European Commission

Final Report

EVALUATION AND EXCHANGE OF GOOD PRACTICE FOR THE SUSTAINABLE SUPPLY OF RAW MATERIALS WITHIN THE EU

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Annex A1 is presented as a separate document

Introduction

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This document contains the Draft Final Report being submitted by the Centre for Strategy & Evaluation Services (CSES) LLP in respect of the assignment: 'Evaluation and Exchange of Good Practices for the Sustainable Supply of Raw Materials within the EU'.

1.1 - The Aims of this Good Practice Exercise

This report has a practical purpose. It aims to provide concrete examples of good practice from across Europe in implementing developments that increase the competitiveness of the European raw materials sector in line with the developments in policy since the Commission's 2008 Communication 'The raw materials initiative — meeting our critical needs for growth and jobs in Europe'[1] The intention is to do this in ways that assist other countries to develop similar approaches.

In a sense, therefore, the report simply presents practical examples of approaches that have already been agreed at a European level. **Those who are primarily interested in the detail of these practical examples should proceed directly to Chapter 3, where an overview is presented, or to the separate Annex A for a detailed description of each case.** However, those who wish to review the policy background in which the cases were selected will first find a brief explanation, since, in arriving at the examples and especially so that the learning and transfer process can be supported, a distinctive approach has been adopted, that has been characterised by three important elements:

1) Reliance on information, guidance and advice from the Raw Materials Supply Group and especially a sub-group of experts who have agreed to assist in the development of the project.
2) The identification of good practice on the basis of a clear link with policy priorities and the application of disciplines derived from evaluation practice, especially in the selection and assessment of the cases under consideration.
3) A concern to ease the process of transferring practice from one country or region to another, by assessing the transfer potential of specific examples of good practice and by gathering material that could strengthen the case for their broader adoption.

A further explanation of this approach will be set out in the following sections of the Report and will also be supported by annexed documents, but it should be stressed that rather than seeking to give an account of the processes that have been followed to arrive at the conclusions of the report, **the aim has been to concentrate on presenting the results of the analysis in a way that could be useful to those with an interest in the industry who would want to make use of them**.

Furthermore, it should be recognised that the report does not attempt to provide a complete solution or to identify practices illustrating even most of the major issues identified in key strategy documents. Nor has it sought to identify practices that necessarily apply in every situation. Rather, in a bottom-up approach, a number of cases of apparent good practice identified by members of the Raw Materials Supply Group have been examined and a relatively small number illustrating potentially promising developments have been highlighted with a view to focusing attention on practices that can make a real difference. To assist this process, they are presented in a way that facilitates their use, either by national officials working in this area, professionals working in geological institutes, officials working at a regional

[1] Communication from the Commission to the European Parliament and the Council 'The raw materials initiative — meeting our critical needs for growth and jobs in Europe' COM(2008) 699 final of 4.11.2008

or local level, involved in land use planning or permitting and authorisation procedures, or by the private sector or professionals in the industry that are in a position to promote developments that can improve the industry's competitiveness.

It should also be noted that refining the messages and the detail of the Report has been a continuous process throughout the assignment. Hopefully this will continue after the final version is made available, notably as further evidence on the impacts of the cases cited emerges.

1.2 - The Approach Adopted for the Assignment

This assignment has been commissioned by Directorate Sustainable Growth and EU 2020 of DG Enterprise and Industry in the European Commission. Directorate Resources Based Manufacturing and Consumer Goods Industries has participated actively in the project.

The policy framework for the work that has been undertaken will be explained in a little more detail in the next chapter. However, an important factor underlying the processes that have been adopted is Article 173 of the Treaty on the Functioning the European Union, which provides for monitoring of Member States' actions addressing industrial competitiveness and invites the Commission to promote policy coordination. As a result, the European Commission has launched a series of exchanges of good practice in policy areas relevant for industrial competitiveness, of which the current exercise is one example.

Minerals policy and the supply of raw materials fall under the competence of the Member States. Nonetheless Member States are able to learn from experience elsewhere and, in the recent years many of them have up-dated their national strategies and/or their minerals policies, after taking the experience of other countries into account.

These themes of competitiveness and encouraging co-operation between the Member States have been central to the work that has been undertaken.

The Role of the Raw Materials Supply Group

The team developing the report have collaborated with Raw Materials Supply Group, which is made up of members nominated by the Member States, (which in some cases is staff from the relevant geological surveys) and representatives of industry associations. The project was launched at a Raw Material Supply Group (RMSG) meeting on 17 June 2013, where the members were invited to nominate cases of good practice to be considered for more detailed investigation. Subsequently, the RMSG have been kept informed of progress, notably at a special session on 23rd September, when they were invited to contribute to the selection of the cases to be presented and the process of writing them up and at a meeting on 10th December, when a draft report was presented and comments invited.

In addition, **a sub-group of experts**, largely from the Raw Materials Supply Group, have contributed advice and guidance and individual members have commented on the reports, provided very useful data and made generous inputs into, the elaboration of specific good practice cases. The consulting team are particularly grateful for the contributions of this sub-group, who have helped them avoid some of the pitfalls that are inevitably encountered in exercises of this kind.

Valuable information has been provided through the interactions with the RMSG and its members. The Working Group has been a major source of primary information, as well as providing a steer in relation to the key issues for the cases to bring out.

Introduction

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The process for selecting and presenting the good practice cases has been as follows:

- Members of the RMSG made an initial nomination of cases of good practice illustrating significant developments that are improving the competitiveness of the industry. These were supplemented by cases identified in independent research on the part of the consultants. 84 cases were eventually considered.
- An initial list of cases for further investigation was presented to a special meeting of the RMSG, along with explanations of the methods used in the selection. After discussion and building on earlier work, these cases were organised into five categories:
  - Policy and Legislative Framework
  - Information and the Knowledge Base
  - Governance
  - Land Use Planning
  - Permits and Authorisation
- After further refinement of the initial list on the basis of recommendations by RMSG members, the project team has been investigating the chosen cases further in interviews and background research with a view to selecting a smaller number that can be presented as the prime examples of good practice in the area. At the same time advice has been sought on which issues in the five areas under consideration should be highlighted in the good practice examples and the accompanying text. This process has led to a draft report.
- A final stage in the assignment is to seek expert guidance and supplementary material from the RMSG and the sub-group of experts, especially on the final choice of the main cases illustrating the good practice identified and on matters relating to the practical processes of taking-up good practice elsewhere. These issues will be the main subject matter of the second special meeting in December 2013 and the discussion and subsequent follow-up will shape a final version of the Report.

Throughout this process, the intention has been to build on previous work undertaken by the Commission and the RMSG and its Working Group on the Exchange of Best Practices in Land Use Planning, Permitting and Geological Knowledge and also to complement and support other work currently being undertaken, notably in the European Innovation Partnership (EIP) on raw materials and the project to define indicators.

Evidence-based analysis

In order to develop as strong a case as possible for the good practice to be identified, it was proposed to the RMSG at the first special meeting that an important consideration in characterising the good practice to be presented in the Report should be **the evidence available on the performance of the cases being examined in contributing to improved competitiveness**. Since good practice is differentiated from less good practice by contributing significantly to sustainable development and delivering superior economic performance, it was argued that the analysis of individual cases should seek to identify indications of real success. This, however, is not the whole story in characterising good practice. Good projects have to be inspiring and encourage others to change their own practice and projects that have been launched relatively recently, for instance, would not generally have had time to generate concrete results. Nonetheless it was agreed that a disciplined approach modelled on

evaluation practices would be an important contribution to achieving the right balance in assessing particular cases. Indications, for instance, that recent projects had been set up in a way that would eventually allow a proper evaluation to be conducted, would provide evidence of good management and should help distinguish the more compelling cases. Furthermore this approach would be in line with the increasing tendency for monitoring and evaluation to be required in publicly-funded projects.

Transfer and take-up

The final characteristic of this project has been **the attempt to prepare the ground for the more widespread adoption of the practice identified,** with the help of the RMSG. The concern has been, first of all, to identify projects that could be adopted elsewhere – for instance, in not requiring substantial amounts of additional expenditure. But in addition, consideration has been given to the processes whereby projects are adopted in other areas and in particular how they are financed, and this has influenced both the way that projects have been presented and some of the detail that is provided. The aim has been to present evidence to support, in as practical a way as possible, the case of those arguing for similar practices to be adopted.

The theme of transfer and take-up is one to be considered at the second special meeting of the RMSG and will influence both the final form of the cases presented and the form of the final chapter of the Report, which specifically considers the issue of promoting the take-up of the good practice that has been identified.

Background

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This chapter sets out the policy context for the Report. It provides a background for the presentation of good practice in the following chapter

2.1 - The Raw Materials Sector

The requirements of modern technology for new materials and the developments in the global economy that have increased considerably the overall demand for raw materials have posed a serious challenge for the European economy – a challenge that also has many social and political implications. It is no longer safe to assume that Europe can continue to import most of its raw materials in the way that it has done over a long period, but especially since the patterns of trade established in the 1970s. These trading patterns are now changing both as a result of demand from newly industrialised economies and because of changing patterns of political and commercial control in the supply of materials. Greater efforts and expense are needed to continue to

1) access raw materials from around the world,

but at the same time it is necessary to

2) increase the availability of primary materials within Europe through policies which are compatible with exploration and development, by improving their discovery through better knowledge of EU mineral potential (especially of hidden deposits) and through the development of eco-efficient extraction and processing technologies,

3) further develop industrial ecology, the eco-design of products, extending the durability of products and the recycling at the end-of-life stage of the minerals and metals they include .

As will be explained further, these areas constitute the three pillars of European policy on raw materials, but it is on the second area that this particular project is concentrating and here there are major issues that have been highlighted and analysed by a series of impressive studies conducted in recent years in which European initiatives have played a significant part. These studies have set out challenges that policy makers and the industry have to address, but also the wider population, who need to understand the issues better, to participate in processes that explore the implications, to deal honestly with the problems and, in some cases, make difficult decisions.

Some of the work defining the raw materials challenge will be summarised briefly in this report, in order to establish the main themes that have to shape our work. However, this exercise does not aim to contribute further to the analysis of the challenges faced, nor to refer to wider policy issues. Rather the idea is to help attention to be focused on solutions, by pointing to examples of initiatives that are already responding effectively to the challenges. In this way, the aim is to promote understanding of the issues and potential responses, especially in an audience that is somewhat more extensive than the public officials and industry representatives that are routinely involved in these matters. Rather than an exercise in analysis therefore, this report is primarily concerned with the communication of existing good practice.

For readers, therefore, who are already familiar with the debates about the challenges faced by the industry, it could well be best to proceed directly to the next chapter, which provides an overview of the cases that are presented or to the good practice cases themselves that are set out in the annex.

For those, however, who wish to know more about the context in which the good practice cases have been selected and the themes that they illustrate, the rest of this chapter provides an overview of the

issues faced by the industry and the policy framework in which the good practice exercise has been conducted.

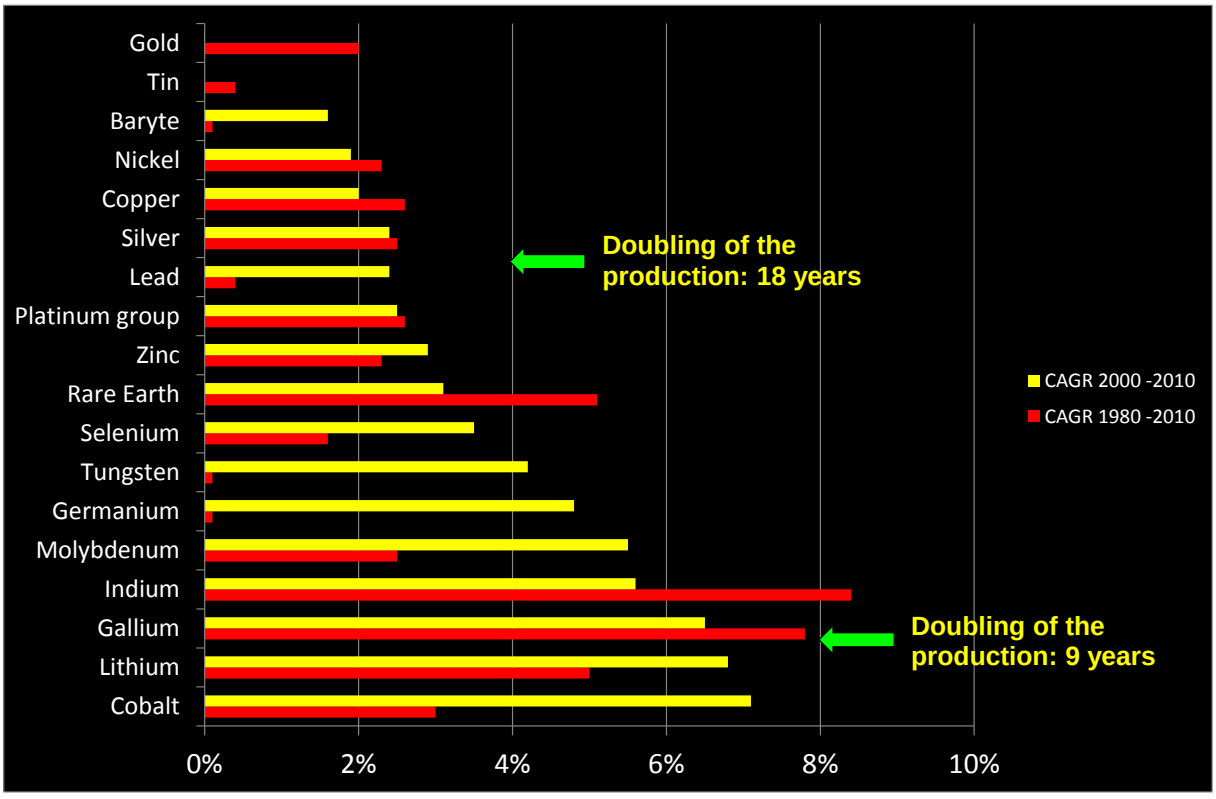
The Market for Raw Materials

The project's focus is on the exploration, extraction and processing of non-energy raw materials - metallic ores, the metals derived from them, industrial minerals and construction materials (aggregates) - and their supply to European industry.

Demand and supply imbalances for these raw materials are set to intensify over the coming decades. Even though there may be off-setting elements, such as the development of less resource intensive technologies, the anticipated rise in global population and living standards in developing countries is expected to drive continuously increasing levels of demand for a wide range of resources.

Meanwhile, requirements for a broad range of metals and minerals are increasing with modern technology, especially with the development of resource-efficient and low carbon technologies such as electric cars, catalytic converters and photovoltaics

Figure 2.1: Compound Annual Growth Rate observed in the production of minerals and metals over 30 years, 1980-2010, and 10 years, 2000-2010

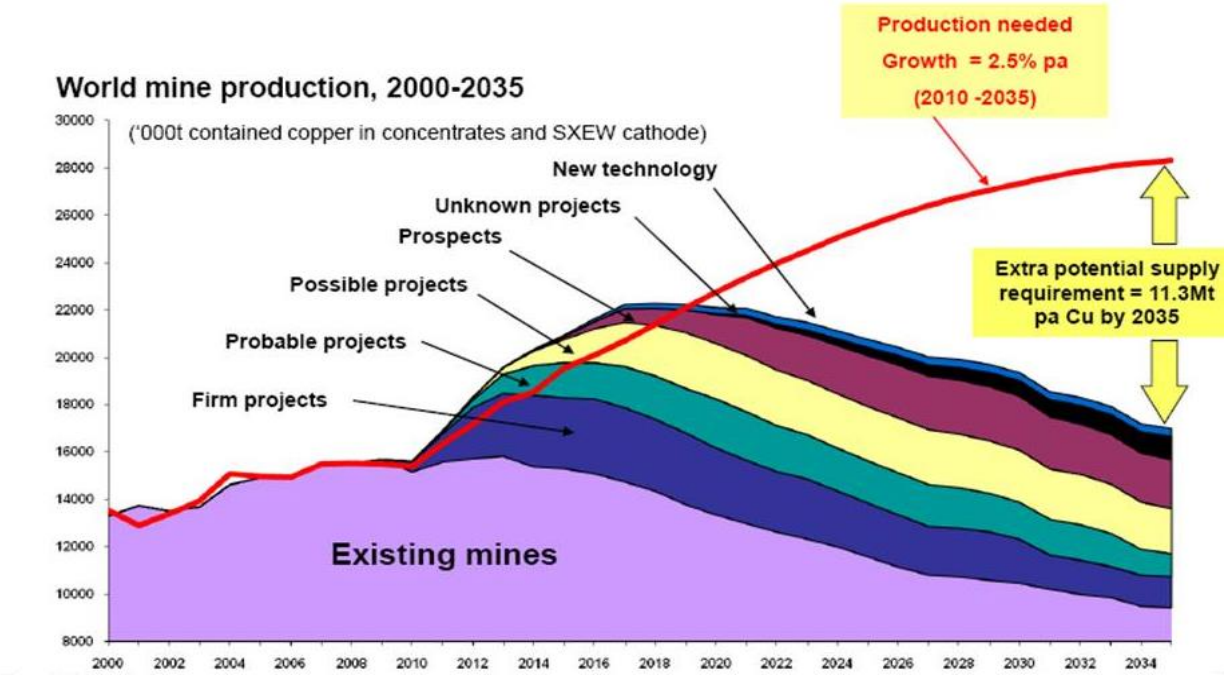


Source: USGS Data series 140, compilation P. Christmann BRGM

Frequently these materials occur only rarely and in low concentrations. Industry forecasts for a number

of raw materials suggest that there could be medium to long-term supply shortages in certain areas[2], including but not exclusively for rare earths and critical raw materials. Copper, for instance, provides an example where a gap between supply and demand could very well emerge by 2020.

Figure: 2.2 - Production Forecast for Copper Mining



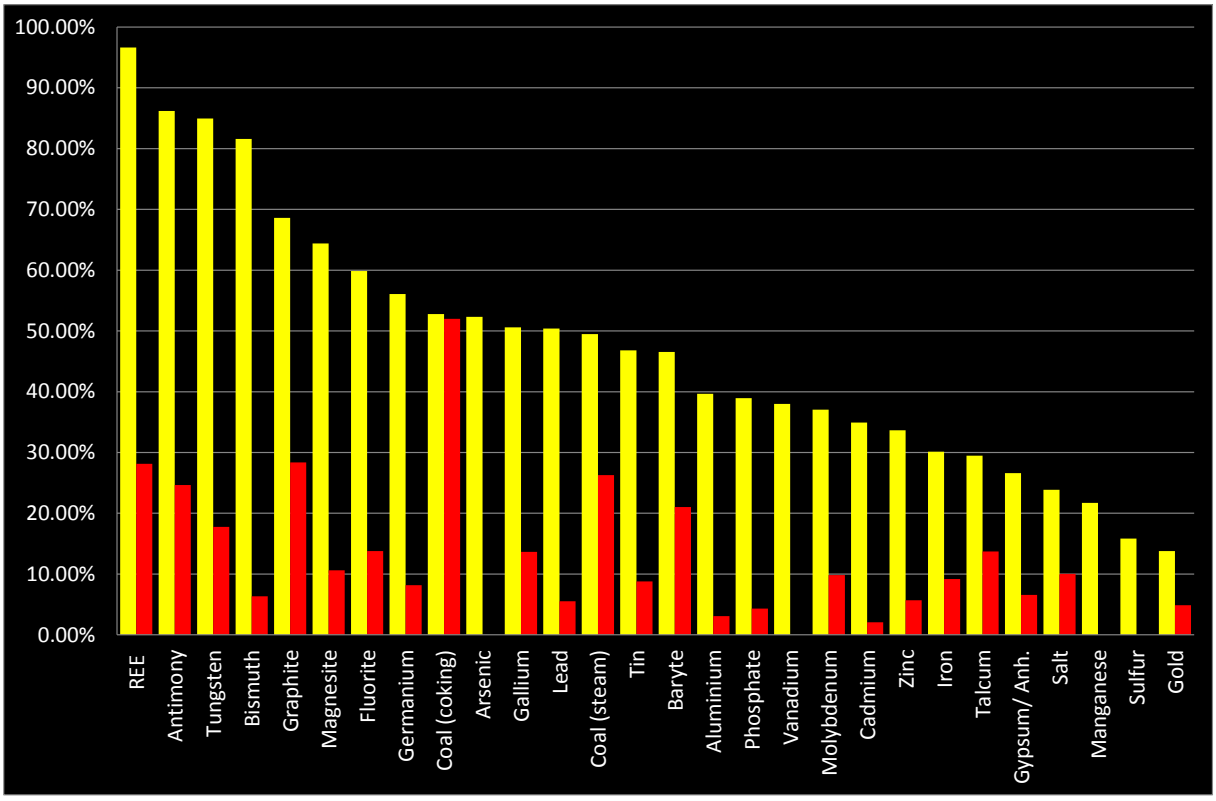
Source: CRU Data Analysis

Increasing global demand will be a major factor influencing the price of raw materials, but there are other considerations, such as the exhaustion of currently known deposits, their being increasingly difficult to reach, higher overall costs (labour, permitting, environmental controls) and increasingly stringent safety and environmental standards. Current recycling processes and the provision of secondary materials appear to be insufficient to meet current market demand.

There are also some worrying trends in the concentration of supply and the geo-political challenges associated with them. Within a period of 25 years, China became the first global producer of over 20 minerals and metals important to the EU economy and has established a monopoly – or near monopoly position.

[2] See, for instance, papers and presentations by Richard Schodde, Minex Consulting

Figure 2.3 Evolution (1986-2011) of China's share (%) of the global mine production of the mineral raw materials for which it was the first mine producer worldwide in 2011



1986 - red bars

2011 - yellow bars

Source: World Mining Data, 2013 Edition. Compilation: P. Christmann, BRGM

Consequently, there are potentially going to be resource shortages (at least in terms of reserves depletion) for a number of different metals by 2050. In some cases, several times the existing stock of reserves will be required. The extent of these potential shortages, however, is the subject of considerable debate and will depend on a number of factors, including developments in mining technology and practices, not least as a result of policy initiatives.

For now, the effects of the underlying developments in markets have been exacerbated by the increasing interdependence between financial and physical commodity markets, and limited market transparency. Furthermore, price movements in non-energy raw materials have been exacerbated by structural problems in the global supply and distribution chains of different commodities including in the availability of transport infrastructure and poor governance in some countries. These developments occur at a time when the competitiveness of European industry requires efficient and secure access to raw materials[3].

[3] European Commission (2011) Tackling the Challenges in Commodities Markets and on Raw Materials

Background

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Furthermore, as part of the overall picture, we should remember that the situation in relation to aggregates has its own characteristics. Europe as a whole has no problem with the availability of natural aggregates. Some regions may have a shortage in some aggregates, while others will have surpluses: but the availability of requisite quantities of aggregates is not, at present, an issue. Imports and exports between regions and Member States do, and will continue to occur. However, in some countries consumption is outstripping replenishment of the needed planning permissions for future extraction and thus accessibility may become a problem within the next decade in some regions and will need to be addressed by the Member State concerned.

The metals and minerals supply chains cover the following stages preparatory actions, such as public geological surveys, exploration, extraction, processing, including beneficiation, metallurgy and refining, smelting, transport, exporting and importing. A wide range of organisations, people, technologies, activities and resources are involved and these are located around the world. The variability and accessibility of the information sources on all these aspects of the industry is a further complicating factor. Woven through the operation of these processes are policy and governance structures again with a range of elements: trade treaties, tariff and non-tariff trade barriers in some cases, national regulations, national stockpiling practices (where they occur), plus national economic policies, the effects of commodity exchanges, financial systems and speculation, and of course the end users. Some elements of the supply chain can be vertically integrated to quite a high degree and this can help ensure security and stability in supplies, but generally supply chains are relatively complex.

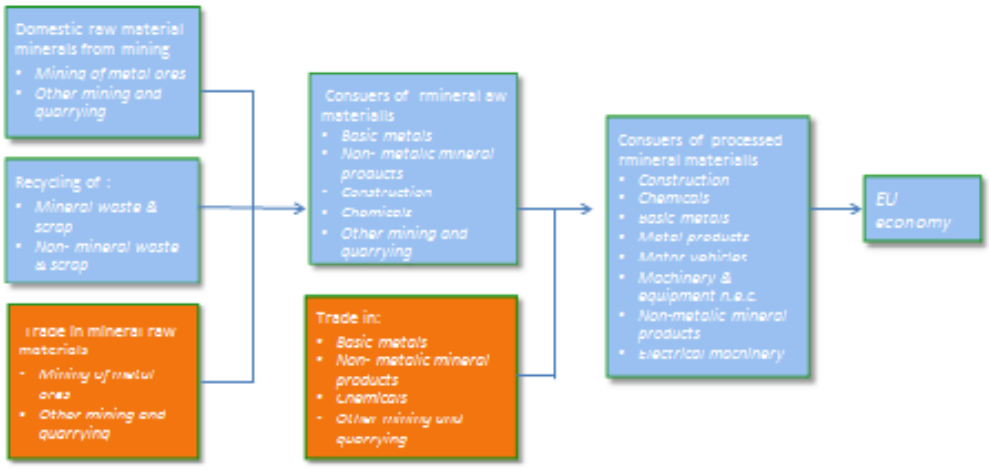
In this context, there are challenges both for countries that consume large amounts of mineral raw materials and those that produce them and while there are developments through the OECD and the G20 as well as through EU policy making processes to achieve international agreements, the relevance of the EU's second pillar of policy relating to the fostering of a sustainable supply of raw materials from European sources, that is, the production and processing of non-energy raw materials within the continent is clearly becoming more apparent as the situation internationally becomes more complex and challenging. This is particularly true as a consequence of the stiff competition from Asian countries that do not consider minerals and metals as commodities but rather as strategic assets needed for their economic development.

Improving the supply of raw materials from within the continent, however, is itself not without challenges. Extractive industry companies are often only able to expand their production capacity slowly because of the high capital requirements, long start-up times and sometimes complex market structures that make revenue forecasting difficult. EU and national/ regional public authorities have a significant role in this situation in ensuring that there are the right framework conditions to allow companies to carry out their activities, without undue impediments. The regulatory and planning environments have to be appropriate, including properly taking into account the various aspects of the extraction and processing of raw materials. It is for this reason that the land use planning environment and permitting and authorisation procedures are significant themes within this good practice exercise, though, of course, there are broader regulatory issues, not least at a European level, that fall outside of the current exercise, but that certainly need to be addressed elsewhere.

The structuring of the chain of production is also a highly significant factor and this in turn is influenced both by market considerations and the regulatory framework. In the course of the transmission of raw materials from suppliers and intermediaries to various customers in the supply chain, value is added as the inputs are worked on and transformed into higher value outputs. The chain of production ultimately

goes from the location and extraction of the raw materials, through processing to manufacturer and end user. The focus of the current analysis is more on the upstream supply and value added than on the end of the chain that is close to the consumer. The risk and uncertainty associated with the fact that many primary supply sources are located outside the EU in less stable political and economic environments may lead to speculation in commodity markets, which in turn has impacts through feedback loops on supply and demand. This suggests that, given the strategic nature of the dependence on certain raw material inputs, there could be a role for European intervention in cooperation with Member States to help ensure continuity of supply. Several mineral products (including base metals such as aluminium, cobalt, copper, gold, molybdenum, silver, lead, platinum, lead, nickel, tin and zinc) are traded globally on the basis of reference prices established on commodity exchanges such as the London Metals Exchange (LME)[4]. Many other minerals are commonly marketed through long-term agreements, including off-take contracts, between mining companies and buyers (in a number of cases these are downstream manufacturers) or through traders. The prices are sometimes established on the basis of reference prices.. When considering the value chains based on inputs from the metals and minerals industry, the overall EU position can be summarised as per the diagram in Figure 2.4 below:

Figure 2.4 – Mineral and Raw materials value chain in the EU



Source: European Raw Materials Initiative, 2008

While there is a trade deficit in imports, once value has been added in the various industries, there is a powerful trade surplus. Many industries across the EU use metals and mineral inputs and both directly and indirectly, the sector is a significant employer. However, the situation at different stages of the value chain varies considerably by industry and metal. For example, in mass electronics, production is outsourced to lower cost third countries and raw materials are embedded in the components and sub-assemblies or even final products imported into the EU. However, when a greater part of value is added to materials in the EU itself, accessing raw materials that are important for the high-tech, resource efficient and low carbon economy of the future is more critical. Many countries have adopted

[4] However, as explained in more detail below, a number of critical raw materials such as rare earths are not traded on listed markets.

stockpiling as a mitigation approach, especially in the case of cobalt and tungsten. But the need for longer term solutions suggests that a more co-ordinated approach is required by EU Member States and this has led to the development of raw materials policy at an EU level.

2.2 - Raw Materials Policy at an EU level

The growing urgency of the need to improve and stabilise access to raw materials has meant that, although raw materials is primarily an area of competence of the Member States, there have been significant developments in policy at a European level over a number of years, both in terms of assisting Member States to co-ordinate their policies and also in the support provided by European level programmes, under the Structural Funds or the Research and Technological Development Framework Programmes. For present purposes, reference to the 2008 and 2011 Communications from the European Commission help to define the policy framework for the good practice exercise.

The European Raw Materials Initiative

The Commission Communication 'The raw materials initiative — meeting our critical needs for growth and jobs in Europe'[5] in 2008 put the pursuit of a raw materials policy in the context of the Lisbon Agenda's pursuit of sustainable competitiveness as the basis for jobs and growth:

> *'Securing reliable and undistorted access to raw materials is increasingly becoming an important factor for the EU's competitiveness and, hence, crucial to the success of the Lisbon Partnership for growth and jobs.'*

The Communication is notable in particular for launching the European Raw Materials Initiative (RMI). This Initiative recognises the importance of enhancing access to, and the sustainable supply of, raw materials and seeks to stabilise long-term commodity prices by removing market distortions, providing alternative approaches to meeting demand and supporting the transition to a low carbon and resource-efficient economy. It is structured around 3 pillars, which are summarised below:

The European Raw Materials Initiative (RMI)

First pillar: Access to raw materials on world markets at undistorted conditions - securing fair access to raw materials through well-functioning world markets through diplomacy, better and more effective coordination and coherence among EU external policies (external relations, trade, and development).

Second pillar: Foster sustainable supply of raw materials from within EU - improving sustainable access to raw materials through increased investment and exploitation of Europe's natural resources. While regulation of extractive industries is a Member State competency, an enhanced regulatory framework could be developed to improve administrative processes, access to permits and land planning policies. National Minerals Policies could ensure that resources are extracted through economically viable, environmentally sustainable and safe methods. The knowledge base of mineral deposits could be improved through harmonised databases, national geological surveys and synergies with GMES. Research could be undertaken to enhance extraction, processing and substitution techniques, relevant skills initiatives could be introduced and UNECE standardisation methods could enhance reporting on

[5] Communication from the Commission to the European Parliament and the Council 'The raw materials initiative — meeting our critical needs for growth and jobs in Europe' COM(2008) 699 final of 4.11.2008

reserves and resources.

Third pillar: Boosting resource efficiency and promoting recycling - supports the transition to a low carbon by encouraging resource efficiency, recycling, substitution and the increased use of renewable raw materials to ease critical dependence of the EU on primary raw materials, reduce import dependency, and improve industries' environmental performance.

The second pillar of the RMI "Fostering the sustainable supply of raw materials from within the EU" is the main focus of this study. In order to support this pillar, the Commission is encouraging Member States to take the necessary measures to promote investment in extractive industries. Specifically, these are to:

- Define a National Minerals Policy - to ensure that mineral resources are exploited in an economically viable way, harmonised with other national policies, based on sustainable development principles and a commitment to provide an appropriate framework on the regulatory environment and other relevant information;
- Set up a land use planning policy for minerals – comprised of a digital geological knowledge base, a transparent methodology for identifying mineral resources, long-term estimates for regional and local demand and identifying and safeguarding mineral resources (taking into account other land uses) including their protection from the effects of natural disasters;
- Strengthen the effectiveness of authorisation processes for minerals exploration and extraction – such processes should be clear, understandable and provide certainty and help to streamline administrative processes (e.g. lead times, allow applications for extraction to be made in parallel, and the setting up of one-stop-shops).
- Develop a European knowledge base necessary for an efficient raw materials strategy – drawing on EU funded programmes such as GMES and specific projects to develop a GIS-based resource assessment and modelling system (see further below).

These four objectives continue to define raw materials policy and are the basis for the good practice exercise.

In its recent report on the implementation of the RMI[6] the Commission makes reference to a number of activities that have taken place since the launch of the RMI. In brief these included:

- a number of Member States (including France, Germany, Finland, Greece, the Netherlands, Portugal, Ireland) have developed national mineral strategies, complementary to the EU raw materials strategy;
- the Commission has developed guidelines for the extraction and the protection of sensitive ecosystems (Guidelines on Non-Energy Extractive Industry (NEEI) and Natura 2000);
- an ad-hoc working Group on the exchange of best practices in land use planning, permits and geological knowledge sharing has been set up. It produced a report on the exchange of best practice

[6] EC (2013), Report from the Commission On the implementation of the Raw Materials Initiative, COM (2013)442

in minerals policy, land use planning, permits and geological networking in June 2010 (see section 2.4);

- a set of indicators has been developed to monitor actions by Member States in relation to National Minerals Policy (legal framework indicators and information framework indicators), Land Use Planning, authorisation and permits (including the application of the Guidance on NEEI and Natura 2000) and the first round of relevant data collection completed (see section 2.4);
- the European Innovation Partnership in Raw Materials was launched in 2012 and its Strategic Implementation Plan was finalised in September 2013 (see below)
- a number of studies and projects have been launched to enhance the European raw materials knowledge base. One study reviewed statistical information on the quality and quantity of the EU raw materials deposits aiming to identify the gaps and steps to be taken in order to achieve interoperable coherent and consistent data. A second study (Raw Materials: Study on Innovative Technologies and Possible Pilot Plants - RAMINTECH) will map the potential for pilot plants for raw materials extraction, processing, product design and recycling in the EU that can significantly improve sustainability and supply of raw materials along the entire value chain and will also analyse gaps where the EU needs to build up a competence;
- the Commission is supporting the establishment of a European Rare-Earth Competency Network (ERECON), a network that should bring together experts in order to advance the exchange of best-practice on rare earth elements (REE) which are vital for the development of high-tech and environmentally-friendly goods. ERECON will make recommendations on research and promote sustainable mining, recyclability and substitution of REE;
- another network on raw materials (ERA-MIN) has been in operation since November 2011 with the aim of improving the involvement of Member States authorities and national stakeholders. ;
- a number of research projects in the area of Raw materials are supported by the 7th Framework Programme. For example, the ProMine project (Case 9) aimed to improve the geological knowledge base and provide additional information on Europe's primary raw materials potential. The EuroGeoSource project provides harmonised spatial geological and geographical data sets fully utilising the data specifications of Directive 2007/2/EC – INSPIRE[7] and the INSPIRE web based, distributed infrastructure. Another projects supported (EURARE) focuses on rare earths exploration and exploitation or the reduction and substitution of rare earth elements.
- Other studies conducted in co-operation with the Joint Research Centre have focused on the security-of-supply issues in product supply chain and end-of-life management and the raw materials needs of the energy sector.
- five European Technology Platforms have been formed including the Sustainable Mineral Resources (ETP-SMR), Manufacture (Manufacturing), EuMaT (Advanced Materials), SusChem (Sustainable Chemistry) and Forest-Based Industries (FTP).

[7] DIRECTIVE 2007/2/EC establishing an Infrastructure for Spatial Information in the European Community (INSPIRE)

Background

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The Challenges in Commodities Markets and Raw Materials

The subsequent Commission Communication in 2011 added to this framework and attempted to ensure that the RMI had been followed-up. The 2011 Communication 'Tackling the Challenges in Commodities Markets and on Raw Materials'[8] notes that progress has been made through the RMI, but acknowledges that there remain continuing policy challenges in ensuring access to raw materials for European industry. These include, among others, the growing interdependence of commodities and related financial markets and the increased volatility in prices, over-dependence on a small number of third countries for the critical raw minerals on which EU industry depends (and a lack of appropriate substitution alternatives), cyclical patterns of supply and demand leading to price spikes, exacerbated by the economic and financial crisis and an attendant risk of a lack of adequate investment to ensure access to raw materials in the future. Through the implementation of the RMI, steps have been taken to address these challenges, for instance, steps to improve Europe's knowledge base on actual and future deposits of raw materials and stimulating the extractive industry to deliver new products to the manufacturing industry through FP7.

The 2011 Communication also points out that the Europe 2020 Strategy underlines the need to promote technologies that increase investment in the EU's natural assets. Extractive industries fall under this category but their development has been held back by a complicated and burdensome national regulatory framework and by competition with other land uses.

More generally, the concept of the sustainable use of natural resources is increasingly being mainstreamed into EU policy initiatives to promote growth and competitiveness[9]. The 2011 Flagship Initiative on Resource Efficiency stressed the need for the Union to become increasingly resource-efficient and carbon-neutral, given the growing global population and increased competition for resources from emerging economies.

The Communication sets out medium-long term objectives to secure growth and jobs in Europe, improve productivity, reduce costs and boost competitiveness and to develop new products and services. New ways need to be found to reduce inputs, minimise waste, improve management of resource stocks, change consumption patterns, optimise production processes and improve logistics. This will help to stimulate technological innovation, boost employment in developing 'green technology' sectors, sustain EU trade, open up export markets, and benefit consumers through more sustainable products. The roadmap also focuses on sustainable production and consumption, using waste as a resource, and ensuring that market prices reflect true economic and environmental costs.

European Innovation Partnership on Raw Materials

In February 2012, the Commission put forward a proposal for a **European Innovation Partnership on Raw Materials**[10] to encourage innovation along the raw materials value chain and to overcome barriers to innovation in raw materials. The process is based on co-operation between Member States and

[8] Communication from the Commission to the European Parliament, the Council, The European Economic and Social Committee and the Committee Of The Regions Tackling the Challenges in Commodities Markets and on Raw Materials' COM(2011) 25 final of 2.2.2011

[9] "A resource-efficient Europe: flagship initiative under the Europe 2020 strategy" COM(2011) 21

[10] European Commission (2012) Making Raw Materials Available for Europe's Future Wellbeing Proposal For A European Innovation Partnership on Raw Materials (COM) (2012) 82 final)

engagement with industry and other stakeholders and it is intended to address the lack of integrated approaches to 'value chains' from the extraction and processing of raw materials, through to product design and end of life usage. The Strategic Implementation Plan (SIP) of the Innovation Partnership was finalised in September 2013 making use of input from a wide range of European stakeholders organised in various operational groups. The two high level objectives of the EIP in Raw Materials are to:

- reduce import dependency and promote production and exports by improving supply conditions in the EU, diversifying raw materials sourcing and improving resource efficiency (including recycling) and finding alternative raw materials;
- put Europe at the forefront in raw materials sectors and mitigate the related negative environmental, social and health impacts.

The actions under the EIP are organised under three groups (pillars) a Technology Pillar, a Non-technology Pillar and an International cooperation Pillar. A number of actions under the first two pillars of the EIP are directly linked to achieving the objectives of Pillar 2 of the RMI.

Under the **technology pillar**, Priorities I (Raw materials research and innovation co-ordination) and II (Development of new technologies for primary and secondary raw materials production) are both relevant to the objectives of Pillar II of the RMI. In the areas of exploration the focus is on the **development of new exploration technologies** including 3D geo-data and the development of geo-models to improve the resolution of the raw materials maps and reduce exploration costs and risks. In relation to extraction, the focus is to be on the **development of alternative extraction methods** in order to unlock existing deposits not worth exploring using conventional technologies. In processing and refining, the focus is on the development of processes of higher technical, economic, energy and environmental performance and flexibility, versatility and modularity for processing and recovery of different raw materials from low grade and/or complex feeds with changing composition.

Under the **non-technology pillar of the EIP**, Priorities I (improving framework conditions for primary and secondary raw materials), and III (knowledge skills and raw materials flows) are also particularly relevant to Pillar II of the RMI. Priority I actions aim is to provide a stable and competitive supply of raw materials from EU sources while promoting good governance and facilitating public acceptance. They include actions for **strengthening the mineral policy framework on the basis of the exchange of best practices** in the area of mineral policies and **streamlining permitting procedures and the application of other relevant legislation** (e.g. Environmental Impacts Assessment Directive or Directive 2006/11 on the management of waste from the extractive industry) along the whole chain of extractive industry activities. Communication actions, such as the development of a **reporting system on raw materials based on international standards and terminology**, are also included, in order to ensure compatibility between reporting standards and to increase transparency on raw materials availability. Other actions will foster access to both known and still undiscovered mineral deposits and ensure that extractive industries are considered on equal terms with other competing sectors when it comes to the development of land use and marine spatial plans. Finally, under Priority I communication actions will aim to increase awareness, enhance public acceptance and build trust towards the activities of the sector. Specific actions include early and open communication with various stakeholders, information campaign, adoption of voluntary codes based on good governance and sustainable, transparent performance.

Background

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Under Priority III the focus is on the creation of an EU Raw Materials Knowledge Base (EURMKB) to provide **EU level data and information on raw materials** from different European and national sources (Eurostat national geological surveys, agencies) **in a harmonized and standardized way** and use various tools to analyse the information and report to the public. Reporting should make use of **web services and portals** on raw materials with links to data providers, **regular (annual) reports** and an **early warning system** based on outlooks on future supply and demand of raw materials from primary and secondary sources. This is intended to lead to greater economies of scale, reduced costs and the potential for pursuing EU-wide projects (e.g. a harmonised minerals database, European Raw Materials Yearbook). It also includes the development of a Knowledge and Innovation Community to boost technological innovation across the whole production chain and the **development of partnerships across the value chain to strengthen primary and secondary raw materials flows**.

European Technology Platform on Sustainable Mineral Resources (ETP SMR)

There are also important contributions to the RMI from the **European Technology Platform on Sustainable Mineral Resources (ETP SMR)** - launched in 2005 and officially recognised by the Commission in 2008 - whose activities focus on creating sustainable resource potential, access to, and supply of, essential and critical raw materials with important synergies with the EIP. A revised report was published in 2013[11]. The STP is structured around 5 Strategic Ambitions for 2020, two of which are particularly relevant to the second pillar of the RMI. The first one focuses on exploration and the creation of an inventory of resources and a comprehensive overview of available geological mineral and metal resources (primary and secondary), together with the development of new exploration technologies. Accessibility to data and strengthening the knowledge base on mineral resources are seen to be a key element. The second refers to mineral extraction processes and the development of new technologies (including 3D/4D modelling but also GMES), which are to be considered in order to improve exploration in different environments in order to increase knowledge of mineral deposits.

It should also be recalled that the European Regional Development Fund (ERDF) provides funding for research, innovation and business support measures for raw material exploration and extraction. Moreover, the EU provides funding through Erasmus Mundus for the Minerals and Environmental Programme (2009-2013) to support the development of new skills in the area of raw materials.

Overall then, since the Raw Materials Initiative in 2008, there have been an impressive array of inter-related developments at a European level, all aiming to strengthen the supply side of the raw materials industry, notably by improving the information base from which it operates, supporting the development of technology and other forms of innovation, including those directed to improving environmental sustainability, and by making the regulatory environment governing actual operations more streamlined and effective. These developments have helped define the context in which the current exercise has sought to identify and describe practical examples of the implementation of the principles advocated.

[11] European Technology Platform on Sustainable Mineral Resources - (ETP SMR) - Strategic Research Agenda (Strategic Innovation and Technology Roadmap) - Revision 2013

2.3 - National Raw Materials Policies

The response of the different EU Member States to the challenge represented by the key messages of the Raw Materials Initiative and subsequent policy statements has varied significantly.

Of course there are major differences in the geology across the EU, with some countries sitting on highly valuable and relatively accessible metals and minerals, while for others the geology is not so favourable. Population densities vary considerably and with that the possible range of alternative land uses. There are important variations in the ecology of different areas, which give rise to differing problems and solutions. Other considerations also need to be taken into account in determining the extent to which potential resources can be exploited. The transport costs of sand and gravel, for instance can soon outweigh the value of material itself and this restricts the extent of the market for such materials.

Consequently, a 'one-size-fits-all' approach is not possible and there need to be a differentiated approach. Nonetheless the EU overall has an €11 billion trade deficit in metal and minerals and the EU faces considerable challenges.

A number of Member States have formulated national raw material strategies, including Denmark, Finland, Germany, Greece, Portugal, Sweden, Ireland and the UK. It is interesting that some of these have not been major suppliers in the past. Others, however, have not yet adopted such policies and there are variations in the extent to which the sector has a profile in national policy debates. There are also two recent assessments of national minerals and metals strategies with a broader international focus, covering EU countries as well as some non-EU countries.[12] [13].

In general, there is also a considerable variation in the extent to which some of the more operational issues have been addressed, such as the integration of management of raw materials considerations into land use planning and the pursuit of smart regulation objectives in permitting and authorisation procedures.

In some EU countries, there have been major contributions to improving the knowledge base for policy makers, industry, the research community and the general public, the emphasis being on promoting knowledge and innovation, both to address sustainability of the industry and to improve its overall competitiveness. This has frequently been in the form of national initiatives, but also through the encouragement of participation in EU RTD programmes.

Of growing importance in recent policy debate has been the broader aspects of the governance of the sector, the management of its relations and especially communication and the interaction of the sector with its stakeholders; the populations affected, the media, policy makers, and the general public. In broad terms, the issue of ensuring a social licence for the industry has been raised, taking the debate to

[12] Department for Environment, Food and Rural Affairs (DEFRA) - 2012 - A Review of National Resource Strategies and Research - Report - DEFRA (London, United Kingdom) - https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69526/pb13722-national-resource-strategies-review.pdf

[13] Hilpert H. G., Mildner S. A. - 2013 - Fragmentation or Cooperation in Global Resource Governance? A Comparative Analysis of the Raw Materials Strategies of the G20 - Stiftung Wissenschaft und Politik German Institute for International and Security Affairs, Bundesanstalt für Geowissenschaften und Rohstoffe (Berlin, Germany)

another level, beyond the particular questions raised in relation to specific sites or activities that are highlighted in the media. In many respects, the debate is about how reasonable decisions can be made, through democratic processes, given the need to respond to the challenges originally set out in Raw Materials Initiative.

It is the intention of this project to help promote further developments at a national or regional level responding to these issues, by highlighting examples of responses that have either already been made or are under way. By providing some detail of the approaches that have been adopted, the aim is to illustrate what is possible for those thinking of taking similar steps and to suggest some features that might usefully help to find solutions elsewhere.

2.4 - Earlier Analysis of Relevance for the Good Practice Analysis

An important aim of the current project is to build on and reinforce **past and parallel actions undertaken by the European Commission** on the identification and exchange of good practice relating to NEEIs. The study of **the Ad Hoc Working Group** of the Raw Materials Supply Group completed in 2010, "Improving Framework Conditions for Extracting Minerals for the EU: Exchanging Best Practice on Land Use Planning, Permitting and Geological Knowledge Sharing"[14] is one place to begin implementing this aim, especially given the wide interest base of the Working Group. It consisted of a mix of experts from national and regional ministries, geological surveys, extractive and downstream industries, and academic experts from universities. The other major initiative that needs to be taken into account is the subsequent work on indicators. Although the final report relating to this work has not yet been completed, interim reports have been made available and it is evident that there are a number of ways in which the indicator work and the current good practice analysis can reinforce each other.

The mandate of the Working Group was to research and identify examples of best practice covering minerals policy, application and authorisation processes, land use planning, and codes and technical guidance. In this respect, this earlier work had similar objectives to those of the current project. However, the approach adopted was different in many respects from that proposed for the current exercise. The methodology adopted placed a lot of emphasis on a comprehensive questionnaire, which resulted in the development of a rich information source on the approach adopted across the EU Member States in each of the main target areas. Specific examples of 'best practice' were cited as a result of the feedback from the questionnaire, but the details presented in relation to each case are relatively brief and the main effort in the report is rather dedicated to analysis of the main problem areas and the search for a consensus on potential developments in the various areas under discussion. This consensus is then expressed in the form of a series of recommendations, supported by brief reference to particular cases of 'best practice'.

The intention with the current exercise has been to rely on previous work for the definition of the main issues, but then to provide information in greater depth on the areas highlighted, with the aim of encouraging progress in specific areas of policy, land use planning, applications etc. Nonetheless, the analysis provided by the 'Improving Framework Conditions' report, particularly in those areas highlighted in the subsequent Communication, has provided an indispensable background for the

[14] EC (2010), Exchanging best practice on land use planning, permitting and geological knowledge sharing g Improving framework conditions for extracting minerals for the EU, Ad-hoc working group report, tp://ec.europa.eu/enterprise/policies/raw-materials/files/best-practices/sust-full-report_en.pdf

current analysis in that it has been used to define in large part, the issues that the new investigations sought to illustrate in the elaboration of the good practice examples selected.

One element in the 'Improving Framework Conditions' report that has already influenced the current exercise is its emphasis on the importance of strategic information and data gathering systems. This will be an additional area for investigation for the new work.

In particular, many of **the recommendations of the earlier report have helped shape the definition of good practice** and the search for illustrative examples. These include:

- As a key component of a national minerals policy, Minerals Planning Policy should describe in detail the ways that future minerals supply will be secured and demonstrate a strong link to broader land use planning policy and regulation.
- A Sustainable Minerals Policy should be based on the principles of sustainable development and incorporate, economic, environmental and social requirements.
- Any land use policy for minerals must utilise a robust digital geological knowledge base ensuring fair and equal consideration of all potential uses of land including the eventual extraction of raw materials.
- The aim of a land use policy for minerals should ultimately be to ensure fair and equal consideration of all potential uses of land including the eventual extraction of raw materials. A national planning framework can help to ensure that minerals are accorded due weight in the land use planning process.
- The most important elements of the minerals exploration and extraction application process are: clarity, understanding and certainty of what needs to be provided in order to get authorisation for minerals exploration or extraction. This can take the shape of a standardised application form or could be set out in legislation or guidance.
- Speeding up the authorisation processes may be achieved through integrating the different permits required so that they are issued by one competent authority (a one -stop-shop) and with only one environmental impact assessment or by parallel assessment.
- Codes of practice are important instruments to achieve technical, social and environmental excellence. Use of codes of practice, guidelines or equivalents by industry helps to ensure protection of the environment from adverse impacts of mineral extraction.
- To improve the knowledge base of mineral deposits in the EU the need for harmonised EU level data sets stands out. Better networking between the national Geological Surveys of Member States is the basis for cooperation between relevant institutions and the Geological Surveys.
- Standardised and accurate statistical data on worldwide minerals production, imports and exports, and publication of this data are necessary on an annual basis.

These and other recommendations have been taken into account in the work to identify good practice and have influenced the way that good practice has been described. Essentially the aim has been to illustrate points emphasised by the 'Improving Framework Conditions' study.

Similarly, the **on-going work on national minerals policy indicators** has important links with the good practice project. This work follows on from the 'Improving Framework Conditions' study in that in

determining the priorities for indicators, it very much refers to the policy framework described by the previous study.

Starting from the call in the 'Improving Framework Conditions' report for a National Minerals Policy, **the intention has been to reflect the following key components** of such a strategy:

- The approach needs to be based on a policy that ensures that the mineral resources are provided to industry and society in an economically viable way, harmonised with other national policies, based on sustainable developments principles and including a commitment to provide a legal and information framework.
- Minerals Planning Policy should describe in detail the ways that future minerals supply will be secured and demonstrate a strong link to broader land use planning policy and regulation.
- Any land use policy for minerals must utilise a robust digital geological knowledge base ensuring fair and equal consideration of all potential uses of land including the eventual extraction of raw materials.
- Alongside information on resources of local importance, a method for developing scenarios of the long term demand trends for these materials, and a means by which this can be translated into a spatial plan while recognising the contribution of recycled materials is needed.
- Minerals exploration and extraction application processes need to be characterised by clarity, understanding and certainty of what needs to be provided in order to obtain authorisation for minerals exploration or extraction.
- These principles can be implanted through application forms that conform to good practice or alternatively established through legislation or guidance. Speeding up the authorisation processes may be achieved through integrating the way that the different permits required are provided.

In addition to the developments at a Member State level, there are also elements that could help co-ordination and the effective operation of the market:

- Codes of practice can be useful devices to promote technical, social and environmental excellence.
- Standardisation of the knowledge base of mineral deposits in the EU would promote transparency and speed up cross- border developments.
- Accurate statistical data on minerals production, imports and exports, and other data would serve to analyse trends and help decision makers to better understand and monitor the EU's supply and demand situation and the related risks.

These elements, together with overall policy framework provided by the implementation of the Europe 2020 Flagship on Innovation Union[15] in the raw materials area are leading to the definition of appropriate indicators to form part of a robust monitoring system that will contribute to a more active and continuous assessment of developments in this key area of economic and industrial strategy.

[15] Europe 2020 Flagship Initiative , Innovation Union COM(2010) 546 final, http://ec.europa.eu/research/innovation-union/pdf/innovation-union-communication_en.pdf

Background

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At this stage, a final definitive set of indicators has still not been determined. There has been a stakeholder consultation process and a provisional set is being discussed. From this, it is clear that they will relate to the four classic policy areas and that the number of indicators has broadly been determined, in that a preliminary set of 20 indicators have been discussed with Member States and industry representatives in RMSG. This preliminary set is distributed as follows:

- Legal framework (indicators 1 -3);
- Information framework (indicators 4-5);
- Land use planning (indicators 6-9), and
- Authorisation and permitting (indicators 10-20).

The implications for the good practice project are clear. Given that the motivation for the current project and the work on indicators stem from the same basis in earlier work overseen by the RMSG and that they have the same objectives in terms of aiming to promote the competitiveness of the industry in some well-specified areas, it is clear that the good practice project needs to support and reinforce the indicators project. Consequently, the good practice project has aimed to elaborate examples of practice that illustrate precisely the areas that have been highlighted in the previous and on-going work, as a way of demonstrating how the principles and approaches advocated can be implemented in practice.

Overview of Good Practice Cases 3

This chapter presents an overview of the good practice cases set out in full in the Annex, highlights the common themes and explains how the individual cases should be seen as illustrating various aspects of an overall package of good practice.

3.1 - Overall Approach to the Presentation of Good Practice

It is worth repeating that the aim of this exercise is to illustrate the themes of raw materials policy at a European level by pointing to practical examples of where important elements of the agreed policy are being implemented in an interesting and potentially reproducible way. **There has been no attempt to redefine policy** or move on the debate in any conscious way, other than by revealing aspects of practice that might suggest new elements for future policy discussion.

The framework that has been taken to define the policy issues for which good examples have been sought is that established since the Raw Materials Initiative in work undertaken, notably in conjunction with the Raw Materials Supply Group. The key documents have been the initial Commission Communication on the Raw Materials Initiative in 2008, the Report from the Commission On the implementation of the Raw Materials Initiative from 2011 and the study of the Ad Hoc Working Group on 'Improving Framework Conditions for Extracting Minerals for the EU' in 2010. The content of these documents has been summarised in Chapter 2. The recent Communication on the implementation of the Raw Materials Initiative[16], the Strategic Implementation Plan of the European Innovation Partnership on Raw Materials and the ERA-MIN research roadmap provide further insight and guidance.

One significant feature of the current study that has been determined by the previous policy discussions is **the themes that have been explored** and that the good practice cases are intended to illustrate. These themes are used to group the sets of particular cases that are summarised in the following sections. In broad terms, these have been established right from the beginning of the current exercise and they reflect the main headings of earlier work, notably that of the Ad hoc Working Group. However, as work has progressed, it has been necessary to sharpen the distinctions between the different categories, so that they should now be understood in the following terms:

- *Policy and Legislative Framework:* the cases presented in this section relate to the policy and legislative frameworks that determine both the regulatory regime under which the industry operates in a particular country, but also the principles under which other supporting features of the operating environment are determined. In other words, the good practice considered under this heading relates to the fundamental definition of the approach to be adopted by the public administrations in the country concerned. Other categories consider some of the implementations of these principles, while the governance category includes more broadly based actions through which an engagement with the sector is managed.

[16] Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions 'On the implementation of the Raw Materials Initiative' COM(2013) 442 final of 24.6.2013

- *Information and the Knowledge Base:* this category contains good practice that reflects the frequent calls for geological information and information systems to be improved and to be complemented with business intelligence, but also other initiatives to improve the knowledge base of the sector, its sharing and the further development of knowledge through research.
- *Governance*: under this heading, there is consideration of the whole process of governing the activities of the industry and how the issues these activities raise is managed by the public authorities – over and above passing legislation. This involves the ways that stakeholders and citizens are kept informed and engaged in the processes and how conflicts are resolved and managed. There is also a brief consideration of how the public authorities provide a supportive business environment for the industry.
- *Land Use Planning:* this section sets out examples of good practice in the process of translating legislative and governance principles into processes and decisions in particular geographical areas on the ground and the administrative procedures that govern this.
- *Permits and Authorisation:* specific procedures for obtaining permits and authorisation are considered in this final category.

It should be said, however, that a number of the cases presented have elements that relate to headings other than the ones under which they are considered. **The categories are not intended to be watertight** and one might even expect that the best examples of good practice might have features that are interesting from a variety of different perspectives. In practice, the attribution of good practice cases to a particular category can be slightly arbitrary and in some instances, it has been a matter of emphasising certain characteristics rather than others – for expository reasons.

The following sections provide an overview of the cases that are presented in full in the Annex A and explain why they have been selected.

3.2 - Policy & Legislative Framework

In this category five cases are presented that start with contrasting examples of the definition of a national strategy, before going on to consider how, in the case of Finland, the national strategy as originally defined has been extended in its compass and an Action Plan developed, on the basis of which both government and industry will implement an agreed programme of change, in order to meet ambitious national objectives. There is then a case that refers to a programme of legislative reform in the Netherlands, which although only in its initial stages, is already showing evidence of some radical thinking. The final case is an example of 'soft regulation'. It concerns a voluntary industry initiative in Spain to promote the adoption of sustainable mining practices on the basis of standards developed jointly by a broad range of stakeholders.

In its 2011 Communication, the Commission considered that **defining a National Minerals Policy** was an important way to promote investment in extractive industries, by establishing a coherent framework, based on the principles of sustainable development that provides for an efficient regulatory regime along with the necessary practical measures and is harmonised with other national policies.

A number of countries have defined national strategies, including Denmark, Finland, Germany, Greece, Ireland, Portugal, Sweden, and the UK and they all have interesting features. Two recently developed strategies are presented here, showing different characteristics.

Overview of Good Practice Cases 3

The first case is from Sweden and sets out the **Swedish Minerals Strategy (Case 1)**. This provides a good example of how, though an open and interactive process with stakeholders, a comprehensive strategy has been developed to meet the needs of industry and to extend and maintain Sweden's competitive advantage in this field.

Case 2 is the Portuguese National Strategy for Geological Resources for the period 2013-2020. It is comprehensive strategy that placed mining activities and access to natural resources in parity with other activities balancing economic, social and environmental considerations. It has set the basis for the development of a more effective legal and institutional framework to support the development of the sector.

Finland also defined a national Mineral Resources Strategy in 2010, with a view to establishing the country as a global leader in the sustainable utilisation of mineral resources, but an active national debate about various aspects of the industry prompted the government in 2012 to convene a high level Round Table, chaired by the Prime Minister, with 160 participants from a range of interest groups. The discussion at the round Table and the subsequent work of 10 expert groups has led to the publication in April 2013 of an Action Plan with 35 targeted measures to be implemented by 2019. The details of **the Finnish Action Plan and its follow-up are presented as (Case 3)**.

Case 4 on the Environment and Planning Act ('Omgevingswet') in the Netherlands describes the process that is underway of developing an integrated Environment & Planning Act. The main aim of the Act is to combine and simplify EU and national land and environmental land planning regulations with a view to streamlining the entire land planning process including projects proposed by the extractive industry (in the Netherlands the industry mainly consists of surface extraction, especially of sand and gravel). By integrating a wide range of pieces of EU and national planning and environmental legislation, it is anticipated that the overall regulatory framework will be simplified for industry, other stakeholders and government bodies. Moreover, the Act aims to simplify the process for citizens and businesses through the introduction of single environmental permits and one-stop-shops. These forward thinking reforms have been initiated with the Smart Regulation[17] agenda and the Raw Materials Initiative in mind[18].

The case on Sustainable Mining Management - Voluntary Standards (Case 5) provides an example of a **'soft' regulation** approach to improving sustainable mining management in a way that also promotes a better engagement with the Community. A practical tool is provided, assisting firms to develop a sustainable mining management system. This includes reporting elements that add to the evidence base of the industry. It has to be said that that the reporting elements of this case illustrate one aspect of a relatively fluid situation. There are a number of approaches that are to a certain extent competing with each other currently and it will be important in the wider adoption of such standards that experience across Europe be taken into account and an active process take place of comparison and selection of the best features. While a certain amount of experimentation is important, care should also be taken to avoid an unnecessary proliferation of such initiatives and the best features should be consolidated in a widely accepted approach.

[17] http://ec.europa.eu/smart-regulation/
[18] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2008:0699:FIN:en:PDF

All the cases show how minerals policy can be based on the principles of sustainable development and integrate economic, environmental and social requirements, as recommended by the Ad hoc Working Group report. They also all provide a sound basis for broader land use planning policy and regulation, a feature that will be further, and more explicitly, considered in the cases below in the land use planning category.

An important consideration in providing this sound basis for land use planning and regulatory procedures that is illustrated by several of the cases presented is that they seek an integration of the treatment of the whole raw materials sector. Because of the way that regulatory provisions and other considerations have often evolved from disparate legislative provisions governing mining activity, quarrying, land use, safety and environmental legislation and provisions governing poisonous and otherwise dangerous substances, there often still remain complex and cross-cutting requirements and procedures. A clear strategic framework can provide the grounds for clarifying and eventually codifying these different requirements.

Such a framework can also provide other benefits in that they can lead to greater stability and predictability in the regulatory system, which is of considerable importance to the raw materials industry, given the long lead times over the period from initial geological reconnaissance to actual production. Unpredictability is a powerful deterrent to investors in mining and metallurgy and conversely a significant benefit can arise if a clear legislative framework can lead to greater stability in regulatory provisions.

3.3 - Information and the Knowledge Base

As the European Technology Platform on Sustainable Mineral Resources (ETP-SMR) has commented, a process is underway in the raw materials sector of **reshaping the industry from one focused on resources to one that is knowledge-driven**.

This category of good practice cases brings together some relatively well-known examples of developments in information gathering, analysis and provision and creation of knowledge, together with others that are less well known. It starts with three aspects of information provision. The Fennoscandian Ore Deposit Database has often been cited before, but it continues to develop the information provision that makes it not only a first-class repository of geological and business data, providing an information base that can encourage further exploration and eventually exploitation, but also an excellent example of co-operation between geological institutes. This is followed by Minerals Online – GIS from the UK, focusing on good practice in the provision of online services and then the DCENR Exploration Data Release Initiative from Ireland, where arrangements are made to publish private sector exploration data. The final two cases in this category concern developments that are improving the knowledge base of the industry. The work of the German Mineral Resource Agency (DERA) is relatively well-known as a resource centre for the German industry. This case sets out the services offered currently, while the ProMine Project has also been cited frequently. It is well known for its work on 3D and 4D and advances made in the project represent a step-change in the availability of data both across Europe geographically and in the potential to represent data in 3D and 4D.

The Fennoscandian Ore Deposit Database – 'FODD' - (Case 6), which is the result of co-operation between the geological surveys of Finland, Sweden, Norway and Russia and SC Mineral (Russia), was cited as best practice by the report of the Ad hoc Working Group in 2010. FODD continues to be a world-leading example in the use of scientific data in support of the raw materials industry and public

policy, especially land use planning, not least because of the transnational collaboration of the staff of the respective geological surveys. Since the database was first made available in 2007, the number of deposits covered has more than doubled and a range of further data have been added, especially information in a form that can assist industry, including large unexploited metal deposits in Fennoscandia and potentially large unexploited deposits. The links of some of the institutions involved with the ProMine project (notably GTK in Finland that has co-ordinated both initiatives) promises well for future developments of FODD, but it is already possible to see that FODD has played a part in a clear increase of exploration and exploitation in the Fennoscandian region, with the opening of new mines and expansion or re-opening of existing and former mines.

The Minerals Online – GIS (Case 7) from the UK, is also an information resource for the industry that has been available for some time[19]. It was developed by the British Geological Survey and went online in 1999. It provides maps and statistics about minerals exploration and extraction, but also a wealth of business intelligence with information on production and trade in the UK and globally.

There are similar information resources that exist elsewhere. As well as those provided by DERA in Germany referred to below, the French portal www.infoterre.fr provides multiple digital data layers that can be overlaid. The system is compliant with the requirements of the Inspire Directive. It is clear that as well as inspiring those who have yet to develop such resources, the existing sites are learning from each other.

Through **the DCENR Exploration Data Release Initiative (Case 8) in Ireland**, the Exploration and Mining Division (EMD) has been releasing all of its non-confidential exploration data, since 2000. The types of exploration data made available include: Prospecting Licence Ground Status, Exploration Company Reports, Drillhole Data, Airborne Geophysics Data, geochemical surveys, and a bibliography of Irish publications and selected reports concerning Irish mineral resources (1750-2007). Historical exploration data and reports are also now available for public access through the web. An online GIS system has also been developed for industry[20] and other interested stakeholders. This system operates on the basis of an open access data policy on surrendered licenses and data which is over six years old. An overlay of the geology in the license that a company is interested in can be reviewed. The online information system is transparent and companies and the public can see the Prospecting Status of sites across the country (i.e if the ground is held for exploration by a company or if it is not held for exploration purposes). The location and extent of Mining Lease/Licences can also be viewed.

The German Mineral Resource Agency (DERA) (Case 9) was established in 2010, as part of the Federal Institute for Geosciences and Natural Resources (BGR) and was created to address a key issue faced by the German raw materials industry, namely the absence of reliable information on raw materials markets. The objective of DERA is to become a mineral resource competence centre and serve as a central information and advisory platform for the German government and industry in the area of mineral and energy raw materials. Services include:

- A commodity information centre producing reports on specific categories of minerals or specific sectors;
- A minerals price monitoring system;

[19] http://www.bgs.ac.uk/mineralsuk/
[20] http://www.mineralsireland.ie/

- Reports and studies concerning the raw materials situation and potential and the extractive industry in Germany and in selected countries;
- Reviews of raw materials potential (exploration and extraction projects, uses and waste) as well as possible alternative or new sources of supply;
- One-to-one advice to firms in relation to raw material supply risks and diversification strategies taking into account geo-strategic issues of safety and environmental aspects.

Various events with the cooperation of industry associations and local chambers including DERA industry workshops with a focus on specific minerals and examining issues related to the supply and demand of raw materials.

The recently completed **ProMine Project (Case 10)**, co-ordinated by GTK in Finland, was a major mineral resources project funded by the EU, with 30 partners and a team of 400 individuals making contributions at various points. Through its strengthening of the research community alone, the development of the project represented a significant contribution to the knowledge capacity supporting the industry, but the detailed work on 3D and 4D modelling and the new products and processes contributing to sustainability and competitiveness through more efficient processing and reduced energy requirements, led to some very concrete results (from 17 peer reviewed publications to the identification of 16 exploitable foregrounds, 14 patents and the creation of a spin-off company) and fed into a series of follow-on projects.

Developments at a national level are also worth mentioning at this point, including the support for knowledge development under the Finnish Action Plan (Case 3) and specifically the Green Mining programme in Finland (Case 13), both of which are considered in other contexts.

The cases cited in this (and other) categories, therefore, indicate that there has been **good progress in responding to earlier recommendations** and in developing the information and knowledge base of the sector, including the publication of intelligence data on worldwide minerals production, imports and exports etc. Overall in this category, the good practice presented provides an excellent illustration of what can be achieved. This may encourage further networking between the national Geological Surveys of Member States and suggests that there are improving prospects for harmonised EU level data sets, but there also appear to be promising prospects for some of the areas highlighted recently by the European Innovation Partnership on raw materials, notably in the area of 3D and 4D data and modelling.

The cases presented also illustrate some interesting interactions between industry and public institutions, through collaboration in research, but also, as in the Irish case, in agreeing the time-limits and confidentiality rules for making data collected by companies generally available. This may well encourage further developments in this direction on the basis of the Pan European Reporting Code or the UN Framework Code and possibly parallel developments on sustainability reporting, perhaps making use of the Global Reporting Initiative guidelines tailored to the raw materials industry. The actions relating to Corporate Social Responsibility under the Finnish Action Plan (Case 3) are interesting in this respect, as is the standard relating to reporting developed in Spain and referred to in case 5.

In terms of issues that it has not been possible to address fully in the cases chosen, the extent of demand-side counterpart developments is certainly one to point out. The previous section has considered important developments in the regulatory framework, but because of the nature of the overall exercise, which has focused largely on supply-side developments, it has not been possible to

consider other demand-side interventions to any great extent, such as action where public procurement might play a role.

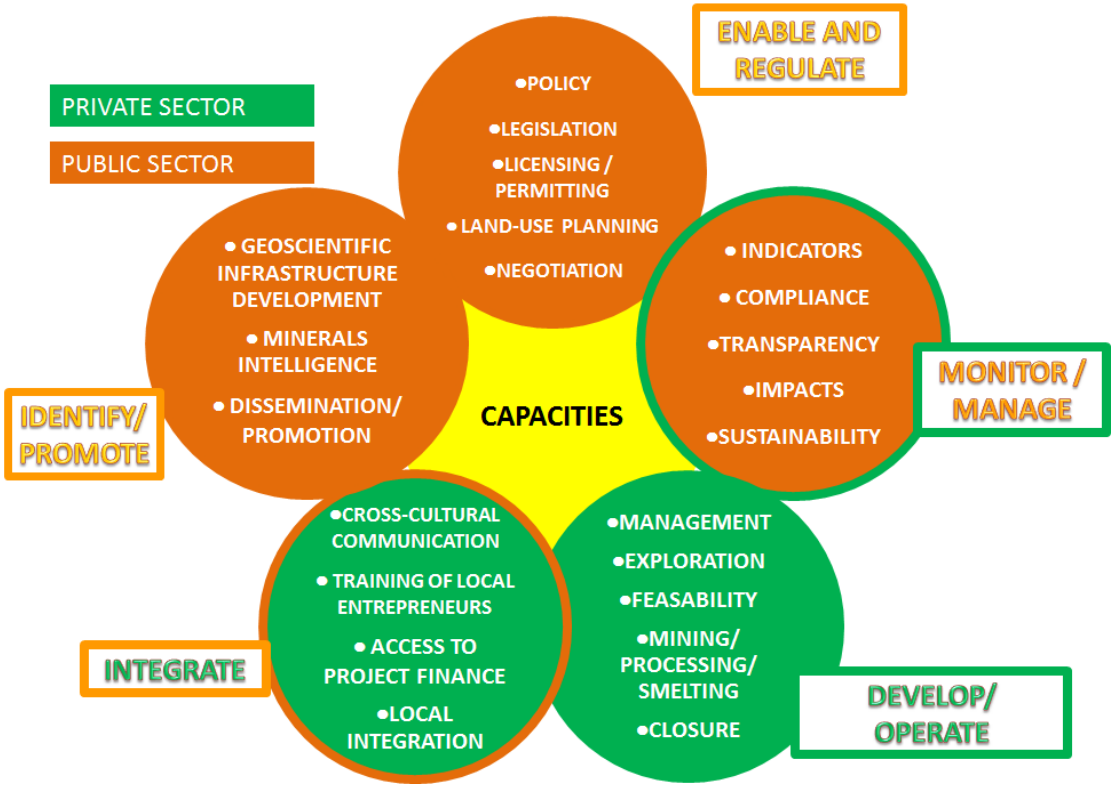
Finally, the longstanding issue of whether exploration itself can be regarded as a form of research and development has yet to be resolved and has become more urgent, as the emphasis in R&D funding at European and national levels continues to shift towards applications. Unfortunately, the good practice cases themselves can shed little direct light on this question.

3.4 - Governance

An area of practice that has emerged more clearly from the analysis undertaken for the current exercise is the issue of governance. This question has not explicitly formed part of the reference analysis that has been used to define the key topics for the other categories of cases being presented, although it has often been there implicitly. However, discussion with the Raw Materials Supply Group and its expert sub-group, established to advise the project, and also the more detailed consideration of individual cases, have convinced the project team that developments in this area are indeed worth highlighting, especially since this can be done in a way that complements the other areas and helps to provide a more comprehensive and coherent overall package of good practice cases.

The presentation of the cases should begin with an explanation of how the term 'governance' is used in this context. Figure 3.1 below presents the key activities and the main elements in the interaction between the public and private sides of the sector. In defining this basic structure, the diagram serves a very useful purpose. Many of the activities listed deserve more detailed consideration and, in fact, are referred to in a number of the specific good practice cases. However, there are other dimensions to the situation, not least those involving other players, which include the general public and those involved in other economic activities that interact with the sector. In addition, there is the question of the quality of the interactions, which it is difficult to indicate in a diagram of this sort.

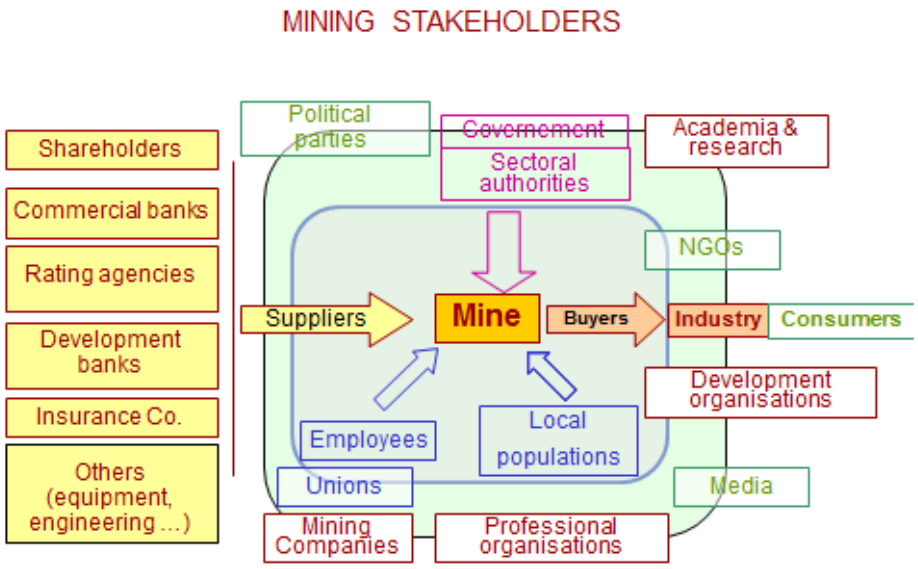
Figure 3.1 Respective role of the State and of Industry in the Development of the Raw Materials Sector.



Source: Christmann, BRGM

The section on governance aims to capture some of the elements that go beyond the first diagram (Figure 3.1) to consider the broader range of interactions indicated in Figure 3.2. This includes the general interaction on issues relating to the sector that arise in a democracy and the role of the authorities and industry in this process, in providing information and in raising awareness, including awareness of the challenges faced by Europe in accessing raw materials that were initially highlighted by the Raw Materials Initiative. It also includes processes put in place to resolve conflict, especially those that go beyond the formal planning and permitting procedures that are part of the core processes of the sector.

Figure 3.2 Stakeholders with an Interest in the Raw Materials Sector



Source: Christmann, BRGM

However, it is not all about communication with people outside of the sector. **Communication within the sector is important too**. However, the structure of the sector is relatively complex and diffuse. There is a range of technical knowledge and skills required in the industry. I It operates over large geographical areas, some of which are difficult to access. There are different kinds of activity from surveying and exploration, through extraction, to various forms of processing and there is the development of ancillary activities from machinery and instrument manufacture to the provision of technical services, It also operates at many different levels in terms of responsibilities and geographical coverage. It is difficult therefore to find individuals who have an overview of the whole sector and ensuring good communication across the different parts is challenging. Improving this communication within the sector and identifying and addressing weaknesses in the fabric of the industry is therefore also an important part of developing the governance of the industry. Finally, as for other sectors, there is a role for government in promoting competitiveness by providing a supportive business environment for the industry. This too potentially covers a wide range of measures, ranging from infrastructure development, through promoting innovation and participation in research and development to assisting SMEs in accessing finance. In the current exercise, there will be reference to a programme that is bringing together support for a number of the elements of the business environment.

In general, therefore **this governance category is highlighting examples of ways that the broad management of the industry and its interactions with the rest of the economy and society are being improved**. It should be recalled that a major element in the Finnish Action Plan (Case 3) is precisely the comprehensive attempt to address governance issues of this kind, but at a more detailed level, the section begins with **the Committee for Strategic Metals (COMES), in France (Case 11)**, where, following the EU's Raw Materials Initiative, a debate on the dependence of industry upon imported raw materials

for which there is growing international competition and particularly on the need for high tech industry to have access to critical and often rare materials, led to the establishment of a Committee, chaired by the Minister for Industry, which engages all the key stakeholders in an active dialogue, to identify the critical issues for the French economy all along the various supply chains and to develop the appropriate responses. Of particular interest in the context of governance, is the aim of COMES to raise awareness of the issues among all the relevant public and private actors and to develop an on-going engagement with industry - both suppliers of raw materials and users. One aspect of the case therefore describes an interesting response to a significant issue in the governance of the raw materials sector – the involvement of users in the development of raw materials strategy and policy.

Initiatives by the private sector are illustrated by **the Resource Alliance (Case 12)** - developed by the Federation of German industry. The mobilisation of a variety of stakeholders in addressing strategic issues is an important aspect of governance and clearly the engagement of a group of purchasers of raw materials represents an interesting example of this process. It is true that the main activity of the Alliance up until now has been in addressing the global supply of key raw materials - an issue which falls more under Pillar I of the Raw Materials Initiative, than Pillar II which is the main concern of the current exercise. However, the mechanisms used are certainly of interest beyond their initial area of application.

The following case more directly concerns the issues that arise with developing the supply of materials and specifically the need to engage positively with local communities. It refers to **a guidance document for local stakeholders on relationship management (Case 13) that has been produced by the Spanish Aggregates Association (ANEFA)**. The guidance document is a comprehensive document of 140 pages that assists firms in the aggregates sector to address Not-In My Back Yard conflicts with local communities. It is a practical guide for industry with examples and illustrations on how to develop and manage the relationships with local stakeholders, how to communicate better with local communities, adapt messages to the specific audiences and interact with the media, in order to prevent and resolve conflicts and avoid crisis events. It has already brought some positive results.

In Sweden too, there have been a number of initiatives to reach out to communities with which the industry has to interact. Case 14 refers to the efforts that have been made by both authorities and industry to engage local communities in the planning process, in a case where the reconciliation of differing interests and perspectives is presents particular difficulties. In this context, the Norrbotten County Administrative Board in North Sweden has developed **a manual for consultation and communication between the reindeer husbandry and mining industries during the permitting process for exploration and exploitation (Case 14)**. It is expected that as a result the overall number of appeals will be reduced, the general acceptability of proposals will increase and this will help to shorten the planning time required to access raw materials.

In Portugal, there has been an initiative to help share the benefits of developments in the extractive industry, by allocating a share of the royalties paid to local communities - **Increased Sustainability from the Use of Royalties (Case 15)** Under the new scheme, up to 25% of the royalties payable by firms for exploration or exploitation can be allocated to finance sustainable development projects defined by the regional and/or the local authorities. The measure simplifies the royalties system and ensures that local communities can get additional benefits from extraction activity in their area. At the same time it helps the extractive industry improve its public profile and strengthen its ties with the local communities.

Moving on to aspects of the governance of the industry that have more to do with supporting various aspects of the economic framework within which the industry operates, there is the case presented by

Green Mining (Case 16) – a programme developed by Tekes, the Finnish Funding Agency for Technology and Innovation. This is a reasonably well-known case in terms of its objective of promoting sustainable technology and processes and the results being obtained from some of the projects supported by it. But another aspect of the programme is its strategic and systematic approach to strengthening capacities and promoting innovation across the whole value chain. Green Mining is, in effect, promoting a national mining cluster, with international ambitions. The projects supported are therefore from across the whole sector, supporting SMEs as well as larger companies and improving work and organisational practices and supporting the development of human resources, as much as supporting the development of technology and new processes.

Given the wide scope of this category, there are bound to be many omissions. Perhaps notable among them are cases of good practice relating to strengthening training and education provision. This is needed both to provide the human resources for the industry in the future – an issue of growing importance - and also more generally to help develop a better appreciation of the challenges faced by European society in relation to future access to material resources.

3.5 - Land Use Planning

Many major activities undertaken by the industry and all exploration and extraction inevitably take place in a specific location, conditioned by the availability of a geological resource. **Land use planning is therefore the point at which the sector's key ambitions, processes and procedures are focused**, if they are to be realised as intended. It is a critical part of the policy framework, as was recognised by the Commission's 2011 Communication, where land use planning was identified as one of the areas that are particularly important for promoting investment in extractive industries.

In any given area, the planning system is key to achieving the objectives set out in national raw materials policy, but there can be many different potential land uses and corresponding issues – agriculture, tourism, housing and use by other economic activity, soil erosion prevention, climate control, protected areas etc. – and these can compete with each other. Furthermore, the demands on a location can vary in extent and intensity and both of these dimensions can vary considerably over time. The demands made when exploration is taking place are clearly very different from those relating to extraction. Typically, mining and other forms of extraction are not permanent activities in the sense that eventually a site will be available for other uses.

The process for deciding on future land use, therefore, needs to incorporate an informed and balanced assessment of the different options and needs to be flexible enough to adjust to the discovery of a new deposit. Transparent consultation and stakeholder engagement are essential for the integrity of the process and acceptance of land use decisions.

The Commission has frequently emphasised **the importance of a digital geological knowledge** base for providing an informed basis for decision taking. There have also been recommendations about basing the provision of data on a transparent methodology that includes long term estimates for regional and local demand and takes into account other land uses, while taking care not to sterilise resources, by making future access difficult or even impossible. The lack of such data in the past has meant that land use planning processes have often omitted consideration of what lies under the surface and the means of getting access to mineral and other material resources. Even when data are available, if they are of poor quality or concentrate solely on physical characteristics without any indication of the potential future use and the value of the resources, this can lead to poor decision-making processes.

Overview of Good Practice Cases 3

It is also of significance that of its nature, land use planning is local; it refers to specific locations and one of the considerations that varies considerably between Member States, is the constitutional and administrative arrangements for decision-taking at this level. Whatever the arrangements, however, it is important that policies and strategies adopted at a national level feed through to the decisions actually taken by the authorities responsible for land use planning.

Effective stakeholder participation is a significant way to achieve well-founded decisions, since stakeholders can bring specialised or local knowledge and contribute to achieving buy-in to the land use decisions. However, to arrive at this point, it is necessary that the procedures are clear, generate understanding of the relevant issues and deliver certainty in relation to the result.

The cases presented in this category all reflect the issues that have been outlined in different ways. **The Mineral Resources Plan in Austria (Case 17)** is well-known and has been frequently cited as best practice. Indeed its features suggested some of the characteristics that have been recommended in the various policy documents. It continues to have a strong input from the Austrian Geological Survey, applying a well-structured methodology, in order to provide information maps not only of raw material areas with near-surface construction materials or deeper seated deposits such as metal ores, industrial minerals and coals, but also with the results of an evaluation of the economic aspects of raw materials deposits, based on an analysis of Austria‘s supply situation and the probable development of prices and demand. These have then been superimposed on regional development plans showing areas where the extraction of raw materials is prohibited or hindered. Adopting a strategy of conflict elimination, the removal of prohibition and conflict zones allows the remaining areas, where exploitation is possible, to be identified. The case then goes on to provide a summary of the latest available information on how these results have been used at the level where land use planning is decided, namely at that of the federal states (‘länder’).

The second case in this category refers to a process to **‘Increase the Capacity and Effectiveness of Land Use Planning’ in Portugal (Case 18)**. This is an initiative of the Portuguese Mining Authority based on a national strategy for geological resources that establishes a land use planning management system at 3 levels: national, regional and municipal. The objective is to develop land use plans which will clearly demarcate areas allocated to geological resources, facilitate and expedite the licensing process and avoid or mitigate land use conflicts. So far, a total of 203 municipal land use plans have been developed, out of the total of 278 municipalities in the country.

The case on **Minerals Planning Policy in Wales in the UK (Case 19)** – provides an example of a highly integrated and co-ordinated minerals land use planning process, which clearly sets out the roles of different levels of government (local, regional and national) and links with general planning policy. The approach is built around the creation of unitary development plans that look ahead 15 years and are reviewed at least every five years. Authorities must also regularly assess mineral resources in their areas and reserves for which planning permission has been granted. The final case in this category describes the **Departmental Quarry Scheme in France (Case 20)**. It sets out the system that has applied at a departmental level in France since the early 1990’s for determining the location and operating conditions for quarries of industrial minerals (talc, quartz) and aggregates and for reconciling different interests in this process. It then goes on to describe the changes that are under way in order to take decisions at a regional level, while at the same time promoting resource conservation and aiming to manage environmental and landscape aspects more effectively.

Feedback arising during discussions on the cases in this area and from comments of the expert sub-group suggest that there will continue to be an issue about how the better information that is now available is fed down and effectively used at the government and/or regional/ local levels that take decisions on land use planning. There is also a question of how the variety of information now being generated on geological assets, metallogenic maps, groundwater, geospace data, economic data, information on fossil fuels, geothermal energy, geoheritage etc. can be effectively synthesised so that it can be best used at this level. Another issue that it has not been possible to look into at all is the integration of information on natural hazards of geological origin into land use planning.

At a more pragmatic level, among the possible developments in land use planning practice that might be encouraged, the possibility has been mentioned that there could be a mechanism for ensuring that the raw materials dimension is taken into account in land use planning decisions. This might include a requirement to provide a summary of what is known about the geological, geochemical and other physical features of an area before any decision is taken, together with an indication of what additional information is needed or should be sought. This would be a first step to ensuring that raw material considerations would at least be raised.

3.6 - Permits and Authorisation

At **the most detailed and specific level**, there have been frequent references in the past to the need to improve permitting and authorisation procedures. The Ad hoc Working Group suggested that above all, it was necessary to improve the **clarity, understanding and legal certainty** of what needs to be provided in order to obtain authorisation for minerals exploration or extraction. Legislative provisions or issuing guidance were envisaged at a national level or practical steps such as the development of standardised application procedures.

Similarly, the Working Group concluded that a process of rationalising authorisation might be achieved by integrating the different permits required, wherever possible, and having them issued by one competent authority (**a one-stop-shop**). This would speed up the whole process, especially if parallel rather than sequential assessments could be made. Equally, it is generally only necessary to conduct one environmental impact assessment.

Discussion of these issues with the expert sub-group that has assisted the current exercise has pointed to the importance of making **a distinction between permits for exploration and permits for mining**. Since the economic, social and environmental impacts of exploration and exploitation are very different, the two procedures need to be kept distinct. It may be more appropriate for exploration permits to be granted by one competent authority, with security of tenure being provided, should an economic deposit be discovered, while speeding up the authorisation processes for mining may be achieved through co-ordination of the authorities, if more than one exist, and allowing for parallel assessment.

The problems that have arisen in this area are often the result of the different origins of requirements in a range of laws and regulations dealing with different issues – land use, mining legislation, provisions on poisonous substances, health and safety legislation and labour market regulation. In some countries there are direct contradictions between the different legislation of relevance to the extractive industry (mining law, tax law, environmental requirements etc. The resulting complexity adds to the compliance costs of businesses, but also can also cause significant delays that undermine the responsiveness of industry to changes in the market and undermine its competitiveness.

In response to this issue, in the case of Finland, one of the developments under the Action Plan (Case 3) is precisely to map out all the differing requirements and procedures leading up to the issuing of permits and authorisations in order to provide the basis for a systematic process of simplification.

It should be said, however, that it is not just a question of the complexity of the permitting and authorisation processes. There are other factors. The difficulties caused by the complexities can be exacerbated by the tendencies reported by stakeholders for such procedures to result in ever-shorter time periods for the validity of permits. This can clearly affect calculations of overall feasibility and also the ratio of return to effort needed. It also has an impact on the sustainability of projects, since the most effective option from this point of view is often to complete the extraction of the available minerals rather than being forced to withdraw after some arbitrary time interval.

There have also been complaints that regulatory requirements, such as those governing the levels of lead permitted in water discharged from mining operations is set unreasonably low –below that permitted in drinking water – and this adds to the difficulties of the permitting process and current mine operations. Such issues are beyond the scope of the current exercise and need to be addressed elsewhere, but they illustrate that the sort of issues that the good practice cases presented in this section are addressing are just the first stage in a longer road to achieving a smart regulatory system.

For the issues in focus the aim is still to develop permitting regimes that have clarity, are easily understandable and allow certainty, with the obligations for enterprises at each stage of the proposed development and the relevant timeframes clear and beyond doubt. Administrations should be required to handle applications within a prescribed time period and wherever possible one-stop shops organised that are conveniently accessible. This all needs to be operated by sufficient numbers of suitably qualified staff (unfortunately not something that can be taken for granted) and supported by adequate information provision.

The case on **Irish Minerals Development (Case 21)** concerns the way that the regulatory framework for promoting the development of raw materials extraction provides a sound basis for the permitting and authorisation regime, such that the Department of Communications, Energy and Natural Resources (DCENR) has procedures in place for the prompt issuance of permits and licenses. An exploration license can be granted in as little as 4 months. Mining lease/licences are issued subject to planning permission and IPPC permits being in place. Negotiation on the mining lease/licence can be carried out in parallel with those relating to the other permits. The authorities co-operate closely in the case of granting and monitoring mining operations. Experience to date indicates that mining lease/licence can take up to six years to grant.

Moving from the regulatory framework, the second case in this category, on **a model agreement between 'support committees' and residents (Case 22) is from** Wallonia in **Belgium** and shows how public authorities, local residents and the quarrying companies can be brought together in these 'support committees' in order to negotiate solutions to environmental problems that arise in extraction activities. The agreed solutions are then communicated to the competent authorities for a final decision. It is however often the case that the solutions proposed by the support committees will be taken up by the authorities. The process is supported by a model agreement or charter published by the regional advisory committee on quarrying (CRAEC[21]). The company undertakes to control its environmental

[21] Commission régionale d'avis pour l'expoitation des carrières

impacts and to implement a constructive consultation process. The local residents, for their part, undertake to respect the consultation rules that have been agreed.

Case 23 from Hungary concerns the use of the concessions procedure for the provision of permits that enables the government to select among proposals that are high quality and offer attractive royalties. The process is based on consultation among a range of stakeholders at national, regional and local level and combining an appropriate (environmental) research and assessment framework with the provision of generous timeframes for exploration and exploitation activities that offer stability to firms.

Denmark's use of the parallel processing of applications (Case 24). Is an application of a principle advocated in earlier work. Under the Danish system for granting permits for open quarries on land and on the seabed, based on the Danish Raw Materials Act, the municipality to which the application for a raw materials extraction permit is submitted has a 'co-ordination obligation' ('samordningspligt'). The case explains how the authority with the 'co-ordination obligation' co-ordinates its actions with other authorities, responsible for issuing other permits system, so that a parallel process reduces the time needed overall. It also explains how the system is to be changed after an evaluation revealed certain deficiencies. The final case from **Sweden** concerns the development of **Guidance for the Permitting Process for Mining Operations (Case 25).** The initiative was developed to address the complexity of the permitting process for mining operations, not least because of the range of authorities involved in the permitting process with different roles, understanding and responsibilities. The guidance has been drawn up after a substantial input from the authorities concerned. Detailed guidance is provided for those who have to use the permitting process.

It is appropriate that the last case under consideration is very concrete and practical.

The Take-up of Good Practice

4

This chapter presents ideas on disseminating and developing the good practice that has been identified..

4.1 Introduction

The intention of this Good Practice project has been to identify **projects that could inspire change elsewhere**, both by highlighting elements that can be copied directly or applied in other locations and also by serving as examples that can stimulate new and original thinking and motivate creative developments that take the key ideas seen in the identified good practice in new directions

The last section of this report considers how the good practice that has been identified can be taken up and developed further, especially in ways that could strengthen raw materials policy and its implementation across Europe and hence contribute to improving the competitiveness of the sector. Initially the process of disseminating the material that has been assembled will be considered, but after this, there will be consideration of ways of building on the existing material, so that the exercise can contribute to other on-going policy processes in the area, notably in the form of strengthening the evidence base for policy and the associated evaluation culture. In both these elements, the remarks are made very much in the context of recent and current developments in the raw materials policy framework. Throughout the exercise, the intention has been that **the work undertaken should draw on and complement the agreed policy priorities** in the area and the initiatives that have been undertaken in the recent past. The developments outlined below are proposed in the same spirit.

4.2 Disseminating Good Practice

In order to make effective use of the material that is presented as good practice cases, it is necessary to follow up the analysis with a well-directed communication effort, with the aim of supporting a systematic adoption of the good practice identified. This, in turn, requires **the right organisational framework**, that will include an appropriate co-ordination process, involving real decision makers and other stakeholders, mechanisms for planning the detail and arrangements for progress-chasing and the monitoring of implementation.

Given the current arrangements for dialogue between the European Commission and the Member States and the industry at a European level, **the Raw Materials Supply Group is clearly the most appropriate structure** for following up this good practice initiative and integrating it with other developments that are taking place.

At a European level, the Raw Materials Supply Group can help create **an environment that encourages the take-up of the good practice identified**. The examples have been deliberately chosen to illustrate the developments advocated in earlier work supported by the RMSG. Consequently they are very much in line with previous policy initiatives and can help to reinforce their message on a number of significant points, notably by providing illustrations of how the policy developments promoted are actually being implemented. In this sense, the Commission and the RMSG have an advocacy role, which is completely in line with other actions to implement common policy.

This advocacy role could involve a series of actions:

- An agreement between the Commission and the RMSG on an appropriate **communication plan** to raise awareness of the good practice identified.

- As a first step in this plan, an initial coverage of the report in newsletters, on national web sites and those of the industry associations and their national members. RMSG industry associations have already indicated their willingness to do this.
- The Commission and the Member State representatives adding to the profile of the good practice cases, for example, by making use of them for illustrative purposes in speeches and policy statements, but also by drawing particular cases to the attention of bodies at a national level that deal with similar issues.
- Particular arrangements to ensure that parallel initiatives are aware of the good practice material and its utility particularly as a communication resource for their own activities. Special efforts are needed to help the European Innovation Partnership, in particular, make effective use of the material together with counterpart initiatives at a national level,
- Members of the RMSG could be asked to report on follow-up activities at national and sub-national levels, involving the adoption and development of projects making use of similar approaches to those highlighted in the good practice cases
- The Commission, in conjunction with the RMSG, could help **support learning processes** associated with the implementation of the good practice identified by:
    - Periodic **reflections on the experience** of those implementing the good practice identified, so as to highlight synergies obtained and to develop the evidence base on the effectiveness of the various measures in promoting competitiveness.
    - Developing **benchmarking** exercises on the basis of some at least of the cases in order to define performance measures more precisely and help to shape expectations about what can be achieved
    - Encouraging the organisers of the **Annual Conference** of the European Innovation Partnership on Raw Materials to include an examination of good practice in its programme
    - Supporting **peer review exercises**, designed to provide mutual support and exchange of experience and to explore the issues and solutions arising in parallel implementation processes in different regions or destinations
    - Supporting those organisations, involved in the good practice cases cited, that wish to extend their actions or '**replicate successful models**' in other parts of Europe.
    - Co-operating closely with **European industry associations** in their own work to identify and promote good practice

More generally, the **European industry associations** have an important mediating role, given their close work with national associations and direct contact with major interests in the industry and individual enterprises too. The Commission should encourage them to stage their own 'competitiveness' events and cover the issues and good practice examples in their media work and own communications instruments. At the same time, **the Strategic Implementation Plan for the European Innovation Partnership on Raw Materials** has added an extra dimension to action at a European level. The European Innovation Partnership on Raw Materials aims to improve conditions for research and innovation and to ensure that innovative ideas are turned into products and services that create growth and jobs. Key to this is mobilising all the stakeholders, including the relevant authorities, raw materials

and downstream industries, research communities and society in general. To provide focus for these developments, a number of concrete research and innovation actions have been set out in the Strategic Implementation Plan (SIP).

The SIP sets out a series of actions, including research and development along the value chain, the development of raw materials knowledge, improved implementation or revision of selected legislation, licensing steps, standardisation, policy dialogues and the exchange of best practice. The actions are organised according to their nature under three pillars – technology, non-technology and international co-operation. It is under the non-technology pillar (Priority Area II.A) that **the aim is to facilitate the exchange of best practice among Member States** in order to improve the sustainable and safe supply of raw materials to the EU economy and society. In particular, it is proposed to strengthen the exchange of best practice in the area of mineral policies and related regulation and by streamlining the permitting procedure along the whole chain of mining activities, although good practice identified in the current exercise can also illustrate processes in other areas under consideration, notably, the area of access to mineral deposits of public importance and associated land use planning and issues of public awareness, acceptance and trust.

There would appear to be considerable scope then for a sustained development of good practice analysis and it could well be that this could usefully develop other aspects of the current exercise.

4.3 Building on the Good Practice Identified

The primary purpose of the current exercise has been to inspire change in policy at a national level, by highlighting concrete examples of initiatives that illustrate the successful implementation of the principles of policy at a European level, as these have been developed in the Raw Materials Initiative and subsequently. The aim has been to show the substance behind the policy discourse and, by providing practical examples of what can be achieved to encourage others to learn from the experience of their colleagues and, where possible, adopt similar approaches.

However, in order to formulate convincing cases of good practice, attention has been paid to their **strengths in terms of a range of performance criteria**. The team has wanted to show that the cases illustrated really do work effectively and in order to achieve this has consciously set out to apply, the disciplines of evaluation in the examination and characterisation of the cases presented.

It ought to be said, once more, that it has not been possible to evaluate each of the cases considered to the extent required by normal evaluation practice. In that sense, there has not been a 'proper' evaluation. In particular, as well as not having the resources to enquire into each case in the detail required, in most instances, such an exercise would not even be possible in principle, since good practice cases frequently involve novel departures or, at least, new initiatives that are inevitably at the early stages of implementation and for which consequently there is little evidence available that could support a full assessment of effectiveness or efficiency. In other words, for most of the cases it would not yet be possible to conduct a conventional ex post evaluation.

Nonetheless, in order to substantiate the claim that the examples chosen represent 'good practice' and also to present them in a way that is as persuasive as possible, an effort has been made, during the course of the selection process and the subsequent investigations, to apply the '**disciplines of evaluation'** to the examination of the separate cases under consideration. That is to say, that in characterising the cases, a consistent attempt has been made to analyse and describe them against the

conventional criteria of evaluation - meaning that the 'performance' of each case has been considered in terms of its relevance and coherence, its effectiveness and efficiency, its sustainability and utility and the valued-added it offers at a European level.

In practice, the exercise relied initially upon the knowledge and experience of the RMSG and others familiar with the sector to cite examples that could be examined in more detail. In total 84 potential cases were identified in this way. Then, in consultation with the RMSG and especially the sub-group of experts established to assist the exercise, around 30 cases were identified for more in-depth investigation. The consulting team made use of a programme of interviews with people associated with each of these cases and further background research in order to assemble the evidence from which an assessment could be made by the team as a whole as to which of the cases could be considered as good practice currently. Those conducting the interviews were briefed to request any information that is available on the results and impacts of the cases considered and other aspects that would allow an assessment against the evaluation criteria. This information is included as a significant part of the characterisation of the cases that are presented as good practice. Certain of the cases in the short list were in fact eliminated before eventually arriving at the list of 25 that are presented.

As a result of this process, therefore, the exercise has added to the evidence base from which assessments of policy can be made. In this way, it has contributed to the development **of evidence-based policy making** in the area and more broadly to a significant support for this approach, namely an evaluation culture.

However, the special nature of good practice analysis means that the evaluation side is still very much **work in progress**. We have not arrived at a point where it is possible to look back and assess how well the policies under consideration have performed. The action is taking place too early in the policy cycle to allow this, but nonetheless a process has been started that could be usefully followed up, not least in the course of the examination of good practice under the Strategic Implementation Plan. The following section provides more detail on how this could be done.

4.4 An Assessment of the Good Practice Identified

Even though a full evaluation of the good practice cases could not be undertaken, guiding the initial selection and the subsequent examination and presentation of cases that appeared to exemplify good practice were the assessment criteria derived from standard evaluation practice. In this context, as explained to the RMSG at an early stage, the usual **evaluation criteria** were understood in the following terms:

- *Relevance and coherence:* how far the measure has clear objectives, is addressing the issues identified in recent work on the challenges facing the sector and particularly the priorities of the common strategy, how well the measure complements other actions being taken.
- *Effectiveness:* the extent to which the measure is structured so as to deliver improvements in performance and evidence on its anticipated and actual effects.
- *Efficiency:* how the measure is managed, its intended and actual outputs and whether these are likely to lead to clear results and longer-term impacts; the cost-effectiveness of the measure.
- *Sustainability:* whether the action can be sustained and its effects are likely to continue, the extent to which the measure can be taken up by others.

- *Utility & European value added:* any evidence of transformative or spill-over effects, including the extent to which additional value is or could be created by its adoption more widely across Europe.

In terms of the relevance criterion, therefore, it was important that the cases chosen should reflect the main themes established in the on-going policy discussion and also, as far as possible, particular issues highlighted, for instance, by the work of the Ad hoc Group. It has been explained that there was some development in the categorisation of the main themes, used in the definition and presentation of the case material, notably with the inclusion of a 'governance' theme, relating to the management of the broader set of relationships between formal policy and regulation between the authorities and industry and the communities in which the industry operates. This new theme was introduced after discussions with the RMSG and the expert sub-group and a result of the evidence emerging from the examination of particular cases which had pointed to the importance of creating a business environment that includes elements beyond formal policy and regulatory frameworks. This additional element was therefore seen as being complementary to the themes previously highlighted and as representing a development in the sector's policy consensus. This has been confirmed in that the Strategic Implementation Plan includes an action on 'Public Awareness, Acceptance and Trust' – issues that are at the heart of the governance theme.

The following table (Table 4.1) provides an overview of how the good practice cases cover the principal themes and other issues raised in various policy discussions at a European level.

Table 4.1 Coverage by the Good Practice Cases of the Principal Themes and Other Significant Issues in Raw Materials Policy

	Policy themes					**Other identified themes**								
	Policy and Legislative Framework	**Information and the knowledge base**	**Governance**	**Land use planning**	**Permits and authorisation**	Promote profile of the mining Sector/raise awareness	Policy based on the principles of sustainable development	Voluntary codes	development of alternative extraction methods	Harmonise EU level data	*Networking between national Geological Surveys*	Use/integration of 3D data	Clarity, understanding and certainty in application processes	A one -stop-shop for permits
1. Sweden's Minerals Strategy, Sweden	❶	②	②	②	②	●	●	●					●	
2 National strategy for geological resources, Portugal	❶	②	②	②	②	●	●						●	●
3 Developing a national action plan, Finland	❶		②			●	●		●		●	●	●	
4. An integrated environment & planning Act, The Netherlands	❶		②	②	②		●						●	●

	Policy themes					**Other identified themes**								
	Policy and Legislative Framework	**Information and the knowledge base**	**Governance**	**Land use planning**	**Permits and authorisation**	Promote profile of the mining Sector/raise awareness	Policy based on the principles of sustainable development	Voluntary codes	development of alternative extraction methods	Harmonise EU level data	*Networking between national Geological Surveys*	Use/integration of 3D data	Clarity, understanding and certainty in application processes	A one -stop-shop for permits
5. Sustainable mining management – voluntary standards, Spain	❶		②			●	●	●						
6 - Fennoscandian ore deposit database, Finland		❶		②	②	●				●		●		
7. Minerals online – GIS, UK		❶		②		●								
8. DCENR exploration data release initiative, Ireland		❶				●				●			●	
9. German mineral resources agency, Germany		❶	②			●	●							
10. Pro-Mine project, Finland		❶	②	②		●	●		●	●	●	●		
11. COMES – Committee for Strategic Metals – France	②	②	❶			●	●							
12. Resource Alliance - Germany			❶				●	●						
13. Guidance document for local stakeholders relationship management, Spain			❶			●		●						
14. Manual for consultation with the reindeer husbandry and mining industries, Sweden			❶	②	②	●	●						●	

	Policy themes					**Other identified themes**								
	Policy and Legislative Framework	**Information and the knowledge base**	**Governance**	**Land use planning**	**Permits and authorisation**	Promote profile of the mining Sector/raise awareness	Policy based on the principles of sustainable development	Voluntary codes	development of alternative extraction methods	Harmonise EU level data	*Networking between national Geological Surveys*	Use/integration of 3D data	Clarity, understanding and certainty in application processes	A one -stop-shop for permits
15. Increase sustainability on royalties use, Portugal			❶		②	●	●	●						
16. Green mining: minimum-impact mines 2011-2016, Finland		②	❶			●	●		●		●	●		
17. Mineral Resources Plan, Austria	②		②	❶		●	●						●	
18. Increase the capacity and effectiveness of land use planning, Portugal				❶	②		●						●	
19. Minerals planning policy in Wales, UK	②		②	❶			●						●	
20. Departmental scheme of quarries, France				❶			●						●	
21 Minerals Development, Ireland	②		②		❶		●						●	
22. Model agreement between support committees and residents - Belgium			②		❶	●	●	●					●	
23. The concessions procedure under act no. 43 on mining, Hungary	②				❶								●	
24. Parallel processing of applications, Denmark					❶		●						●	
25. Guidance for the Permitting Process for Mining Operations, Sweden					❶		●						●	

The Take-up of Good Practice

4

LEGEND:

● = Coverage of this issue in the case concerned

❶ = The main topic covered

② = Subsidiary coverage

The subsidiary themes used for the column headings of this overview have been selected from a range of themes highlighted by previous statements of policy and related documents that have been referred to in sections 2.2 and 2.4. For reasons of space, they are not comprehensive and the selection was to a certain extent arbitrary, but nonetheless includes some of the obvious candidates and generally gives an impression of the extent to which the good practice presented illustrates the broader elements identified by earlier work. It can be seen that, to a significant extent, therefore the good practice identified is consistent with agreed priorities in raw materials policy and is very much in line with the spirit of the Raw Materials Initiative.

However, when it comes to compliance currently with the other evaluation criteria, the picture is more varied. The table below (Table 4.2) provides an overall summary of situation. It can be seen that in a number of instances, the amount of evidence that exists currently, in relation especially to the effectiveness criterion is rather limited.

Table 4.2 Evidence Status of the Good Practice Cases Presented

	Project	MS	Relevance	Coherence	Effectiveness	Efficiency	Sustainability	Utility /Eur. added value		Evaluation & Monitoring
Policy and Legislative Framework										
1	Sweden's Mineral's Strategy	SE	●	●	○	◐	◐	◐		●
2	National Strategy for Geological Resources	PT	●	●	○	○	○	○		◐
3	Developing a National Action Plan	FI	●	●	◐	●	◐	●		●
4	Integrated Environment & Planning Act	NL	●	●	○	○	●	●		◐
5	Sustainable mining management – voluntary standards	ES	●	●	◐	○	◐	◐		◐
Information and Knowledge Base										
6	Fennoscandian Ore Deposit Database	FI	●	●	●	●	●	●		●
7	Minerals Online – GIS	UK	●	○	○	○	○	●		○
8	DCENR Exploration Data Release Initiative	IE	●	●	●	●	●	●		◐
9	German Mineral Resource Agency (DERA)	DE	●	●	◐	◐	◐	●		●
10	ProMine Project	FI	●	●	●	●	●	●		●
Governance										

11	COMES – Committee for Strategic Metals	FR	●	●	◐	◐	●	●		◐
12	Alliance for Raw Materials	DE	◐	●	○	○	○	◐		○
13	Guidance Document for local Stakeholders on Relationship Management	ES	●	●	●	●	●	●		●
14	Manual for Consultation between the Reindeer Husbandry & Mining Industries	SE	●	●	○	◐	◐	◐		○
15	Increased Sustainability on Royalties Use	PT	●	●	○	●	◐	○		◐
16	Green Mining	FI	●	●	◐	●	●	●		●
Land Use Planning										
17	Mineral Resources Plan	AT	●	●	◐	●	●	●		◐
18	Increase the Capacity and Effectiveness of Land Use Planning	PT	●	●	○	○	○	○		◐
19	Minerals Planning Policy in Wales	UK	●	●	◐	○	●	◐		○
20	Departmental Scheme of Quarries	FR	●	●	◐	◐	●	◐		○
Permits and authorisation										
21	Minerals Development	IE	●	●	●	●	●	●		◐
22	Model Agreement between Support Committees and Residents	BE	●	●	◐	◐	●	●		○
23	The Concessions Procedure under Act no. 43 on Mining	HU	●	●	○	○	●	◐		○
24	Parallel Processing of Applications	DK	●	●	◐	◐	●	●		●
25	Guidance for the Permitting Process for Mining Operations	SE	●	●	◐	●	●	●		○

LEGEND:

● = Good evidence available – will need up-dating

◐ = Only partial evidence available/ supplementary information required

○ = No evidence available currently/ basic information required

The intention with the table above is, to some extent, to provide an indication of the persuasiveness currently of the cases that have been presented, but more importantly to indicate where **further work is required to extend the material** that is currently available and reinforce its status as good practice - or alternatively in the light of a failure to perform, to downgrade it and seek alternatives. The lack of evidence currently on effectiveness in a number of the cases is to be expected and in several instances,

the lacunae will be addressed by those responsible for the projects, especially where they have their own evaluation and monitoring procedures in place.

Some cases, however, already have evidence of effectiveness, ranging from a broad increase in the levels of activity in Finland, since the development of more concerted attention to the sector, to evidence in the Pro-Mine case of the commercial success already registered of some of the products developed under the project.

Assessment of efficiency is also hindered where there is a lack of evidence on effectiveness, at least where efficiency is seen as the ratio of outputs to inputs. However, it is also possible to take a broader view to take into account the performance of the processes that deliver the desired results. In a number of the cases these have been judged to be performing well.

Similarly, a full assessment of the sustainability, utility and European value-added of the initiatives highlighted depends to a certain extent on their longer-term performance and in a number of instances the need to complement or up-date existing information is indicated. In other cases, however, it is already possible to see that the initiative is sustainable or that it is already having broader effects beyond its country of origin.

Overall, the assessment is that **all the twenty five cases that have been presented should form a set of recognized good practice at the current time**, but that the opportunity should be taken, especially within the framework offered by the Strategic Implementation Plan for the European Innovation Partnership on Raw Materials to up-date the current set, as fresh evidence emerges, as well as to extend them to cover other issues and themes, so that there is a rolling set of current good practice.

Improving the evidence base

Information is key to improving policy and this is particularly the case with raw materials, both in relation to the development of the policy framework and its implementation. Knowledge about key resources has been seen to be of major importance for encouraging business interest and investment, but also for improving land use planning and permitting and authorisation processes. This is why one of the major themes of the good practice study has been developments in the information and knowledge base, along with related issues such as encouraging better networking between the national Geological Surveys of Member States and the need for harmonised EU level data sets. Reference has been made to developments based on the work of the Pan-European Reserves & Resources Reporting Committee and the UN Framework Code, as well as the improvements seen in the cases cited, especially in the Information and Knowledge base section.

However, as well as basic geological, scientific and business information, **the improvement of policy in the area also needs better information** on the performance of the stakeholders against a range of indicators. Feedback from the expert sub-group has pointed to the utility of various reporting regimes in generating data of this kind. Enterprises that have responded to the Global Reporting Initiative, for instance, in making use of its framework for sustainability openly provide information on their economic, environmental, social and governance performance and the associated impacts. Case 5 on sustainable mining management in Spain sets out another approach based on voluntary standards elaborated at a national level.

It has been stressed by the expert sub-group that responding to Global Reporting Initiative and other exercises in Corporate Social Responsibility must always remain a voluntary activity for the organisations concerned; there should be no regulatory requirement to provide such information, but the public

authorities can highlight the advantages of undertaking such exercises for the enterprises themselves and for the industry and, of course a considerable number of the larger organisations[22] already make use of this framework and some of the smaller enterprises too.

In the present context, such initiatives not only help to build a relationship with the community, by explaining the effects of the industry's activities, but also contribute to **the evidence base** for more formal assessments of performance.

[22] Companies producing reports for 2011 include: Anglo American PLC; AngloGold Ashanti; Barrick Gold; BHP Billiton; Freeport-McMoRan Copper & Gold; Goldcorp; Kumba Iron Ore; Newcrest Mining; PanAust; Penoles; SKF Group; Teck Resources; Vedanta Resources

Recommendations

5

The examination of the good practice cases and discussion with the Raw Materials Supply Group, the sub-group of experts that have assisted the project and persons interviewed in the process of developing the material have given rise to certain **recommendations that the team would wish to make**:

Good practice identification

- It is recommended that all the twenty five cases presented in this report should form a set of recognized good practice at the current time, but that the opportunity should be taken, especially within the framework offered by the Strategic Implementation Plan for the European Innovation Partnership on Raw Materials to **up-date the current set, as fresh evidence emerges**, and to **extend them to cover other issues** and themes.
- All cases that are cited as **good practice should be based on an assessment of performance**, as part of a process of evidence-based policy development.
- Although it should be on a voluntary basis, there could be an encouragement of the use of **reporting frameworks**, both for reasons of corporate social responsibility and as a contribution to the evidence base on the effects of policy.

Policy scope

- The areas of policy illustrated by identified cases of good practice should include the addressing of **governance issues** and the need to engage with stakeholders and the community, in addition to policy development and regulation, developing the information and knowledge base, land use planning and permitting and authorisation processes.
- Consideration should also be given to including the area of **training and human resource development** as an area of raw materials policy alongside those previously targeted.

Disseminating good practice

- Pending the longer-term developments of good practice identification and exchange associated with the Strategic Implementation Plan, **action should be taken by the Commission and the Raw Materials Supply Group to highlight the cases** that have been presented in this report, along the lines outlined in the previous chapter.

Good Practice Cases *A*

Annex A1 is presented as a separate document. Below is the list of cases.

No	Case title and country
Policy and legislative framework	
1	Sweden's Mineral's Strategy – Sweden
2	National Strategy for Geological Resources- Mineral Resources – Portugal
3	Developing a National Action Plan- Finland
4	An Integrated Environment & Planning Act – Netherlands
5.	Sustainable mining management – voluntary standards – Spain
Information and the knowledge base	
6	Fennoscandian Ore Deposit Database - Finland (and other Nordic countries)
7	Minerals Online – GIS –UK
8	DCENR exploration data release initiative – Ireland
9	German Mineral Resource Agency (DERA) – Germany
10	ProMine Project - Finland
Governance	
11	COMES – Committee for Strategic Metals - France
12	Alliance for Raw Materials - Germany
13	Guidance document for local stakeholders relationship management - Spain
14	Manual for consultation and communication between the reindeer husbandry and mining industries during the permitting process for exploration and exploitation – Sweden
15	Increased Sustainability from the Use of Royalties– Portugal
16	Green Mining - Finland
Land use planning	
17	Mineral Resources Plan - Austria
18	Increase the Capacity and Effectiveness of Land Use Planning – Portugal
19	Minerals Planning Policy in Wales - UK
20	Departmental Quarry Scheme – France
Permits and authorisation	
21	Minerals Development – Ireland
22	Model agreement between support committees and residents –Belgium
23	The Concessions Procedure under Act no. 43 on Mining - Hungary
24	Parallel processing of applications - Denmark
25	Guidance for the Permitting Process for Mining Operations - Sweden