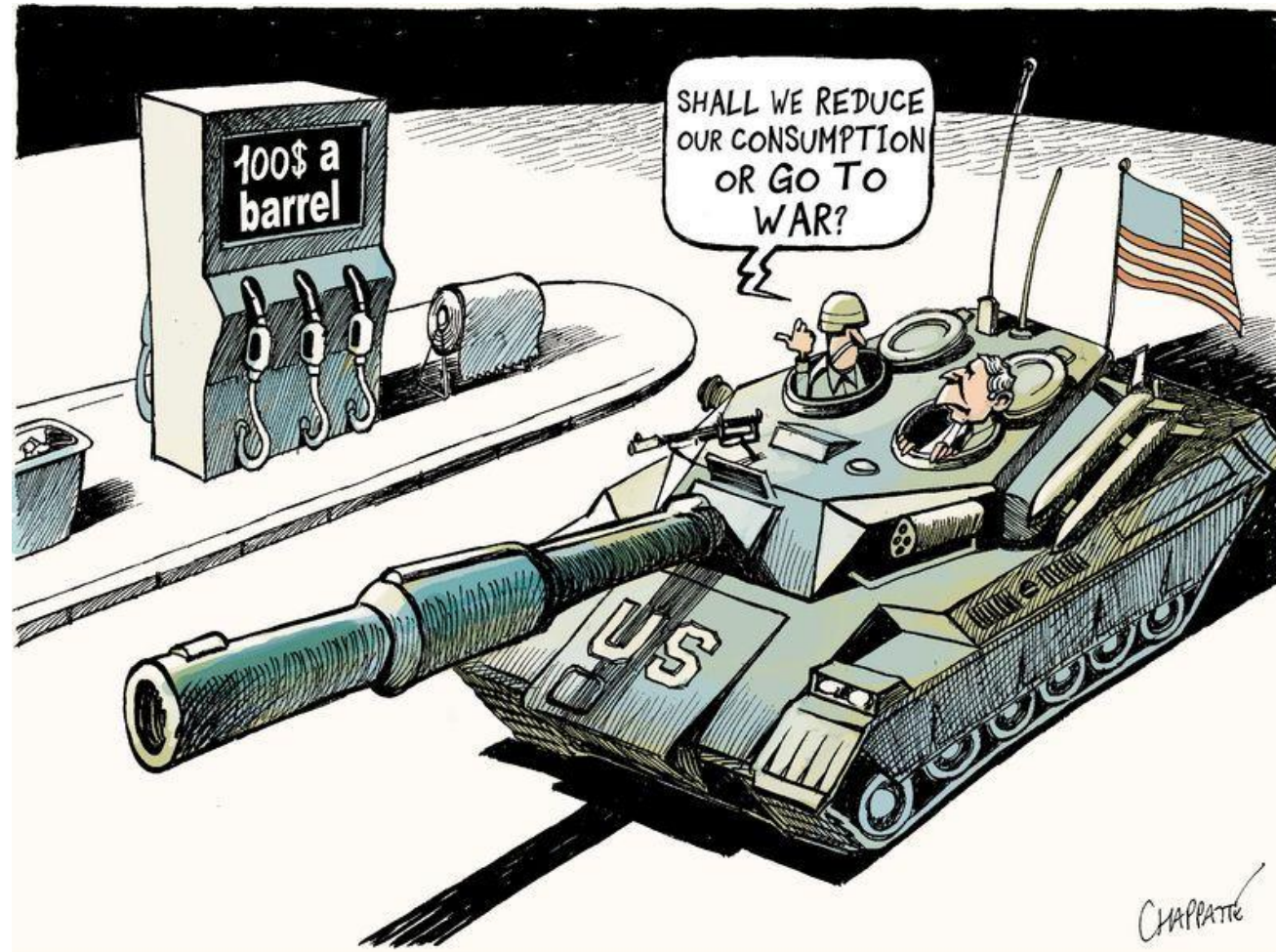
Target implementation date: 2026

Figure 10 | Strategic raw material partnerships between EU and non-EU countries as of June 2025



Source: ECA, based on Commission data.

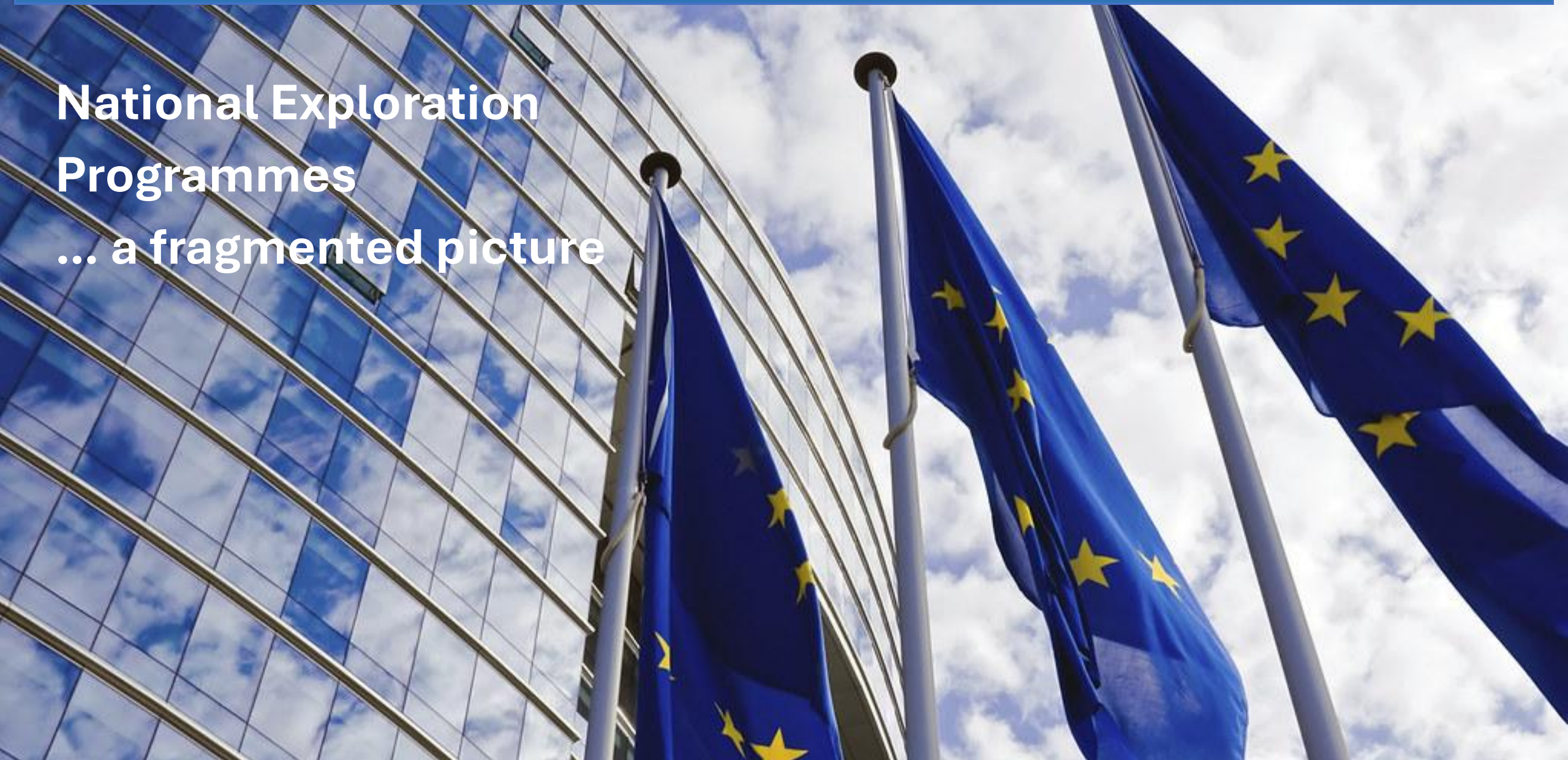
Are our actions serving our end goals?



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EU policy action

**National Exploration
Programmes
... a fragmented picture**



Driving new exploration – what works?

Australia: Exploring for the Future (EFTF) Geoscience Program Programme

- 1,000 publicly available datasets
- airborne geophysics, geology, geochemistry, stratigraphic drilling, groundwater studies
- open data released via national platforms

Impact In 2021–2022 alone

- supported ~3.5% of GDP (~€46 billion)
- ~80,000 jobs linked to pre-competitive geoscience
- 600 exploration licences (~490,000 km²)
across ~70 companies



Driving new exploration – what works?

Saudi Arabia: Arabian Shield Geoscience Programme

- €175 million national initiative (launched 2023)
- Airborne geophysics (~650,000 km²)
- Stream sediment geochemistry
- 271 geological maps and reports

Impact

- Exploration expenditure increased five-fold
- +144% year-on-year increase in exploration licences (to 2025)





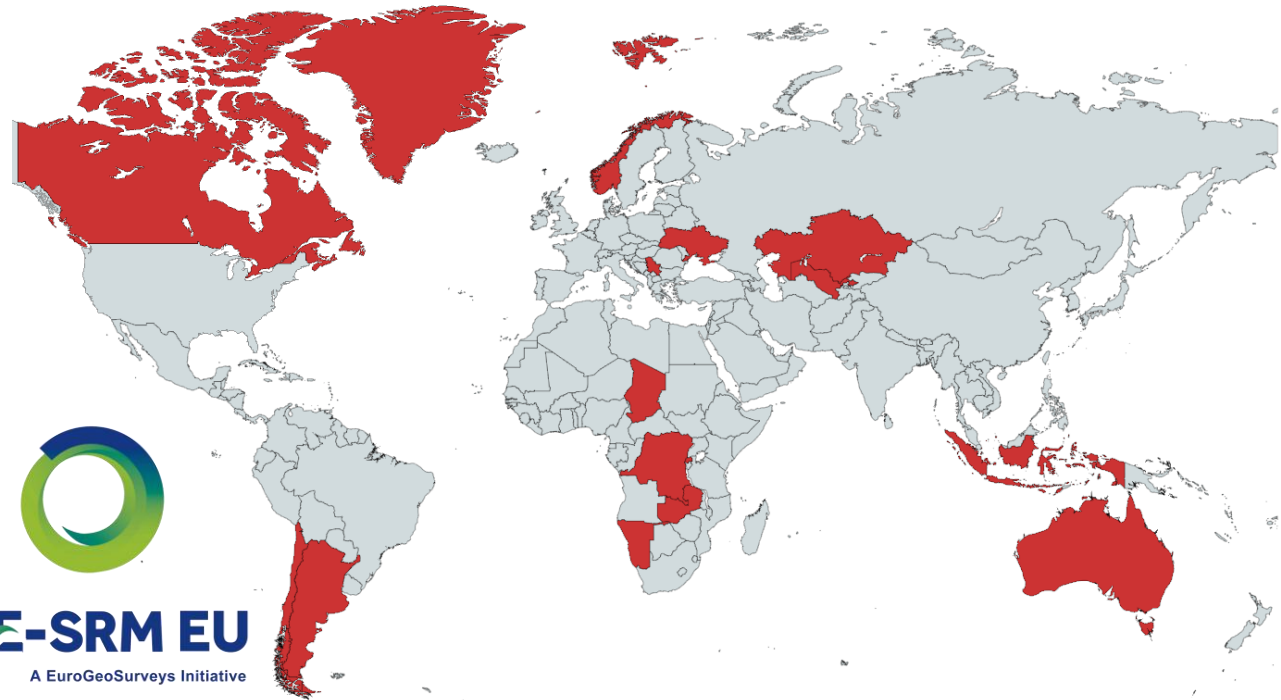
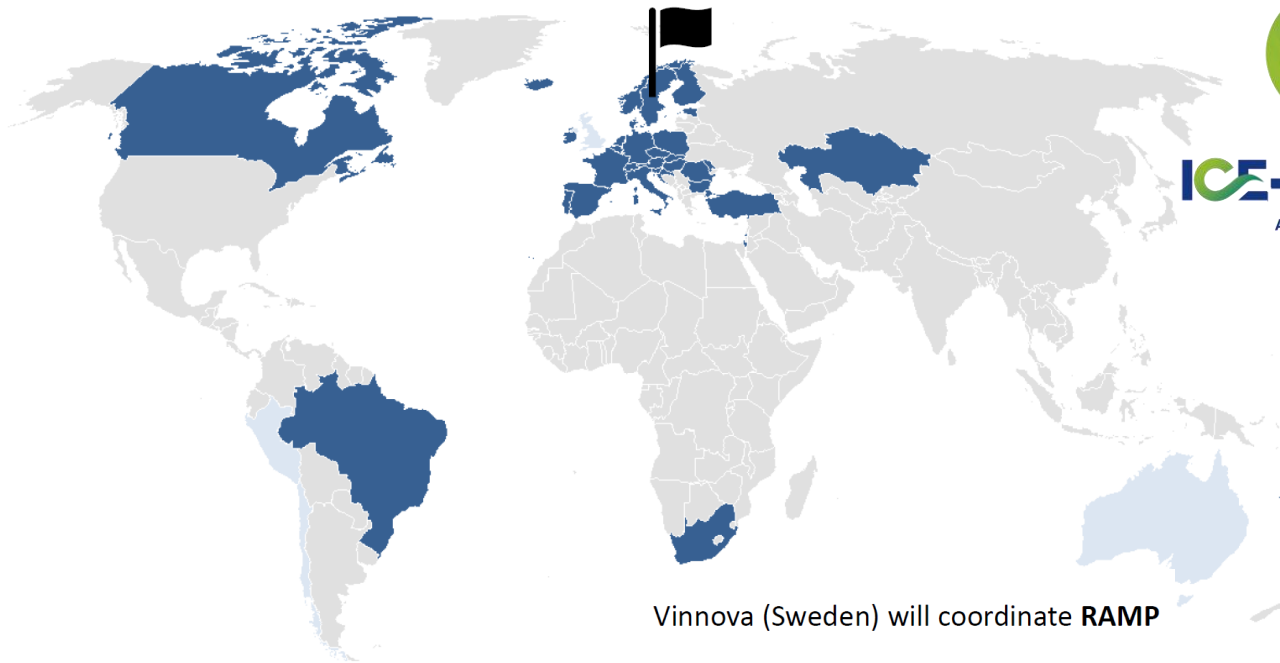
Drawing together collaborative actions on...

National Exploration Programmes


International Partnerships

R&I – RAMP

-  Committed countries (32)
-  Observer countries (4)



Global Gateway



PanAfGeo+
The Pan-African Support to Geological Sciences and Technology



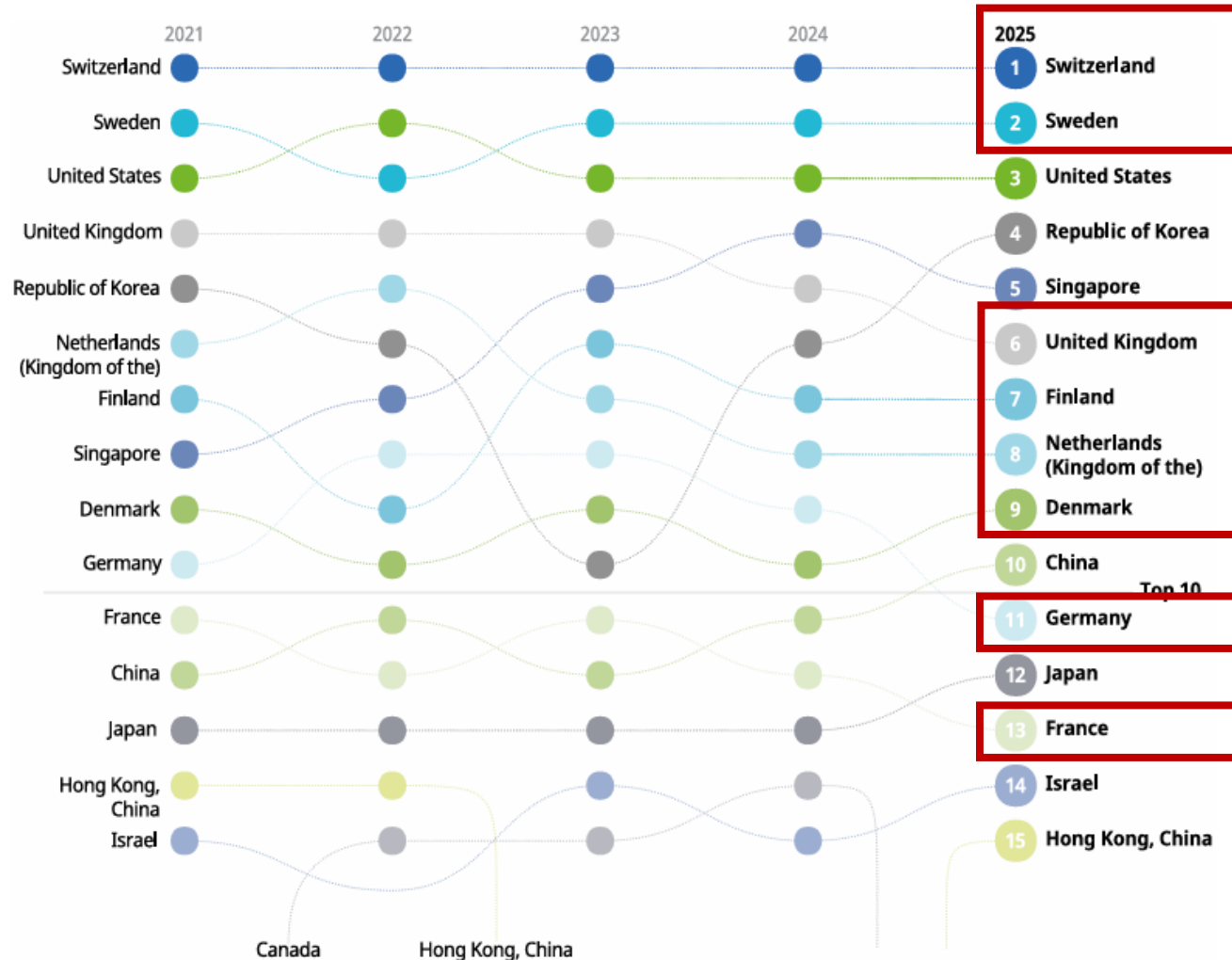
Competitive advantage?

increase your work force

increase working hours

improve productivity
(technology, innovation)

Figure 1 The GII dynamo: the top 15 innovators, 2021–2025



Note: Changes in methodology and variations in data availability may affect the year-to-year comparison of GII rankings. The GII model undergoes periodic refinements, which should be a consideration when interpreting longitudinal performance trends.

Source: Global Innovation Index Database, WIPO, 2025.

Everything is connected by...geology



GSEU
GEOLOGICAL FOR
SERVICE EUROPE

