Dear Madam/Sir,

In the name of Geological Survey of Slovenia (42093214201-74) I'm submitting the replies to the RMI Questionnaire.

DEFINING CRITICAL RAW MATERIALS

1. Do you have any comments on the methodological approach, including the scope, to determine criticality at EU level? If so, please specify.

The methodology that used was heavily dependent on data and the outcomes may have been more robust if more/better data were available. For example, separate uses for particular minerals are often not resolved by available statistics (e.g. some uses of magnesite are critical, some are not). The scope of materials considered should have been wider (for example, phosphate and potash were not addressed).

Establishing a formal list of 14 minerals deemed as critical at EU level may lead stakeholders such as policy makers, programme officers, NGOs, banks and the general public to think that there are no important criticality issues in relation with many of the other minerals needed by EU economies, whose production chain linking geological deposits to end uses may be disrupted. It may be preferable to name the 14 minerals list as the list of minerals with the highest criticality issues to make above point clear.

Moreover, it must be stressed that several of the listed 14 minerals are essentially by-products of "main" metals, as shown by fig. 4 of the report. Their production is highly dependent on the production of metals such as aluminium, chromium, copper, nickel, tin or zinc, whose production and markets therefore need to be monitored as well, as there may be related criticality issues.

2. Do you see any additional raw material that should be considered as critical? If so, please explain.

As additional raw materials we suggest to consider also Lithium, Potassium, Phosphate, and Tin. Potassium and phosphate are essential raw materials for the agricultural sector (fertilizers). This sector has not been included in the EU methodology on critical raw materials. Given the high importance of food production, especially for the developing countries, analysing the raw materials needed in this sector should be included. The global tin production is highly concentrated in a few countries (China 37%, Indonesia 32%, Peru 13%). The main use of tin is soldering and alternatives for tin based electronic solders are not available. The main use of lithium is in batteries with a foreseen important surge of consumption due to the development of hybrid and electrical cars.

3. Do you have any comments regarding the recommendations of the report? If so, please specify.

Recommendations of the report are valid. However, additional discussions will need to take place ahead of any implementation of the recommendations. One of the recommendations is definitely a development of an EU networked, public, minerals intelligence capacity, based on existing capacities.

4. Are you aware of any initiatives in your country that aim to assess the criticality of raw materials? If so, please describe briefly.

There are no initiatives on country level.

5. The functioning of raw materials markets has not been dealt with. Do you think that further analysis of their functioning should be carried out? What actions should be proposed to increase their transparency?

This is a very important topic. Research is needed that brings together industry, international metals study groups, EuroStat, OECD, national statistical bodies, geological surveys and other organisations that have already demonstrated some concerns about the raw materials markets and/or carried out studies on this topic.

Actions that would increase transparency should include following topics: (a) trade restrictions, (b) commodity speculation, (c) financial instruments in the raw materials markets, and (d) investment into new projects. The development of exploration budgets and targets under changing economic and political conditions should be analysed in detail, as well as aspects on good governance in developing countries and education.

6. Do you think that the EU should propose a system of stockpiling for the critical raw materials? If so, please indicate whether you consider it more appropriate to do this at Community or alternatively at Member States level.

The EU should consider commissioning expertise to assess the viability of this proposal. In addition, the EU should propose the monitoring and analysing production, trade, consumption, recycling (including supply and demand) of the critical raw materials. Stockpiling could be done by industry, although not at member state level as the industrial consumers of critical raw materials are not distributed equally in the EU. Another problem

associated with stockpiling is that demand for many raw materials depends upon current technology 'state of the art' which may have an "expiration date". As such, technology may change resulting in some raw materials being substituted by others. This is the principal driver behind the need to revise the "critical raw materials" list every 5 years (or sooner) and may lead to a significant risk of stockpiling material for which demand collapses.

A stockpiling system also risks introducing some distortions in the global markets similar to the export restrictions currently practised by some countries. What is needed is a good knowledge of European mineral resources (including dumps and tailings) and recognition that mineral resources are natural resources which are non-renewable. A system should be developed to ensure that access to the mineral resources is guaranteed now or in the future. This would avoid land uses incompatible with access to resources and develop a European system capable of classifying some resources as "European public resources" and assuring the mining of that resource. Assuring such access to European mineral resources will require a strong political will.

The Commission should assess the Japanese way of managing security of supplies issues, as the Japanese and the European Union share the same dependence issues. In Japan, the State established the Japan Oil, Gas and Metals National Corporation (JOGMEC) that deals with raw materials supply in specific way.

Mineral resources issues should be included in cooperation agreements between EU and Africa, ACP Group of States and Latin American to counter similar agreements instituted by China.

TRADE

7. Do you think that the importance of trade is adequately reflected in the work carried out so far in the Raw Materials Initiative?

The importance of trade has not been adequately reflected in past work. However, the Raw Materials Initiative gives trade issues adequate prominence, especially in its coverage of trade distortions (subsidies, export quotas etc.) which can have a great influence on the EU raw material supply. There is a need for more precise import statistics for mineral raw materials regarding the country of origin. Many raw materials are imported from EU countries which themselves import the raw materials from third countries. Trade flows are unclear.

8. Do you have any comment regarding the main findings of DG Trade activity report? What activities should be prioritised? Are there, in your opinion, additional activities not mentioned in the report which should be pursued in this strategy?

A continuous monitoring system for global trade distortions should be put in place in the mineral sector.

9. Please identify trade distortive measures (i.e. export restrictions) concerning raw materials that in your view should be tackled.

Distortive measures can be part of political agreements between countries such as China and some key African mineral producing nations. This issue is described in more detail in an OECD report on trade distortions (reference required here).

10. Are you aware of any initiatives in your country that have one of the above goals in mind such as, for example, developing a raw materials diplomacy, or supporting companies to invest in third countries in the raw materials sector? If so, please describe briefly.

There are no initiatives on country level.

DEVELOPMENT

11. What specific actions would you consider most relevant needed in the following areas:

- *Good governance;*
- *Infrastructure / investments;*
- *Geological knowledge / skills.*

All three areas are important, good governance and geological knowledge / skills are within the domain of the EU or Member states, while infrastructure / investment is the responsibility of industry. Good governance and, in particular, the establishment and maintenance of a stable and democratic system is prerequisite for any other action. Actions aimed at both increasing transparency, and decreasing corruption are most desirable. The EU expert and research community, including GSOs from MS are willing and able to assist in increasing geological knowledge and skills in resource rich countries.

Capacity building in geological surveys, universities and other relevant institutions in mineral-rich developing countries would, along with measures mentioned above, assist in ensuring a continuous and sustainable raw material supply. Capacity building is often needed in areas such as mining law, modern mining cadastre (licensing systems), permitting, investment promotion (including enhancement of geological knowledge, skills and information), and geological data retention/update. Education is often needed to improve capability in the mining, processing and exploration sectors.

GeoZS welcomes the "Africa Mining Vision" document jointly prepared by the African Union and the UN Economic Commission on Africa. It well describes the need to simultaneously act on mentioned above areas. It also welcomes the Joint Declaration of the 4th College-to-College Meeting of the European Commission – Africa Union Commission, as it includes a commitment to: the development of a bilateral cooperation in the field of raw materials

(taking full account of the Africa Mining Vision of February 2009 and the EU Raw Materials Initiative of December 2008) and the elaboration of further progress and initiatives, in particular on issues such as governance, infrastructure and investment and geological knowledge and skills.

Hence, a long-term, dedicated, ring-fenced financing facility is needed as part of the EU development of cooperation instruments, such as the European Development Fund, to support geological data acquisition and dissemination, institutional strengthening and capacity building in high potential or already producing developing countries. Access to funding should be via a programming procedure with the support of qualified experts and support to any country should be conditional on its commitment to transparency (for instance via the implementation of the Extractive Industries Transparency Initiative), good governance and sound environmental management.

Twinning actions between EU and developing countries sector institutions should be considered as well as easy access to EU geological, mineral resources and mining-related education.

12. Regarding transparency, what measures do you believe the EU should take to foster revenue transparency in the mining industry in raw material resource rich countries? What are your views regarding existing initiatives currently being taken in this area, namely by the Extractive Industries Transparency Initiative (EITI6)?

Transparency, corporate social responsibility and observance of sustainable development ethics are needed to avoid potentially damaging consequences of unregulated international competition driven solely by national and/or corporate interest. EU should be actively involved in existing initiatives (including EITI) related to transparency, stability and democracy in resource rich countries. Stability funds such as the Norwegian Oil fund could be supported in developing countries. Many countries require improved fiscal arrangements.

The roles of several agents (trading houses, investors ...) that play a growing role on the global mineral markets, contributing to opaqueness and price volatility decoupled from market fundamentals, need to be assessed.

13. Concerning the recent agreement between the European Commission and the African Union Commission, in your view, what concrete objectives, targets and deliverables should be included in such a partnership?

NO ANSWER

14. Do you consider that wood should be addressed in the framework of development policy? If yes, please specify what are the main issues to be analysed.

NO ANSWER

15. Are you aware of any initiatives in your country that contribute to promoting exploration and exploitation of mines in developing countries? Should such initiatives be better coordinated or promoted at the EU level?

Yes, such initiatives should be better coordinated and promoted at the EU level.

IMPROVEMENT OF THE REGULATORY FRAMEWORK CONDITIONS INSIDE THE EU

16. Do you agree that these topics correspond to the major challenges in this policy area? If not, please specify.

GeoZS experts were part of WG Exchange of Best Practises and agrees that topics correspond to challenges of raw materials sector in EU.

17. Do you think of any other avenues which should be followed by the Commission? If yes, please specify.

There are additional avenues recommended:

- A requirement for a more consistent (harmonised) approach to reporting mineral statistics across Member States and at the international level
- More focus on resource efficiency in the mining and processing sector.
- There is also need for a clear identification of a mineral resources (and downstream products) prioritisation in the EU research agenda. This should be addressed by the forthcoming 8th EU RTD Framework Programme to add further momentum to the support already provided by the European Commission to the Research Agenda published by the European Technology Platform on Sustainable Mineral Resources (www.etp-smr.org).

18. Do you agree with the recommendations made in the report on "Exchanging Best Practice on Land Use Planning, Permitting and Geological Knowledge Sharing" or do you have any specific once to be added. Please explain.

Yes. The best practice examples presented in the report of the working group are very useful. The examples highlight potential improvements Member States may wish to consider with regard to their own minerals policy and associated land use planning policy. The examples also show the necessary geological data (knowledge base) enhancements required in order to improve this policy area. However, more effort is needed to address the additional challenges listed in this policy area.

A substantial, protracted coordinated programme will need to be engaged by the European Commission and the Member States to develop the 3D digital geological/ mineral resources public knowledge infrastructure described in the report and in its recommendations. For cost and efficiency reasons efforts it primary should be targeted on areas of high potential for mineral resources. This programme will require public investments in geophysics, drilling of deep scientific boreholes, geostatistics, geochemistry and modelling.

19. Do you consider it useful to establish an EU geological service based on a network of Member State geological services?

Yes, it would be extremely useful in the field of Raw Materials to establish an EU geological service. However this should be expanded to other areas where there is a need for coordinated geological information to be delivered to the EU. Such a service has to be based on the network of Member State Geological Surveys. The EU service will be highly dependent on data and knowledge as the source of information, and the State Geological Surveys need to be kept fully operational and strongly connected to the EU geological service, otherwise the EU mission will fail.

20. Do you consider that EU regulatory framework conditions for wood and/or recovered paper need to be further analysed? If yes, please specify.

NO ANSWER.

PROMOTING SKILLS AND RESEARCH, DEVELOPMENT AND INNOVATION

Skills:

21. What type of actions would you propose to provide better cooperation between companies, universities and public authorities in order to promote skills and in the extractive or other raw materials sectors? Please specify.

The EU could provide fellowships to make it possible for students from developing countries to attend mineral resources and geology related training programmes in EU universities and Mining Schools. The EU-wide training offer should be identified and made accessible from a single Web portal. Focus should be on mining, processing and exploration in FP7/8 research programmes.

EU-wide training and education in raw material-related issues with fellowship program for students from partner developing countries is needed.

Research, Development and Innovation:

22. Are you aware of any research, development and innovation programme(s) at national, regional or local level? Please specify.

There are no initiatives on country level.

23. Where do you see the major gap / the urgent need for the raw materials sector related research, development and innovation at EU level? Please provide details.

Major gaps in technical mining issues are:

- Development of new exploration techniques
- Development of new drilling techniques
- Applied mining methods to increase resource efficiency
- Applied small scale mining methods for developing countries.

While urgent need for the raw materials sector related research, development and innovation is related to Priorities in the non-energy mineral raw materials sector are:

- Development of an EU digital knowledge base on the 3D deep geology and mineral resources potential, from surface down to – 4 km, focused on areas known for their above average mineral potential;
- Development of an EU minerals intelligence capacity, based on existing national-level capacities (in geological surveys and other public institutions), EuroStat, the mineral industry associations and others.
- Further development of research in ore deposits genesis and the understanding of the controls determining their locations;
- Further development of exploration concepts and tools, of eco-efficient mining, mineral processing and metallurgical hard- and software;
- Development of technologies and organisational systems for recycling and re-use of minerals and metals, especially of the rarer ones, from their diverse high-technology applications.

24. What is your idea of a major research and innovation action that would have the highest positive impact on the security of raw materials supply for the EU industries? Please specify.

The European Technology Platform on Sustainable Mineral Resources Vision Document and Strategic Research Agenda provides detailed information on this. GeoZS supports research proposed in WG 2 report – (a) development of a 3D EU data and knowledge infrastructure

on Europe's subsurface, focused on mineral rich regions (b) research of (deep seated) deposits, (c) EU mineral deposit data base, (d) better, harmonised statistics and information to underpin policy- making and to steer research programming, and (e) development of new exploration techniques. In addition, dumps and tailings may constitute an important source for some metals because the new technologies may allow the recovery of material previously lost or metals which were not previously of commercial value.
There should be comprehensive and systematic data and information on the mineral resources of Europe.Examples of such datasets already exist in the Nordic region, and Sweden and include:
(1) The Fennoscandian Ore Database (FODD). This contains information on the largest metallic ores and mineralisations in Sweden, Norway, Finland and Russia. The project aims to create a common ore database for the Fennoscandian Shield and will now start a continuation project on some of the critical minerals mentioned in the RMI report, and
(2) At a national level, an annual competition to find mineral deposits in the northern part of Sweden (known as the "Minerals hunt") is organised by the Swedish Geological Survey (in cooperation with the local authorities and mining/exploration companies).

25. Are you aware of innovative exploration and extraction technologies, where project partners on a European level are needed to develop and implement the new technologies and which are the innovative technologies which need to be developed further? Please provide details.

There is a need for fundamental 3D (Europe's subsurface) 4D (how this subsurface evolved over time) studies of mineral deposit formation which would underpin better exploration, mining and processing - particularly for rare minerals and metals such as REEs, tantalum and gallium which are critical for environmental technologies and other high-tech applications. Research is also needed into the possibilities for de-carbonisation of resource exploitation including assessment of low-energy intensive deposits. Research on new methods of extraction – e.g. electric pulse fragmentation, and how to utilize "waste" should also be included.

26. Are there any other aspects related to skills, R&D and innovation for other raw materials, such as wood, that need to be further promoted? Please, specify.

Certification of processes and products should be considered. For example, the German Geological Survey (BGR) has a project entitled Certified Trading Chains - CTC). CTC Project which aims to certify of raw materials in order to avoid illegal trade.

RESOURCE EFFICIENCY & RECYCLING

27. In your view, and beyond measures already being taken (e.g. the recast of the WEEE Directive), what practical measures can be taken by the EU and by Member States to prevent the illegal shipment of obsolete end-of-life vehicles and electronic equipment?

NO ANSWER.

28. In what ways should statistics on trade in, and recycling of, products containing secondary raw materials be improved?

Official EU statistics can be improved by in depth expertises on trade, recycling, LCA and afterwards improved data collection, monitoring and reporting. Fundamental data on recycling are lacking across Europe. Research is required urgently to improve level of data gathering and interpretation. This is needed to ensure that this important potential source of supply is not lost to European industry. There is no reliable database on the production of recycled metals. Companies are not required to report their production to statistical offices. See comments on question #24.

29. Have you identified major problems with recovered paper? What are the main issues that need to be further analysed?

NO ANSWER.

Sincerely,

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