

1. Education

ESEE RM Sector needs/challenges

1. Social licence to operate

- **Public opinion** - mining sector is under pressure from both third sector and public. Any considered activities are **perceived negatively**.
- Main challenge is to educate people or nations about the importance of mining and raw materials. That's the key of "**the social license to operate**". The public must be informed on regular basis about the use of raw materials and the positive impact that mining business have on community.

2. Life-long-learning education

- Necessity of practicum related to the **extraction and processing of raw materials** for bachelor and master degrees
- Ability to identify, quantify and solve problems related to **environmental protection** in general. Introduction to the **circular economy**.
- Following the latest developments in science

3. Internship programmes

- Other needs/challenges are to keep the faculties and the industry in a close relationship and **set foundations for more practice time** during the studies.
- More practice time for students, better prepared young engineers and scientists.

ESEE RM Sector solutions/opportunities

1. Social licence to operate

- Projects aimed at improving the reputation of the mining sector.
- With the acceptance of local population, mining industry can thrive in places where the conditions for mining are right.

2. Life-long-learning education

- Learning through courses and workshops
- Presentations to the teachers and students at the newest technologies in mining and processing of raw materials presented by specialists in the field / industry

3. Internship programmes

- With faculties and industry partners working closely together, students have better knowledge transfer and actual information about the industry challenges.
- Cooperation between industry and R&D institutions
- Conclude contracts with industrial partners for training students who could start working in the following company after the education. Something like initial form of internship/training

2. Knowledge transfer

ESEE RM Sector needs/challenges

1. University-business cooperation

- Closer co-operation of universities with industrial partners. These should solve actual problems and needs of the companies.
- Cooperation between industry and R&D institutions
- Teachers and students to learn know-how from industry professionals who introduce the innovations (**Education**)
- Exchange of knowledge of various professions related to environmental protection in general.
- Faculties working together with the industry.

ESEE RM Sector solutions/opportunities

1. EIT Raw Materials

- Framework for companies and universities.
- More projects co-financed by the EU
- Organizing conferences for the purpose of knowledge exchange.

2. Science to business

- Transferring scientific research into business cases
- Training on scientific marketing
- Training on basics of product development

3. Innovation

ESEE RM Sector needs/challenges

1. Specific innovations

- Mine back-filling solutions - elimination of tailings storage facilities.
- Ability to identify, quantify and solve problems related to environmental protection in general.
- Innovation is needed in terms of "green energy" use and reduction of negative influences of the mining industry.

2. Role of Universities

- More researches
- These innovations should be accessible to students and teachers
- **Development of entrepreneurial skills of students and teachers, creating innovation initiative and developing projects**

ESEE RM Sector solutions/opportunities

1. EIT Raw Materials /national structural funds / other sources - private?

- Support of the research and building of the infrastructure.
- Better cooperation with R&D institutions

2. Education/promotion role of the Universities

- They need to be demonstrated by the people who create these innovations or the professionals who already apply them in the industry
- Learning through courses and workshops.
- By industry having responsible and sustainable approach in mining activities, more mining sites could be opened in areas that are now unreachable.

4. Financial support

ESEE RM Sector needs/challenges

1. Development of University career center

- The need of the universities to conclude contracts with interested companies with which to guarantee its students that they will have good practice with stable and profitable job after that

2. Internship programmes

- In my opinion, most of the financial support must be used for student practice and reshaping public opinion regarding mining activity.
- Constant investment in development and modernization (**Industry?**)

ESEE RM Sector solutions/opportunities

1. EIT Raw Materials /national structural funds / other sources - private?

- It comes from companies which are interested to work with well - professionally trained staff (students)
- More projects co-financed by the EU and government
- To reach out to elementary schools and high schools, as well as local authorities where mining industry could be the support of local economy

5. Legislation

ESEE RM Sector needs/challenges

1. Decreasing length of the permitting procedures

- Limit the duration of the permitting procedure. It takes years before any mining activity is authorized. This is mainly due to possibility of some sort of blackmailing the companies during the EIA or process. Some individuals or even subjects (not from the sector, without the actual understanding of the processes and technologies and from regions far away) block the process by remarks (in most cases groundless) till they are not paid to stop.

2. EU legislation - MINLEX and MIN-GUIDE projects

- Identify all the EU legislation affecting the permits and licenses for exploration and for exploitation, in particular the environmental legislation.
- http://www.minlex.eu/eu_legislation.html
- <http://minerals4eu.brgm-rec.fr/>

3. Protecting mineral resources?

- In Croatia, the Mining law must be updated and changed as soon as possible. Legislation is complex and raw materials are not protected/preserved in a way they should be.
- More rights to the mining industry versus the local community

4. Specifics

- Amendments to the legislation to allow students to have access - even though limited access to specific and dangerous activities

ESEE RM Sector solutions/opportunities

1. Open dialogue with national and EU policy makers

- New and better legislation
- Negotiation and open meetings with the legislation for those changes
- Analyse the impact this EU legislation have on the national procedures.
- In cooperation with the industry partners, academic community must keep pressure on the Government and Croatian Mining sector. With necessary changes in legislation, mining industry will have more funds for innovations and processing improvements.