

# The Raw Materials Scoreboard

An overview on the challenges related to raw materials

**STRADE workshop**

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Unit C2 « Resource Efficiency and Raw Materials »

# The Raw Materials Scoreboard is an initiative of the European Innovation Partnership (EIP) on Raw Materials

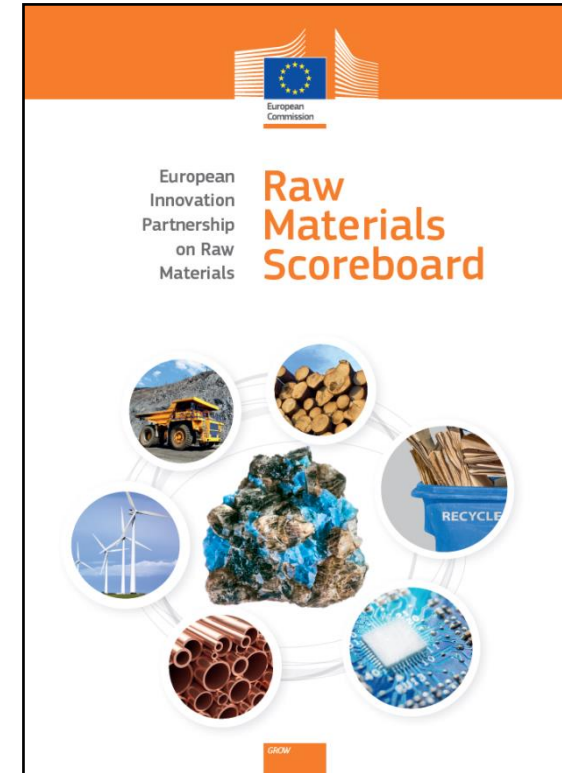
- **Purpose**

- Follow up on the **objectives** of the European Innovation Partnership on Raw Materials
- **Increase the visibility** of the challenges related to raw materials
- Provide **relevant and reliable information** for policymaking processes

- **Modalities**

- Using **peer-reviewed data from trusted sources** ("RACER" criteria)
- **Limited number** of generally accepted indicators
- Accessible to **non-experts**

- **Developed with the support of the JRC**



# The search for suitable data ...

- Advice from 30 experts, who considered **± 70 different indicators**
- **Selection criteria:**
  - Relevant
  - Accepted (by all stakeholders)
  - Credible (i.e. not from interest groups)
  - Easy (to compute and understand)
  - Robust
- **All indicators are imperfect proxies of complex phenomena**
- **Work is ongoing to widen and deepen the analysis** for the 2018 Scoreboard, and to develop data for certain issues



# The Raw Materials Scoreboard gives an overview of the challenges related to raw materials

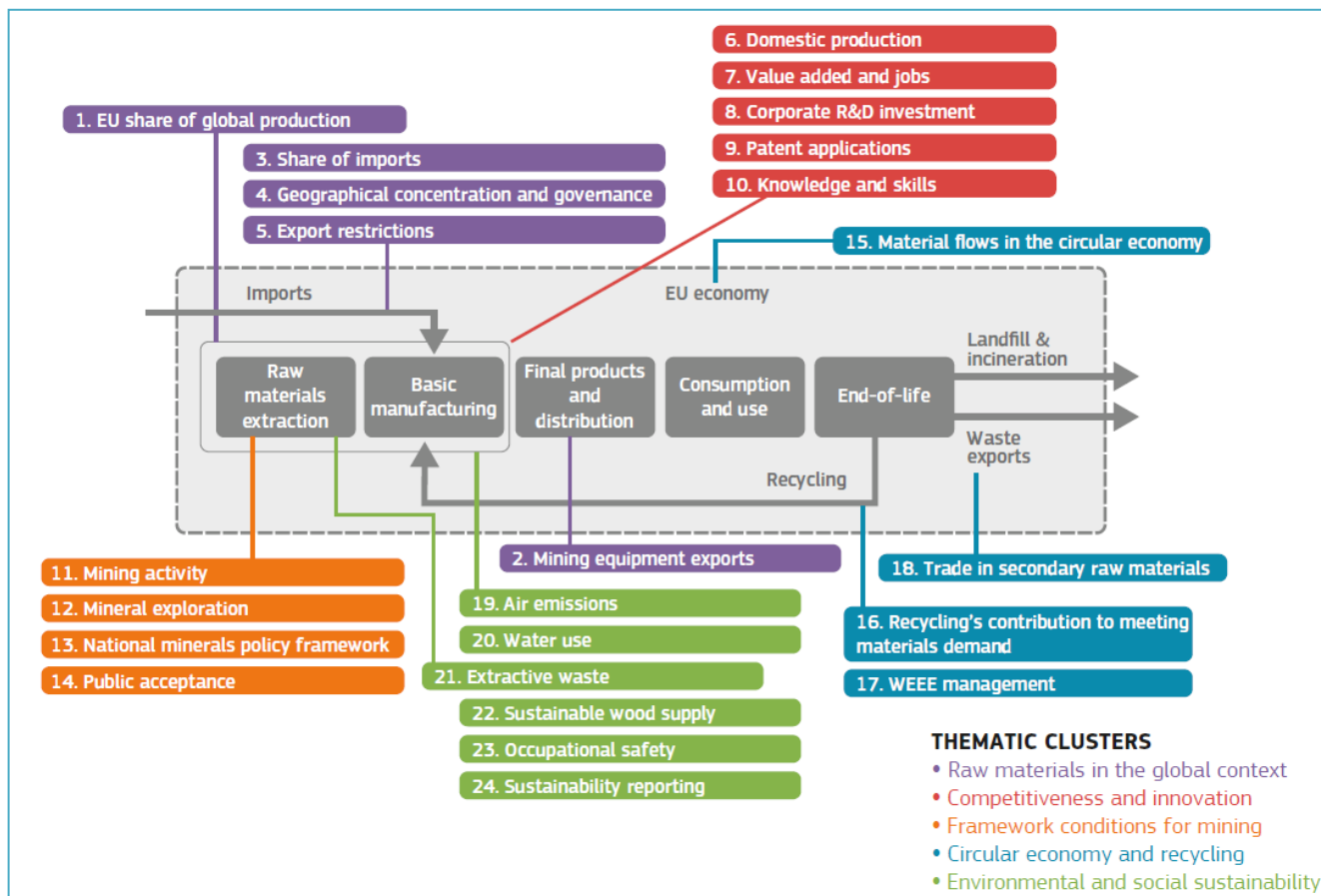


Figure 1: The Raw Materials Scoreboard at a glance

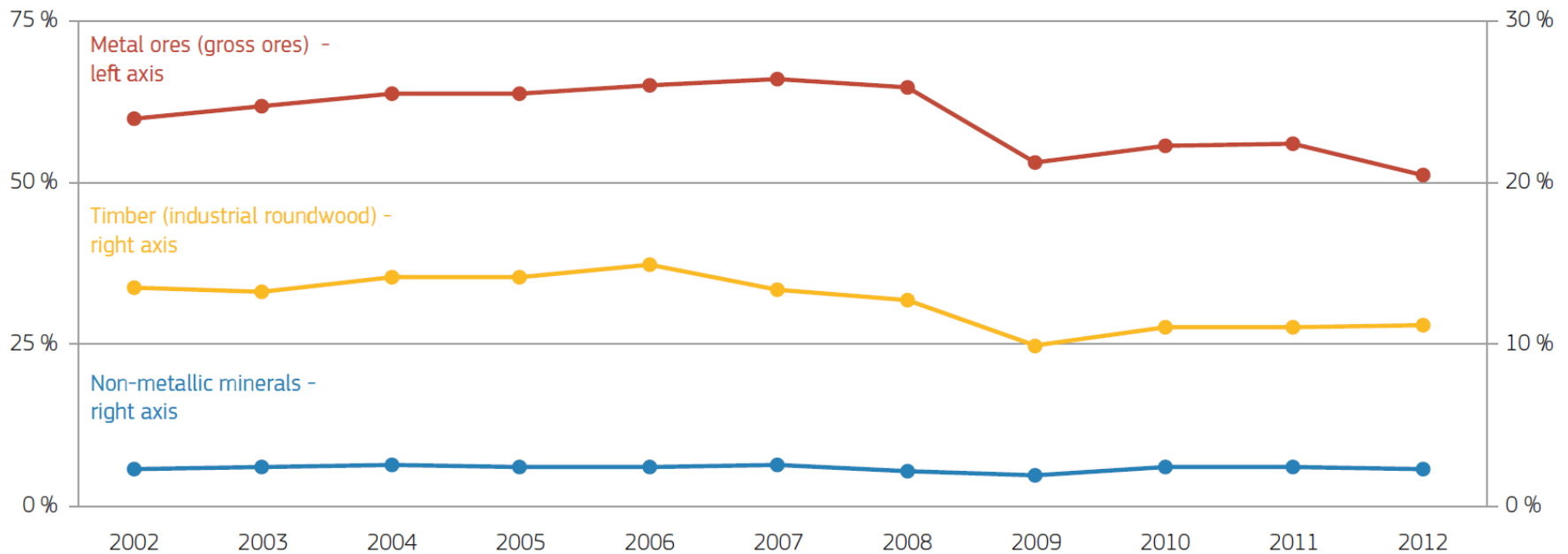
# Raw materials in the global context

## >> Indicators:

1. EU share of global production
2. Mining equipment exports
3. Share of imports
4. Geographical concentration and governance
5. Export restrictions

### 3. Share of imports

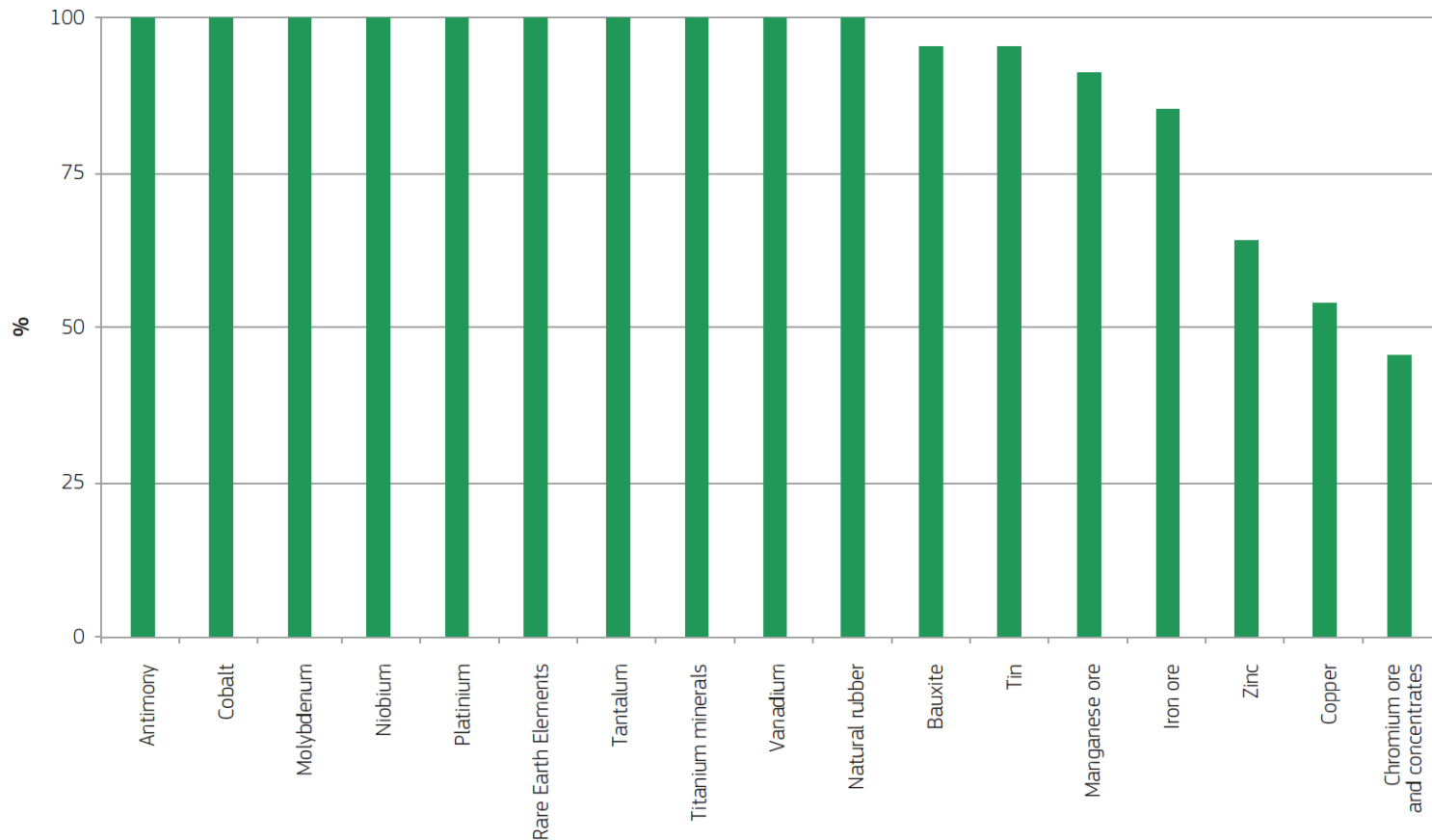
*The EU economy requires a wide variety of raw materials and not all of them can be produced domestically*



**Figure 11: Share of imports in EU-28 compared to Direct Materials Input (2002-2013)**

### 3. Share of imports

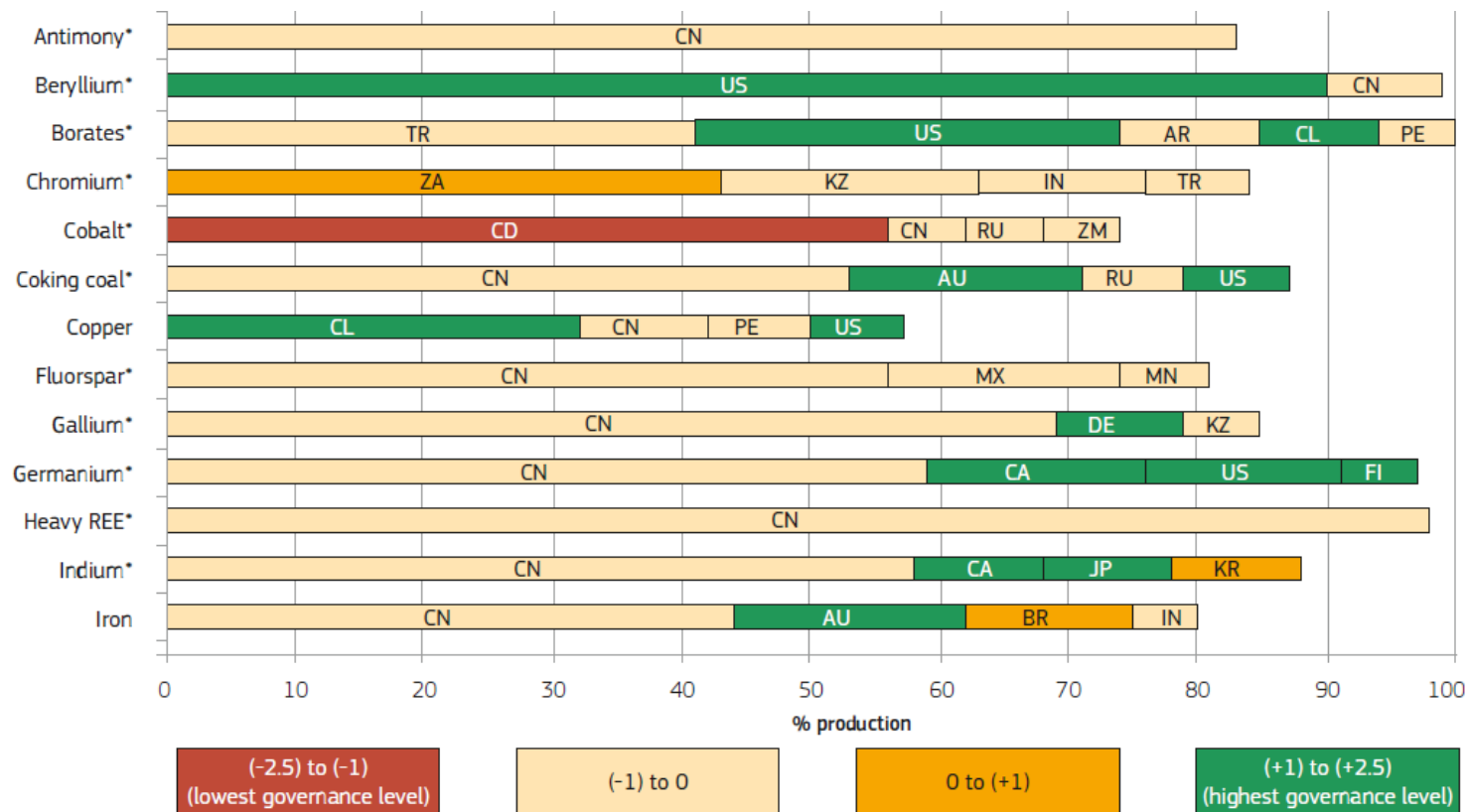
*The EU is highly import-dependent for certain raw materials, which poses a risk to its security of supply*



**Figure 12: Import dependence for selected raw materials**

## 4. Geographical concentration and governance

*The supply of critical and some non-critical raw materials to the EU is highly concentrated in a few non-EU countries that often show low levels of governance*

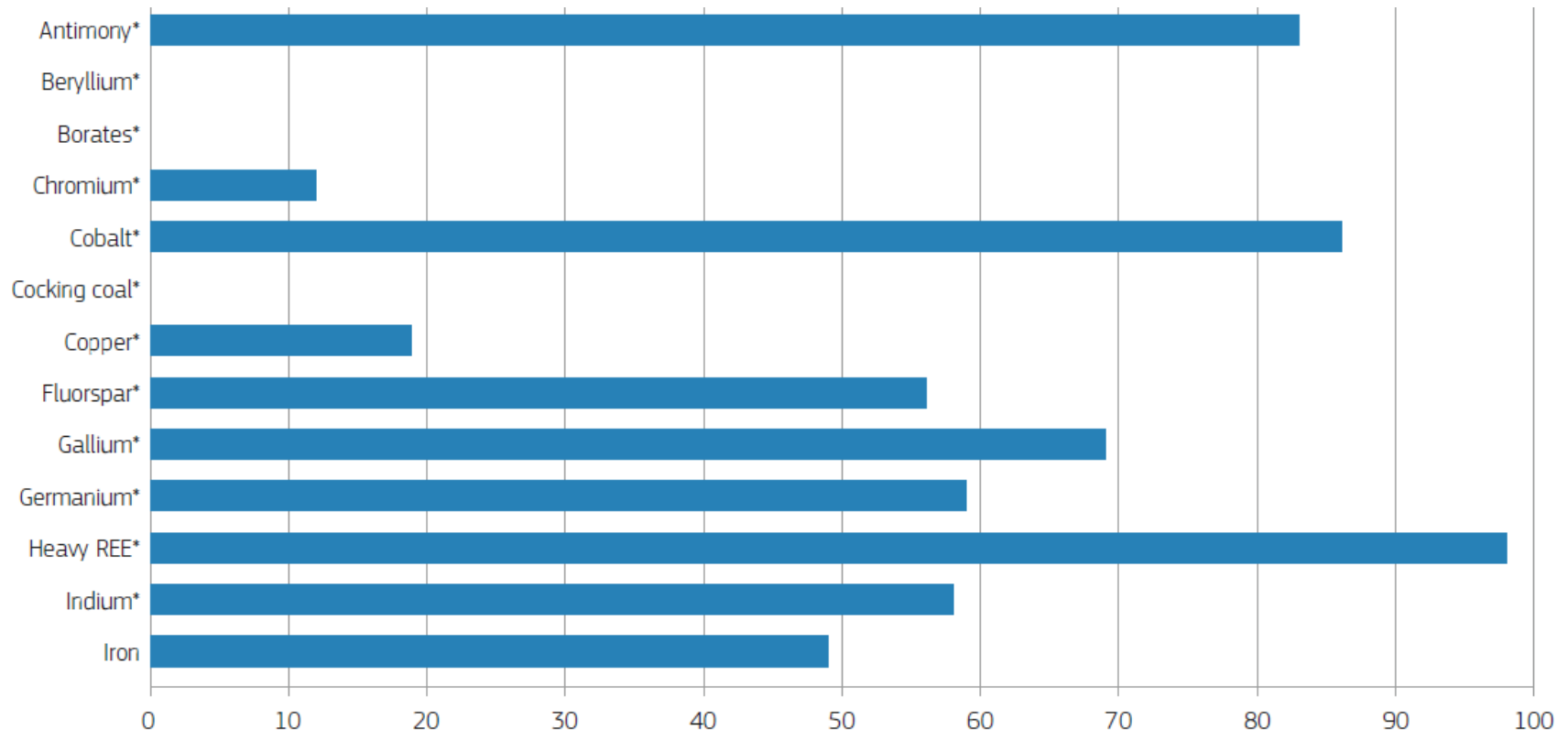


**Figure 13: Geographical concentration of raw material production and producer countries' governance levels**



## 5. Export restrictions

*Commodity market distortions are particularly relevant for raw materials for which the global market is dominated by a few exporting countries*



**Figure 15: Proportion of primary production subject to export restrictions (2009-2012)**

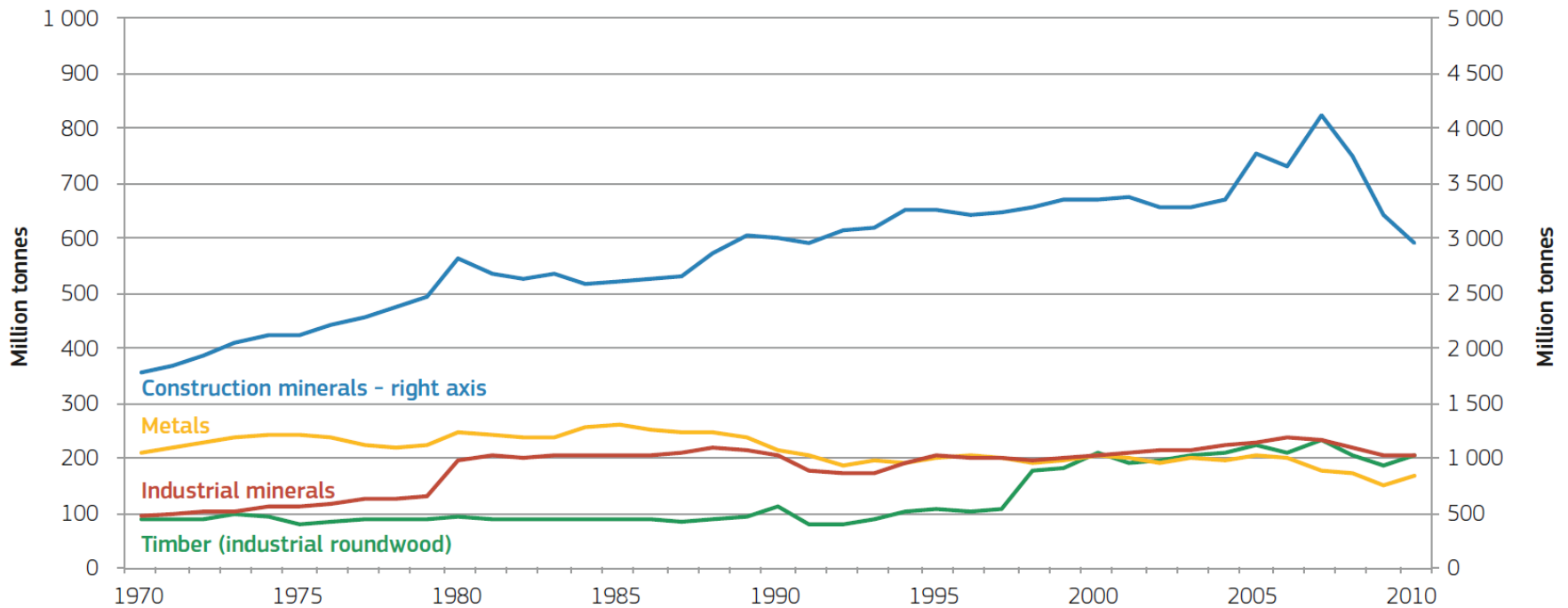
# Competitiveness and innovation

## >> Indicators

6. Domestic production
7. Value added and jobs
8. Corporate R&D investment
9. Patent applications
10. Knowledge and skills

## 6. Domestic production

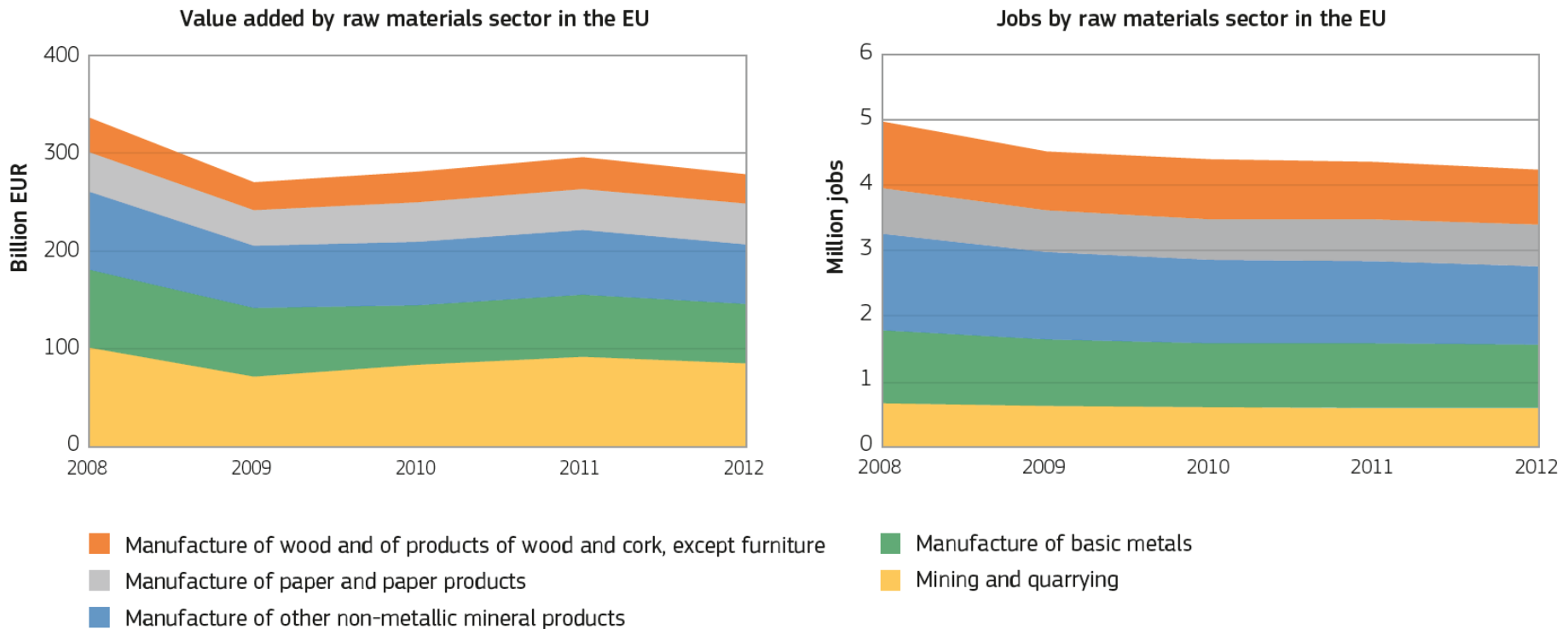
*Domestic extraction of construction minerals and harvesting of wood has increased since the 1970s, allowing the EU to remain more or less self-sufficient*



**Figure 16: Domestic extraction of raw materials (EU-28, 1970-2010)**

# 7. Value added and jobs

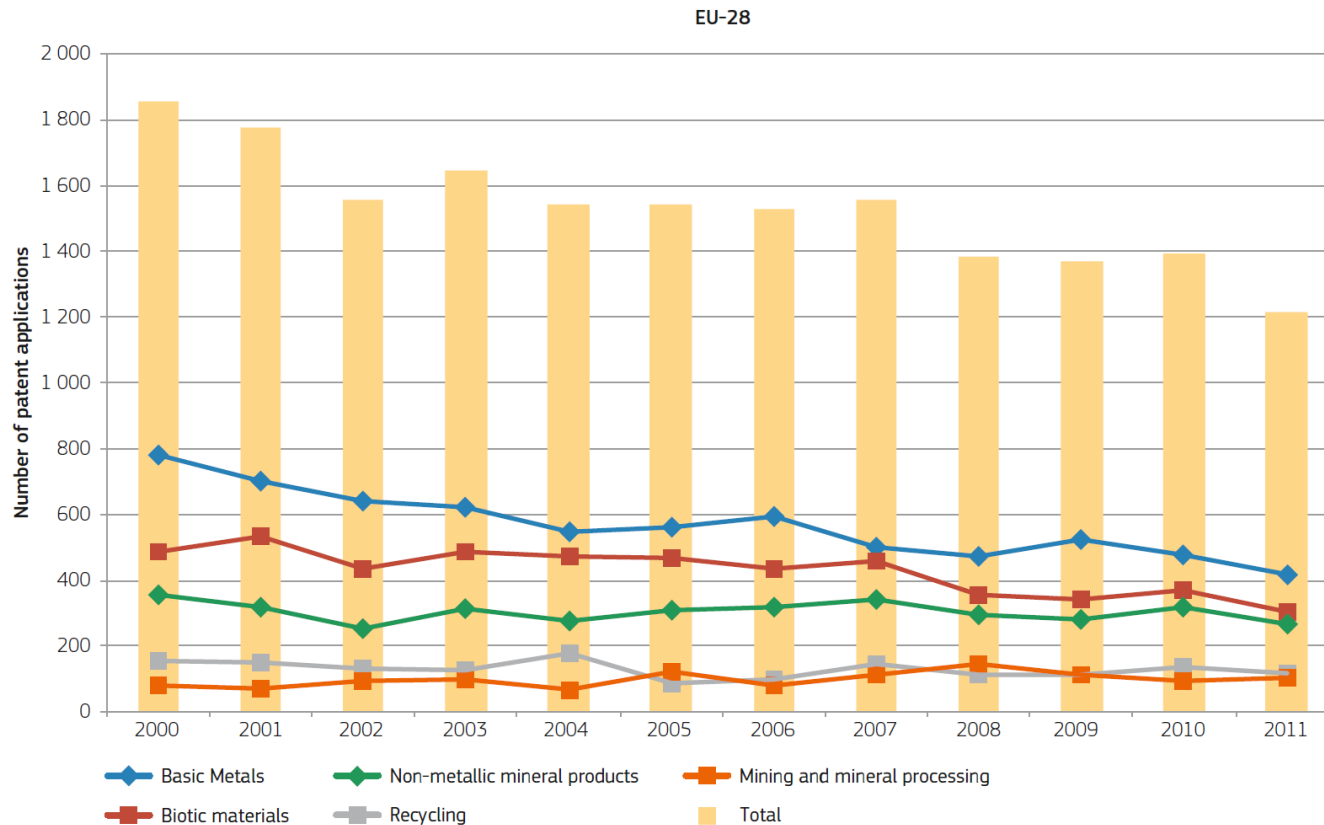
*Domestic raw materials production creates EUR 280 billion of added value and more than four million jobs*



**Figure 18: Value added at factor cost (left) and number of jobs (right) for a selection of raw materials economic sectors in the EU (2008-2012)**

# 9. Patent applications

*EU patent applications in the raw materials sector show a decreasing trend*



**Figure 21: Number of raw materials patent applications from EU-28 Member States**

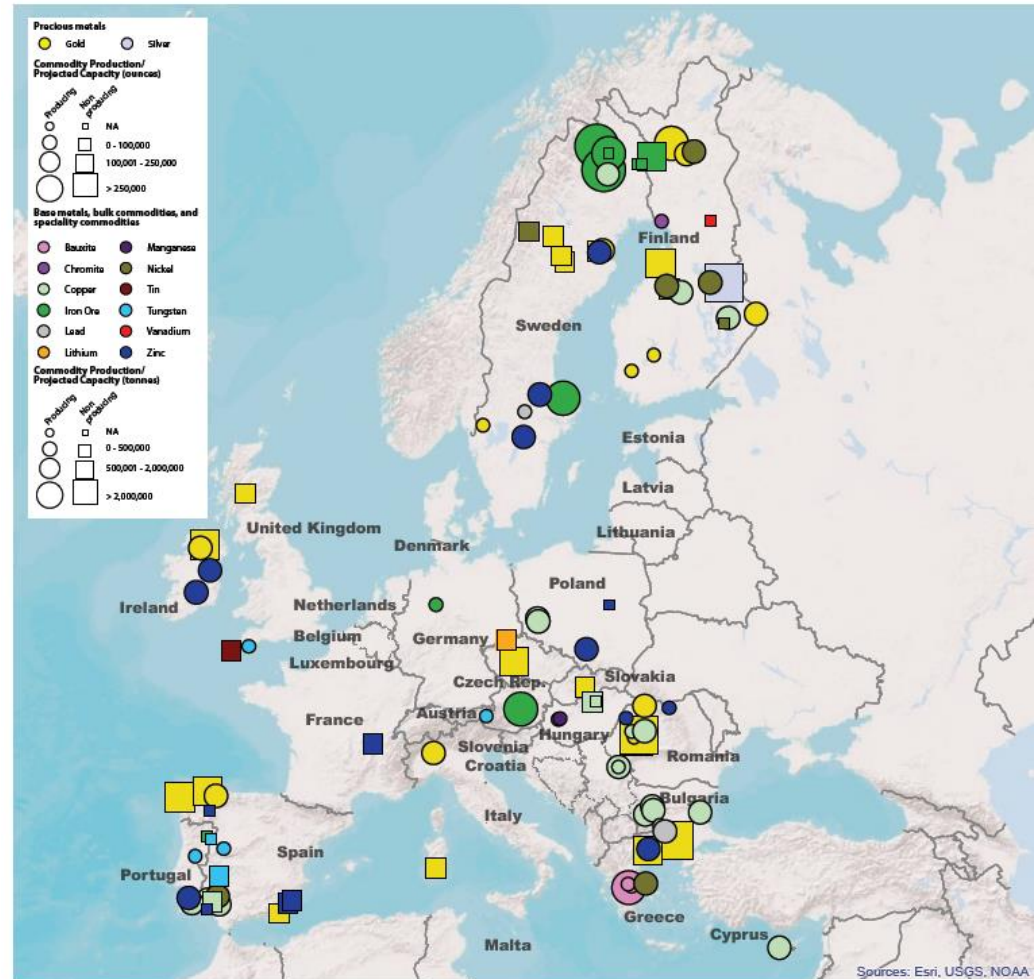
# Framework conditions for mining

## >> Indicators:

- 11. National minerals policy framework
- 12. Public acceptance
- 13. Mining activity in the EU
- 14.. Minerals exploration

# 11. Mining activity in the EU

*Even though the EU has the potential to increase the current production or start new production units, domestic extraction of metals is largely insufficient to meet the EU's raw materials demand*

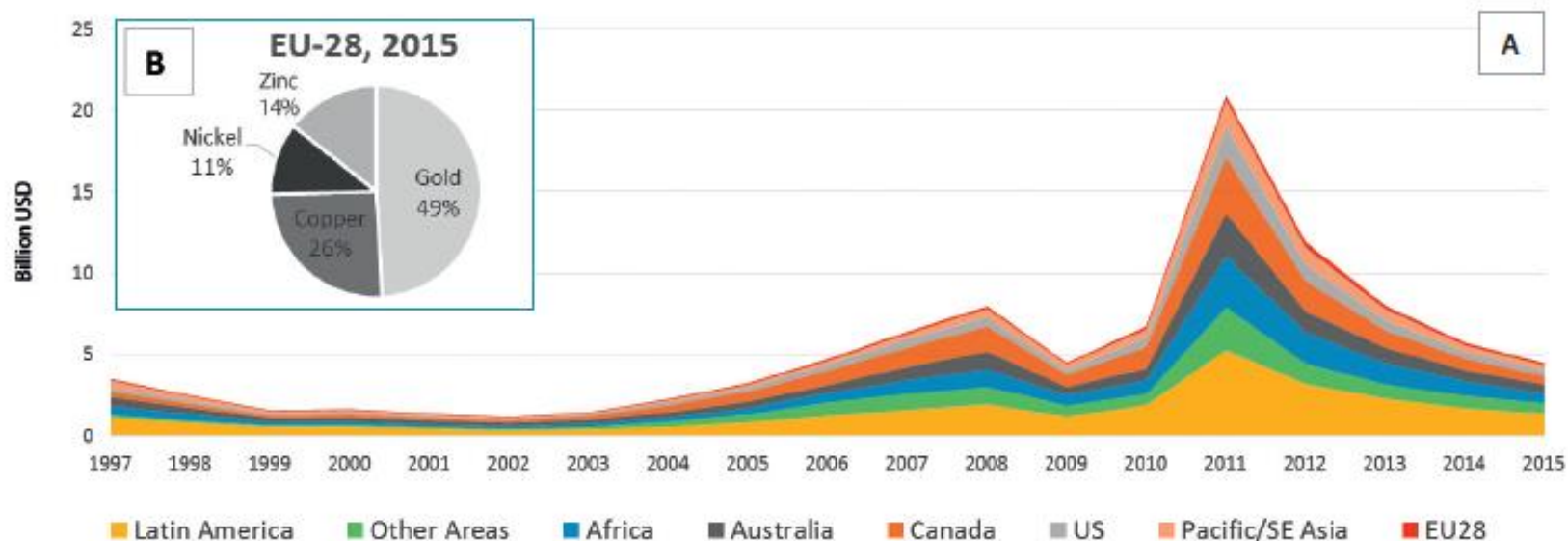


**Figure 25: Metal mine production in the EU (2014)**

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# 12. Minerals exploration

*Compared to the global level, investment in exploration activities in the EU is low*

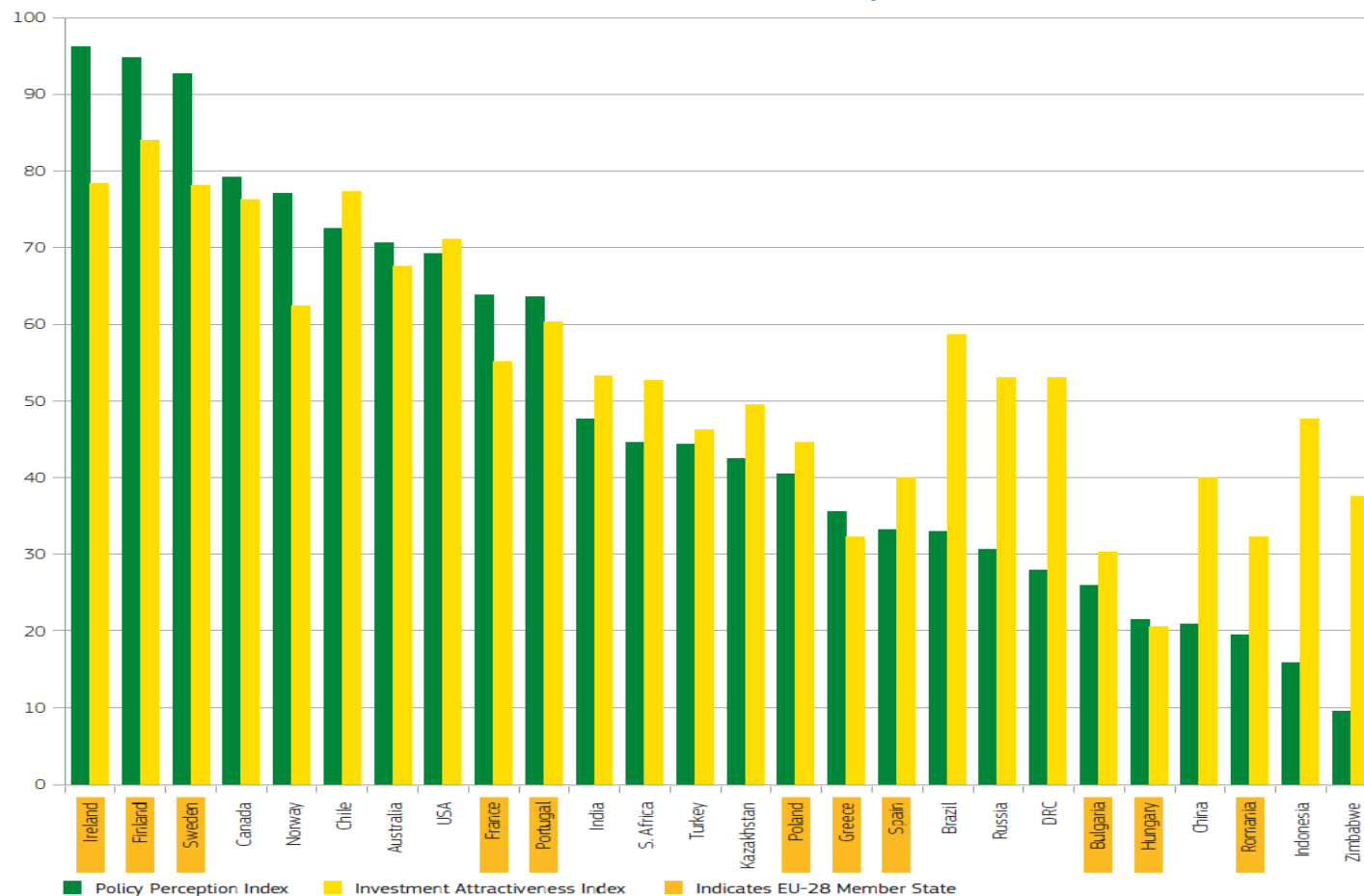


**Figure 28: Exploration budget by world mining region (1997-2015) (Figure A) and distribution of exploration budget allocation to various metals in the EU (2015) (Figure B)**



# 13. National minerals policy framework

*According to mining company managers, the minerals policy framework of the EU Member States varies widely*



**Figure 29: Policy Perception Index and Investment Attractiveness Index (2014)**

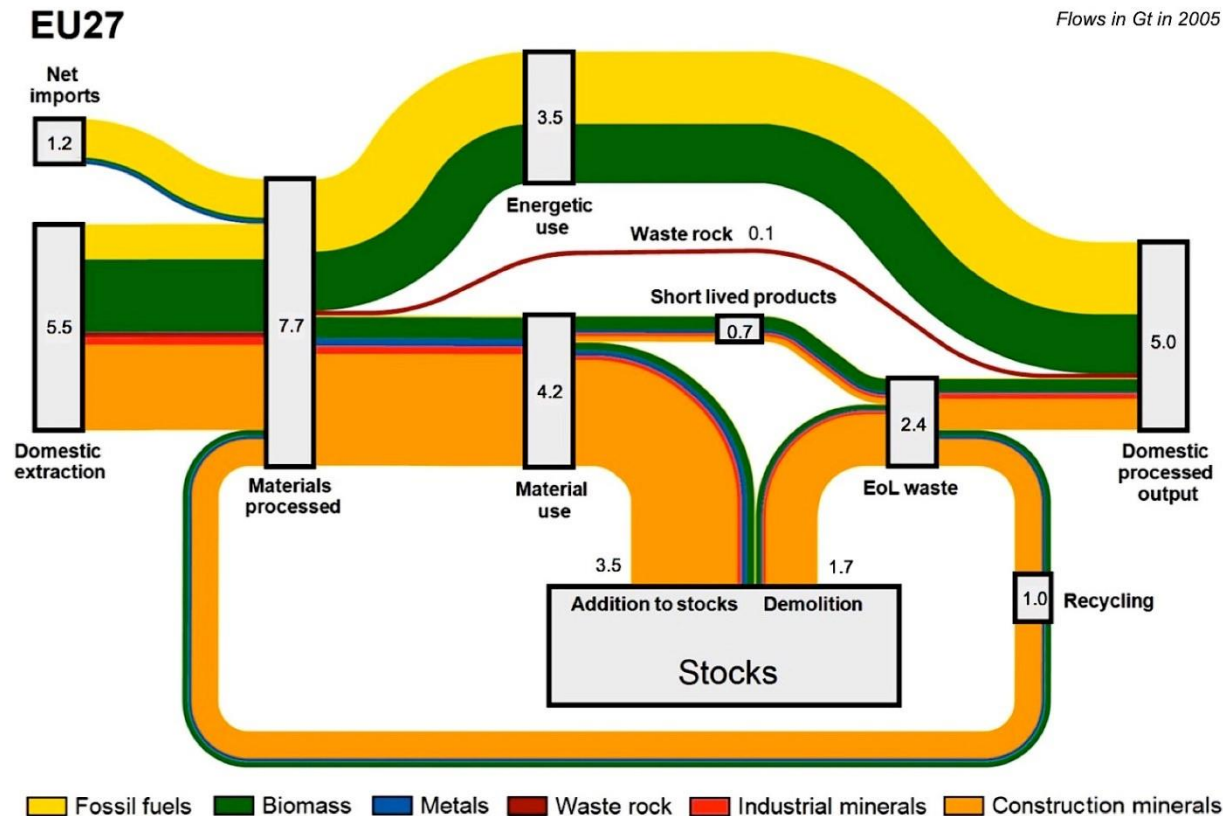
# Circular economy and recycling

## >> Indicators:

- 15. Material flows in the circular economy
- 16. Recycling's contribution to meeting materials demand
- 17. WEEE management
- 18. Trade in secondary raw materials

# 15. Material flows in the circular economy

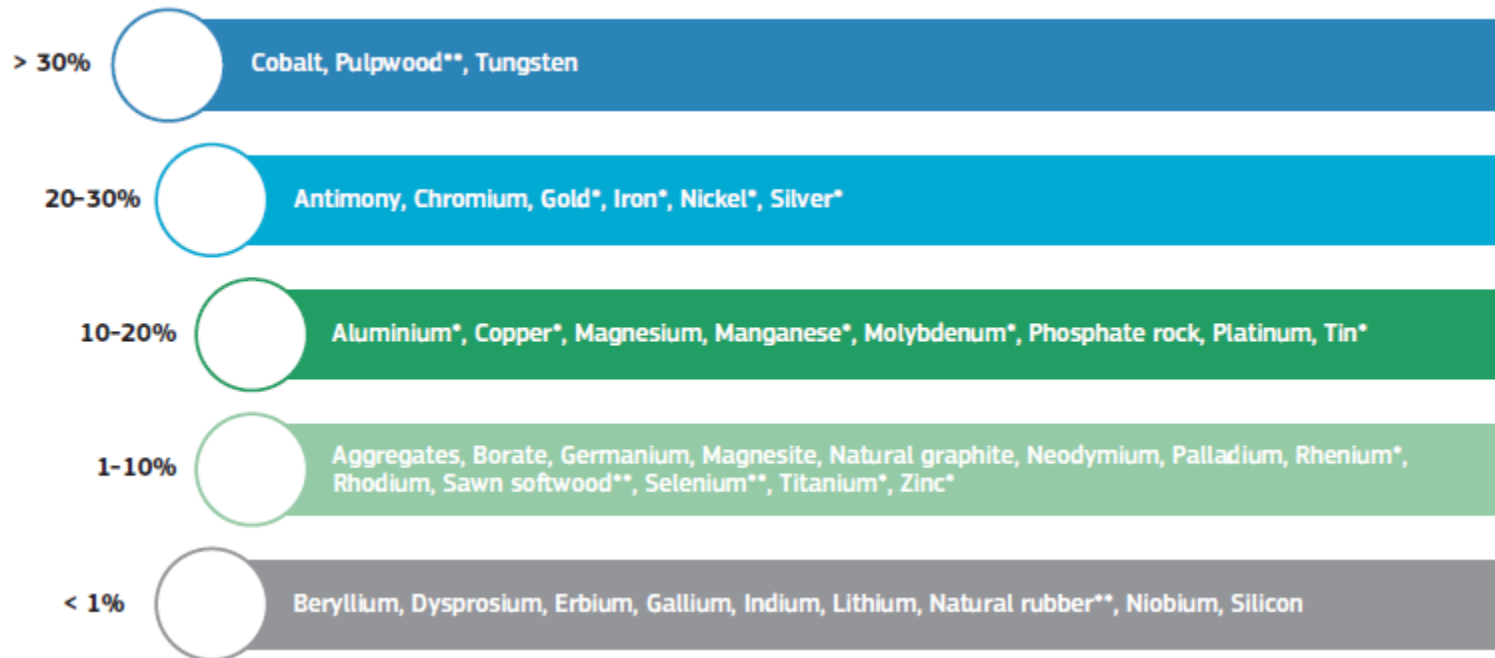
*The circular use of raw materials in the economy is relatively low, mostly due to technical limitations to recycling and because demand for raw materials to build infrastructure is higher than what can be met through recycling*



**Figure 32: Material flows in the EU-27 economy (2005)**

# 16. Recycling's contribution to meeting materials demand

*For most materials, recycling's contribution to meeting materials demand is relatively low, because demand is higher than what can be met by recycling or because high-quality recycling is not technically or economically feasible*



**Figure 34: End-of-life recycling input rates (EOL-RIR) for a selection of raw materials**

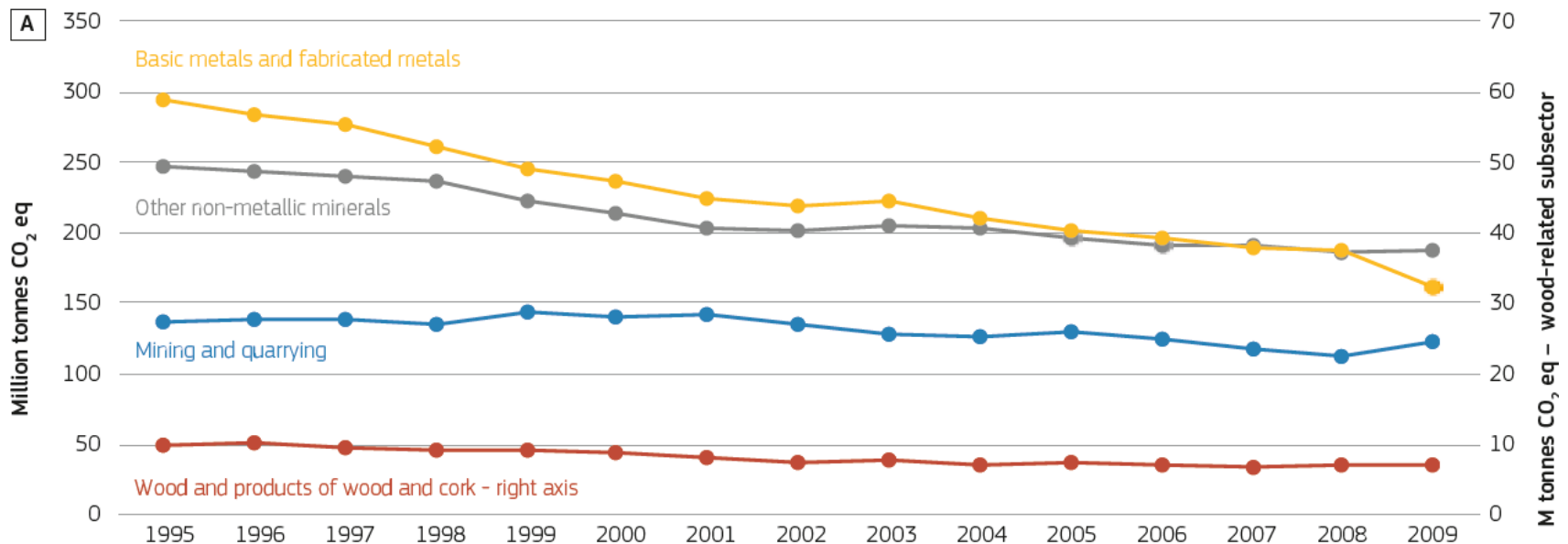
# Environmental and social sustainability

## >> Indicators:

- 19. Air emissions
- 20. Water
- 21. Extractive waste management
- 22. Sustainable wood supply
- 23. Occupational safety
- 24. Sustainability reporting

# 19. Air emissions

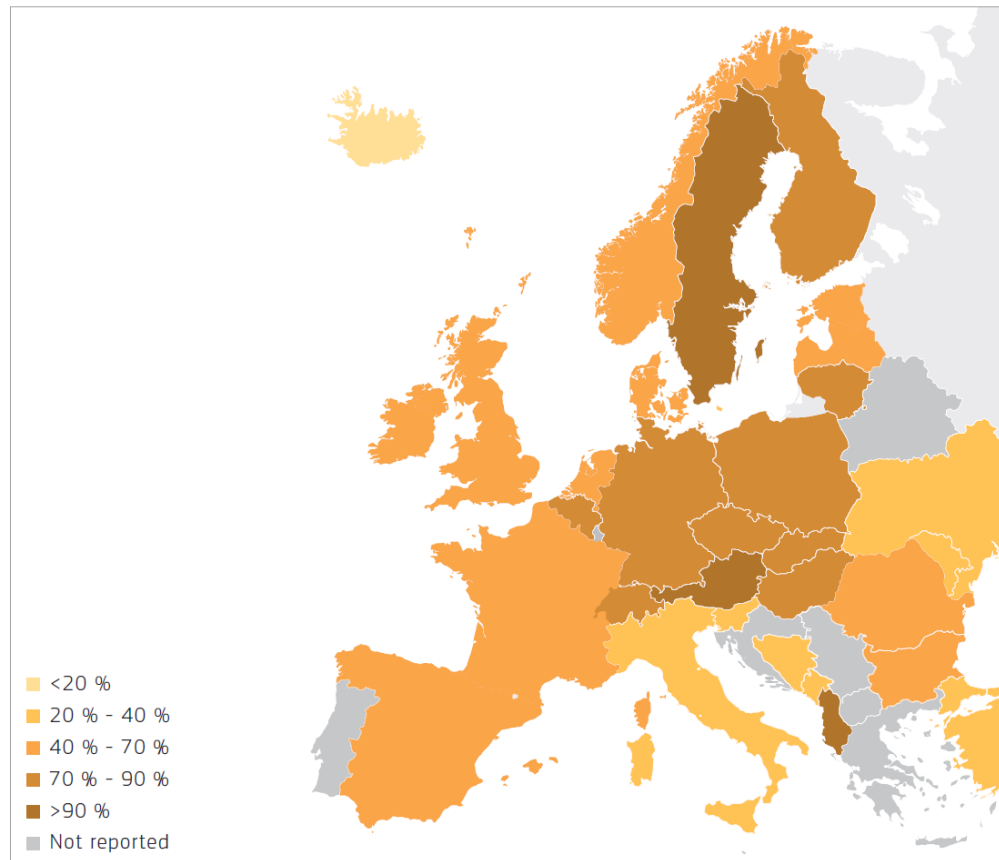
*Emissions of greenhouse gases and other air pollutant emissions from the production of raw materials in the EU decreased by 10-40 % between 1995 and 2009*



**Figure 39A: Emissions of greenhouse gas emissions (EU-27, 1995-2009)**

## 22. Sustainable wood supply

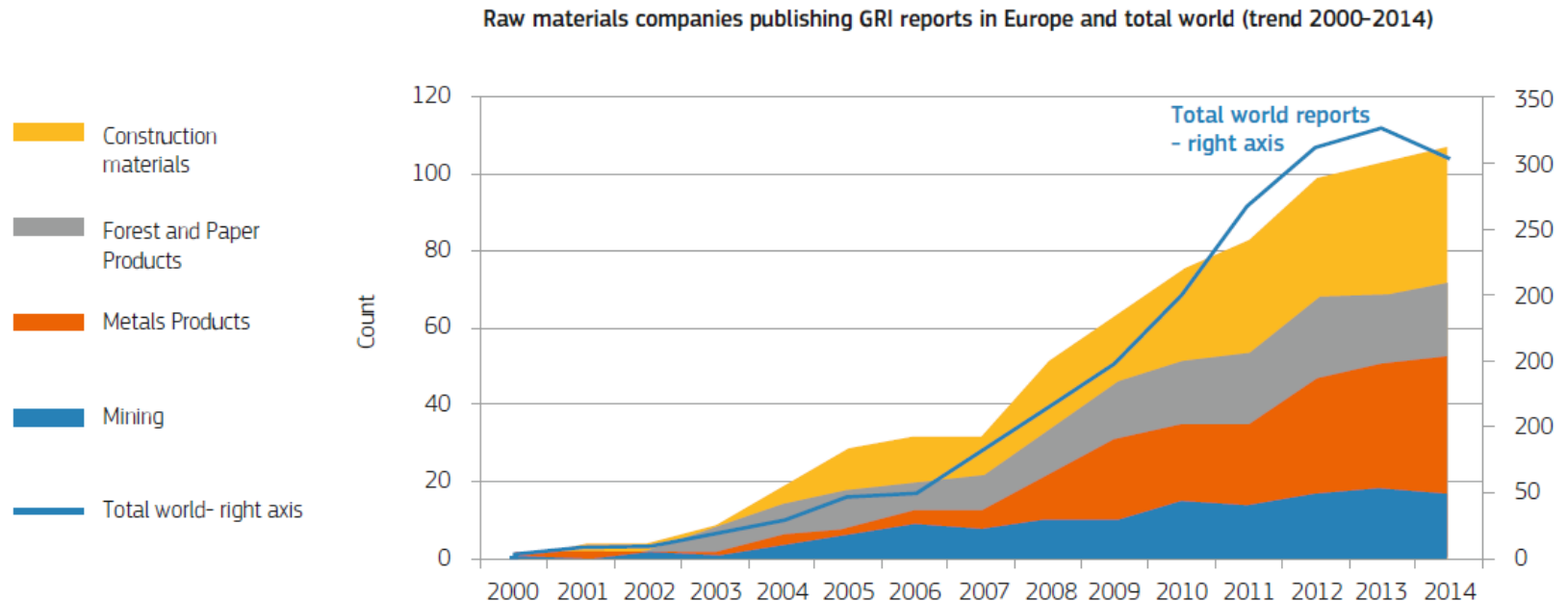
*After centuries of deforestation, the area and wood-growing stock of EU forests has been increasing over many decades*



**Figure 40: Geographical distribution of felling rates (% of net forest increment, 2010)**

## 24. Sustainability reporting

*Raw materials companies are increasingly publishing sustainability reports*



**Figure 43B: Number of companies that have joined the Global Reporting Initiative (Europe, 2014)**





# Raw Materials Scoreboard: conclusion and next steps

- The Raw Materials Scoreboard provides an overview on the **challenges related to raw materials** in 24 indicators, structured in 5 thematic clusters
- The Raw Materials Scoreboard will contribute to the **monitoring of the Circular Economy**
- The Raw Materials Scoreboard has **prompted several stakeholders to step up their efforts** to provide data and information on raw materials from different sources in a harmonized and standardised way
- **Work is ongoing to widen and deepen the analysis** for the 2018 Scoreboard, and to develop data for certain issues

# Thank you for your attention!

**Find the Scoreboard at:**

<https://bookshop.europa.eu/en/raw-materials-scoreboard-pbET0416759/>

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## Raw Materials Week

6-10 November 2017

