
**Annual report on national thematic
workshops (D2.3.)**

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1. Introduction

Under a WP2 -- Community buildings RESEERVE consortium aim to facilitate an open dialogue with identified stakeholders associated with the RM sector in all involved ESEE countries. For that purpose, seven national thematic workshops will be organised within each of the participating West Balkan country, focused on most important national resource (critical elements, metallic raw materials or industrial minerals) according to the United States Geological Survey Mineral yearbook containing countries production rates (data for 2014). Participation of the relevant national raw materials value chain stakeholders will ensure national task partners. Official language of the conferences will be mother-tongue of the host country, simultaneously translation will be ensured for English lectures. First in -line of these national thematic workshops was organised in November 2018 in Podgorica, Montenegro. Results and conclusion from Podgorica workshop will serve as an input to WP6 -- SWOT//GAP analysis and businesses opportunities in the ESSEE region for Montenegro.

Objective and scope

RESEERVE workshop *Mineral potential of the ESEE region – focus on Montenegro* had been organised under the **9th ESEE Dialogue Conference**, 6th of November in Podgorica, Montenegro, entitled “**Raw Materials Regional Innovation Development**”. ESEE Dialogue Conference is a kick-off event for the ESEE (East and South East Europe) community, offering networking opportunities in the field of raw materials. Best-practice examples and opportunities to become a member in the EIT RawMaterials community have been presented by the EIT RawMaterials Regional Center Leoben, Regional HUB ADRIA, their partners and local stakeholders.

Target groups

Several target groups for the RESEERVE workshop are detected: experts in mining, geology, mineral and metallic raw materials, circular economy; raw materials industry stakeholders; policy and decision-makers in the field of mineral prospection and mining industry; and stakeholders in the field of raw materials education.

2. Organization of the workshop Mineral potential of the ESEE region – focus on Montenegro

An invitation to the RESEERVE workshop has been sent to the stakeholder databases of the EIT RawMaterials Regional Center Leoben, Regional HUB ADRIA and their partners. Invitation to the local stakeholders was also distributed via Federal Economic Chamber of Montenegro. Invitation to the 9th ESEE Dialogue Conference is under Annex 1.

2.1. Topic of interest

United States Geological survey report Minerals Yearbook for Montenegro 2014 available at <https://minerals.usgs.gov/minerals/pubs/country/2014/myb3-2014-mj.pdf> under a sub-chapter

Commodity Review describes bauxite, alumina, and aluminum sector as the largest metallic raw material producing industry in Montenegro. Presented parameters show increase in production of primary aluminium to 44.000 metric tons and bauxite to 155.153 metric tons in 2014, consequently increasing a production of secondary red-mud as well. For the time-being, secondary red-mud has not been used in Montenegro.

For the purpose of rising awareness to highly valuable Rare Earth Elements (REE) in the primary bauxite ore, as well as the secondary red mud, a RESEERVE workshop topic had integrated lectures related to extraction of the REE from the bauxite residuum.

2.2. Invited lecturers

With a large number of bauxite deposits in the Eastern and South-Eastern European (ESEE) region and a long tradition of the aluminium processing industry, which has left also a significant amount of bauxite residue behind, there is a respectable perspective for development of a new REE resource for Europe once geological, mining and technological aspect are well elaborated.

Therefore, invitation for the presentation under RESEERVE workshop went to:

- **Research fellow Slobodan Radusinović, PhD**, (geologist), Geological Survey of Montenegro - for the overview of the geological potential of Montenegro,
- **Prof. Nenad Tomašić, PhD** (geologist), University of Zagreb-Faculty of Science – a coordinator of the EIT RM REEBAUX project – for the prospects of REE recovery from bauxite and bauxite residue in the ESEE region, and
- **Asst. Prof. Anamarija Grbeš, PhD** (mining engineer), University of Zagreb-Faculty of Mining, Geology and petroleum Engineering, a member of the RESEERVE project - for presentation of bauxite and bauxite residue as viable resource of REE.

2.3. Agenda

Agenda of the 9th ESEE Dialogue Conference is presented under Annex 1, below is a detail agenda of the RESEERVE workshop:

Location: Podgorica, Montenegro

Time 6/11/2018, 14:00-16:00

Workshop topic: Mineral potential of the ESEE region – focus on Montenegro (moderator Sibila Borojević Šoštarić & Marta Mileusnić)

Part 1 Lectures

Lecture 1: RESEERVE project presentation (Matej Draksler; GeoZS)

Lecture 2: REEBAUX project presentation (Nenad Tomašić; UNIZG-PMF)

Lecture 3: Methodology for extractions of REE (Anamarija Grbeš, UNIZG-RGNF)

Part 2 Introduction to group work

Lecture 4: Legislation and SWOT analysis of the RM sector in Montenegro (Slobodan Radusinović, Geological Survey of Montenegro)

Part 3 Group discussion

Introduction of the participants.

Discussion on the SWOT analyses for the RM sector in Montenegro – suggestions for improvement

3. Workshop results and feedback

3.1. Part 1 Lectures

Moderator: Marta Mileusnić

Annex II: RESEERVE project presentation

Annex III: REEBAUX project presentation

Annex IV: Methodology for extractions of REE



Picture 1 from Part 1 Lectures: RESEERVE project presentation

3.2. Part 2 Introduction to group work

Moderator: Marta Mileusnić

Annex V: Legislation and SWOT analysis of the RM sector in Montenegro



Picture 2 and 3 from Part 2 Introduction to group work: Legislation and SWOT analysis of the RM sector in Montenegro.

3.3. Part 3 Group discussion

- Moderator: Sibila Borojević Šoštarić
- Introduction of the participants.
- Group tasks: Discussion on the SWOT analyses for the RM sector in Montenegro – suggestions for improvement

Table 1: Feedback from group discussion on the presented SWOT analyses

| Questions related to | Explanation | Feedback | Additional info |
|---------------------------------|---|---|---|
| Geological data and investments | Outline the most important mineral raw materials of Montenegro – with potential for commercialization during exploitation/extraction | <ul style="list-style-type: none"> • building stone (highway) marl • Pb, Zn, Ag, Au • petroleum and gas • fly-ach • Fe-slag • Red-mud deposits | <ul style="list-style-type: none"> • Methodology and know-how not for secondary processes available • Concession rights for secondary materials not clarifies |
| | How many investments (foreign/domestic) in the RM sector happened in last decade (new mines opened; new extraction lines etc)? What administrative barrier/obstacles should be removed by your opinion? | <ul style="list-style-type: none"> • needs for reopening of the Šuplja Stijena mine with new flotation facility • Brskovo – Alumina plant – closed facility in Podgorica in 2009 | <ul style="list-style-type: none"> • Unclear status of red mud dams' ownership |
| | Is there a potential to develop secondary leaching/extraction from the existing tailings and slags? Current state of legislation related to reuse of secondary industrial waste. | <ul style="list-style-type: none"> • Small private investors could not reopen large aluminium industry • Problem of sharing „know how” – once there was institute with more than 100 researchers supporting industries • Lack of knowledge experts from scientist to the workers | <ul style="list-style-type: none"> • Problem in application of legislation • Ownership problems • Technogenic vs. geogenic deposits |

| Questions related to | Explanation | Feedback | Additional info |
|--|--|---|-----------------|
| Education sector | The role of education institutions related to (1) classical education; (2) LLL education; and (3) WSL – social acceptance? | <ul style="list-style-type: none"> Lack of finances at university Lack of information Lack of knowledge how to get money from EU Changing philosophy of education | |
| Social acceptance | What is a general status of social acceptance in the mining regions of Montenegro and why? How to gain and maintain social licence for mining? | <ul style="list-style-type: none"> Social acceptance is high for the secondary mining (from red mud, tailings) In the mining area (eg. Brskovo, Pljevlja, Nikšić) –good acceptance of primary mining – local community see advantages Example of negative perception – Andrijević (quarry) | |
| Labour market /mobility/employment | A need for qualified workers (a role of Education sector); rate of unemployment; mobility habits of the domestic population? | Insufficient time for feedback. | |
| Transport and infrastructure | Status of the county infrastructure, development plans (also important for the mobility of the work force)? | Insufficient time for feedback. | |
| National agencies/institutions | Development of national institutions/agencies, support for investors, support programmes? | Insufficient time for feedback. | |
| Financing, fiscal and tax policy | Tax rates, salaries, net salaries in mining (usually higher than in the rest of the industries)? | Insufficient time for feedback. | |
| Economic structure/factors | Financial stability of the country currency, contracts? | Insufficient time for feedback. | |
| Health system, Religion structure, Ethical and Cultural habits | Other important facts | Insufficient time for feedback. | |

3.4. Attendies

From a total of 57 participants of the 9th ESEE Dialogue Conference, about 35 has attended RESEERVE workshop (Annex VI: 9th ESEE DC Attendance sheet). Attendees were coming from all three sides of the knowledge triangle: Industry (Šišković d.o.o. Danilovgrad, Bonibo d.o.o., Carinvest d.o.o. Kotor, Tujko d.o.o. Kotor, Draga-sadra d.o.o., KNAUF d.o.o., North Mining d.o.o., Monstat, Tim company, Uniprom metali d.o.o., North Mining d.o.o., WR Dynamic Company) professional associations (Croatian Employers' Association (CEA), Društvo za energetske optimizacije d.o.o), research organization (Monstat Statistical Office Montenegro, Slovenian National Building and Civil Engineering Institute) and education sector (University of Montenegro - Faculty of Metallurgy and Technology, University of Montenegro - Faculty of Civil Engineering, Professional High school "Spasoje Raspopović; National Technical University of Athens), including one governmental agency (Embassy of the Republic of Slovenia in Montenegro) and one NGO (NGO Environmental Law Center), supported by and EIT RawMaterials, EIT RawMaterials CLC East.

Attendees actively participated in group discussion of every aspect of the SWOT analyses, supporting discussion with many plastic examples. Session was prolonged for 35 minutes, as time reserved for discussion was too short. Several participants prolonged their participation for several hours for networking event after the official programme was closed.

4. Lessons learned

Although well prepared and rightly focused workshop needed additional time for discussion of every aspects of the Raw Materials-country analyses. Also, it has been recognised that small working group discussions would facilitate expression of the individual opinions of more participants.

4.1. Improvement strategy

Following RESEERVE country workshops are going to:

1. Distribute questionnaire to the participants one- or two-weeks prior to national thematic workshop containing modified questions from Table 1 – supporting country SWOT analyses,
2. Separate participants in small working groups during the workshop in order to facilitate individual discussions,
3. Include several discussion moderators, and
4. Increase discussion time for group tasks and joint tasks.

4.2. Final remarks

Thematic topic was rightly selected.

Relevant lecturers have been selected.

Presentations were straightforward, opening new business possibilities/options for alumina/bauxite stakeholder in Montenegro.

Drafted SWOT analyses of the RM sector in Montenegro supplemented with participants feedback will serve as one of the starting points for WP6 - SWOT/GAP analysis and businesses opportunities in the ESSEE region for the Montenegro.

A. Annexes

Annex I: Invitation to the 9th ESEE Dialogue Conference.

Annex II: RESEERVE project – project presentation

Annex III: REEBAUX project – project presentation

Annex IV: Methodology for extractions of REE

Annex V: Legislation and SWOT analysis of the RM sector in Montenegro

Annex VI. Attendance list of the 9th ESEE Dialogue Conference.