Global material flows and demand–supply forecasting for mineral strategies

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MinFuture is funded by the Horizon 2020 Framework Programme of the European Union under Grant Agreement no. 730330. The contents of this document are the sole responsibility of MinFuture and can in no way be taken to reflect the views of the European Union.

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Challenges and objectives

Challenges
1. Lack of robust **maps** and **forecasting tools** of the physical economy hamper effective strategy development
2. Governments tend to monitor isolated flows, not systems → fragmented information
3. Complexity of system

Objectives
1. Develop a proof of concept for a “Google Maps” of the global physical economy (multiple scales)
2. Involve governments and industry in the development and implementation of a common methodology
3. Test the feasibility and usefulness of this methodology and identify relevant barriers
Approach and achievements

- Brought together key data providers and users (UN Statistics, USGS, BGS, JRC…)
- Developed a conceptual framework for mapping the physical economy → Providing system context of data
- Assessment of approaches for model and scenario development, uncertainty, visualization, indicators
- Case studies on cobalt, neodymium, aluminium, construction minerals started
- Proposal GeoERA: Application for European Minerals Yearbook
MinFuture seeks cooperation with partners that can support us in:

1. **Methodology development**

   Development of tools for robust mapping and forecasting of material cycles

2. **Teaching / training**

   Enable companies and data providers (e.g., geological surveys, statistical offices) to monitor their own systems

3. **Strategy and policy**

   Test the use of quantitative system approaches / scenarios / system-based indicators for strategy support