

RAW4RES : Enhancing
responsible mining
policies and raw
materials resilience in
EU regions

REPORT

Activity (A1.1) : Exchange of experience on contention points between growth strategies vis a vis environmental protection policies

OCT 23

Executive Summary

This report documents the findings of the survey conducted within the context of RAW4RES Activity 1.1 (A1.1), titled “Exchange of experience on contention points between growth strategies vis-à-vis environmental protection policies”. Project partners documented territorial discrepancies between RM growth policies, measures or strategies and environmental regulations that could lead to conflicts with civil society actors. The report presents and analyses the survey results and elaborates on key findings that emerged throughout the analysis on policy related barriers to RM investments, providing recommendations for reinforcing environmental protection provisions in relevant RM growth policies. The report is structured as follows:

- **Section 1** introduces the topic of raw materials, followed by an overview of the RAW4RES project and Activity 1.1.
- **Section 2** summarises the survey and the methodology used for data collection.
- **Section 3** presents the survey results in three subsections: a) RM growth policies, b) regulations regarding the protection of the natural environment from RM sector activities, and c) ongoing or recent disputes on the grounds of environmental concerns due to RM sector activities.
- **Section 4** discusses the main findings of the survey with regards to RM policy mismatches that could jeopardise future investments in the RM sector and offers policy recommendations to enhance environmental protection provisions in RM growth policies.

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List of Abbreviations

- ◆ CRM Critical Raw Materials
- ◆ EC European Commission
- ◆ ESG Environment-Social-Governance
- ◆ EU European Union
- ◆ HREE Heave Rare Earth Elements
- ◆ KPI Key Performance Indicator
- ◆ N/A Non-Applicable / Non-Available
- ◆ NGO Non-Governmental Organisation
- ◆ OECD Organisation for Economic and Cooperation Development
- ◆ RM Raw Materials
- ◆ SDGs Sustainable Development Goals
- ◆ UNFC United Nations Framework
- ◆ UNRMS United Nations Resource Management System

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1 Introduction

1.1 About Critical Raw Materials

Critical Raw Materials (CRM) are materials such as metals, minerals and natural elements that are essential to our daily lives but also have a high risk associated with their supply. Raw materials, particularly CRM, are economically and strategically important to Europe's economy, as they form the backbone of Europe's industrial sector, producing a wide variety of goods and services used in daily life and in modern technologies. Securing raw materials supply is also essential to achieving the net-zero transition. Green technologies such as solar cells, li-ion batteries, and electric traction motors make intensive use of certain CRM like lithium, aluminium, platinum, and rare-earth elements¹.

The Organisation for Economic Cooperation and Development (OECD) estimates² that despite improvements in materials intensity^a and resource efficiency, global material's use will more than double from 79 billion tonnes in 2011 to 167 billion tons in 2060. However, production and processing of many CRM are highly concentrated in certain geographic regions. As a result, the CRM supply chains are at a higher risk of supply disruption, making reliable and unrestricted access to certain raw materials increasingly important in the European Union (EU) and globally.

The EU in particular depends on international trade partners for over 75% of many raw materials⁴, as these are produced and supplied by non-EU countries (third countries). For example, China supplies 100% of EU's needs for heavy rare earth elements (HREE), Turkey supplies 99% of EU's needs for boron, and South Africa supplies 71% of EU's needs for platinum and an even larger proportion of platinum group metals (i.e., iridium, rhodium, and ruthenium). To address the issue of raw materials' supply chain vulnerability the European Commission (EC) established in 2011 a list of CRM for the EU. The list of CRM is updated every three years and includes materials of high

^a Material intensity describes the national economy's dependency on natural resources. It can be measured as the ratio of the total material requirement, domestic material consumption or direct input to gross domestic product (GDP). As material intensity decreases, the aim is to reach a situation where the state of environment does not deteriorate as the economy grows. This also known as decoupling of economic growth and environmental impacts. (source: *Statistics Finland*⁶)

added value to the EU economy and of high risk associated with their supply. The 2020 updated and currently in force CRM list includes 30 CRMs (see **ANNEX I**).

In this context, diversifying supply from primary and secondary sources, reducing dependencies and improving resource efficiency, circularity and sustainable product design are all requirements for increasing the resilience of EU economy to supply disruptions. Furthermore, the increase in materials use combined with the environmental impact of materials extraction and processing is likely to put further strain on the global economies and threaten well-being of people². Without addressing the resource implications of low carbon technologies in the extraction and processing of raw materials, there's a risk of shifting the burden of emissions reduction to other sectors of the economy which may lead to new ecological and social issues, like heavy metal pollution or habitat destruction or resource depletion.

Aiming to tackle CRM supply disruptions and the structural weaknesses of EU CRM supply chains, the EC proposed in 2023 the Critical Raw Materials Act⁵. The CRM Act aims to ensure EU's access to a secure and sustainable supply of CRM, supporting the Union's industrial competitiveness and smooth functioning of the single market. A proposed fifth updated list of 39 CRM is also included in the CRM Act proposal's Annex (see **ANNEX II**). The Act proposes benchmarks (i.e., minimum or maximum targets) to enhance the capacities to extract, process, and recycle CRM in the EU and support diversification of EU's CRM supply. It also proposed new measures to reinforce European CRM capacities across all value chain stages, and to enhance circularity and efficient use of CRM by establishing value chains for recycled CRM. Finally, the Act proposes actions to strengthen EU's preparedness and reduce supply risks.

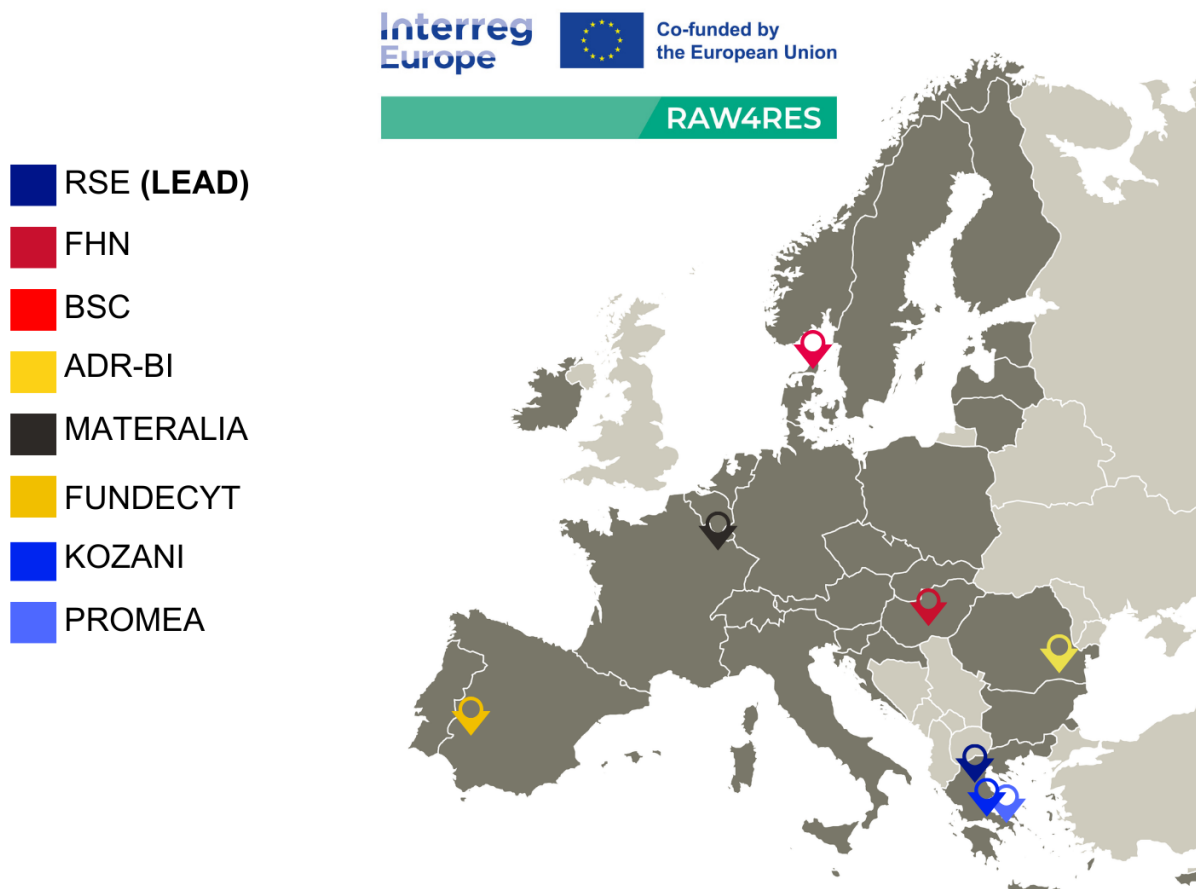
1.2 The RAW4RES Project

RAW4RES is an Interreg Europe project that seeks through regional cooperation to fill a gap in policy knowledge in building resilient, inclusive, and sustainable domestic CRM growth strategies. At the moment, the EU's domestic CRM potential is not sufficiently exploited, as EU mineral resources have not been sufficiently explored and mapped⁶. Moreover, EU lacks capacity in key stages of the value chain. Permitting procedures at all stages (exploration, mining, processing, refining, and recycling) are

complex and time consuming, while difficult access to financing constitutes a serious barrier to CRM investments. Moreover, the EU lacks both workforce with skills and expertise related to CRM activities, and high-quality technical standards for CRM-related industrial processes. Lastly, mainly due to environmental concerns there is limited public acceptance for CRM mining in Europe.

To contribute drive EU's untapped CRM potential, the RAW4RES project adopts a comprehensive approach that will enable stakeholders in the CRM industry to share their knowledge and experience on how to strengthen territorial value chains against CRM and industrial metal scarcity. RAW4RES will build and disseminate a multi-stakeholder and multi-layered approach to harmonise CRM mining policies across the participating countries, engage civil society actors in the identification and mitigation of value chain risks, and promote circular approaches that will enhance CRM resource efficiency.

1.3 The RAW4RES Partnership



Partners' Logos & Acronyms

	RSE	Περιφέρεια Στερεάς Ελλάδας Region of Sterea Ellada
	FHN	Frederikshavn Kommune (Frederikshavn Municipality)
	BSC	Poslovno Podporni Center, d.o.o., Kranj Business Support Centre Ltd. Kranj
	ADR-BI	Agentia pentru Dezvoltare Regionala Bucuresti Ilfov (Bucharest Ilfov Regional Development Agency)
	MATERIALIA	MATERIALIA rôle de compétitivité
	FUNDECYT	Fundación para el Desarrollo de la Ciencia y la Tecnología (Foundation for the Development of Science and Technology)
	KOZANI	Δήμος Κοζάνης Kozani Municipality
	PROMEA	ΠΡΟΜΕΑ - Εταιρεία Προαγωγής Μεθοδολογιών Έρευνας και Ανάπτυξης PROMEA - The Hellenic Society for the Promotion of Research and Development Methodologies

1.4 RAW4RES Activity 1.1

The RAW4RES “Activity 1.1 - Exchange of experience on contention points between growth strategies vis-à-vis environmental protection policies” aims to support partners in identifying territorial regulatory discrepancies between raw materials (RM) policies, measures or strategies and environmental regulations (regarding water, land, biodiversity) that could cause concerns to civil society.

The activity consists of two phases. During the first phase, using the methodology and data collection tool prepared by BSC, project partners collected data pertaining to potential discrepancies between territorial RM growth strategies, policies or measures on the one hand, and environmental regulations on the other. In addition, partners researched and reported any policy mismatches linked with mining disputes and conflicts in their region.

In the second step and upon the successful completion of the task, BSC has prepared this comparative analysis of the evidence collected to: a) pinpoint common mismatches that could jeopardise future investments, and b) provide recommendations on how to reinforce environmental protection provisions in relevant growth policies, so as to effectively address any civil society concerns.

2 Survey design & methodology

To identify and document territorial regulatory discrepancies between RM growth policies, measures, or strategies and environmental regulations that could potentially lead to conflicts with the local communities and other civil society actors, a survey was carried out by the project's partners in their respective territories.

2.1 Methodology

To guide and assist partners' data collection process, BSC developed a methodological framework on the basis of relevant primary literature, secondary desk research, and a three-sectioned questionnaire. The methodology document provided:

A thematic background of EU's RM growth strategies, including examples of Member States' individual RM growth strategies, as well as a comprehensive overview of the causes and impact of mining disputes in Europe.

Detailed guidelines for data collection, including Key Performance Indicators (KPIs), the activity's timeline, and sources to facilitate partners' research.

The questionnaire developed consisted of three sections to guide partners in assembling the required data in a clearly structured way, and ensure all information was documented in a consistent and comparable manner.

2.2 Survey objectives & scope

The survey's goal was to identify discrepancies between RM growth strategies, policies, and measures and environmental regulations in project partners' territories. To this end each the first section of the questionnaire focused on territorial RM policies, measures, and strategies supporting activities in the RM sector, and the identification of potential discrepancies with environmental regulation. The second section focused on territorial regulation on environmental protection from RM activities, and the identification of potential conflicts with RM growth policies. The last section, focused on ongoing or recent territorial mining disputes involving civil society actors on the

ground of environmental concerns regarding RM activities, and their potential linkage to RM growth policies.

2.3 Key Performance Indicators

The methodology set minimum targets to track and monitor the data collection process and make sure that sufficient data will be gathered. The KPIs set for each partner and those achieved are presented in **Table 1^b**.

It needs to be mentioned that in the case of Greece where three (3) partners are involved in the project, PROMEA was only required to identify national environmental protection policies that regulate RM sector activities, while the Municipality of Kozani (KOZANI) and the Region of Sterea Ellada (RSE) were required to elaborate on territorial RM growth policies, as well as local mining disputes.

^b Achieved KPIs are calculated and reported following the analysis of questionnaires submitted by partners and may differ to the number of policies, regulations, and disputes partners had actually reported as explained in **3.1** - Overview of data collected.

Table 1: Data collection target KPIs and those achieved per project partner.

Partner	RM growth policies		Territorial regulation on environmental protection		Ongoing/recent territorial disputes due to RM sector's activities	
	target	achieved	target	achieved	target	achieved
RSE (GR)	2	0	N/A	N/A	1	0
FHN (DK)	2	2	2	1	1	0
BSC (SI)	2	3	2	1	1	0
MATERIALIA (FR)	2	0	2	0	1	0
ADR-BI (RO)	2	2	2	2	1	1
FUNDECYT (ES)	2	2	2	3	1	1
KOZANI (GR)	2	1	N/A	N/A	1	1
PROMEA (GR)	N/A	2	2	2	N/A	1

3 Survey data & analysis of partners' input

3.1 Overview of data collected

Of the total eight (8) project partners, six (6) of them contributed to data collection documenting RM growth policies, territorial regulation on environmental protection, and/or cases of local mining disputes/conflicts. It needs to be mentioned that MATERIALIA (FR) has withdrawn from the project since early August 2023 and thus was not required to submit data to the survey. Moreover, as data analysis and discussion will take place on a country-by-country basis rather than at the project partner level, it is considered that partners have provided data covering all countries participating in the project.

It is noted that upon review of the questionnaires submitted by partners, a number of modifications/re-classifications of data took place according to the requirements and focus of each section of the survey questionnaire in order to make the best use of the partners' contributions.

In particular, regarding the input of the Danish partner FHN:

- The one dispute/conflict reported was re-classified as a RM growth policy as it describes inconsistencies of the Raw Materials Act with Environmental Damage Act.
- “Denmark’s Nature Conservation Association’s raw materials policy” documented as a RM growth policy cannot be used for the purposes of Activity 1.1 as it does not refer to an official national, regional, or local policy but to a policy proposal of a Danish NGO.
- “Business strategy, including business strategy for recycling” documented as a RM growth policy cannot be used for the purposes of Activity 1.1 as it does not refer to an official national, regional, or local policy but to a policy proposal of a Danish semi-public organization.

3.2 RM growth policies

Partners from Greece and Slovenia documented three (3) RM growth policies per project country, and partners from Denmark, Romania, and Spain documented two (2) RM growth policies each (**Figure 1**).



Figure 1: Documented RM growth policies per project partner country, as compared to related target KPI.

Of the twelve (12) identified policies, eight (8) refer to policies implemented on national level and four (4) to regional level policies (**Figure 2**). Moreover, of the four (4) regional RM growth policies, three (3) fall under the jurisdiction of the respective regional authorities and one (1) under the jurisdiction of the respective national government.

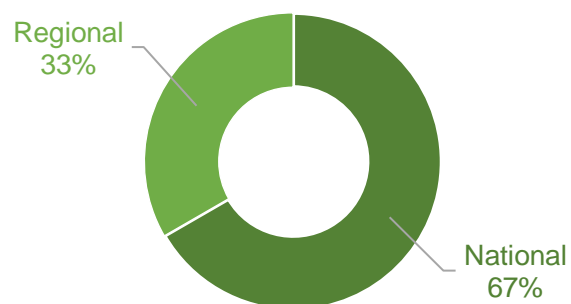


Figure 2: Classification of documented RM growth policies based on their implementation level.

Finally, for most of the documented RM growth policies (9 out of 12)

partners did not identify any discrepancies of the said policies with local, regional, or national environmental regulations (**Figure 3**). Similarly, for more than half of the policies (7 out of 12) partners did not report any concerns having been publicly expressed regarding the environmental provisions or impact of said policies (**Figure 4**).

3.2.1 Overview and key points of documented RM growth policies

Spain – Law 22/1973 on Mines

- **Implementation level:** National
- **Responsible authority:** National government
- **Description, objectives & provisions:** The Law regulates and establishes the legal regime for the investigation and exploitation of mineral deposits and other geological resources, whatever their origin and physical state, including radioactive minerals not covered by the Nuclear Energy Law.
- **Discrepancies with environmental regulations:** RM activities are prohibited in environmentally protected areas.
- **Impact on territorial RM sector growth:** About one third (6%) of Extremadura's territory is classified as protected areas where RM activities are prohibited. To regulate RM initiatives on the basis of the Law, the Extremadura Mining Council was established in 2017.
- **Environmental concerns expressed:** Concerns have been expressed about the impacts of RM activities on the environment and the area's natural resources, as well as the high social and economic impact of mining.

Spain – Decree-Law 5/2022 establishing urgent measures necessary to regulate the use of lithium mineral resources in Extremadura

- **Implementation level:** Regional
- **Responsible authority:** National government
- **Description, objectives & provisions:** The regional Decree Law contains urgent measures for the exploitation of lithium.
- **Discrepancies with environmental regulations:** N/A
- **Impact on territorial RM sector growth:** This Decree-Law has a very high impact on the economic and social development in Extremadura, as it allows the exploitation of the natural resources of lithium, which is one of the raw materials recognized as fundamental and strategic by the European Union in the "European Law on Fundamental Raw Materials" regulation.
- **Environmental concerns expressed:** The National Government lodged an appeal before the Constitutional Court against the Regional Government for this Regional Decree Law 5/2022. This appeal has been accepted by this Court because it considers that this could overturn national competencies in mining matters. The

Decree-Law has also been rejected by certain groups in society who consider lithium mining to be harmful to the environment and the surroundings of the places where it is carried out, including the negative visual impacts it causes.

Greece – Law N.4951/2022 Regulations for the rationale development of the mining and quarrying activity

- **Implementation level:** National
- **Responsible authority:** National Government – Ministry of Environment, Energy, and Climate Change
- **Description, objectives & provisions:** The Law includes provisions regarding the licensing of electricity production and electricity storage activities. It further includes special provisions to regulate the mining activity (regulations for the sustainable development of the mining and quarrying activity, aiming to strengthen the mining sector, generate revenue for the public from the leasing of quarries and the legalization of electro-mechanical equipment, but also mitigate longstanding procedural and substantive issues that inhibited the development of the sector).
- **Discrepancies with environmental regulations:** N/A
- **Impact on territorial RM sector growth:** Provisions of the Law regarding the mining sector will allow operators to save valuable time and coordinate their actions both in terms of administration and the market.
- **Environmental concerns expressed:** N/A

Greece – National Strategy for Sustainable and Equitable Development 2030

- **Implementation level:** National
- **Responsible authority:** National Government – Ministry of Development
- **Description, objectives & provisions:** The Strategy forms a new model of holistic design and implementation of public policies. It foresees an integrated, quality, and participative model with measurable goals that are monitored and evaluated based on clearly defined tools for their achievement.
- **Discrepancies with environmental regulations:** N/A
- **Impact on territorial RM sector growth:** With regards to mineral RM and energy minerals, the Strategy foresees the planning of a Special Spatial Plan for mineral raw materials, and the resumption of mining activities, with a balance between public and private sector, through transparent and competitive processes. It also includes provision regarding new international tendering procedures for offshore exploration and exploitation of hydrocarbon regions.
- **Environmental concerns expressed:** N/A

Greece – Regional Framework for Spatial Planning and Sustainable Development of the Region of Western Macedonia

- **Implementation level:** Regional

- **Responsible authority:** Regional Government of Western Macedonia
- **Description, objectives & provisions:** This framework recognizes mining as an important development sector in the region and in order to ensure equal treatment of the sector in relation to other activities, defines mining zones of main or exclusive activity the extractions of minerals.
- **Discrepancies with environmental regulations:** Conflicts arise with other land uses, such as animal breeding, solar electricity facilities, recreation, NATURA protection areas. In these zones mining is in favour to all other activities.
- **Impact on territorial RM sector growth:** It has positive impact on RM sector as all mining has priority over all other land-uses.
- **Environmental concerns expressed:** N/A

Romania – Romania’s Sustainable Development Strategy 2030

- **Implementation level:** National
- **Responsible authority:** National Government – Ministry of Environment and Sustainable Development
- **Description, objectives & provisions:** The Strategy outlines Romania's plan for enacting the 2030 Agenda for Sustainable Development, offering a guide to achieve the 17 sustainable Development Goals. This strategy promotes the sustainable development of Romania by concentrating on Sustainable Development’s three dimensions: economic, social, and environmental.
- **Discrepancies with environmental regulations:** N/A
- **Impact on territorial RM sector growth:** Romania faces a challenge due to the country’s resource productivity remaining at a relatively low level, having in fact declined in comparison to the European Union average. To address this concern, the Strategy puts forth a gradual shift towards a novel development paradigm. This transition is to be facilitated by incorporating principles of circular economy. Raw materials exploitation should be coupled with actions to minimise waste. In addition, effort to enhance resource productivity should employ innovative approaches promoting the creation of decent jobs and facilitating entrepreneurship.
- **Environmental concerns expressed:** N/A

Romania – National Strategy for Non-Energy Mineral Resources 2023-2035

- **Implementation level:** National
- **Responsible authority:** National Government – Ministry of Economy
- **Description, objectives & provisions:** The Strategy harmonises the national mining legislative framework with national legislation and European legislation. It aims to optimize the use of domestic raw materials while also promoting resource efficiency, responsible mining practices, and environmental protection. It aims to eventually reintegrate vast areas of land into economic activities, foster socio-

economic growth in neighbouring communities, restore landscapes, and enhance biodiversity.

- **Discrepancies with environmental regulations:** N/A
- **Impact on territorial RM sector growth:** The Strategy intends to facilitate the re-opening of mining sites by addressing gaps in the current Mining Law (Law 85/2003) which does not allow for the re-opening and operation of mining areas that have stopped operations, both before and after closure activities.
- **Environmental concerns expressed:** The proposed measure to reopen mines following government decisions to cease activity shifts the financial responsibility for environmental clean-up away from the Romanian state. The economic operators responsible for reopening and operating these mines would now bear the costs of environmental rehabilitation.

Denmark – Raw materials plan 2020

- **Implementation level:** Regional
- **Responsible authority:** Regional Government of Northern Jutland
- **Description, objectives & provisions:** The regional resource plan deals exclusively with the recovery of gravel by excavating gravel in gravel pits. It aims to ensure future generations' access to resources. The Plan lays out the areas and the guidelines governing where and how raw material extraction must take place.
- **Discrepancies with environmental regulations:** N/A
- **Impact on territorial RM sector growth:** N/A
- **Environmental concerns expressed:** N/A

Denmark – The Natural Resources Act (Raw Materials Act)

- **Implementation level:** National
- **Responsible authority:** National Government
- **Description, objectives & provisions:** The purpose of the Act is to ensure the sustainable exploitation of RM deposits on land and sea, including the extraction and post-treatment of mining areas. The Act covers stone, gravel, sand, clay, lime, chalk, peat, loam, and similar deposits. Under the provisions of the Act commercial extraction of raw materials and establishment of facilities at the extraction site for use in extraction may only take place with permission from the regional council. Permission for reclamation on beaches and other stretches of coast where there is no contiguous land vegetation can only be granted with the approval of the Coastal Inspectorate.
- **Discrepancies with environmental regulations:** N/A
- **Impact on territorial RM sector growth:** N/A
- **Environmental concerns expressed:** N/A

Slovenia – Slovenian Mining Act No. 56/1999

- Implementation level: National
 - Responsible authority: National Government
 - Description, objectives & provisions: The Act defines the conditions for exploration activities and mining of minerals.
 - Discrepancies with environmental regulations: N/A
 - Impact on territorial RM sector growth: N/A
 - Environmental concerns expressed: N/A
-

Slovenia – Spatial Planning Plan

- Implementation level: National
 - Responsible authority: National Government – Ministry of Infrastructure, Energy Directorate
 - Description, objectives & provisions: The plan regulates spatial planning as part of physical planning so that it lays down types of spatial planning documents, their content and mutual relations, and procedures for their drafting and adoption.
 - Discrepancies with environmental regulations: N/A
 - Impact on territorial RM sector growth: N/A
 - Environmental concerns expressed: N/A
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Slovenia - Regional Development Program of Gorenjska

- Implementation level: Regional
 - Responsible authority: Regional Government of Gorenjska
 - Description, objectives & provisions: N/A
 - Discrepancies with environmental regulations: N/A
 - Impact on territorial RM sector growth: N/A
 - Environmental concerns expressed: N/A
-

3.3 Territorial regulations on environmental protection

The partner from Spain documented three (3) territorial regulations regarding the protection of the natural environment (water, land, biodiversity) from RM sector activities, whereas partners from Greece and Romania documented two (2) regulations each (**Figure 5**). Finally, partners from Denmark and Slovenia documented one (1) territorial regulation on environmental protection each.

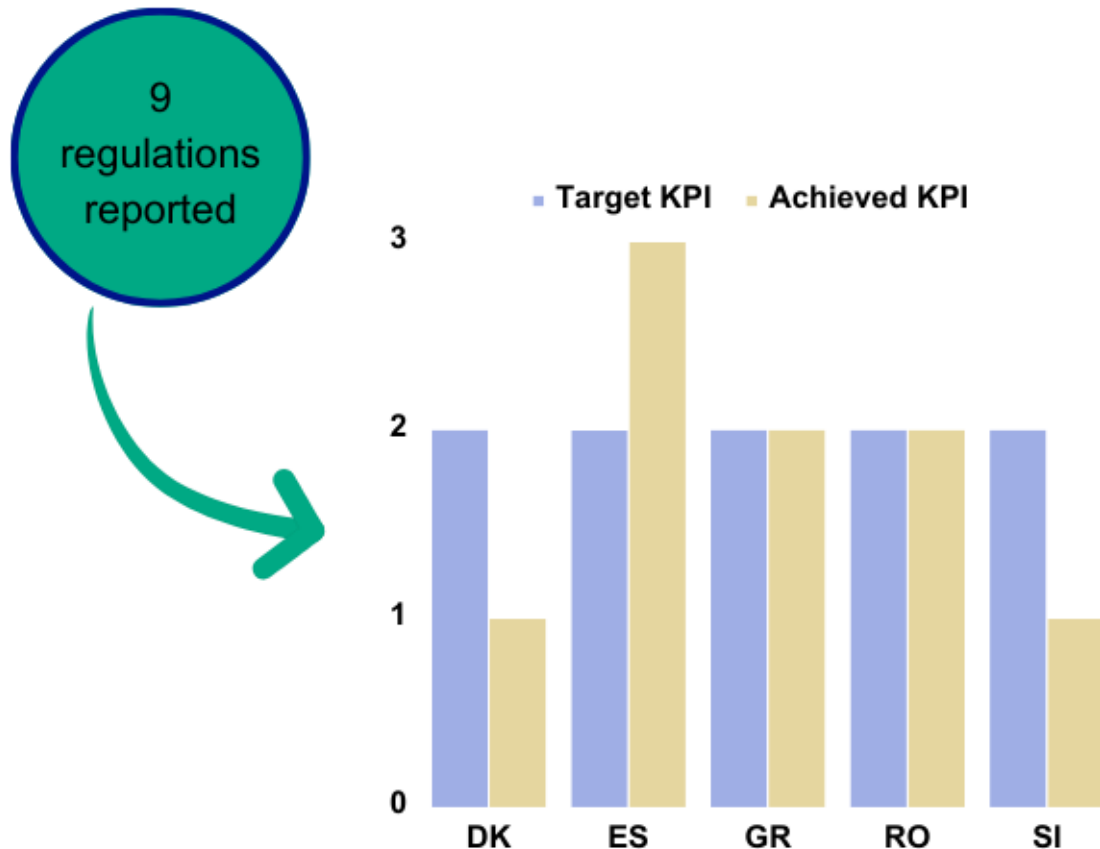


Figure 3: Documented regulations on environmental protection from RM activities per project partner country, as compared to related target KPI.

Of the nine (9) reported environmental protection regulations, six (6) refer to regulations implemented on national level, two (2) on regional level, and one (1) on local level (**Figure 6**). All of the regional regulations fall under the jurisdiction of the respective regional authorities. However, the one local regulation falls under the authority of the respective regional authority.

Furthermore, for almost half (4 out of 9) of the documented environmental protection regulations, partners identified discrepancies with national, regional, or local policies supporting the growth of the RM sector (**Figure 7**). Similarly, for two thirds (6 out of 9) of the regulations (6 of 9) partners reported concerns

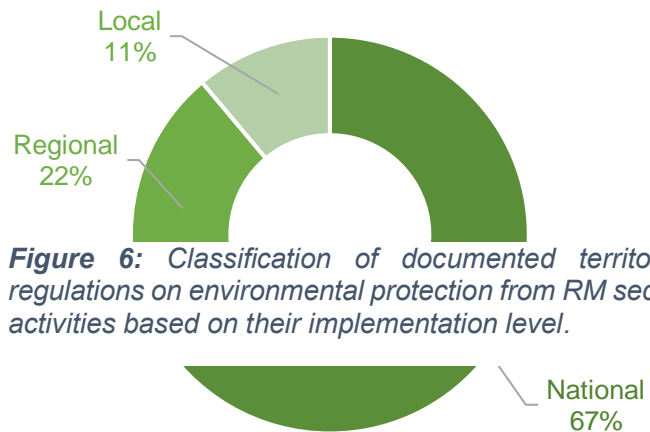


Figure 6: Classification of documented territorial regulations on environmental protection from RM sector activities based on their implementation level.



Figure 4: Documented environmental regulations regarding potential discrepancies with national, regional, or local policies supporting the RM sector.

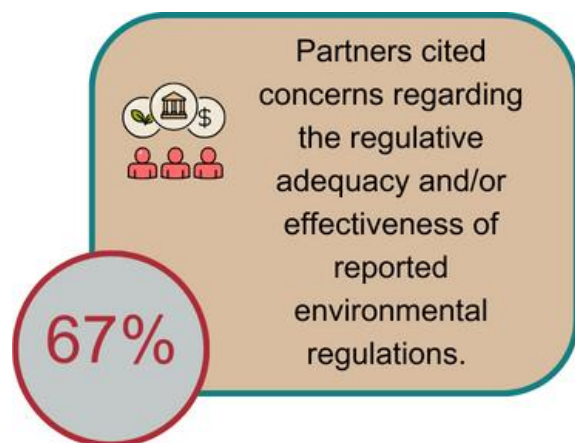


Figure 5: Documented environmental regulations on the basis of whether or not concerns have been reported regarding their regulative adequacy and/or effectiveness.

regarding the regulative adequacy and/or effectiveness of said regulations (**Figure 8**).

3.3.1 Overview and key points of documented regulations regarding protection of the natural environment from RM sector activities

Spain – Law 16/205 on environmental protection of the Autonomous Community of Extremadura

- **Implementation level:** Regional
- **Responsible authority:** Regional Government of Extremadura
- **Description, objectives & provisions:** The purpose of this law is to establish an appropriate regulatory framework for the development of the environmental policy of the Autonomous Community of Extremadura and its integration with other regional policies, implementing environmental intervention mechanisms that contribute to obtaining a high level of protection of the environment and people's

health. It regulates the treatment of some animal or vegetable raw materials belonging to food industry activities, and facilities where secondary raw materials resulting from metallurgical, chemical or electrolytic processes are produced.

- **Impact on territorial RM sector growth:** To protect the environment and people's health, the regional administration is obliged through a series of requirements set out in a resolution ('Autorización Ambiental Integrada') to operate the facilities where these activities are carried out.
- **Discrepancies with policies supporting RM sector growth:** N/A
- **Concerns regarding regulative adequacy and/or effectiveness:** Companies involved in the raw materials sector may face increased administrative requirements to develop their exploitation activities.

Spain – Law 8/1998 on the Conservation of Nature and Natural Resources of Extremadura

- **Implementation level:** Regional
- **Responsible authority:** Regional Government of Extremadura
- **Description, objectives & provisions:** The purpose of this law is to establish additional rules for the protection of the natural heritage of Extremadura, to facilitate its protection, conservation, restoration, and improvement and to ensure its sustainable development and its preservation for future generations. It regulates incompatible activities in these Protected Natural Spaces, determining the level of infringements, in activities such as the extraction of aggregates and the installation of quarries, when the natural heritage is endangered by non-compliance with the conditions set by the administrative authorisations, or by carrying them out in areas that are not authorised for this purpose.
- **Impact on territorial RM sector growth:** Strong regulation and the large territory in which it applies constitutes a barrier for the development of the RM sector.
- **Discrepancies with policies supporting RM sector growth:** N/A
- **Concerns regarding regulative adequacy and/or effectiveness:** In practice it is not possible to establish any productive activity, including RM extraction, in Protected Natural Spaces because of the strict regulatory framework regulating the treatment and conservation of those areas.

Spain – Real Decreto 975/2009 on the management of waste from extractive industries and the protection and rehabilitation of the area affected by mining activities

- **Implementation level:** National
- **Responsible authority:** National Government
- **Description, objectives & provisions:** The purpose of this regulation is to establish measures, procedures, and guidelines to prevent or reduce the adverse effects on

the environment, in particular on water, air, soil, fauna, flora and landscape, and the risks to human health that may be caused by the exploration and extraction of mineral deposits and other geological resources, and, fundamentally, by the management of mining waste. This regulation makes it compulsory to carry out rehabilitation work on the natural area affected by mining operations and their associated services and facilities, including those where mining waste is to be deposited.

- **Impact on territorial RM sector growth:** The operators of the extractive industries must apply the best available techniques for monitoring and controlling management to prevent water and soil pollution and identify any adverse effects that their mining waste facilities may have on the environment and human health.
- **Discrepancies with policies supporting RM sector growth:** N/A
- **Concerns regarding regulative adequacy and/or effectiveness:** N/A

Greece – National Law 4014/2011 on the environmental licensing of works and activities, regulation of illegal constructions in connection with environmental stability and other provisions falling under the competence of the Ministry of Environment. (art. 6 -11)

- **Implementation level:** National
- **Responsible authority:** National Government – Ministry of Environment and Energy
- **Description, objectives & provisions:** The Law 4014/2011 is responsible for a) Clarifying and simplifying the process of issuing building permits for construction and development activities, b) Enhancing environmental conditions and restrictions for construction work in order to protect natural and human heritage; and c) Promoting sustainability in the planning and use of the territorial space, with the aim of preventing uncontrolled construction and the protection of green and open spaces.
- **Impact on territorial RM sector growth:** The procedures that are followed for the licensing of projects are most of the time quite long with a lot of bureaucracy and ambiguities, which prevents the exploitation of mineral resources in NATURA 2000 areas. This in turn leads to a loss of resources and opportunities, to financially support the introduction of new technologies in research and exploitation of new deposits, as well as for the modernization of existing activities.
- **Discrepancies with policies supporting RM sector growth:** NATURA 2000 areas cover 28% of the land area of Greece, which makes difficult the extraction of raw materials and have an impact in growth of the RM sector.
- **Concerns regarding regulative adequacy and/or effectiveness:** Companies face administrative bureaucracy.

Greece – National Law 4964/2022 concerning provisions for the simplification of environmental licensing, establishing a framework for the development of Offshore Wind Farms, dealing with the energy crisis, environmental protection and other provisions

- **Implementation level:** National
- **Responsible authority:** National Government – Ministry of Environment and Energy
- **Description, objectives & provisions:** The purpose of this law is to resolve serious and urgent issues that concern the protection of the natural and urban environment as a whole, as well as dealing with the energy crisis. The objectives of this law are a) the simplification of environmental licensing and environmental controls, b) the rationalization of permitted land uses, c) the regulation of the organization and management of the resources of the Natural Environment and Climate Change Organization and the Green Fund, d) the regulation of issues related to the protection of forests, e) the update of parts of the urban planning legislation, f) the overall regulation of the conditions for the development of offshore wind farms; and g) addressing issues related to the management of the energy crisis and the circular economy.
- **Impact on territorial RM sector growth:** Regulations that aim to protect the environment such as licensing and environmental assessment will lead some companies to change their investment plans because the procedures to invest in RM sector are too complex.
- **Discrepancies with policies supporting RM sector growth:** N/A
- **Concerns regarding regulative adequacy and/or effectiveness:** Some amendments of the Law may slow down investments in the RM sector.

Romania – Law No. 292/2018 – Environmental Impact Assessment Law

- **Implementation level:** National
- **Responsible authority:** Ministry of Environment and Sustainable Development
- **Description, objectives & provisions:** This law regulates the environmental impact assessment of public and private projects that may have significant effects on the environment. In particular, the environmental impact assessment procedure integrates the appropriate assessment of protected natural areas of community interest, the conservation of natural habitats, flora and fauna, as well as the assessment of the possible effects of industrial emissions and the assessment of major accident hazards in which hazardous substances are involved.
- **Impact on territorial RM sector growth:** On one hand, the Law emphasises the adoption of environmentally sustainable practices in waste management, which to be implemented will require additional expenditures from the RM sector. On the other hand, the high requirements set by the Law regarding waste management is expected to push the RM sector to explore the employment of innovative technologies and practices, and consequently new investments in R&D.
- **Discrepancies with policies supporting RM sector growth:** N/A

- Concerns regarding regulative adequacy and/or effectiveness: N/A

Romania – Law No. 85/2003 – Mining Law

- **Implementation level:** National
- **Responsible authority:** National Government – Ministry of Energy
- **Description, objectives & provisions:** This Law sets out basic rules governing mining activities in Romania. Specific regulations exist regarding the authorization of land utilization for the intent of the exploration and exploitation of mineral resources. Additionally, the legislation oversees the process for issuing licenses for mining and exploration, including the stipulated financial obligations. It also includes provisions regarding the acquisition of restricted mining zones. The mineral resources which are the subject of the present law are: coal, ferrous and non-ferrous ores, aluminium rocks and minerals, noble, radioactive, rare and disperse metals, salts, non-metallic useful substances, useful rocks, precious and semiprecious stones, peat, mud and therapeutically peat, bituminous rocks, non-combustible gas, geothermal waters, gas associated to them, natural mineral waters (gaseous and non-gaseous), mineral therapeutically waters, as well as mining residues from barren dumps and tailing ponds.
- **Impact on territorial RM sector growth:** At national level, the legislation seems to be rather inefficient as mining companies risk finding themselves in a legislative loop because their obligation, including taxation and environmental and social responsibilities, are defined by different types of permits, leases, licenses, and concession forms. Moreover, mining activities are subject to both an annual tax and a mining loyalty; the high taxation hampering investments in the sector.
- **Discrepancies with policies supporting RM sector growth:** N/A
- **Concerns regarding regulative adequacy and/or effectiveness:** Some of the obligations that the investors have to follow are strict and act as factors inhibiting initiatives in the raw material mining and processing sectors.

Denmark – Regional Raw Materials Plan

- **Implementation level:** Regional
- **Responsible authority:** Regional Government of the Region of Northern Jutland
- **Description, objectives & provisions:** The Regional Raw Material Planning helps to prevent unnecessary territorial conflicts with national interests in connection to raw materials extraction. It also safeguards groundwater protection. The plan states that raw material extraction must not lead to pollution of the aquatic environment. In relation to environmental protection, the regional raw materials plan maintains that the extraction of raw materials must take place within the excavation areas that have been laid out in the raw materials plan. Moreover, it emphasizes that when supplying soil to resource pits for re-establishment, there are three areas in Frederikshavn Municipality that require special environmental consideration: Kragelund, Lyngså Syd, and Sæbygaard.
- **Impact on territorial RM sector growth:** N/A

- Discrepancies with policies supporting RM sector growth: N/A
- Concerns regarding regulative adequacy and/or effectiveness: N/A

Slovenia – Decree on waste of electrical and electronic equipment

- Implementation level: National
- Responsible authority: National Government
- Description, objectives & provisions: The Regulation establishes provisions concerning waste of electrical and electronic equipment in order to prevent waste generation equipment and ensure its reuse, recycling, and other methods of processing. This Regulation also lays down measures to improve efficiency in the waste of all persons who, due to their activities, are involved in the life of electrical and electronic equipment, such as manufacturers, distributors, and end users, especially those who are directly involved in the collection, processing, and disposal of residual processing of waste equipment.
- Impact on territorial RM sector growth: N/A
- Discrepancies with policies supporting RM sector growth: N/A
- Concerns regarding regulative adequacy and/or effectiveness: Legislation on environmental protection and waste management in Slovenia is extensive and scattered, making its implementation in practice difficult. Also, it still often happens that the jurisdictions of individual public bodies are unclear or are shifted from one side to another, and problems remain unresolved.

3.4 Territorial disputes and conflicts due to RM sector’s activities

The partners from Greece documented two (2) territorial disputes and conflicts due to RM sector’s activities, whereas partners from Romania and Spain documented on (1) dispute or conflict each (**Error! Reference source not found.**). Partners from Denmark and Slovenia did not report an ongoing or recent disputes or conflicts related to the RM sector’s activities. Half of the four (4) disputes or conflicts reported are ongoing, while the other half have been recently resolved.

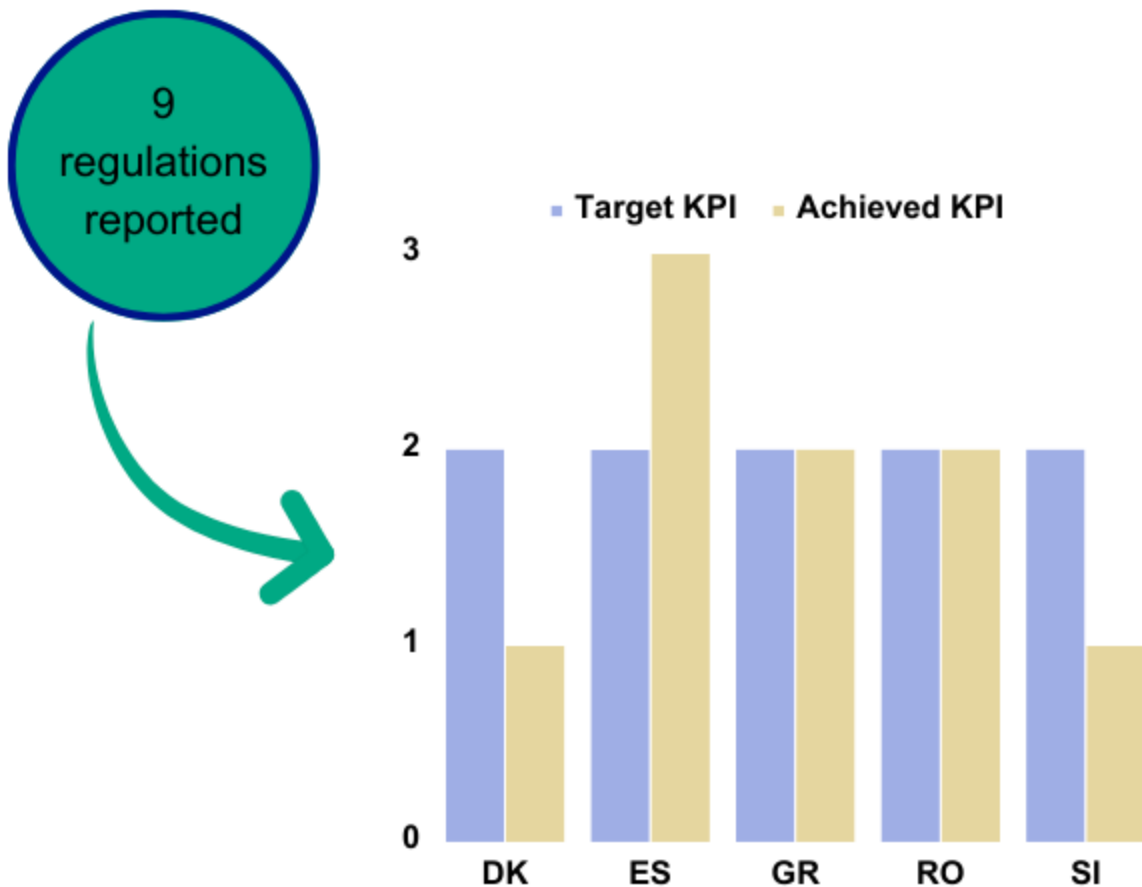


Figure 7: Documented disputes and conflicts due to RM sector’s activities per project partner country, as compared to related target KPI.

Moreover, only one (1) of the reported disputes/conflicts was attributed to inconsistencies between the RM sector growth policies and the environmental regulations in partners’ territories (**Figure 10**).

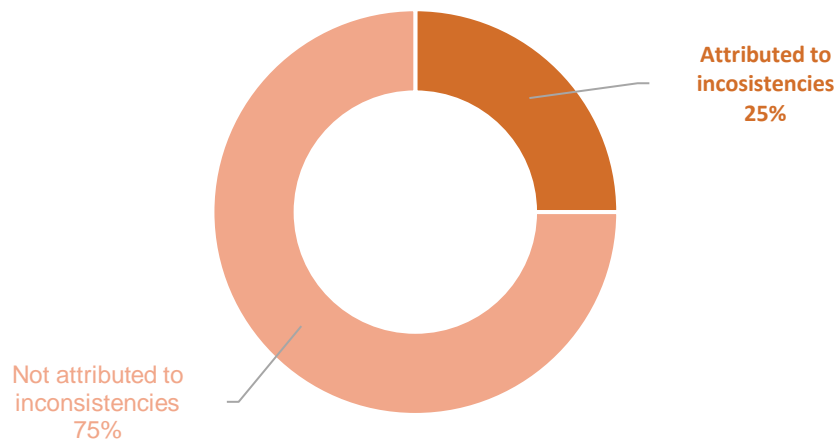


Figure 9: Classification of documented disputes/conflicts on the basis of whether they can be attributed to inconsistencies between RM sector growth policies and environmental regulations.

Regarding the primary causes of the disputes/conflicts (**Figure 11**), in all cases partners cited reasons of environmental and economic nature. In three out of the four cases, health and politics were also said to be the primary reasons for the disputes/conflicts. In one case, an additional cause was attributed to spatial planning considerations, while in another it was attributed to doubts about job generation from and water shortage due to the RM activity.

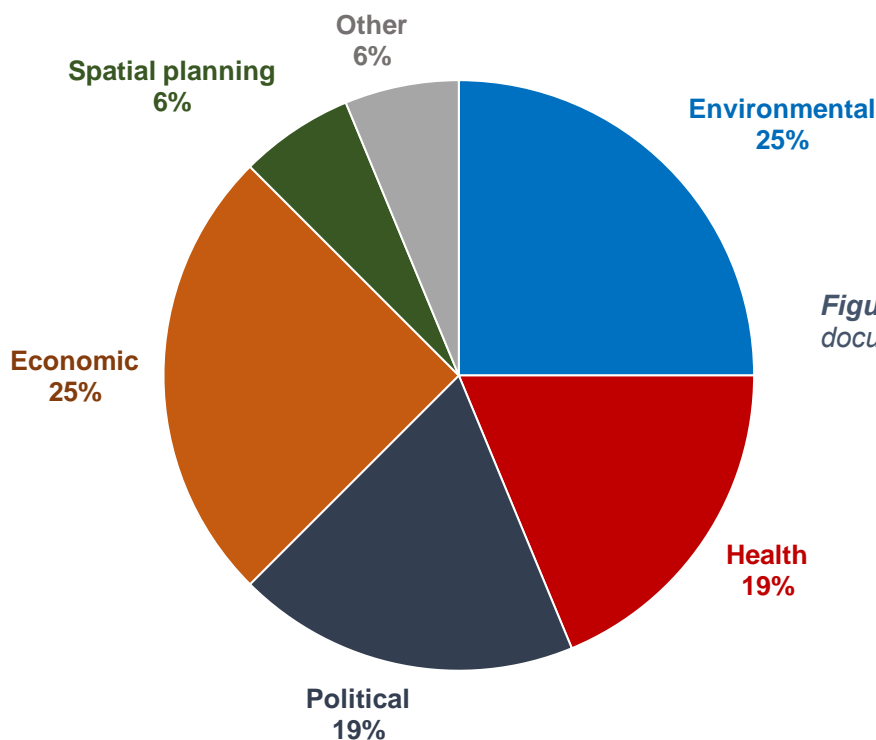


Figure 8: Core rationale behind documented disputes/conflicts.

Finally, apart from the mining companies, most partners (3 out of 4) cited civil society as being among the principal actors involved in the dispute/conflict (**Figure 12**). Additionally, in half of the reported cases, national, regional, or local governments as well as NGOs were also named as being the main parties in the conflicts/disputes.

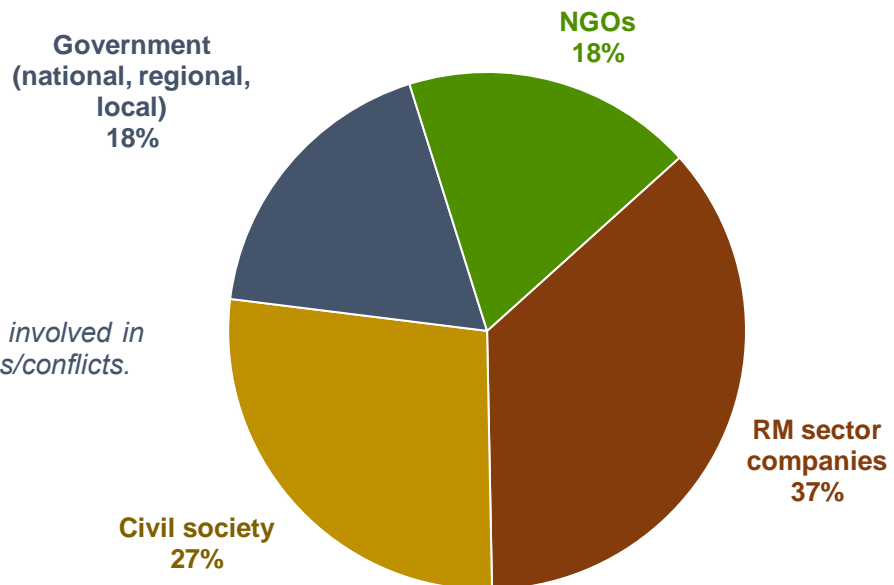


Figure 10: Main actors involved in the documented disputes/conflicts.

3.4.1 Overview and key points of documented recent or on-going territorial disputes and conflicts on the grounds of environmental concerns due to RM sector activities

Spain – Construction of lithium processing plan in Cáceres

- **Actors involved:** a) companies, and b) civil society
- **Status:** on-going
- **Core rationale behind the dispute/conflict:** a) environmental, b) health, c) economic, d) lack of water; and d) doubts about job creation
- **Description:** The Valdeflores Valley, located in the province of Cáceres, has what is believed to be the largest lithium deposit in Europe. The construction of a lithium processing plant in Cáceres was initially designed as an open pit mine only 2 km from the Historic Centre of the city, causing opposition from part of the civil society. Later, the company responsible for the extraction is planning to carry out the work by means of underground galleries. In addition to heavy economic investment, this activity will generate 700 direct jobs during the more than 25 years of operation of the plant.

The mining company has been in litigation for several years with the various administrations involved. The operation licence initially granted by the local administration was later revoked by higher authorities who argued that the company did not have all the permits and environmental sustainability reports required. The latest Scoping Document, drawn up by the Directorate General for

Sustainability (regional government body), even points to the radioactive risk from the activity, the radiation potentially affecting the underground aquifers, the air, the soil, and ecosystems as well as people's health in area surrounding the investment.

The dispute is on-going as the mining company has submitted the additional studies and additional reports ruled as necessary by regional authorities, while also expecting an upcoming revision of the regulatory framework in favour of mining activities in the region. However, farmers and local businessmen fear not only pollution, but also the water depletion in the region. Local citizens also doubt the creation of the jobs that are being announced by the mining company.

- **Can the dispute/conflict be attributed to inconsistencies between RM sector growth policies and environmental regulations?** No
- **Impact on RM activity concerned:** This issue is delaying the development of the extraction activities of the RM, which still does not have the permits and whose initiative began in 2015 with the first drillings in 2017.
- **Outcomes and results for the local communities involved:** Stopping economic activity and maintaining the environmental and natural conditions of the territory.

Greece – Gold mines in Chalkidiki

- **Actors involved:** a) Greek Government, b) Eldorado Gold Cooperation; and c) Civil society
- **Status:** resolved, 1990-2021
- **Core rationale behind the dispute/conflict:** a) environmental, b) health, c) political; and d) economic
- **Description:** Skouries is a region in Chalkidiki with a numerous amount of gold mines. As the area has for years attracted investors, a series of conflicts have erupted between local residents and mining companies on the grounds of risks to the natural environment from the mining activities.

Residents and environmental organizations believe that the abovementioned investment will have the following effects:

- Deforestation in an area of more than 2,500 acres.
- Pit mining of the rock planned to amount to 24,000 tons per day and will be achieved by excavation and blasting.
- The continuous pumping of water from progressively greater depths will cause a lowering of the underground water table over an area measuring 4.5x3.2 kilometers (= 14,400 acres). The immediate result will be the drainage of the mountain and the degradation and destruction of the forest far beyond the already deforested area.
- The final product will be only 1.97 % of the rock while the rest of the rock will be tailings.
- During the entire period of surface mining (11 years), rock dust will be produced amounting to 2,162 tons per hour on the mine premises and 954 tons per hour during loading and unloading at the rock deposit areas.

The Council of State, which with decision 613/2002 weighed against the investment plan on the basis of environmental reasons.

- Can the dispute/conflict be attributed to inconsistencies between RM sector growth policies and environmental regulations? No
 - **Impact on RM activity concerned:** Such disputes often lead to ambiguous policies from the administrative authorities, which lack clarity regarding the requirements for RM project development and related arising conflicts. Such ambiguous policies act as inhibiting factors to RM investments, and consequently the area's RM potential remains untapped.
 - **Outcomes and results for the local communities involved:** N/A
-

Greece – Rehabilitation of the lignite mines in Western Macedonia

- **Actors involved:** a) Lignite Centre of Western Macedonia, and b) local and regional governments
 - **Status:** on-going
 - **Core rationale behind the dispute/conflict:** a) environmental, b) political, c) economic; and d) spatial planning
 - **Description:** The lignite mines in Western Macedonia cover an area of 147.925.860m² in the boundaries of Municipality of Kozani and Municipality of Eordaia. The area has been under exploitation since 1970 and lignite mines are closing gradually until 2030. The dispute among local and regional governments is about:
 - The ownership of the rehabilitated land. The Lignite Centre of Western Macedonia claims that is the owner of the mining land, even after the closure of the activity while local administration claims that the land is public and should be returned to the local community. It is a dispute that started in 2014 and is a constant problem for the relationships and the development of the area.
 - The rehabilitation and land uses. The last rehabilitation plan, which sets significant changes to the final land uses in the mining area, has not been in public consultation. None of the local governments has been informed and expressed their opinion about the future of the area.
 - Can the dispute/conflict be attributed to inconsistencies between RM sector growth policies and environmental regulations? Yes; Local governments have been ignored from the decision makers, especially in cases that significant decisions had to be made, regarding environment and future plans.
 - **Impact on RM activity concerned:** Delays in procedures, decisions that do not cover the necessities of the local community.
 - **Outcomes and results for the local communities involved:** N/A
-

Romania – Construction of Gold Mines

- **Actors involved:** a) public society, b) Gabriel Resources Independent mining company, c) Center for the Development of Environmental Resources; and d) Greenpeace Romania
- **Status:** resolved, 2003-2023
- **Core rationale behind the dispute/conflict:** a) environmental, b) health, c) political; and d) economic
- **Description:** Roșia Montană a small village in the Western Romania has been the centre of conflict between the local communities and a mining company called Gabriel Resources. For almost 20 years disputes have plagued the village due to the investments in the territorial gold mines from the Canadian British company. Plans for the mine in Roșia Montană in Transylvania would have seen open-pit gold mining with the use of cyanide, a highly toxic substance linked with serious environmental risks. Residents of three villages would have had to be resettled while four mountains were be levelled. The planned mining also threatened one of Romania's most important archaeological sites.
- **Can the dispute/conflict be attributed to inconsistencies between RM sector growth policies and environmental regulations?** No
- **Impact on RM activity concerned:** Health and environment related concerns of local communities are major drivers of mining disputes. It has been remarked that when mining disputes increase in number and frequency in a region, potential investors and project developers become hesitant going forward with an RM project plan in the region.
- **Outcomes and results for the local communities involved:** Fewer jobs and slower territorial development.

4 Discussion

The following section looks at the main findings from the Activity's survey, mainly focusing on the common gaps identified that could jeopardise future RM investments. It also provides general recommendations on how to strengthen environmental protection provisions in relevant growth policies.

4.1 Key findings

By reviewing and comparatively analysing partners' responses to the survey's questionnaire, several pertinent observations emerged regarding common and frequent gaps in territorial raw materials' policies that can impede investments in the (RM) sector.

Fragmented regulatory framework

In numerous occasions partners noted that the raw materials legislative framework lacks coherence and thus is not effective due to discrepancies and ambiguities resulting from RM policies - whether on regional or national level – not being closely aligned with other national policies. Even in the cases where partners' countries have recently issued new and updated RM policies (strategies, laws, regulations) there are still not aligned with other national horizontal policies such as land use planning, biodiversity protection, mine waste management, and water management.

Lengthy and complex administrative procedures

Partners consistently stressed the difficulties associated with RM investments due to the lengthy and complex administrative procedures, which often involve many authorities with potentially overlapping and even conflicting requirements. Partners noted that oftentimes the whole permitting chain lacks a clear direction, which is due to the division of responsibilities and jurisdictions among authorities, as well as the various, and sometimes repetitive, requirements posed by different authorities. The unpredictability of the length of permitting processes and the criteria for assessments and documentation required were cited as key considerations underpinning investment decisions within the RM sector.

The financial and social aspect of mines' closure

Partners reported several attempts to establish and regulate post-closure restoration of mining sites by revising existing legislation or adopting new legislation to rehabilitate the mining area and support the post-mining transition of local communities. However, in some cases partners noted the uncertainty of related regulations around the allocation of post-closure obligations between the State and mining companies, particularly regarding the cost and environmental rehabilitation of the mining sites. Some partners also reported past, ongoing, or potential conflicts arising from the discussion around the ownership of the rehabilitated site; whether it belonged to the mining company, or the local administration, or the national government.

4.2 Recommendations

Following the review of the conflicts and disputes reported by partners on the environmental impacts of RM activities, as well as the cited discrepancies between territorial RM growth strategies and environmental regulations, a series of recommendation were developed to strengthen environmental protection provisions in relevant growth policies.

Investments in research and innovation coordination

Energy consumption, greenhouse gas emissions, and water consumption of the mining industry are key environmental barriers to the sustainable growth of the RM sector. Currently, the research and development (R&D) in the area of RM is scattered amongst different players and not well-connected with industrial needs. Territorial RM policies could integrate grants or other financial instruments for the uptake of new improved, highly efficient, and cost-effective exploration technologies which are currently available in Europe or elsewhere but have not yet been adopted in the consortium countries due to prohibitive costs or other constraints. The framework could also set up research and innovation funding schemes to develop new technological concepts and solutions across the whole value chain of RM.

Enhance recovery and recycling of RM from products, buildings and infrastructure

Recycling and recovery of RM – especially CRM - during mining, processing, and waste management activities should be encouraged and supported by policy makers

to ensure reliable, secure, and sustainable access to RM in project partner countries. Countries should also set time-bound recycling targets for each CRM based on the available recycling technologies and the concentration of the relevant CRM in the country's starting mix. The targets should also be subject to a comprehensive monitoring framework.

Promote the exchange of good practices

Project partners' countries could benefit by the exchange of best practices in mineral policies and related regulation among EU Member States, with the aim to streamline the permitting process along the whole chain of mining activities (i.e., prospecting, exploration, extraction, processing, closure, post closure activities) in terms of time frame, the regulatory co-authority regime, the financial and administrative requirements, and supply security.

Increased transparency of the RM value chain

To safeguard the sustainability of the RM sector – particularly with regards to CRM - project partner countries are encouraged to establish a systematic reporting system for exploration, mineral production and trade, reserves, and resources, when information is available. It is also recommended that countries adopt a standardized and harmonized approach to public disclosure of the environmental, social and governance (ESG) performance of the mining companies. Extraction and trade of minerals should adhere to internationally applicable standards (e.g., United Nations Framework Classification (UNFC) and United Nations Resource Management System (UNRMS) to ensure security of supply and reasonable, sustainable utilization of critical minerals.

Certification for end-processing/recycling facilities

Project partner countries are encouraged to set up a mandatory or voluntary certification scheme for end processing/recycling facilities for specific CRM-related waste streams. Minimum standards and a verification procedure based on traceability through the supply chain could be included in the certification scheme, where the certification is carried out by accredited independent certifiers. Furthermore, the certification framework could include specific requirements set in applications-specific standards.

Closing the loop through industrial symbiosis

To a great extent the strength of any RM supply industry is often defined by its capability to turn secondary RM into resources which are of at least equivalent quality of resources resulting from primary production. Partners are encouraged to support pilot initiatives aiming to establish networks for industrial symbiosis within their regions. Such network should bring together industry actors, the public sector, and the academia with the aim of establishing synergies and closing the loop between supply and demand for RM.

4.3 Conclusions

The European raw materials sector is growing, driven by an increasing demand for minerals to meet the needs of a rapidly expanding and increasingly affluent population. Governments and businesses are setting ambitious renewable energy targets resulting in a growing demand for certain raw materials critical to the energy and digital transition, such as cobalt, copper, lithium, nickel, and rare earths among others.

However, the supply of critical raw materials, and in particular their extraction and trade, poses a number of challenges that, if not managed properly, can lead to a number of negative impacts on the economy, environment, society, and governance. If on the other hand, these challenges are managed properly the raw material sector can become a lever for Europe's sustainable development and transition.

While a circular raw materials industry that recycles and re-utilises raw materials has a high potential to mitigate the risks and negative impacts of the sector, addressing the difficulties of the primary mineral extraction sector is just as important for the shift to a sustainable carbon neutral future and for meeting the Sustainable Development Goals (SDGs) at the required rate.

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6 Annexes

6.1 ANNEX I - 2020 EU list of Critical Raw Materials³

Antimony	Hafnium	Phosphorus
Baryte	Heavy Rare Earth Elements	Scandium
Beryllium	Light Rare Earth Elements	Silicon Metal
Bismuth	Indium	Tantalum
Borate	Magnesium	Tungsten
Cobalt	Natural Graphite	Vanadium
Coking Coal	Natural Rubber	Bauxite
Fluorspar	Niobium	Lithium
Gallium	Platinum Metals	Titanium
Germanium	Phosphate Rock	Strontium

6.2 ANNEX II - 2023 Proposed List of Critical Raw Materials⁵

Antimony	Arsenic	Bauxite
Baryte	Beryllium	Bismuth
Boron	Cobalt	Coking Coal
Copper	Feldspar	Fluorspar
Gallium	Germanium	Hafnium
Helium	Heavy Rare Earth Elements	Light Rare Earth Elements
Lithium	Magnesium	Manganese
Natural Graphite	Nickel – battery grade	Niobium
Phosphate rock	Phosphorus	Platinum Group Metals
Scandium	Silicon metal	Strontium
Tantalum	Titanium metal	Tungsten
Vanadium		

