

Baseline report on missing segments and supply chain vulnerabilities

Deliverable D6.1



Deliverable D6.1 provides the conceptual and analytical baseline to support effective and pragmatic policymaking for securing the EU's access to critical raw materials (CRMs), especially in and around environmentally protected areas.

It focuses on identifying the **missing segments and vulnerabilities in the CRM supply and value chains and proposes a framework** to address them. The EU's transition to a net-zero emissions' economy relies heavily on secure access to CRMs. However, supply chains remain exposed to vulnerabilities due to concentrated sourcing, underdeveloped extraction, processing and recycling infrastructure, and the absence of integrated strategic planning. These weaknesses are particularly problematic for projects in nature-protected or socially sensitive areas. They will also grow more visible as supply chains shorten to promote national self-sufficiency in critical and strategic materials.

Therefore, addressing them requires not only improved governance and infrastructure but also significant investment in social capital, the establishment of adequate social resource contracts and transparent, inclusive communication with all relevant stakeholders, particularly local communities, to **build trust, ensure social acceptance, and promote long-term sustainability**.



A **systemic supply risk assessment** was conducted aligning both binomial and stochastic methods. The methodology adapted a conventional DPSIR framework (Drivers-Pressures-State-Impact-Response) to apply Circular Economic value-chain principles such as "smart contracts" balancing all stakeholder interests, to mitigate or eliminate disruptions to CRM and SRM supply chains.

Special focus was given to integration of the **Social Resource Contract** and UN Resource Management System (**UNRMS**) as tools for circular economy transition, equitable access to and benefits from natural resources, and continuous stakeholder participation, through to robust End of Life (EoL) provision for completed projects, especially those in or close to protected areas.

This deliverable defines a **new conceptual baseline** for secure, socially responsible CRM value chains. These insights have been directly used to create a platform for Deliverable D6.2, which focuses on CIRAN's triple-bottom-line policy recommendations for permitting, ESG frameworks, and stakeholder engagement, with special attention to permitting new projects in environmentally sensitive areas.

Key Findings:

- Heavy dependence on imports from resource-rich countries like China (e.g., Rare Earth Elements), were unstable EU-China relations imply systemic supply risks.
- Delays in mining permits are often caused by bureaucratic fragmentation and under-resourced permitting bodies.
- Environmental concerns and societal resistance are common, especially in protected areas such as Natura 2000, due to lack of early engagement and trust-building.
- The absence of "social resource contracts" undermines long-term stakeholder commitment and societal acceptance.
- Policy misalignment across EU and Member State levels hampers timely and coordinated responses to CRM demand and environmental protection needs.
- Supply risk assessment and management must balance in a continuous process.

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