



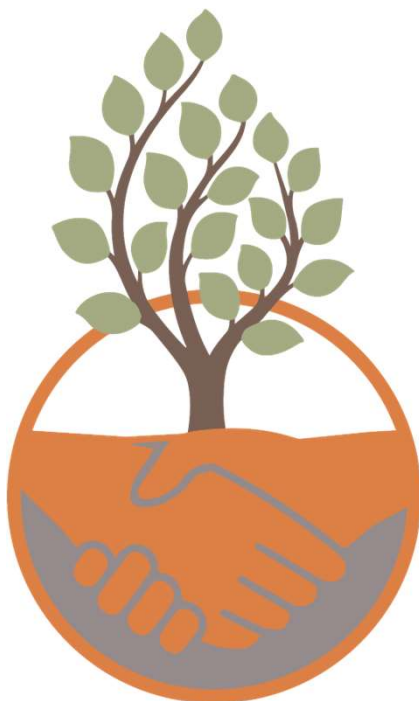
EUROPEAN RAW MATERIALS CLUSTERING EVENT

SUSTAINABILITY,
EXPLORATION,
TRACEABILITY AND
PROCESSING
TECHNOLOGIES.

16-17 OCTOBER 2024
HOTEL OCCIDENTAL
VIAPOL
SEVILLE, SPAIN



EUROPEAN
RAW MATERIALS
CLUSTERING
EVENT



CIRAN

CRITICAL RAW MATERIALS EXTRACTION IN ENVIRONMENTALLY PROTECTED AREAS

Helena Robert i Campos
LA PALMA RESEARCH CENTRE (LPRC)
16 October 2024

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INTRODUCTION



"Projects are expected to contribute to the following outcomes:

a. Exchange of **good practices** in permitting procedures related to extractive activities that may have an impact in environmentally protected areas;

b. Dissemination and exploitation of projects outputs is **tailored for competent EU, national and regional authorities, industry and civil society in EU Member States.**"

CIRAN: A plan for sustainable resource extraction

01 Reconciling two societal needs: Resource recovery and nature conservation. Land-use planning for sustainable development & social progress

02 A shared perspective for a shared space

03 Capacity-building and participatory approaches to decision-making

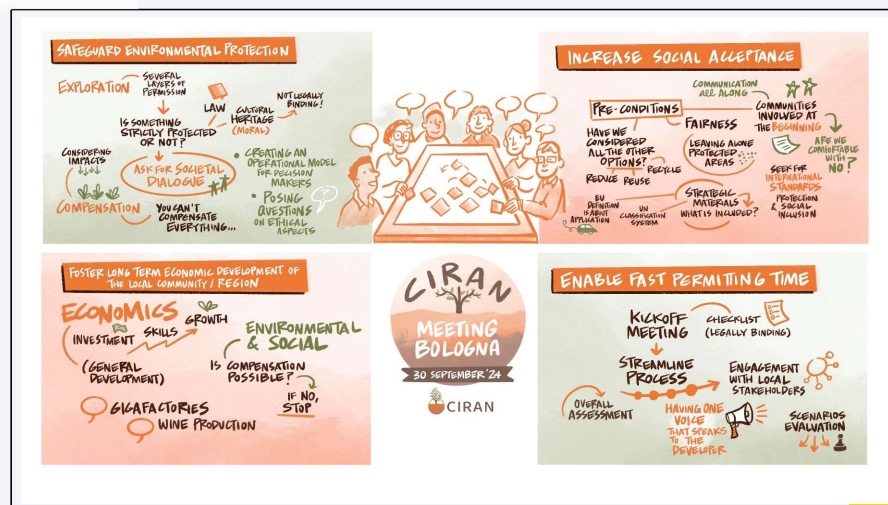


Figure 1. Overview of the objectives and challenges addressed in the CIRAN project

PROJECT STRUCTURE



- M1-M36
- Structured into **7 complementary, highly interactive Work Packages**, each engaged with one or more of the four groups of Expert Groups as an integral element of the project.
- Several interactions across WPs are possible thanks to a **cohesive, active, and well-connected Consortium** (e.g., monthly Consortium + WP meetings)

4 KEY PILLARS DRIVING OUR WORK

- **System-oriented approach:** capturing & assessing best practice – enabling factors, metrics, benchmarks, case studies + technological & innovative performance appraisals towards sustainability
- **Social dialogue:** engagement & knowledge co-creation – explore new social contracts and more sustainable business models
- **Cross-sectoral dialogue:** mapping the effects of policy-making & developing policy recommendations
- **Capacity-building:** educational materials, peer learning, knowledge-exchange

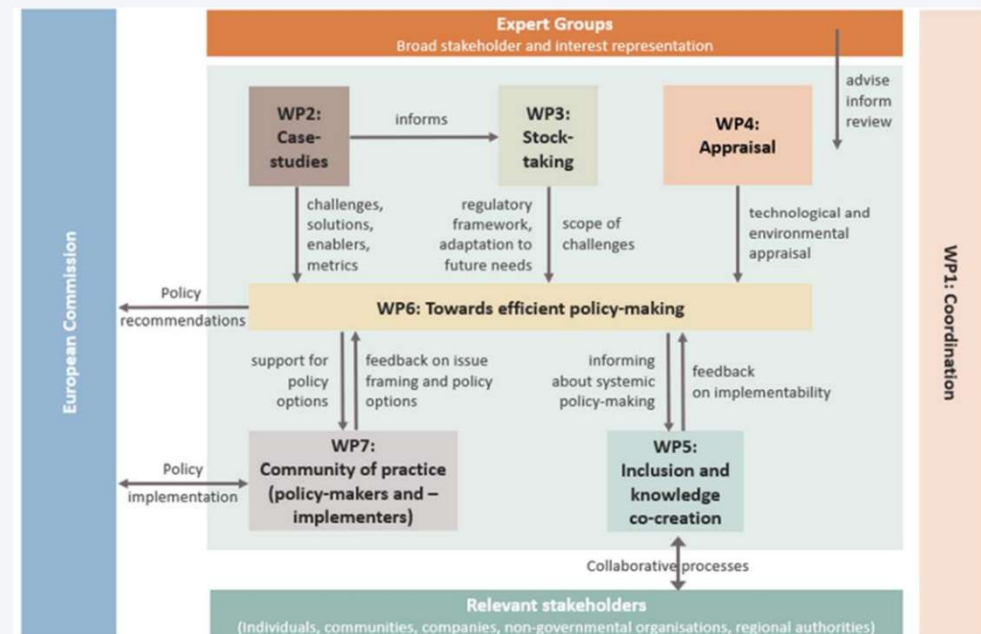
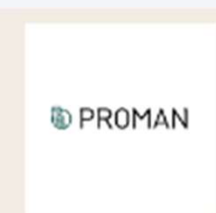
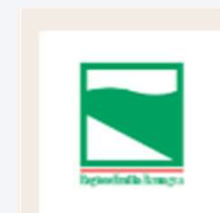
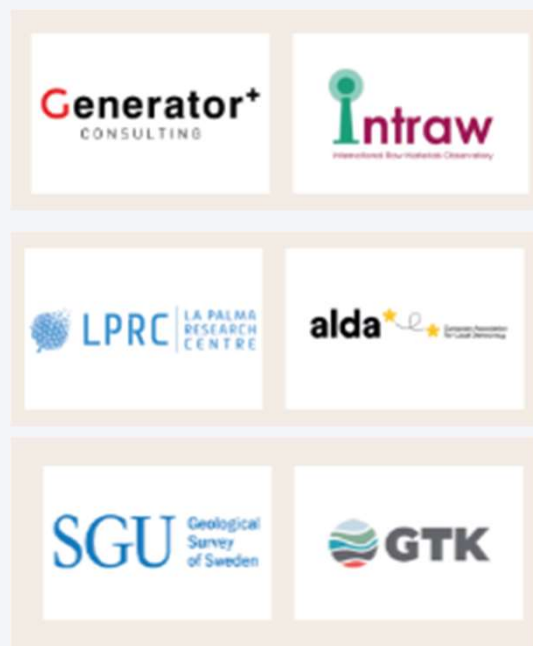


Figure 2. CIRAN Knowledge space and information flows for inclusive and balanced policy and decision-making recommendations.

OUR CONSORTIUM

Committed to EU's agendas and targets
Interdisciplinary approach & experience



General Director

OUR EXPERTS' NETWORK



IT GOES BEYOND THE CONSORTIUM OUTREACH AND EXPANDS AFTER EVERY OPPORTUNITY TO CONNECT – Like this one!

Role of External Experts: Provide a **critical view** on the project developments, outputs, and ongoing discussions. Invited to **discuss concrete topics** crucial for advancing project tasks (e.g., Workshop on future scenarios, decision tree support tool, etc.). Update the project with **real-life experiences** from the industry, policy, academic, and local perspectives.

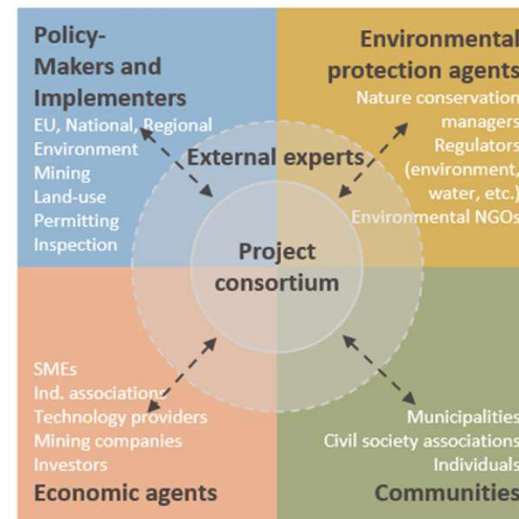
Pillars: Diverse but balanced, European & international, active and regularly engaged

Where to connect?

- **LinkedIn – [Community of Practice](#):** Join, share & support
- **Site / Guided visits – networking opportunities** combined with project meetings
- **Conferences & other international events**

1. Centre for European Policy Studies
2. IE Department of the Environment, Climate and Communications
3. DE Thuringian Ministry for the Environment, Energy and Nature Conservation
4. RS Environment Ministry
5. PT Mining Directorate
6. University of Pécs

1. IMA Europe
2. Euromines
3. EIT Raw Materials
4. International Council on Mining and Metals (ICMM)
5. Latitude Five
6. African Minerals Development Centre (AMDC)



1. UNESCO World Heritage
2. EUROPARC Federation
3. EU Network for the Implementation and Enforcement of Environmental Law (IMPEL)
4. European Environmental Bureau
5. Institute for European Environmental Policy

1. European Economic and Social Committee
2. Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF)
3. SmartNorth (Smart Specialisation Platform)
4. Pôle AVENIA
5. Municipality of Idanha
6. Municipality of Guimarães

Figure 3. CIRAN network of engaged stakeholders.

PROJECT RESULTS



Outcomes from good practice case studies

Niko Luodes (GTK)

AIM

Cases studies of Extractive activity in or near protected areas across EU to show how viable corporate strategies and the good practices they develop can adapt and successfully respond to a range of different socio-economic and environmental conditions as well as to different national and local legislation, permitting and public consultation procedures.

Cases

1. Nasir ASA
2. AA Sokatti Mining Oy
3. Rompa- Rajapalot
4. Regional case
5. Värmb quarry, Cementa Skövde
6. Blackstams Lithium
7. Budmor
8. Hamarönd Tungsten
9. Elmä - Beauvoir
10. Mittelland
11. Monte Tondo
12. Barmucopanda
13. Serra Candeleiras
14. Naves Corvo

Protected areas Natura 2000, UNESCO, Other level of protection and denomination + Reindeer herders areas, Sami Areas in Nordic countries

Results

Authority Level

- National: Comprehensive national policy, guidelines, permitting process of extraction, No high expert knowledge of the impact for decision-making
- Regional: Regional policies, guidelines, permitting process of extraction, No high expert knowledge of the impact for decision-making
- Local: Local policies, guidelines, permitting process of extraction, No high expert knowledge of the impact for decision-making

Company Level

- Environmental: Environmental impact assessment, Environmental impact management plan, Environmental monitoring and reporting
- Social: Social impact assessment, Social impact management plan, Social monitoring and reporting
- Economic: Economic impact assessment, Economic impact management plan, Economic monitoring and reporting

Sensitivity maps of potential conflicts over natural resources usage

Nikolas Ovaskainen (GTK)

Introduction

The goal of deliverable D3 is to study how much critical raw material (CRM) deposits and projects, collectively referred to as occurrences, and protected areas (PA) overlap within the EU and nearby countries (study area). The primary goal is the creation of geographical maps that visualize the potential overlap. As data for PA, we use Natura 2000, Emerald Network and CCDA (European Environment Agency, 2022). As data for CRM occurrences we use European Geological Data Infrastructure dataset "Critical raw material occurrence points 2022" (GUS, 2022). Based on availability of data, the study area consists of continental areas of Sweden, Spain, France, Austria, Norway, Finland, Portugal, Czech Republic, Switzerland, Belgium, Greece, Italy, Poland, Romania, Ukraine, Slovakia, Bosnia & Herzegovina, Ireland, Albania, Serbia, Slovakia, Hungary, Montenegro, Croatia and Luxembourg.

Methods and Data

Distance method: Illustration of the a) distance and b) buffer method for analyzing overlap of CRM occurrences with PA. The proportion of CRM buffer area overlapping with the PA is 10.9 %.

Buffer method: Illustration of the a) distance and b) buffer method for analyzing overlap of CRM occurrences with PA. The proportion of CRM buffer area overlapping with the PA is 10.9 %.

Results

- PA cover circa 24.4 % of the study area
- The number of CRM occurrences is 2379
- Approximately 85 % of the CRM occurrences are less than 5 km to the nearest PA
- There are 149 active mines with CRMs (in the dataset)
- Of the active mines, approximately 69 % are closer than 5 km to the nearest PA

Conclusions

- Critical raw material occurrences are often in (very) close proximity to protected areas (Natura 2000, Emerald Network or CCDA). This has a potential to generate environmental impacts and disputes.
- Based on overlap analysis, there are differences between countries and commodities within the study area in terms of how much overlap there is with protected areas.

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References: (GUS, 2022). Critical raw material occurrence points 2022 (3302/MH440). Retrieved from https://data.gus.fi/dataset/European-Environment-Agency-2022-Natura-2000-Emerald-Network-and-CCDA. Retrieved from https://data.gus.fi/dataset/European-Environment-Agency-2022-Natura-2000-Emerald-Network-and-CCDA
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Fitness-for-Purpose Assessment of Regulatory Frameworks

Sybil Berne¹ & Jerry Barnes¹ (MDB)

Baseline of a Fit-for-Purpose Regulatory Framework

1. Protects environmentally sensitive areas; and
2. Enables the sustainable extraction of materials.

Barrier Themes Identified

Conclusions

Significant challenges identified: with the reconciliation of increasing environmental protection and speeding up the process of CRM development.

Recommendations

Key Points

- Tension between mining and environmental protection expected to increase in the coming years.
- Areas to be addressed for the successful realisation of EU mineral and environmental objectives.
- Input of successful objective realisation into the streamlining of current systems.
- Overly restrictive approaches to the Nature Directives by member states create implementation problems.
- Results of the fitness-for-purpose assessment confirm the barriers to more effective decision-making as identified by previous studies and identify others.
- Increased need for CRM extraction and demands on the regulatory systems responsible will likely exacerbate barriers, slowing down decision-making.

Cutting-edge and emerging technologies and extraction methods

Mauro Lucarini¹, Monica Serra¹, Fiorenzo Fumanti¹, Maria Gabriella Andrisani¹, Federico Silvestri¹, Lucio Martarelli¹ (ISPRA)

Introduction

Best available techniques and processes covering the whole extractive life-cycle for responsible mining even within environmentally protected areas.

Context

The results of the investigation aimed to select options and limitations for extraction methods that may be considered for use in environmentally protected areas. All the possible scenarios have been taken into account from the mine that could have a significant impact on a protected area, even if very distant from it, to the case of a deep underground mine generating less to none environmental impacts.

Results

D 4.1: CATALOGUE OF EMERGING LOW-IMPACT, LOW VISIBILITY EXTRACTION METHODS

It refers to the process of optimizing the health and safety, efficiency and profitability and sustainability of mining operations through various techniques, technologies and strategies.

LOWER IMPACT

It refers to the reduction of release of carbon dioxide and methane into the atmosphere during activities such as ore extraction, transportation and processing.

FOOTPRINT MINIMIZATION

It refers to the process of reducing impacts on ecosystems, communities and natural resources during mining operations, in order to extract minerals responsibly and with long-term impact.

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PROJECT RESULTS



WP3 T3.3 – CIRAN 2035 SCENARIOS

- Objective: Provide 4 potential overviews of the short-term future of CRMs, environmental protection, policy and regulation, and societal challenges/perspectives
- Methodology: combining Horizon scanning, Delphi Surveys, and focused discussions applying foresight methods & participatory tools
- Close cooperation with communities (WP5) & across WPs (WP2-3-6)

(Not final, Deliverable forthcoming)

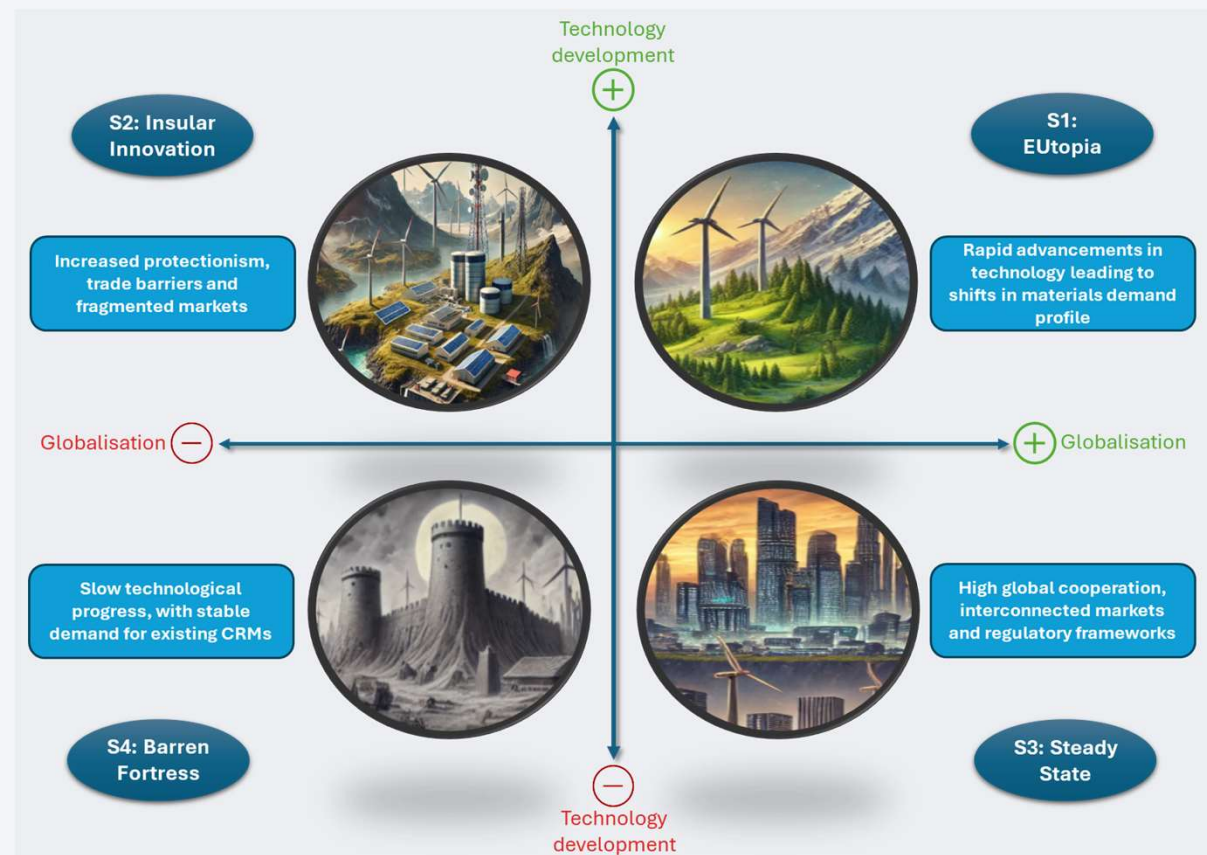


Figure 4. CIRAN 2035 scenarios overview.

EXTERNAL COLLABORATION



CIRAN Consortium & External experts' visit to the Monte Tondo Quarry & Saint-Gobain Group manufacture in the naturally-protected area (UNESCO) of the **Parco Regionale della Vena del Gesso Romagnola**, Emilia-Romagna, Italy – *October 2024*



CIRAN Consortium visit to the active quarry Pedra de Toque, in the Natural Park Serra de Aire e Candeeiros, near Lisbon, Portugal – *January 2024*



And still 15 months to go...

- **More Consortium Meetings, workshops & field visits**
- **Video contest for young people**
- **Final Conference (Brussels, 2025)**



CONCLUSIONS

THE DILEMMA(S) OF BALANCING THE “NEEDS”

01 – Which resources and where?

- Several CRM occurrences across Europe near/in environmentally protected areas
- Innovations in exploration, updating of CRM lists based on demand – EU CRMA-, and increasing regulations for designation of nature protection at European, national, and regional levels.

03 – Sustainable compromise

- Advocates for sustainability (including EU / national policymakers, environmental groups, etc.) often find themselves trapped in contradictions:
 - Advocating decarbonisation, while opposing mining and rejecting global trade

05 – Informed & active citizenship

- Peer learning & community engagement opportunities are essential for providing spaces to envision potential futures and influence recommendations for policy- and decision-making.

02 – Decision-making

- Decision-making for / against & public support/opposition towards mining
 - The distance of the stakeholder to the planned mine or extraction site often mostly influences the degree of its rejection or acceptance.

04 – Our growth

models & lifestyles

- Need to balance societal beliefs and values with lifestyles driven by concrete growth models, while exploring alternative models towards circularity and effective sustainability.

Q & A



CONTACT

Thank you for your attention!

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