



**ReviRis**  
Revitalising Post-Mining Regions



## **D2.2 Typology of current national historic, economic and political situation and related potentials and challenges**

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## D2.2 Typology of current national historic, economic and political situation and related potentials and challenges

### Summary

The aim of this report is to measure the level of SLO in RIS countries, as defined by the EIT. Mining has influence on the environment but also big impacts on the society, politics and economy. The countries in question have different socio-historic backgrounds, current employment situations, economic impacts of mining and historic backgrounds in relation to mining and their political situation. Additionally there is a summary of the positive and negative impacts of SLO of each country related to following three main parameters: economic, socio-political and communication.

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## 1 ABOUT REVIRIS

ReviRis is an evaluative toolbox for decision-makers. The project contextualizes current practices in civic engagement and decision-making focusing on involvement, and engagement of different actors and stakeholders in the planning/design process in the revitalization of post-mining land. The evaluative criteria are based on social, economic and biophysical attributes, possibilities and constraints, and tested using RIS region example cases.

## 2 DRIVERS AND LEVELS OF SOCIAL LICENCE

Social Licence to Operate (SLO) is “the ongoing acceptance and approval of a mining development by local community members and other stakeholders that can affect its profitability”. (Moffat and Zhang, 2014, 61) Social licence is not a constant but can change over time. The process of social acceptance is present on the whole cycle of mining activities starting with pre-exploration and ending with post mining activities. Granting of social licence depends on various socio-economic factors. These can be divided into two larger groups – societal and community levels. Community level are the factors that influence SLO by local population where mining activities are taking place – the most affected people. Societal SLO is a wider level of acceptance given also by other people not directly affected by the mining activities, for instance people from other regions of the country, organizations and movements. Community and Societal levels do not always align, as the acceptance in the community can be much higher than the societal one. For instance, to ensure higher level of SLO, mining companies must have good communication with local population, respect state’s law, work also in the interests of local population and minimize harm to nature. Bad experiences with mining activities or company’s bad reputation can reduce the level of SLO by both community and wider society. (Boutilier and Thomson, n.d, 4)

Robert G. Boutilier and Ian Thomson have identified four factors constituting three levels of SLO. These factors are:

1. **a) Socio-Political legitimacy** - The perception that the project/company contributes to the well-being of the region, respects the local way of life, meets expectations about its role in society, and acts according to stakeholders’ views of fairness.
  - b) Interactional trust** – The perception that the company and its management listens, responds, keeps promises, engages in mutual dialogue, and exhibits reciprocity in its interactions.
2. **Economic legitimacy** - The perception that the project/company offers a benefit to the perceiver.

- 3. Institutionalized trust** - The perception that relations between the stakeholders' institutions (e.g., the community's representative organizations) and the project/company are based on an enduring regard for each other's interests. (ibid)

If something is lacking then the approval level of SLO is less likely. This means that in order to gain the highest level of acceptance these three levels must be satisfied. At the same time, the difference comes when talking about the acceptance on community and societal levels. If institutionalized trust is lacking, psychological identification is unlikely. If it is lacking but both socio-political legitimacy and interactional trust are present, most stakeholders will grant approval level of SLO. The most important factor is economic. Stakeholders with low scores on perceptions of economic legitimacy will never have high scores on any of the other factors. This means that stakeholders must first see economic benefits, which would overweight other factors. That is the key to granting at least the lowest level of SLO. (Boutilier and Thomson, n.d, 5)

### **3 SOCIAL PARAMETERS**

Based on the theoretical framework, three factors with several parameters were chosen to measure the level of SLO in RIS countries, as defined by the EIT. These parameters matter because mining has influence on not only environment but also a big impact on the society, politics and economy. The countries in question have different socio-historic background and each case should be regarded separately. There will be a short description of current employment situation, economic impact of mining, historic background of each country in relation to mining and political situation. These parameters are very important for the discussion of mines closure and should be taken into account in order to deduct implications regarding the incorporation of social strategies in the rehabilitation process.

To measure the success of SLO in RIS countries it is proposed to stick to the following criteria:

- 1) **Economic** – are the economic benefits of mining industry enhance well-being of the community and wider society? This factor can be described by following points:
  - employment and conditions of employment in mining sector;
  - share of mining industry in country's economy and income generated by the mining industry;
  - development of infrastructure that is driven by the mining industry.

Employees of mining companies, their families and other interested parties are more likely to give social licence if the mining sector provides good employment conditions, including higher salaries. In addition to that, it is more likely that SLO would be granted if mining company

invested into the well-being of society through social activities support, study grants etc. Societal level SLO can be achieved if the mining industry of the country provided remarkable economic benefits to the overall states' GDP/budget, as royalties from mining activities can ameliorate well-being of whole society, if governed properly.

- 2) **Socio-Political** – Proper governance is important to ensure that society regards mining industry as valuable and important for their well-being. Improper governance, high level of corruption and unfair practices, can disregard economic benefits of mining. To measure the socio-political criteria of SLO we should see if the society trust its government and are the laws and regulations influence mining industry, especially when it comes to the protection of environment and citizens rights and interests. This can be measured by the existence and content of national legislation on mining industry, which dictates rules that apply to the industry. Are these laws respected and are the interests of people protected and opinions heard?

Societal aspect of this factor is strongly related to mining history in each country. A long and important history of mining can positively or negatively influence SLO in society. Cultural heritage related to mining can positively influence SLO as the community perceives it as an indispensable part of the society, for instance marble in Greece. At the same time memories about mining accidents or accidents related to material production can negatively influence SLO because people become more aware of the risks and prefer to avoid possibilities of new accidents in the future.

- 3) **Communication** – is there a good communication and mutual understanding and respect between company's representatives and local communities? This can be measured by the level of involvement of locals into company's activities in the region and also if the company is taking the voices of local communities into account. In addition, is there a functioning procedure or a legislation regulating the collection of community opinion regarding the activities of the mining company and future developments?

### **3.1 Estonia**

#### **3.1.1 Historic background**

Estonia restored its independence in 1991 after the Soviet Union collapsed. Since then Estonia started renewing its mining sector facilities, installing Western equipment. However, with the collapse of the USSR the mining of oil shell has dramatically decreased because the demand for oil shell dropped. Nowadays Estonia mines ca 15 million tones of oil shell each year, which is twice less than it used to mine in the 1980s. Oil shell mining has been a very important employer in the North-eastern region of Estonia Ida-Virumaa where most of the mines are located. (Beger, 2017, 14)

In the Soviet times, Estonia had also big phosphorite mines located nearby Tallinn. The Soviet government was about to establish another big phosphorite mine in Lääne-Viru county which would bring more workers from other parts of the Union but also raised serious concerns of local population about environmental damage. The experience of environmental damage seen after the explosion on Chernobyl power plant and fears of pollution pushed people into resistance against mine construction, as people became more concerned about the environmental impacts that industry can cause. The lack of SLO in this case was one of the triggers towards stopping the new mining spot. Maardu phosphorite mine inappropriate closure after the collapse of the Soviet Union has also raised many questions in peoples minds regarding mining industry. (Estonica, n.d) These historical events are not favouring SLO in Estonia as bad experience with inappropriate mining practices is still present.

#### **3.1.2 Employment**

The oil shell mining industry today is still one of the most important employers in Estonia and particularly Ida-Virumaa. In 2017, Out of almost 150 000 inhabitants of Ida-Viru county 7387 people were employed in oil shell industry. (Beger, 2017, 8) Ida-Virumaa as the poorest region of Estonia with the highest unemployment rates depends on oil shell industry, as it is the most prestigious and biggest employment sector in the region. Average salaries in this sector are above the medium in the country, reaching on average 1600 EUR/month, and it is 35% higher than the medium salary in Ida-Virumaa. (Beger, 2017, 36) Vast majority of all employees of mining industry are men. Mining industry is over a century old and has been the most important sector of economic activity in Northeast Estonia and nowadays mining companies are seen by local population as the most attractive employer. If the mining companies were about to close then the region would face severe social problems with rising unemployment, probably crime rates and poverty acceleration.

### **3.1.3 Economic impact**

Oil shell mining sector provides in total 4% of Estonian GDP including oil shell mining and added-value production. Oil shell companies paid over 103 million EUR in taxes to the budget in 2017. Thanks to its oil shell mining Estonia has the lowest dependency on energy import amongst the EU members, only 6,8% of energy was imported in 2016, according to Eurostat. 90% of Estonian electricity was produced from burning oil shell. (Beger, 2017, 17)

### **3.1.4 Social-Political impact**

Oil shell companies are active in social life of Estonian citizens, especially those who live in Ida-Viru county. The companies require specialists for continuous operation; therefore, they are supporting initiatives aimed at raising students' interest in energetics and STEM disciplines. Some companies like Viru Keemia Grupp are also supporting students studying chemistry, energetics or engineering with scholarships. (Beger, 2017, 36) The aim is to train needed specialists for the future. In addition to educational support, oil shell companies are sponsoring cultural, sports events in the region, and cooperate with Estonian universities in doing research and development activities. The companies are gaining community acceptance by collaborating with them through social programs and support. (Beger, 2017, 38)

Since several years Estonia has committed itself to reduce the carbon footprint and meet the goals agreed in the Paris Climate Agreement, SDGs, European Union Climate Neutrality Goal by 2050 and many other development strategies. This means that Estonia has to install more eco-friendly equipment such as carbon filters, potentially reduce and later stop burning oil shell for electricity production. (Keskkonnaministeerium, 2015, 10) Currently, Estonian energy companies are trying to develop and plan on opening new oil factory, however these plans are criticized by the climate activists, as in their opinion the new oil factory is not helping to achieve climate goals. Society is favouring mining industry transformation into more green and eco-friendly, with potential closure of mining activities in Estonia, however that would harm economically local communities where mining is playing an important role. (Parksepp, 2020)

At the same time, the companies respect mining laws that protect nature, and people's interests, therefore all mining activities nowadays must comply with stricter regulations and rules. Local municipalities have the right to reject permission for mining activities in their region, if the state's interest is not overwhelming.

## 3.2 Poland

### 3.2.1 Historical background

The traditions of obtaining minerals in Poland date back to the Neolithic period and the early bronze era (c. 3900-1600 BC) and are connected to flint exploitation in Krzemionki Opatowskie. Nowadays in Poland operates more than 7000 mines extracting 509,53 mln Mg of solid minerals plus liquid and gas ones. Minerals from four groups are extracted: metals (31,84 mln Mg); industrial (347,9 mln Mg), chemical (4,77 mln Mg) and energy (125,02 mln Mg) (data for 2018, The Balans of Mineral Resources 2019). . The Lower Silesia region is known from its copper and silver ore deposits. Also other minerals occur: chemical (rock salt, barite, fluorspar and sulfur as an accompanying mineral), industrial (e.g. dimension and crushed stones, backfilling sand, sand and gravel, glass raw materials), energy (lignite, natural gas) as well as brines, curative and thermal waters. Some of the minerals like: copper ore, silver, nickel, gold, whiteware ceramic clays, quartz veins, magnesites, quartz rocks and kaolin are unique on a national scale. In Lower Silesia there are over 50% of the national deposit of road and construction stone, as well as are the largest deposits of fire clay and granite. Hard coal was also extracted in Lower Silesia Voivodship in the past. The mining industry is one of the most significant in the Lower Silesian economy and well-developed transport infrastructure, tax allowances and other preferences attract foreign investors, which in number are growing each year. In 2017, the region took fourth place in Poland regarding the number of companies with foreign capital participation.

Hard coal and lignite are among Poland's strategic resources guaranteeing the country's energy security. Hard coal is exploited in Upper Silesian Coal Basin (Górnośląskie Zagłębie Węglowe) with ar. 20 mines operating presently and in Lublin Coal Basin (Lubelskie Zagłębie Węglowe) with one mine in operation. The change of the country's economic system caused by the transformations after 1989 has contributed to the significant drop in the demand for hard coal and in consequence to the closing down of mines and the reduction of employment. Coal mining has significantly decreased from 175,9 mln Mg in 1989 to 63,88 mln Mg in 2018.

### 3.2.2 Employment

Mining and quarrying sector in Poland is employing 138,6 thous. people (2018). Between 1989 and 2009 total number of employment in mining and quarrying decreased drastically from 568,5 thous. in 1989 to 182,6 thous. in 2009. Hard coal mining has been bearing the biggest consequence of restructuring, since 1989 till 2009 employment in this type of mining has decreased by 296 700 workers (from 415,7 thous. to 119) (Statistical Yearbook of the Republic of Poland, The Polish Agency for Enterprise Development, (Uberman et al. 2010). The workforce reduction was strongly related to the closing of unprofitable collieries and privatisation of the industry in 90s. For some people in

traditionally mining regions this sector remains a tradition that is coming from centuries ago. Between 1989 and 2019 around 50 hard coal mines were closed down (Uberman et al. 2010). Closure processes were driven mainly by the falling profitability of particular collieries and through negotiations between social partners (Szpor and Ziólkowska, 2018, 3).

According to different sources, medium salary of miners in Poland is above average reaching 1600 euros per month, at the same time some sources claim that it is hard for mining industry to attract young workers to mines as salaries are low and mining industry is not prestigious. (Zygmunt, 2017)

Coal mines in Poland are almost entirely state-owned. The states' coal mining company is called Polska Grupa Górnicza (PGG). KGHM Polska Miedź S.A., Lower Silesian copper company is also partially state-owned (31,79%). Miners are entitled for some social benefits; the most prominent one is early retirement after 25 years of service. Coal mining is the only industry in Poland that is receiving additional national funding to operate (before it refer also to sulphur mine which were in the process of restructuration). However, the above do not apply to other raw materials, where mines are mainly owned by private investors.

The importance of the mining sector and large-scale energy generation as the source of growth and jobs is inevitably decreasing. In this situation, reaching the level of GDP per capita and wages comparable with the industrial-service centres of Western Europe requires meeting two conditions. The first is fast increase of productivity at a rate of at least 1.5-2% above the EU average. The second is significant diversification of the foundations for the development of the local economy. This requires large investments and development of other sectors of economy.

### **3.2.3 Economic impact**

Poland is heavily reliant on coal-fuelled power stations. Apart from historical reasons, it is also because of the relative scarcity of other energy sources. 59% of total coal consumption is used for producing energy. 78% of electricity in Poland is produced from hard coal and lignite. Polish government is determined to continue using coal as the primary source of energy in the following years.

### **3.2.4 Socio-Political situation**

As part of the process to obtain a mining concession, the local community has the right and the opportunity to express their opinions under administrative procedures related to the Study on the Preconditions and Directions for the Spatial Development of the Commune and/or the Local Land Use Plan, as well as the Environmental Decision for investment. However, at none of these stages submitted applications and comments have to be considered, nor are they subject to appeal to the

administrative court. Obtaining a concession for the mining of mineral resources from deposits must be agreed with the head of the commune (wójt), mayor or city president and the basis of this is the Local Land Use Plan, or in the case of the absence of it, on the basis of the Study on the Preconditions and Directions for the Spatial Development of the Commune (Ostręga, 2016). Increasing environmental awareness contributes to public opposition to new mining investments. Broad dialogue with local communities is still a developing approach among industry. Social consultations often narrow down to those required by law, but bigger companies and those with foreign capital usually incorporate CSR policy and involve community to a greater extent.

### **3.2.5 Political situation**

Political situation in Poland is one of the hardest in the European Union. The ruling national-conservative party (PiS) is not committed to drastically reduce share of coal in Polish energy sector, in accordance with EU's aim to achieve carbon neutrality by 2050. One of the reasons for this is a long lasting tradition of Polish mining industry and strong labour unions. Incumbent Polish government is well aware that any decision that endangers the future of mining will meet with substantial protest, as exemplified by the events 2015 when miners threatened to end the government of Ewa Kopacz, then Polish Prime Minister. A new law to restructure Poland's largest mining company was met with widespread protests by miners and their unions, who saw the law as a prelude to the closing of four mines in the Upper Silesia region. Negotiations that ensued resulted in the government's strong commitment to keeping all mines open, effectively assuring the mining jobs that could have otherwise been eliminated. Thus, any policy that could potentially limit coal and negatively affect mining jobs can have immediate negative consequences for the incumbent government as well as serious electoral implications. There are 55 seats (out of 460 seats) in the Sejm (the lower chamber of the parliament) and 13 (out of 100) in Senate (the upper chamber of the parliament elected in Upper Silesia - the region historically known as "the kingdom of black coal." Additional "coal" seats are dispersed around the country where lignite is mined. When compared to prospective EU disputes and/or fines, electoral and public support considerations are more immediate and can directly affect chances of survival for any incumbent government. (Mikulska and Kosinski, 2018)

Another reason for continuing coal mining is Polish energy security, mainly from Russia and need to import Russian gas. As alternative sources of energy, including nuclear plant are not well developed in Poland, it highly relies on coal and imports of materials. (ibid)

Despite these reasons, there is still a problem with social acceptance of mining activities in Poland, mainly in the mining regions. From one side, miners are actively defending their position and protest closure of mines, on the other side there are climate activists, the EU and residents of mining areas

who are protesting against opening of new mines and call upon government to decarbonize Polish economy and commit itself into sustainable development.

For instance, currently the local community of town Imielin is successfully protesting against opening a new coal mine in Paruszowiec district.

Unstable and changing situation in hard coal mining negatively impacts other investments (for example metals extraction) as community views the whole industry basing on experiences from the coal mining. Lack of proper reclamation in the past also influence the image of the mining. Lot of post-industrial infrastructure was left abandoned in 90s because of insufficient funding for revitalisation.

The regional authorities have identified environmental degradation, especially air pollution, as well as the extensive degradation of land and urban spaces, as some of the main factors holding back Silesia's development today.

It is by far too costly for the region to rehabilitate the degraded post-industrial areas, often located in inner cities. However, since the mining holdings are state owned and mining itself falls under the national energy policy rather than regional policy, the regional government is not participating in the debate on the future of the mining sector.

#### *Political system*

In accordance with the Constitution of April 2nd, 1997 (which took effect on October 17<sup>th</sup>, 1997), legislative authority is exercised by the Sejm and the Senate of the Republic of Poland. The State executive authority is the President and the Council of Ministers, and judicial authorities are the courts and tribunals.

Legislative authority: The Sejm and the Senate are elected for a four-year term. The Sejm has 460 deputies, and the Senate 100 senators. The main tasks of the Sejm and the Senate are to vote on constitutional and ordinary bills, including the budget and the ratification of international agreements.

Executive authority: The President of the Republic of Poland is the supreme representative of Poland. The President ensures observance of the constitution, safeguards the sovereignty and security of the state as well as the inviolability and integrity of its territory. The President of the Republic is a representative of the State in foreign affairs, and he co-operates with the Prime Minister and appropriate ministers in these matters.

The state's internal and external policies are carried by the government - the Council of Ministers. The President of the Council of Ministers (the Prime Minister) manages the work of the Council of Ministers. The Prime Minister and other ministers are nominated by the President.

There are additional offices at a central level controlled by ministries: the State Mining Authority, the State Inspector of Environmental Protection and the Energy Regulatory Authority. Other state units include: the Polish Academy of Sciences and the Government Centre for Strategic Studies (Constitution, 1997).

**Judicial authority:** Judicial authority in Poland is implemented by independent courts and tribunals. The courts implement the administration of justice in Poland. Judges, within the exercise of their office, are independent and subject only to the Constitution and statutes. The Chief Administrative Court and other administrative courts exercise control over the performance of public administration.

The Constitutional Tribunal is responsible for adjudication on the following matters:

- Conformity of statutes and international agreements to the Constitution,
- Conformity of a statute to ratified international agreements whose ratification required prior consent granted by statute;
- Conformity of legal provisions issued by central state organs to the Constitution and ratified international agreements and statutes;
- Conformity to the Constitution of the purposes or activities of political parties.

**The Tribunal of the State:** The following persons are constitutionally accountable to the State Tribunal with regard to violations of the Constitution or of a statute committed by those individuals within their office or its scope: the President of the Republic, the Prime Minister, and members of the Council of Ministers, and others listed in Article 198 of the Constitution (Constitution, 1997).

### *Local self-government*

Local self-government is a basic form of public life at the local and regional level. Local self-government executes public tasks which do not belong to national administration (among other things connected with educational organisation, health protection etc.). At the regional level (voivodship) the legislative authority is the Sejmik Wojewódzki, and the executive authorities are the Sejmik Wojewódzki and the members of the Boards of the Region. The legislative authorities of a municipality and county are their councils. The executive authority at the county level is the starosta and the board, at the local level the vojt (in the countryside), the mayor (in the villages - the municipality) or the city president (in the municipalities where the population is greater than 100,000 inhabitants).

### **3.3 Greece**

#### **3.3.1 Historical background**

Greece is a country of significant mineral wealth and is ranked highly in global scale regarding quantity of mineral reserves per km<sup>2</sup>. Mining has been an important part of Greek economy and society for centuries. Mineral resource centred activity has traditionally been a key driver of economic development through trade and innovation. In the ancient times, copper, iron, gold, silver, marble and other materials were mined and today they are still very important for the Greek economy. Greek marble is considered to be of the best quality in the World. The utilization of Mineral Raw Materials contributes also to the development of other critical sectors of economic activity, such as non-ferrous metal industry (e.g. aluminium, nickel, etc.), stainless steel industry, energy production, cement industry, construction activity, etc. The mining sector presents extroversion due to its export character, as sales in international markets contribute significantly to the business cycle of companies in the sector.

#### **3.3.2 Employment**

Mining sector in Greece is a very important employer, especially at a regional level. Mining sector employs more than 10 000 (12.810 in 2018) people directly. (Hellenic Ministry of Environment and Energy, 2018) However, the total contribution of the mining sector to employment, taking into account the indirect and the induced effects, reaches 81600 jobs and corresponds to more than 2% of employment in Greece. The employment impact increases to 108000 (2.7% of domestic employment) when we take into account the electricity generation from lignite. (IOBE, 2018) Taking into account the employment situation and long-lasting economic crisis in Greece this sector is of a huge importance for the country. Greek miners can benefit from salaries that are above average, ranging from 1000 to 3000 EUR.

#### **3.3.3 Economic impact**

Greece has always been the main producer of certain minerals and continues to maintain this position. Mining and metallurgy constitutes an important sector of the Greek economic activity as it supplies essential raw materials for primary industries and various downstream users. The industry covers metals (bauxite, nickel, lead, zinc, gold, copper etc.), industrial minerals (bentonite, perlite, magnesite, pumice, gypsum, calcium carbonates, huntite and industrial clays), marbles, ornamental stones and aggregates.

The mining sector, during 2014-2018, despite the recession of the Greek Economy, but also the instability of the international economic environment, managed to maintain its competitiveness and

its position on a global scale. According to the official data presented by the Greek Ministry of Environment and Energy, regarding productive capacity of mineral raw materials for 2017, Greece ranked first in European Union concerning perlite, bentonite, bauxite, second for nickel, third for magnesite, fourth and fifth regarding lignite and aluminum respectively.

The contribution of the mining industry to the Greek economy is not limited to the key economic figures of the mining and mineral processing activities. Taking into account the indirect effects in sectors that participate in the value chain of the mining industry, as well as the induced effects from the income generated by its operations, the total contribution of the mining industry to GDP is estimated at 3.0 billion (2016). If we also take into account electricity generation by lignite, which would not be possible without the support of the domestic mining sector, the contribution to GDP is estimated to 5.4 billion (3.1 of GDP), Table 1.

**Table 1:** Wider economic impact of domestic mining at national level (2016) (IOBE, 2018)

MAGNITUDE*	DIRECT	INDIRECT	INDUCED	TOTAL
Gross production value	3972	1581	3753	9306
Value added	1853	807	2207	4867
GDP	1981	848	2607	5436
Employment	22324	23773	61362	107459
Labour income	577	224	471	1273
Tax revenue	322	121	588	1032
Social security contributions	133	63	126	322
Import substitution	2136	740	320	-1075
Balance of trade	3074	740	320	2013
Social product	1210	508	1520	3238

Source: IOBE multiregional input-output model, Eurostat

\*In € million, apart from employment, which is expressed in full-time equivalents.

50% of mined materials are exported which constitutes almost 5% of total Greek exports. The value of exports exceeds € 1 billion. Large variety of natural resources and potential of Greek mining industry are attracting foreign investments, which reach approximately 300 million euros per year. At the same time, there is still a place for development and Greek mining industry can generate more value and attract larger investments in the future.

Based on a survey conducted by RASS in 2017 on behalf of the Greek Mining Enterprises, Association, 86% of Greeks think that the exploitation of mineral resources has a significant contribution to the economic development of the country. (Greek Mining Enterprises Association, 2017, 23) Mining

activities opponents claim that mines and quarries are not only bringing economic benefits to the Greek budget and provide employment for certain amount of people but also harm other industries that are vital for Greek economy – for instance tourism. The problem is that due to geography of Greece, many mines and quarries are located nearby urban and touristic areas. However, there are some successful examples of mining and tourism symbiosis, e.g. Miloterranean Geoexperience, Vagoneto-Fokis mining park etc. Gold mining and other related activities can harm environment, causing damage to fishing, agriculture and tourism, if proper environmental protection measures are not taken. It is also noted that mining projects cover an area not exceeding 1% of Greek land territory.

### **3.3.4 Socio-political impact**

Greece has a long history of mining and that led the country to create a Mining Code in 1973. From time to time, this Mining Code of 1973 is supplemented or amended by Ministerial decisions. Apart from the Mining Code there is also the Regulation Mining and Quarrying Works, that has been published in 2011 and covers the regulations regarding the safety and health of workers and local residents, the protection of the environment and the right way to perform mining activities. The Greek Ministry of Environment announced in 2012 the National Policy for the Exploitation of Mineral Raw Materials in compliance with the European Raw Materials Initiative (RMI). The national policy is built on six strategic pillars concerning national and regional development, land-use planning, codification of the existing legislation, promotion of dialogue to obtain the social acceptance, reinforcing education and promotion of research and innovation and improvement of the efficiency of the management of mineral raw materials. In addition, through Law 4512/2018 the framework for the exploration and exploitation of quarry minerals was updated. Mining industry in Greece follows the provisions set by national and European legislation in issues regarding forests, environmental impact assessment, management of extractive wastes etc.

It is noted that restoration works, according to the provisions of national legislation, following the cessation of extractive activities aim to the mitigation of environmental impacts providing new forests lands, areas for cultivation, artificial lakes and wetlands, areas for cultural events and recreation activities, museums and many other post mining land uses.

It is estimated that about 68 km<sup>2</sup> have been rehabilitated since the entry in force of Law No 998/1979 on forest and forest land protection, corresponding to 35-40 % of land under exploitation. Furthermore, since 2007 the Greek mining companies have planted more than 3 million trees.

Despite the fact that the legislative framework regarding mining activities exists, there are still some issues to be resolved regarding social acceptance of mining activities, stakeholder engagement and promotion of dialogue among interested parties towards sustainable development of mineral raw materials. For example, investments regarding gold mine projects in northern Greece have been a subject of debate and controversy for many years.

There are also concerns about environmental issues caused by mining activities, for example lignite mining. Production of lignite shows a decrease in last years. Greek Prime Minister has recently announced at the UN Climate Action Summit that Greece will close all power plants utilizing lignite by 2028.

### **3.4 Spain**

#### **3.4.1 Historical Background**

Spain also has a long history of mining dating back to ancient times. Spain has large variety of minerals and metals on its territory. The biggest mining region being Andalusia where almost 40% of all mining value of Spanish Kingdom is produced. Coal has been an important material mined on Spanish territory for centuries, however due to strict regulations of the EU; high price of mining and attempts to decarbonize Spanish economy coal mining has officially ended in 2019. Spain is nowadays the largest producer of fluorite and plaster in the EU, second largest producer of copper and the only producer of Celestine and sepiolite.

Spain has seen mining accidents, which influence public opinion of the mining sector. On 25 April 1998, a holding dam burst at the Los Frailes mine, near Aznalcóllar, Seville Province, releasing 4–5 million cubic metres of mine tailings. The acidic tailings, which contained dangerous levels of several heavy metals, quickly reached the nearby River Agrio, and then its affluent the River Guadiamar, travelling about 40 kilometres along these waterways before they could be stopped. The Guadiamar is the main water source for the Doñana National Park, a UNESCO World Heritage Site and one of the largest national parks in Europe. The cleanup operation took three years, at an estimated cost of €240 million.

#### **3.4.2 Employment**

Mining industry is present in all Spanish regions, however the most important three mining regions are Andalusia, Catalonia and Castile and Leon. (Ministerio Para la Transición Ecológica, 2017, 14) In 2017, 29,640 people were directly employed in mining activities in Spain, however today the number is lower as coal mines were closed in 2019. In Andalusia only mining sector employs 5000 people directly and 40 000 indirectly. (Invest Spain, 2017)

Contrary to other countries, Spanish miners do not benefit from high salaries. Miners average salary according to El Pais is 1600-2000 EUR per month, while official medium salary is approximately 1900 EUR per month.

### **3.4.3 Economic impact**

“Spain has metallic mineral resources, such as copper, gold, iron ore, lead, nickel, silver, tungsten, and zinc, and nonmetallic resources, such as clays, diatomite, feldspar (sixth-ranked world producer), fluorspar (sixth-ranked world producer), gypsum, salt, strontium (second-ranked world producer) and talc, among others.” (Perez, 2015, 42.1) Spanish economy is one of the biggest in the EU, that is why mining generates only 0,2-0,3% share of GDP, at the same time the total value is larger than in Greece, reaching 3.2 billion euros per year. (Ministerio Para la Transición Ecológica, 2017, 6) Mining is especially important for Andalucía as it is one the main sector of economy of the region. “It should be noted that the 10 public universities in Andalucía offer training related to mining activity (Mining Engineering, Geology, Environmental Science, etc.). The Regional Government of Andalucía is strongly committed to boosting mining as a strategic sector for the development and economic growth of the region.” (Invest Spain, 2017)

### **3.4.4 Socio-political impact**

“Spain’s mineral industry is composed of domestic private companies and international companies that have direct investments in Spanish companies or have subsidiaries in Spain.” (Perez, 2015, 42.1) “One aspect that differentiates Spain from other mining jurisdictions is its regional approach to legislation, with explorers and miners having to work with autonomous regional governments, rather than on a national level. The Spanish Constitution provides the state with exclusive powers over the foundations of mining law, although it also allows the country’s various autonomous regions to exercise their powers on related areas, such as environmental protection, regional economic development and the development of basic mining state rules. On a regional level, the local ministry for mining is the authority companies will deal with. These operate under the national umbrella of the Ministry of Energy, Tourism and Digital Agenda, which in turn is led by the Directorate General on Energy Policy and Mines.” (Mining Journal, 2018, 7)

Development of new mines in Spain can be rather challenging as local communities, which are not used to mining activities are often expressing their negative attitude towards mining activities, however, Spanish regulations and obligation to protect environment are helping to change public opinion. (Mining Journal, 2018, 8)

## **3.5 Bulgaria**

### **3.5.1 Historic Background**

“Bulgaria has long traditions in mining. The geological explorations extractive industry bloomed during the decades of the 1950s, 60s, 70s and 80s of the 20th century, with a significant decline in the middle 90s during the transition to a free economy. However, since the 2000s, the extractive industry is growing, especially in the production of metals (mainly Cu, Au, Fe, Pb-Zn), coal, industrial minerals, aggregates and facing stones. In the last years the extractive mining industry has been responsible for about 5 % of the GDP. It employs directly about 30,000 and indirectly about 120,000 persons. Bulgaria’s mine production of refined copper and gold ranks 2nd and 3rd in the EU. The statistics on permit applications in the last sixteen years show that construction minerals, followed by industrial minerals and facing stones, are the main interests for exploration and production. Underground mineral resources in Bulgaria are owned exclusively by the state.” (European Commission, 2, 2017)

### **3.5.2 Employment**

Mining industry in Bulgaria is a very important employer in the country. It provides direct jobs for approximately 30,000 people and 120,000 indirectly. This makes some local communities largely dependent on the industry. In general, salaries in the mining industry are among the highest in the country, reaching 1800 BGN in 2019, which is 50% higher than the average in the country. In addition, for each year of work experience, an additional remuneration is paid in the amount of 0.9 % of the basic salary for those working over ground and 1% for those working underground. In addition to that, employees get free lunch at work. The amount of the additional remuneration for night shifts also exists, as well as the payment for overtime work - not less than 50% extra on working days and up to 120% for the work on an official holiday. (Sotirova, 2019)

### **3.5.3 Economic impact**

Mining is an important part of Bulgarian economy. The mineral and raw materials industry is important for Bulgaria and one of the best developing sectors in recent years. Labour productivity is close to the EU average. Around 300 companies operate in exploration, extraction and processing of underground natural resources and related activities and services. (MINEX, 2019)

Bulgaria is the fifth largest coal producer in the European Union and the third largest European producer in gold and copper. In total mining forms 5% of Bulgaria’s national GDP and coal mining support nearly 45% of national electricity generation. The Bulgarian energy sector is important for the country’s energy-intensive industries and accounts for above EU- average shares in total employment

and value added. The sector contributes to the socio-economic development and welfare of the coal mining municipalities. (Euracoal, 2020)

#### **3.5.4 Socio-political impact**

Bulgaria is a traditionally mining country. According to Eurostat Bulgaria is the poorest country of the European Union, therefore the people in Bulgaria are more likely support industries with good working condition and higher salaries. As Bulgaria is a member of the European Union, it has to stick to the path of sustainable development and achievement of carbon neutrality. This means that the country is more likely to close coal and lignite mines and power plants, however the government is not keen on accepting stricter “green policies” imposed by the European Commission. In 2018, people went on protest in Bulgaria to support coal-fired energy production in Maritsa East 2 plant in southern Bulgaria. (Tsolova, 2018)

As stated by the Constitution of the Republic of Bulgaria and the “Subsurface Resources Act” (Mining Law) the subsurface mineral resources are exclusive state property. All kind of activities related to the extractive industry are regulated by the State. Production of minerals can be performed only under concession provided by the State for a period up to 35 years, extendable by 15 years. (European Commission, 2017)

The mining companies are trying to win social acceptance and portrait themselves as “good neighbours” through supporting education and training activities for local people and contribute financially to local municipalities and charities. However, “the companies are still lacking clear understanding both of the range of ways that business might contribute to development, as well as the potential benefits/damages for societies, communities and also for the businesses involved.” (Dimitrova Stefanova, 2013)

“Basic weakness of the social programs is neither the issues nor the range and amount of contribution but the “betrayal” of the strongest and most distinctive characteristic of the company as a unit – to generate profit by delivering products and services and creating employment.” (ibid)

Despite the support of local population for mining activities for economic reasons, people might be lacking confidence in government to fully represent interests of society and properly regulate the mining sector. This comes from the fact that Bulgaria has been rated the most corrupt country in the European Union (European Commission, 2019) and population’s trust in government remains relatively low. (Novinite, 2017)

## 3.6 Croatia

### 3.6.1 Historical background

“Croatia is recognised for its extraordinarily long tradition of stone exploitation and application. Many abandoned quarries represent potential geological heritage sites.” (Mileusnić et al, 2019, 5) Croatia was a part of Yugoslavia where coal mining was well developed, however with the collapse of the Eastern bloc; coal mining in Croatia completely disappeared. (Bankwatch Network, 2018)

### 3.6.2 Employment

Croatian mining and quarrying sector is small and employs only around 3963 people according to Poslovni Dnevnik newspaper. (Poslovni dnevnik, 2018) In 2010, Geology, mining and oil industry combined provided employment for 13683 people. (Šutalo et al, 2012, 21) At the same time, the salaries in the mining and quarrying sector are amongst the highest in the country reaching 9637 HRK in 2018, while the average salary in the country was around 5000 HRK per month. (Burić, 2019, 11)

### 3.6.3 Economic impact

“The country produced a limited number of mineral commodities, none of which were produced in a quantity that was significant on a world or regional scale. Mineral resources included clays, dolomite, fertilizers, gypsum, limestone, natural gas, petroleum, and salt.” (Hastorun, 2014, 10.1) Mining and quarrying does not play a significant role in Croatian economy, accounting for only 0,7% of national GDP. “The country remained reliant on mineral commodity imports for the bulk of its industrial and energy needs. Most industrial mineral output was consumed by the domestic market, particularly by the construction sector.” (ibid)

### 3.6.4 Socio-Political impact

“The minerals industry in Croatia is regulated by the Mining Department of the Energy and Mining Directorate and the Croatian Hydrocarbon Agency. The Mining Department regulates and oversees all activities related to nonfuel minerals. It is responsible for issuing licenses for exploration and extraction of all minerals except for mineral fuels, for issuing building permits for mining facilities and plants, and for granting approvals for mining concessions.” (ibid) “All mineral producers were wholly privately owned, except for mineral fuel producer INA-Industrija nafte d.d. (INA) and fertilizer producer Petrokemija d.d.” The government and private companies jointly own these producers. (Hastorun, 2014, 10.2) All mining activities are subject to National Environmental Protection Plan. (UN Economic Commission for Europe Report, 2014, 15) However, despite the regulations and controls there is still a problem of illegal quarries which are often “related to abandoned quarries which operated legally in the past but were not restored”. (SARMA, 2011, 27) “In general it is considered that the external supply

from distant quarries of stone aggregates and the illegal quarrying are a consequence of a restricting spatial plan for the Zagrebačka county from 2001 which does not allow opening of new quarries or the enlargement of present ones since the estimated reserves in 2001 were said to suffice production for 30 years. The development of Zagreb caused aggregate supplies to be found in other distant sources which have led to an increase of building prices in the city. Generally illegal quarrying is present at abandoned unrestored quarries or remote areas distant to settlements although some of the quarrying is done on private lands (in some cases the quarrying areas are fenced).” (SARMA, 2011, 28)

### **3.7 Czechia**

#### **3.7.1 Historical background**

Czech Republic has a strong tradition of coal mining dating back to the industrial revolution in the 19<sup>th</sup> century. “The Czech Republic is the fourth largest coal producer in the EU and will remain one of Europe's largest coal producers as the country continues to rely on domestic coal output for heat and electricity generation. The major commodities mined are hard coal, lignite and uranium and the sector is supported by a relatively small but traditional mining equipment, technology and services (METS) sector.” (Australian Government, n.d.)

Uranium was mined in Czech Republic since 1946. Following its start in 1946, exploration and mining grew rapidly and developed into a significant branch of industry. During 50 years of uranium industry activities 194 uranium deposits and occurrences were explored and 74 of them were extracted. (Suran and Vesely, 2001, 45) However, the last operating uranium mine was closed in Czech Republic in 2017. (Willoughby, 2017)

Other materials mined in Czech republic today include kaolin, clay, graphite, timber, dolomite, sand, common gravel, gypsum, bentonite, pig iron.

The country has suffered several accidents that occurred in the coal mines in the 21<sup>st</sup> century. The biggest and most serious one happened in 2018 on OKD company operated mine. 13 people died after a methane explosion more than 800 meters underground. (DW, 2018)

#### **3.7.2 Employment**

Czech mining industry today employs approximately 26 000 people directly, mostly in smaller communities in the Northeast where the majority of country's coal reserves concentrate. The salaries of miners cannot be called competitive in comparison with other countries where miners enjoy salaries above average. In Czech Republic miners salary ranges between 24 000 CZK to 45 000 CZK per month. (Platy.cz), while the average salary in the country is 34 000 CZK per month.

### 3.7.3 Economic impact

Economic impact of mining in Czech Republic is constantly declining. This is related to the process of “mines closure” and transfer to greener energy. Still, the mining sector accounts for almost 1% of Czech GDP, approximately 2 billion euros annually. Czech mining industry mainly produces coal and lignite. “It is important to appreciate that the coal sector in the Czech Republic is basically divided into two parts: brown coal (lignite) and bituminous coal. Both of these sectors have their own energy security issues and energy mix diversification influences. From the Czech energy security point of view, it is the brown coal sub-sector that is the most significant.” (Vlček and Jirušek, 2015, 29) More than half of electricity in Czech Republic is generated from coal burning and this sector remains a powerful industry ruled by oligopoly of wealthy corporations.

### 3.7.4 Socio-political impact

Czech Republic belongs to the “black triangle” of coal mining countries along with Poland and Germany. “Owing to the wasteful usage of this most-polluting of fossil fuels, the Czech CO<sub>2</sub> emissions rank among the highest in the EU in both per-capita and per-unit-of-GDP terms. Moreover, emissions from the energy sector have barely abated at all in the past two decades, betraying the non-existence of any meaningful climate policy.” (Patočka, 2019) Until recently, the most concerns regarding mining industry were „focused mainly on its impacts on health, landscape and, most importantly, human habitation.“ (ibid) After the collapse of the Eastern bloc, newly formed Czech democratic government introduced a limit for territorial expansion of coal mining, though it allowed the industry to function at least until 2050. However, a bit over a decade after, Czech mining companies started lobbying for expansion of territorial limits. The stagnation of Czech climate policy has been a precondition for coal business to flourish. This concerns not only the State-owned ČEZ, but also the Czech coal company which was acquired by Czech oligarchs Pavel Tykač and Jan Dienstl “ who have gradually re-purposed it into the Northern Energy Company, a prominent and aggressive anti-mitigation player in the Czech energy sector.” (ibid)

The anti-government and anti-mining protests in Czech Republic started being more frequent in the recent years. As it is stated in the European Commission report on Public Administration characteristics and performance: “The value of the Power Distance Index is higher than the EU-28 average, i.e. less powerful members of a society accept and expect that power is distributed unequally and people do not strive to equalise the distribution of power and do not demand justification for inequalities of power. Society is perceived as hierarchical, and hierarchy in an organisation is seen as reflecting inherent inequalities. This supports centralisation and can be reflected in lower voter turnout, which

may indicate that people have resigned themselves to the situation, do not trust governments and do not think that there is real competition between parties.” (Špaček and Nemeč, 2018, 203)

### **3.8 Cyprus**

#### **3.8.1 Historic background**

Cyprus is a small island in Eastern Mediterranean. It has been historically a mining country, where mining activities go back to 2600 BC, when Cyprus became famous for its copper reserves and copper trade with nearby countries. The activity continued until 4<sup>th</sup> century BC, when it declined. One of theories suggests that Cyprus got its name thanks to copper mining. Copper mining was revived in 1916 when copper was discovered in Skouriotissa and continued until Turkish invasion in 1974. Since the invasion mining industry has constantly decreased due to exhaustion of copper mines and unprofitability of their excavation. Today, only Skouriotissa copper mine is functioning. However, there are over 200 quarries in Cyprus which produce industrial materials, mainly for domestic use, such as: “asbestos, bentonite, copper, gypsum, lime, limestone (known locally as havara), marble, sand and gravel, and umber and ocher.” (Hastorun, 2019, 11.1)

#### **3.8.2 Employment**

Even though Cyprus accommodates over 200 quarries and 1 copper mine, number of employees remains relatively low. According to Human Resources Development Authority of Cyprus mining and quarrying sector employed 754 people in 2017. However, the sector is expected to grow as new materials are being explored. By 2027 mining sector is expected to employ 969 people. (Mytidis and Panagiotou, 2017, 18)

Cypriot miners benefit from relatively high salaries, above average. According to Brief journal, the average salary in mining and metallurgy sector is 2802 EUR in 2019. (Polykarpou, 2019)

#### **3.8.3 Economic impact**

Mining and quarrying sector play insignificant role in Cyprus economy in general, generating approximately 0,11% of annual GDP in 2017, reaching 20,9 million EUR. (Dialogos, 2017)

Even though the mining plays little role in economy, it is still an important sector as it provides Cyprus with necessary construction materials for roads, buildings, ports etc. This makes Cyprus independent on construction materials needs and gives greater opportunity for development of infrastructure. Cyprus is determined to opening another copper mine in Apliki in the following years. “Mining and quarrying output is expected to continue to increase owing to greater demand for industrial minerals. Copper cathode production is expected to increase once the Apliki Mine begins operating. The

exploration of gold deposits is at an early stage. Cyprus may become a producer of refined gold if the proposed gold refinery receives the requisite permit. The ongoing offshore hydrocarbon exploration has the potential to turn Cyprus into a natural gas producer and exporter if the Aphrodite field is developed as planned and additional reserves are identified in other blocks within the Cyprus EEZ.” (Hastorun, 2019, 11.2)

#### **3.8.4 Socio-Political impact**

The mining sector is regulated by Mines and Quarries (Regulation) Law. As Cyprus is the member of the EU it falls under EU legislation as well. Even though the regulation exists and governmental institutions along with local authorities are responsible for issue of mining permits, there are still concerns regarding the transparency and efficiency of these regulations. According to the research conducted by Cyprus market research agency CYMAR: “Nevertheless, average ratings remain below the mid-point of the assessment scales, as large segments of Cypriot society remain distrustful of the government and dissatisfied with its performance (42% respectively). (CYMAR, 2018) The same statistics goes for the trust in judiciary: “Only one out of four Cypriots (25%) trusts the judicial system of the country. A majority of 44% expresses distrust and an equal incidence of citizens also expresses dissatisfaction with the performance of the judiciary.” (ibid)

Anti-mining attitudes can rise in light of problems caused by abandoned mines all over Cyprus. “These abandoned mines cause severe off-site environmental problems and health risks for the local population. Groundwater supplies are affected by the leaching of pollutants, surface water is contaminated because of water erosion, and harmful dust containing heavy metals or asbestos is spread due to wind erosion. In addition to the environmental risks associated with the abandoned mines, many of these sites are aesthetically unattractive, and remain an economic burden to stakeholders and the public in general, due to the downgrading of surrounding areas, non-development and hence loss of revenue. These factors are important in Cyprus where tourism is a significant source of income for local communities.” (Helsen et al, 2009, abstract)

### **3.9 Italy**

#### **3.9.1 Historical background**

„Italy’s long extractive tradition developed in regions rich with raw materials such as Tuscany, Sardinia, Lombardy, Piedmont and Sicily. The mining traditions of these territories were asserted starting from the end of the 1800s, when the invention of dynamite and the adoption of a national regulatory framework, which facilitated the acquisition of mining concessions, encouraged the transition toward an industrial scale extraction.” (Associazione Mineraria Italiana, 2017, 16) “Looking at trends in recent

years (2008-2014), the mining sector was affected by a strong reduction, in large part determined by the global financial crisis of 2008, which greatly involved the energy and metallic sectors as well as that of industrial minerals. The category of raw materials linked to industry, in particular, saw a 20% reduction in its number of firms while the main macro-economic variables – turnover, added value, employment and fixed investments – recorded shrinkage of 30% each.” (Associazione Mineraria Italiana, 2017, 17)

### **3.9.2 Employment**

The mining industry is quite large in Italy, however, due to the huge size of Italy’s population, the number of mining sector employees is relatively low. According to different sources the sector employs between 18 000 – 30 000 people, making 0,2% of employed population. (Associazione Mineraria Italiana, 2017, 16) Mining sector is providing decent salaries, which are amongst the highest in the country. According to Italian Statistical Agency ISTAT the salary in the mining sector reaches 53370 EUR per year, although it depends on the region. (Istat, 2019) Vast majority of active mining companies are small-sized with less than 10 employees. (Perez, 2015, 23.1)

### **3.9.3 Economic impact**

“Extraction of non-energy minerals in Italy is mostly focused on industrial and construction minerals such as bentonite, bleaching earth, limestone, marble, granite, clay, sand, gravel, travertine and ceramic minerals (feldspar, kaolin, refractory).” (Minlex. 2020)

The mining and quarrying industry in Italy has a great importance for national economy, even though the production rates are decreasing in the recent years. “Yet, despite an overall negative trend and their scarce united economic value, the industrial mineral sector has a number of characteristics that bring out its indisputable importance for the Italian economy. These minerals are essential inputs for most of the manufacturing industry and for construction which together represent 20% of the national added value and 30% of the employment in Italy.” (Associazione Mineraria Italiana, 2017, 17) “Italy has some worldwide leading positions: it is the third largest producer of feldspar (the second in Europe) and the tenth producer of talc (the third in Europe)” . (Associazione Mineraria Italiana, 2017, 18) In total, Italian mining industry generates value of over 6 billion EUR per year, according to Eurostat data for 2018. However, according to the same statistics, in 2016 the production value was above 36 billion EUR per year. (Eurostat)

### **3.9.4 Socio-Political impact**

„The Government had ultimate control of Italy’s mineral industry. Mineral resources are, by law, the property of the Italian nation, but private and mixed public and private entities were the principal

owners of Italy's mineral industry." (Perez, 2015, 23.2) "Due to the decentralised permitting regime, in Italy the authorities responsible for permitting issues for onshore "first category" and "second category" non-energetic minerals are the Regions, i.e. all minerals quarried (sandstone, igneous rock, limestone, chalk and dolomite, sand and gravel, silica sand, common clay, shale) or mined onshore are subject to Regional Administrative regulations (each Region has different permitting procedures)." (Minlex, 2020)

„At present, Italy's mining industry is going through a difficult moment due to both cultural and economic-productive factors. [...] there is a widely-spread negative public opinion, which by now has dealt a blow to all industrial businesses and mining in particular." (Associazione Mineraria Italiana, 2017, 19)

For several years there has been a big discussion regarding potential closure and negative impact of marble extraction in Carrara, Tuscany. The Carrara marble field is one of the largest in the world and has been exploited for thousands of year. Carrara marble is considered to be of the best quality and with historic importance as many famous sculptures and building were constructed with use of this marble. Marble business provides thousands of jobs to locals, however growing dissatisfaction with the destruction of mountains, environmental issues and lack of investments into one of the poorest towns in Tuscany is growing. There have been several controversies regarding the companies that are mining marble in Carrara. One of them is the fact that in 2014: "The Saudi Binladin Group (SBG) has announced the purchase of a company authorised to extract one third of the marble from the hills above the Tuscan town in a deal worth almost €45 million". (Willan, 2014) For local activists marble is a precious historic raw material and they are dissatisfied with the actions of foreign companies.

### **3.10 Lithuania**

#### **3.10.1 Historic background**

"In Lithuania, minerals have been systematically explored since about 1946 and by 1958; the deposits of all currently used solid minerals have been discovered. The development of the search and exploration works lead to the increase in the number of deposits and amount of minerals as well as the increase in volumes of extraction due to rapid development of construction of industrial and residential buildings, agriculture. In 1960– 1972, the country's economic activity required 20–30 million m<sup>3</sup> mineral recourses each year: gravel, sand, limestone, dolomite, clay, peat and opoka, therefore, geologists were set the target to find new deposits and "restore" the used deposits in such way. Both the previously discovered and currently explored minerals constitute a valuable national wealth. The value of thoroughly explored minerals and groundwater alone amounted to 64 billion Lit

in the early 2012. It constitutes a large share of the national wealth of the Republic of Lithuania. It should be noted that areas of minerals occupy only approx. 4% of Lithuania's territory" (Bukantis et al, 2012, 142)

### **3.10.2 Employment**

There is no available information regarding the full picture of employment situation in Lithuania's quarrying industry. At the same time Lithuanian Quarry Association members, which jointly dig and process about 40% of all dolomite and sand, gravel and other products used in Lithuania, constantly employ more than 2500 people. (Lietuvos karjerų asociacija, 2020) According to Lithuanian Government Statistics in 2019 1470.4 thousand people were employed in the country. (Official Statistics Portal, 2019) According to the European Steel Technology Platform review, 0,3% of employed population are working in mining and quarrying sector, making almost 4500 people across country. (ESTEP, 2016, 36)

Salaries in Lithuanian mining sector are relatively high, reaching 1500-1600 EUR per month in 2017. (Lietuvos darbo birža, 2017, 7)

### **3.10.3 Economic impact**

According to various sources, Lithuanian mining and quarrying sector generates between 0,4-1% of national GDP. (Jakaitienė et al, 2003, 83) (ESTEP, 2016, 36) "Currently, there are 17 types of minerals explored in various levels in Lithuania, 9 types of which (limestone, dolomite, sand, gravel, clay, chalk marl peat, sapropel and oil) are utilised. The majority of excavated minerals are used for production of construction materials. According to data of 2011, the extraction of minerals is increasing in Lithuania again. The highest amounts of extracted minerals include gravel, dolomite, peat and limestone. Solid mineral deposits occupy only approx. 4% of Lithuania's territory." (Bukantis et al, 2012, 153) "The main axis of national economy – road building and maintenance – consumes the largest part of the locally excavated and properly processed raw materials. Mineral resources are necessary for construction, energy sector, agriculture, high technologies, food industry, health care and other systems." (Skrinskas et al, 2010, 221)

### **3.10.4 Socio-Political impact**

"The currently existing legal system thoroughly regulates the conditions and accounting of extraction of minerals and compliance with environmental requirements. The Lithuanian Geological Survey under the Ministry of Environment accumulates data on the minerals, performs the accounting of mineral extraction, approves and registers new deposits, issues permits for the use of underground resources". (Bukantis et al, 2012, 144) The legal base of Lithuania provides for that the underground and its mineral

resources are an exclusive property of the state or the state has an exclusive right to the underground – this emphasizes that the objects important to national security must be owned by state. Assurance of the rational use of resources is of a public interest, without mineral resources Lithuania would have very limited as well as much more expensive possibilities to develop and improve transportation infrastructure sector which is one of the strategically important bases of national economy.” (Laurinavičius, 2010, 221) Due to responsible mining practices, there is almost no long-term damage to environment caused by mining in Lithuania. As Vyda Elena Gasiūnienė writes: „Though deposits of solid mineral resources in Lithuania often have different geological structure and are found in different natural conditions, the mining poses relatively small threat to the stability and integrity of geosystems. The impact is most often short-term and can be compensated by rational and effective recultivation, which sometimes can even improve the quality of the environment.” (Gasiūnienė, 2007)

However, there are still a few problems that are present. Lithuania requires extraction of mineral materials for continuing growth and development, however, in the nearest future there will be a need to develop new quarrying sites. The problems stand in the lack of available free land for mining and conflicts between landowners who purposefully acquire land in the sites of mineral resources in order to artificially raise price in the future. There will be a negative impact on the “country’s economic development as this will cause the increase of prices of raw materials and construction materials made of these raw materials.” (Bukantis et al, 2012, 205)

### **3.11 Malta**

#### **3.11.1 Historical background**

Malta is a small rocky island in the middle of Mediterranean Sea. The only valuable resource on Malta is Maltese Lower Globigerina Limestone that is being extracted on the island for thousands of years and used for construction of building and sculptures. Until nowadays, the stone is still mined and holds a status of “Global Heritage Stone Resource” given by UNESCO. (Cassar et al, 2017, 221) “The geology of Malta also includes clay, chalk, phosphate and chert (in order of abundance). The quarrying of clay deposits is prohibited, while the other minerals remain untapped by the local quarrying industry, mainly because their existence remains largely unrecognized.” (AggNet, n.d.)

#### **3.11.2 Employment**

Due to the small size of territory and mining industry in Malta the number of employees is very low. According to the report by Sinan Hastorun, mining and quarrying industry in Malta employs approximately 180 people full-time and around 500 people part-time who are mostly family members of quarry owners. (Hastorun, 2018, 30.1)

### **3.11.3 Economic impact**

Mining constitutes a minor part of Maltese economy. “The major mineral commodities produced in Malta in 2015 were limestone (Coralline and Globigerina) and solar (evaporated) salt. Both minerals were used locally, mostly in construction and lime manufacturing, respectively” (Hastorun, 2018, 30.1)

“The major constraints preventing the quarrying industry from expanding to its full potential in Malta are the lack of territory and the limited rock resources. This is aggravated by an insularity which has retarded modernization and restructuring within the context of global competition. The environmental impacts of quarrying are also more readily perceived in a very densely populated country such as Malta.” (AggNet, n.d.)

### **3.11.4 Socio-Political impact**

“Many Maltese quarrying companies are family-run businesses that have accumulated experience and knowledge from earlier generations rather than relying on scientific innovations.” (ibid) “Malta has similar problems to other small territories where the availability of land for quarrying is restricted. Many quarries have nearly exhausted the rock resources within their permitted boundaries, and new quarrying sites are not permitted.

Land-use planning in Malta is the responsibility of the Planning Authority, which also requires that any quarry development should be supported by an environmental impact assessment report.” (ibid)

Due to the small size of territory and dense population, quarries often are located nearby towns and villages, which creates problems for local people, mostly noise pollution, and environmental issues relate to mining. The environmental problems include lime dust and destruction of ecology, which is the result of an inefficient and unsustainable use of quarried rock that is mostly landfilled with hazardous waste, and this makes its recycling unfavourable. (ibid)

## **3.12 Portugal**

### **3.12.1 Historical background**

Portugal has a long history of mining and quarrying. “From the 1950s, and with particular emphasis on the 1980s, the mining industry was booming, beginning with tin and tungsten in central parts of the country, and later focusing on precious metals and base metals” (Björkman, 2019) “In Portugal, the mining sector legislation was reformed in 1990. Prior to that, there was no legal obligation to rehabilitate mining sites, and the abandoned mines still have an environmental impact. The state-owned mining company EDM is now responsible for the ecological rehabilitation of old, mostly

uranium mines. Since 2007, half of the royalties paid by the now operating mining companies have gone to EDM for mine refurbishment.” (ibid)

Portugal has seen some mining accidents that pushed government to rethink the ways quarry planning in the country. On November 19, 2018 “the landslide on the road between Borba and Vila Viçosa brought down large quantities of rocks, marble blocks and land into a quarry next to the road.” (TPN/Lusa, 2018). „Two workers from a marble quarrying company, who worked at the active quarry, died as well as three other men who were in two cars on the road that collapsed into the closed-down quarry.“ (ibid)

### **3.12.2 Employment**

Mining sector productivity has been slowly decreasing in the recent years. Nowadays, industry employs around 10500 people countrywide. According to the Meusalario.pt website, medium salary of a miner in Portugal is around 840 EUR per month, while medium salary in the country is around 900 EUR per month, depending on the region.

### **3.12.3 Economic impact**

“Despite its small size, Portugal has a great geological diversity. Portugal's territory covers 50% of the Iberian Pyrite Belt, which is considered to be the EU's most important metallogenic region. Portugal has world-class mineral deposits, such as Neves-Corvo (Cu, Sn, Zn), Panasqueira (W), and Aljustrel (Cu, Zn), and is one of the EU's major producers of copper, tin, lithium and tungsten, and globally important producer of decorative stones (marble, limestone and granite).” (Björkman, 2019) “Since 1994, about 0.5% of Portugal's GDP has come from mineral production. In 2017, copper concentrates accounted for the largest share of mineral exports, 30%, and marble and limestone 25%. The mining authority in Portugal is the DGEG Energy and Geology Agency and is also subject to applications for the exploration for and exploitation of mineral resources. According to DGEG, in 2017 the Portuguese mining industry had a production value of 1073 million euros, the export value of 899 million euros” (ibid)

With the current European policy of transition to renewable energy and carbon neutrality, there is a growing demand for lithium-ion based electronic batteries that can also be used in electric cars. The market of electric and hybrid cars is constantly growing and Portugal sees opportunity to boost its economy with Lithium mining. Portugal has one the largest lithium resorts in Europe and, therefore huge potential for development of the industry.

### **3.12.4 Socio-Political impact**

“Due to the growing importance of mineral resources, in 2012 the Portuguese government launched a national strategy for geological and mineral resources aimed at better identification, exploitation and

protection of resources. The first steps to implement the strategy were the adoption of a new proposal for a law on geological resources in 2015. It includes measures to improve the dynamism, competitiveness and environmental responsibility of the mining sector, but no specific legislation has yet been adopted. In the spirit of implementing the strategy, the Portuguese Mineral Resources Cluster network of private actors and universities has also been established.

On November 12, 2018, Público newspaper reported that implementation of the strategy had been patchy. Government plans include, for example, public tenders for lithium deposits in the country and the Jales gold mine, the first of its kind in the mining sector. However, these have been postponed several times and there is still no certainty about the timetable.” (Björkman, 2019)

The developing Portuguese strategy for lithium has already attracted a lot of attention by mining companies, who wish to exploit lithium sites. “As the world seeks to phase out fossil fuels, dozens of miners, such as Australia’s Fortescue, have applied for almost 100 licenses to explore for lithium in Portugal.” (Waldersee and Demony, 2020) On the other side, the strategy “has been systematically contested by the National Association for Nature Conservation, called Quercus. The organization publicly requested an “immediate suspension of the government’s strategy for lithium,” after conducting a study that concluded the process of mining for lithium, a non-renewable resource, will result in “high levels of CO<sub>2</sub> emissions.” They estimated that each lithium mine will emit an additional 1.79 million tons of greenhouse gases per year, which means it’s an energy development plan that’s still environmentally unsustainable.” (Martinez, 2019)

The wish of the government to boost mining industry and exploit lithium has also seen several protests of local communities who are concerned about the possible impacts of lithium and other mining activities’ impact on environment and their life in different parts of Portugal.

### **3.13 Hungary**

#### **3.13.1 Historical background**

Mining activities in Hungary go back to ancient times. After the World War II, the exploitation became more intensive and Hungary became one of the leaders in bauxite mining in Europe. In addition to bauxite, coal and lignite were also mined mostly in Northern Hungary. By the end of 1980s mines started to shut down and were abandoned, as the production was of low quality and unprofitable. After the collapse of the Eastern Block, the process of mines closure accelerated as the demand for Hungarian production reduced drastically. (Horváth and Csüllög, 2010)

The country has seen its worst environmental disaster cause by mining and metallurgy company MAL Hungarian Aluminium. In 2010 “a containment reservoir at the Ajka Alumina plant in western Hungary collapsed, releasing a million cubic meters of highly corrosive red mud that covered more than 1,000 hectares, or 2,500 acres”. (Kenarov, 2011) The accident caused death of 10 people and injured over 200. (BBC, 2016)

### **3.13.2 Employment**

Mining sector in Hungary is relatively small. According to Eurostat, there are around 4000 employees in mining and quarrying industry as of 2018. (Eurostat, 2018) According to JobsEurope website, the average salary of a miner in Hungary is slightly above average, reaching 1174 EUR per month. (Jobs Europe, 2019)

### **3.13.3 Economic impact**

Mining plays a minor role in Hungarian economy, making up only 0,2% of national GDP. „The mining of crude construction materials and other industrial minerals, such as clays, diatomite, lime, peat, perlite, and quartzite, was mainly for domestic consumption.” (Hastorun, 2015, 20.1) Coal production in Hungary has almost disappeared, however lignite production is still ongoing and as of 2018, Hungary mines produce 7,8 million tons of lignite per year (Mining and Geological Survey of Hungary, 2019, 4), 91% of which is used for electricity production. (Thomas, 2012) “The production of coal, particularly that of lignite, will remain much lower than the levels of the past, although production may increase slightly if new mines are opened as planned by the Government.” (Hastorun, 2015, 20.1) “All major mineral producers were privately owned, with the exception of bauxite producer Magyar Aluminium Ltd. (MAL) and hydrocarbons producer Hungarian Oil and Gas Co. plc (MOL). MAL had been nationalized in 2013 following its declaration of bankruptcy. The Government held a 25.2% ownership interest in MOL.” (ibid)

### **3.13.4 Socio-Political impact**

„The main responsible authority for mining is the Ministry of National Development, and under its jurisdiction, the Hungarian Office for Geology and Mining (Magyar Bányászati és Földtani Hivatal – MBFH) and the Mining Departments of the County Government Offices. Whether an area is open (exploration is permitted through exploration permits granted by the regional authorities) or closed (exploration permit can be obtained through mineral concession, which is contracted centrally) is determined by the MBFH in decrees. The MBFH issues licenses for geological and mineral exploration, extraction, the utilization of waste rocks, explosion activities, and activities related to water source protection. Since April 2015 regional mining authorities and several other authorities have merged to

form so called “governmental authorities”, and now the permitting procedure is considered a “one-stop-shop.” (Minlex, 2017, 13)

Even though the extraction of materials in the country is constantly declining and country is determined to reduce greenhouse gases emissions significantly in the following decades (bne IntelliNews, 2019) there is still some room for concerns. Namely, the trust of population in political institutions and judiciary is falling which can be a problem in the future. (Dimitrov, 2019)

### **3.14 Latvia**

#### **3.14.1 Historical background**

Latvia has poor variety of resources and they are mostly extracted for domestic use. Mostly peat, dolomite, sand, clay and limestone are mined in Latvia. Extraction of materials is practiced only in quarries. (Matzko, 2016, 27.1)

#### **3.14.2 Employment**

In Latvia, according to Eurostat around 3000 people work in mining and quarrying sector as of 2018. (Eurostat) On average according to [algas.lv](http://algas.lv) website, miners in Latvia get average salary of 950 EUR per month. (Algas.lv, n.d.)

#### **3.14.3 Economic impact**

„In 2016, Latvia produced mainly industrial minerals, including cement, dolomite, gravel, sand, and crushed stone. In 2016, Latvia was ranked ninth in global peat production.” (Matzko, 2016, 27.1) Mining plays a minor role in Latvian economy, the share of extractive industry varies between 0,4-0,6% of national GDP. (Kasjanovs, 2014) Latvian resources are mostly used domestically in the construction and manufacturing processes, generating added value, which account for about 2,3-2,5% of GDP. (ibid) Though mining sector is relatively small in Latvia, it is still very important for economy.

#### **3.14.4 Socio-Political impact**

„The Latvian Privatization Agency had privatized almost all small and medium-sized state-owned enterprises by yearend; only a small number of large state companies were not privatized. Latvian law designated several state-owned joint stock companies that could not be privatized owing to their strategic interest to the country.” (Matzko, 2016, 27.1)

The legal situation in Latvia is unique. All resources that are found on one’s land belong to the landowner. (Swedbank, 2015) This creates problems as every landowner is free to develop his land and

extract mineral resources, if such permission is granted. The interests of neighbours and local communities can be disregarded.

### **3.15 Slovenia**

#### **3.15.1 Historic background**

On the territory of Slovenia, mining was developed a few centuries ago. Three centuries ago, Slovenians started extracting lead and zinc and coal mining was also developed two centuries ago. Mining played an important role for development of Slovenian metallurgy, power production and glass industry. (Straziar, 2007, 47) However, today the mining industry has lost its significance in Slovenia as it became ineffective and costly. (Straziar, 2007, 48)

#### **3.15.2 Employment**

Mining is not a very big part of Slovenian economy, therefore according to John R. Matzko, there are about 2500 employees in the mining and quarrying sector in Slovenia. (Matzko, 2015, 40.1) According to Slovenian Statistical Office salary in the mining and quarrying sector is the largest average salary in the country, reaching 935 EUR per month after taxes. (Vrh, 2019)

#### **3.15.3 Economic impact**

„There was no metal mining in the country. [...] Industrial minerals produced included chert, clay, crushed and dimension stone, salt, and sand and gravel, most of which were consumed on the domestic market.“ (Matzko, 2016, 27.1) “The mining and quarrying sector was a minor contributor to domestic production; the gross value added by the sector was \$141 million, or 0.3% of the GDP.“ (ibid) There are small coal and lignite mining companies, however they will be closed soon due to the changes in the energy industry and regulations. The closure of these mines will have a significant impact on Slovenian energy pillar, as 30% of electricity in the country is produced on thermal power plant. (Interreg, 2019)

#### **3.15.4 Socio-Political impact**

„All mineral resources in Slovenia are owned by the state. The exploration and production of minerals, including oil and natural gas reserves, are governed by law No. 61/2010, as amended (the Mining Act), which entered into force in January 2011. The Ministry of Infrastructure is responsible for the administration, management, and oversight relating to the Mining Act, including granting licenses for mineral exploration, approving concessions for extraction of mineral resources, and the decommissioning of projects.“ (ibid)

Slovenian government is determined to environmental protection and rehabilitation of mining sites. Ministry of Environment developed a National Environmental Action Programme (NEAP) that states: “Companies still consider money spent for environmental protection a cost rather than a long-term investment which could bring a market advantage. Primarily those companies, which want to compete on the international market consciously, include environmental considerations in their business. Slovenia’s industry is export oriented and the number of such companies is constantly increasing.” (NEAP, 1999)

### **3.16 Romania**

#### **3.16.1 Historical background**

Romania has a long tradition in the mining industry and has important coal reserves that can ensure the continuity of production for more than 150 years. Before 1989, in Romania the mining sector provided jobs, directly and indirectly, for more than one million people. In the 14 mining regions of the country, over 150 localities depended on mining.

At the beginning of the 1990s, Romania had 464 coal and other mineral mines. By 2004, production had stopped at 344 of the most unprofitable mines. The Romanian government started restructuring the mining sector in 1997. At the beginning of 2004, a Mining Sector Strategy was approved for the period 2004-2010 in order to reform the sector (increase the profitability of the sector and support economic growth in the mining regions) and meet the requirements EU accession (elimination of coal subsidies by 2010). (Tantareanu and Ion, 2016. 10)

#### **3.16.2 Employment**

Before the collapse of the Eastern bloc, Romania had over 1 million workers in the mining industry. Today the number is far from that, reaching 36430 people in 2018, according to Eurostat, and is constantly decreasing as unprofitable mines are being closed. Average salary of a Romanian miner is close to the average salary in the country. According to Paylab Romania miners can get from 1206 RON minimum up to 4635 RON per month after taxes. Average net monthly salary in Romania is around 3200 RON per month. (Romania Insider, 2019)

#### **3.16.3 Economic impact**

Mining is one of the most important sectors in Romanian economy. Romania produces aluminum, cement, coal, copper ore, gypsum, iron ore, lead, natural gas, petroleum, salt, steel, uranium, antimony, mercury, gold, silver, lead, zinc and many other materials. Romania is the sixth largest coal producer in Europe, however the share of coal is constantly decreasing. In Romania electricity

production is diversified. “Over 80% of the country’s primary energy supply is met by indigenous energy resources, with coal and lignite accounting for a 17.8% share, this being slightly above the EU average.” (Euracoal, 2017, 41) Romania also has the largest known basin of gold on European continent called Rosia Montana. The value of gold and silver found in the area is worth approximately 3 billion USD. (Euraxess, n.d., 6)

#### **3.16.4 Socio-Political impact**

“In Romania, all mineral resources are owned by the state. The National Agency for Mineral Resources (NAMR) was the principal Government organization with regulatory and supervisory authority in the mining and petroleum sectors. State-owned enterprises continued to dominate in the energy sector, but privatization had been more successful in the industrial mineral sector.” (Matzko, 2015, 37.1)

Even though the existing legislation in Romania regulates mining activities, there are still serious concerns. Many anti-mining protests are present in the country as local people are concerned about degradation of environment, destruction of natural reserves and water contamination. The biggest problem, however, is the corruption that is wide-spread. “Romania’s natural resource industries suffer from a lack of transparency and can carry high corruption risks for businesses. Opaque bureaucratic procedures related to environmental approvals are one of the major problems for foreign investors in Romania” (GAN, n.d.)

The most famous recent anti-mining protest that was covered internationally was a gold mine project in Rosia Montana. “A corruption case in the mining industry sparked mass protests all over Romania when the Romanian mining company Rosia Montana Gold Corporation (RMGC), majority owned by Canada’s Gabriel Resources, employed fraudulent means such as bribery, fraud and procedural rule-bending to obtain approval for the gold and silver mining project in Alba County in the Apuseni Mountains (ERCAS, Dec. 2013). Romanians took to the street to oppose the approval of the environmentally risky project and the political corruption involved. The mining company is being investigated for money laundering and tax fraud. RMGC had reportedly paid over USD 300,000 to a phantom company, which was found to be connected to the network of Marcel Păvăleanu, an advisor to the Romanian government.” (ibid)

### **3.17 Slovakia**

#### **3.17.1 Historical background**

Even though Slovakia has a long mining tradition, it remained an agricultural nation until the 20<sup>th</sup> century. In the 20<sup>th</sup> century, Slovakia was part of Nazi Germany and later part of Czechoslovak state, which was part of the Eastern bloc. Both Nazis and Soviets contributed to development of industry in

Slovakia. “In the course of establishing powerful heavy industries in the new socialist nations, the leadership of the USSR assigned Slovakia the role of arms maker.” (ERIH, n.d) “After the fall of its communist regime, Slovakia has become one of the fastest developing countries in Central Europe. Minerals are the basis of production for metallurgical, electrical, chemical, ceramic and glass industries in Slovakia.

Slovakia has a large mining industry and it is the host of the world's largest magnesite deposits. The natural resources of Slovakia are mainly brown coal and lignite with small quantities of iron ore, copper and manganese ore as well. The mining sector has not made any significant contribution to mineral production in recent years.” (Thomas, 2012)

### **3.17.2 Employment**

Employment in mining industry of Slovakia had permanently decreasing tendency during last years. It is estimated that “from total industry the least number is employed in mining and quarrying industry, which in 2015 employed only 6 742 persons.” (Čulková et al, 2019, 15) “Decrease of employment in mining can be considered as negative social and economic impact of mining activity in Slovakia. New companies purchase Technologies, by which they increase volume of mining, sales of products, and at the same time number of employees is decreasing. Further reason for employment decreasing in mining can be due to the disinterest of people to make such physically demanded job.” (Čulková et al, 2019, 16) “Among positive impacts of mining belong increasing average monthly wage in the sector.” (ibid) Currently miners in Slovakia make between 712 and 1600 EUR, which is an average monthly wage in the country according to Platy.sk website. (Platy.sk, n.d)

### **3.17.3 Economic impact**

“Deployment of raw materials deposits in Slovakia is uneven. It depends mainly on geologic construction of the locality. Raw materials mined in Slovakia are determined mostly for domestic consumption.” (Čulková et al, 2019, 11) “Mining of brown coal and lignite covers domestic consumption approximately 80%. In the frame of energetic policy of Slovakia domestic sources of brown coal and lignite are considered as strategic raw material base, decreasing dependence on import of primary fuel and energetic materials, and as reserve in case of unpredicted situations and source of working possibilities.” (ibid) “Total rate of value of raw materials mining on GDP is negligible (0,5%), but this statistic data does not include value of consequently processed and adjusted commodities on mineral base that is multiply higher and it presents significant element in the economy and foreign trade of Slovakia” (Čulková et al, 2019, 10)

#### **3.17.4 Socio-Political impact**

“Sector of mining and processing of raw materials in Slovakia is full privatized and state as owner of reserved deposits of raw materials creates in accord with available legislation space and conditions for business subjects for effective using of raw materials.” (Čulková et al, 2019, 9) “According the Constitution of Slovakia raw material wealth must be protected and effectively used in connection to long-term needs of economic and social development of the society with regard to environmental aspects of sustainable development, beginning with geological research and using of verified stocks of raw materials.” (Čulková et al, 2019, 10) “Influences to the country and living environment, caused by mining, are vast. Such influences present only one of the most serious environmental problems of Slovakia. (ibid) “Mining of raw materials influences living environment mainly due to the change of relief and soil covering. Inhabitants, living in surroundings of mining works are influenced by too high dust and noise, which can cause rising of various illness. In spite of negative influence of mining there is necessary to support the sector from the side of state, since demand for raw materials in increasing by every year.” (Čulková et al, 2019, 16)

There have been several anti-mining protests organized by Greenpeace in Slovakia, however, these were mostly aimed at halting coal mining in the country. (The Slovak Spectator, 2018)

## 4 SUMMARY

*Table 2: Summary of the positive and negative impacts of SLO*

PARAMETERS COUNTRY	ECONOMIC (Benefits, Employment, GDP, Investments)	SOCIO-POLITICAL (Trust in government, National legislation, Rule of law, Historic events)	COMMUNICATION (Engagement, Reach-out)
Estonia	<ul style="list-style-type: none"> <li>• High salaries</li> <li>• Attractive employer</li> <li>• Scholarships and social activities support</li> <li>• 4% of GDP</li> <li>• Cheap electricity for population</li> <li>• 90% of electricity produced from oil shell, mined in Estonia</li> <li>• Road construction</li> </ul>	<ul style="list-style-type: none"> <li>• Existing legislation regulating mining activities, including obligation to keep environment safe and perform mine closure activities</li> <li>• Local municipalities can reject mining permissions, if state's interests are not violated</li> <li>• High level of trust in judiciary system both by the companies and citizens</li> <li>• Energy sector independence</li> <li>• Plans to develop the industry and build an oil refinery</li> <li>• Environmental damage and bad air quality in the mining region</li> <li>• Improper closure of phosphorite mines and environmental damage caused by them</li> </ul>	<ul style="list-style-type: none"> <li>• Public petitions to the government institutions which are reviewed and answered (Eesti Energia – the biggest oil shell miner belongs to the state)</li> <li>• Often state interest is higher than communities interest → environmental problems and noise pollution</li> </ul>

		<ul style="list-style-type: none"> <li>Climate activists and other groups unhappy with implementation of EU Green deal and government's commitment to reduce CO2 emissions.</li> </ul>	
<b>Poland</b>	<ul style="list-style-type: none"> <li>High salaries</li> <li>Social benefits for industry workers</li> <li>Most of electricity is produced from Polish coal</li> <li>Employment for large amount of people in traditionally mining regions</li> </ul>	<ul style="list-style-type: none"> <li>Long history and tradition of mining</li> <li>Energy sector independence</li> <li>Politicians dependence on miners votes – public perceives government as too political</li> <li>Legislation disregarding communities interests</li> <li>Decreasing trust in Polish government</li> <li>Decreasing independence of judiciary</li> <li>Increasing corruption index</li> <li>Non-compliance with EU strategy on decarbonisation and low determination to achieving carbon-neutrality</li> </ul>	<ul style="list-style-type: none"> <li>Lack of understanding between the government and local communities</li> <li>Mining sector is regulated by the government and regional authorities have no voice in future planning</li> </ul>
<b>Greece</b>	<ul style="list-style-type: none"> <li>Salaries above average</li> <li>Importance for economy (3% GDP, 5% exports)</li> <li>Employment of. 80 000 people directly and indirectly – occupying approx. 4% of Greek active population.</li> </ul>	<ul style="list-style-type: none"> <li>Existing legislations such as Mining Code, Mining and Quarrying work Regulation and Environmental Impact Assessment, which regulate mining activities.</li> <li>Low trust in government</li> </ul>	<ul style="list-style-type: none"> <li>Lack of transparent and constructive dialogue with the local communities.</li> </ul>

	<ul style="list-style-type: none"> <li>Regional growth and investments</li> <li>Mining activities may damage other economic sectors such as tourism, fishing, agriculture etc. if not properly managed.</li> </ul>	<ul style="list-style-type: none"> <li>Communities see environmental and social impact more disastrous than economic benefits</li> <li>Improper closure of old mines and damage caused by previous mining activities</li> </ul>	
<b>Spain</b>	<ul style="list-style-type: none"> <li>Mining sector accounts for 0,2-0,3% of GDP – 3 billion EUR. 30% is coming from Andalucia</li> <li>Regionally important employer, for instance in Andalucia 45 000 people are directly and indirectly involved in mining industry</li> </ul>	<ul style="list-style-type: none"> <li>Highly regulated sector by mining code and responsibilities delegated to regional governments</li> <li>Government’s dedication to environmental protection and green energy</li> <li>Long history of mining in Andalucia</li> <li>Environmental disaster in 1998 caused by mining in Doñana</li> </ul>	
<b>Latvia</b>	<ul style="list-style-type: none"> <li>Mining and quarrying accounts only for 0,6% of GDP</li> <li>High salaries compared to average</li> <li>Around 3000 employees</li> </ul>	<ul style="list-style-type: none"> <li>No hard mining, mostly peat, dolomite, sand and clay quarries – usually located on distance from people.</li> </ul>	
<b>Lithuania</b>	<ul style="list-style-type: none"> <li>Lithuanian resources important for various sectors of economy (quarrying for 0,4% GDP)</li> <li>High salaries (1500-1600 EUR in 2017)</li> <li>Members of Lithuanian Quarrying Association employ 2500 people, 0,3% of active population is employed in</li> </ul>	<ul style="list-style-type: none"> <li>Currently existing legal system thoroughly regulates the conditions and accounting of extraction of minerals and compliance with environmental requirements</li> <li>Concerns about environmental issues and change of terrain</li> </ul>	<ul style="list-style-type: none"> <li>Disputes between land owners who bought land with resources for the purpose to artificially raise land price in the future</li> </ul>

	mining sector, king totally around 4500 people	<ul style="list-style-type: none"> <li>Abandoned an unmanaged quarries left after the fall of USSR</li> </ul>	
<b>Bulgaria</b>	<ul style="list-style-type: none"> <li>High salaries</li> <li>Mining forms 5% of GDP</li> <li>Employment to 30 000 people directly and 120 000 indirectly</li> <li>Energy created mainly from coal and lignite</li> <li>Companies invest in social, educational activities</li> </ul>	<ul style="list-style-type: none"> <li>Traditionally mining country, high support for the reason that sector provides many jobs in light of high unemployment</li> <li>Existing legislation and rules regulating industry through Ministry of Energy/ Ministry of Environment</li> <li>High level of corruption</li> <li>Medium trust in government</li> </ul>	<ul style="list-style-type: none"> <li>Improving communication of companies with local people and other stakeholders, however remains low</li> <li>Lack of understanding both of the range of ways that business might contribute to development, as well as the potential benefits/damages for societies, communities and also for the businesses involved</li> </ul>
<b>Croatia</b>	<ul style="list-style-type: none"> <li>Mining sector employed 3963 people 2018</li> <li>Highest salaries, around Zagreb up to 9637 HRK in 2017 (approx. 1270 EUR) per month, while average salary in the country was around 5000 HRK per month</li> <li>Mining and quarrying 0,7% of GDP</li> </ul>	<ul style="list-style-type: none"> <li>Illegal quarries operating on non-rehabilitated old legal quarries</li> </ul>	
<b>Cyprus</b>	<ul style="list-style-type: none"> <li>Old mines being turned to touristic attraction</li> <li>Hellenic Copper Mines employs directly only 80 people</li> </ul>	<ul style="list-style-type: none"> <li>Copper mining is with historic importance in Cyprus</li> <li>Existing legislation regulating mining industry</li> </ul>	<ul style="list-style-type: none"> <li>Depending on people's reaction or no reaction, environmental impacts are reconsidered or not considered properly</li> </ul>

	<ul style="list-style-type: none"> <li>• Mining share in GDP is insignificant at 0,11%</li> <li>• In 2019, only 793 metric tons of copper exported</li> <li>• Self-sufficient regarding raw materials for construction works</li> <li>• High salaries</li> <li>• Unprofitable mining activities and exhausted reservoirs</li> </ul>	<ul style="list-style-type: none"> <li>• Improper closure of old mines in 20<sup>th</sup> century and their potential health dangers</li> <li>• Low trust in government</li> </ul>	
<b>Czech Republic</b>	<ul style="list-style-type: none"> <li>• Employment for 26 000 people in smaller communities mainly in Northeast</li> <li>• More than half of electricity in CZ is produced from coal mined in CZ</li> <li>• Average salary</li> <li>• Almost 1% of GDP</li> </ul>	<ul style="list-style-type: none"> <li>• Limit on coal mining amounts</li> <li>• Anti-coal mining movements</li> <li>• High share of coal mining in the country</li> <li>• Some coal mining companies belong to private owners who lobby for mining area expansion and destruction of nearby villages</li> <li>• Health and environmental issues</li> <li>• Recent mining accidents with human losses</li> </ul>	
<b>Hungary</b>	<ul style="list-style-type: none"> <li>• Mining and quarrying account only for 0,2% of GDP</li> <li>• Closure of non-competitive coal mines</li> <li>• Lignite mining employs only about 2000 people, the whole sector employs around 4000 people</li> </ul>	<ul style="list-style-type: none"> <li>• Accident on MAL Aluminium company in 2010 – major setback for mining and metallurgy</li> </ul>	

<p><b>Italy</b></p>	<ul style="list-style-type: none"> <li>• Quarrying employs over 30 000 skilled professionals, tens of thousands more employed indirectly. According to Eurostat data for 2018 – 17759 people were employed in mining and quarrying industry</li> <li>• Very attractive salaries – among highest in the country – around 53 000 EUR per year</li> <li>• Important sector for national economy and manufacturing</li> <li>• Local communities do not get economic and infrastructural benefits</li> </ul>	<ul style="list-style-type: none"> <li>• Environmental issues such as terrain destruction and pollution</li> <li>• Interests of locals not taken into account in the mining regions</li> <li>• Historical importance of marble in Carrara disregarded by mining and trade practices</li> <li>• Mining company suspicions owners</li> </ul>	<ul style="list-style-type: none"> <li>• Foreign mining companies do not value interests of local communities</li> <li>• Local communities opinions disregarded</li> </ul>
<p><b>Malta</b></p>	<ul style="list-style-type: none"> <li>• Quarrying sector employs approximately 180 full time employees. In total around 500 people, mostly part-time and family members.</li> <li>• Important material for construction (most buildings made of limestone)</li> </ul>	<ul style="list-style-type: none"> <li>• Opening new quarries is banned</li> <li>• Limestone is the only construction and valuable material found and quarried in Malta</li> <li>• Historically mined and used limestone; Global Heritage Stone</li> <li>• Environmental issues and noise pollution</li> </ul>	
<p><b>Portugal</b></p>	<ul style="list-style-type: none"> <li>• Employment for 10500 people directly</li> <li>• Production value of 1 billion EUR per year, Around 0,5% of GDP, vast majority exported</li> <li>• Medium salary</li> </ul>	<ul style="list-style-type: none"> <li>• Portugal's Strategy for Lithium</li> <li>• Local cultural heritage and environment disregarded as state plans high scaling lithium mining</li> </ul>	

<b>Romania</b>	<ul style="list-style-type: none"> <li>• Employment for nearly 36 000 people directly</li> <li>• High revenues from the sector</li> <li>• Average monthly salaries for miners</li> <li>• Self-sustaining electricity production and construction sectors</li> <li>• Corruption</li> </ul>	<ul style="list-style-type: none"> <li>• Very high corruption risk</li> <li>• Environmental issues in many parts where mining is present</li> <li>• Natural reserves endangered</li> <li>• Abandoned mines without rehabilitation</li> <li>• Long history of mining</li> </ul>	<ul style="list-style-type: none"> <li>• Mining companies not taking into account interests of local communities, decisions taken without consultations</li> </ul>
<b>Slovakia</b>	<ul style="list-style-type: none"> <li>• 6742 employees in 2015, decreasing</li> <li>• Average, or slightly above average salary</li> <li>• 0,5% GDP share</li> <li>• More independence in energy sector thanks to coal mining</li> </ul>	<ul style="list-style-type: none"> <li>• Mining prohibited in protected areas, nature reserves and nature monuments, including Tatra mountains</li> <li>• Environmental issues in the areas of mining</li> <li>• Explosion in Handlova coal mine in 2009, 20 deaths</li> <li>•</li> </ul>	
<b>Slovenia</b>	<ul style="list-style-type: none"> <li>• High salaries</li> <li>• Employment for 2500 people</li> <li>• 0,3% GDP</li> <li>• Materials for domestic use</li> <li>• Electricity made of coal accounts for 30%</li> </ul>	<ul style="list-style-type: none"> <li>• National Environmental Action Program</li> <li>• Closure and rehabilitation of most mines</li> <li>• Determination of government towards environmental protection</li> </ul>	<ul style="list-style-type: none"> <li>• Mining companies not happy for extra-spending on environment rehabilitation</li> </ul>

Green – positive impact of SLO

Red – Negative impact on SLO

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