POST MINING MANAGEMENT AND SOCIAL LICENSE TO OPERATE IN A DIFFERENT PART OF THE WORLD (ASIA, EUROPE, AFRICA, AMERICA, OCEANIA)

TEAM MEMBERS:

TATIANA TZOVARA tatitzov@gmail.com
ALEXANDER NOTAS alexnotas11@gmail.com
MARIA SARAFOGLOU maria.sarafoglou13@gmail.com
EFFH PAPPA effiepap01@gmail.com
MARY KALKOUNIA marykalkounia2002@gmail.com
Mining is a complex industry that require enormous energy and financial resource and copes with a variety of core problems. For example:

- how to standardize the operation of mining industry;
- how to ensure the safety of miners, how to avoid the occurrence of mining accidents;

Countries are actively committed to reducing the negative impact of mining.
POST MINING MANAGEMENT

- minimize the negative consequences of closure processes
- maximize potential positive benefits of closures
SOCIAL LICENSE TO OPERATE (SLO)

- 'the language of choice' by industry and stakeholders.
- Acquisition of economic certainty with respect to new projects and build 'reputational capital' for future ones.
- perspective is fundamental to its definition and purpose.
If a community does not support the development of a mine, commodity prices, no matter how high, will not necessarily generate a positive production/development decision.

**NOW:** development acceptance by all stakeholders affected.

**THEN:** commodity prices (economics) were the primary driver of mine construction.
Asia is rich in mineral resources due to unique geographical conditions. The main minerals are petroleum, coal, iron, manganese, tin, tungsten, antimony, copper, lead, zinc, aluminum, gold, silver, mica and precious stone.
Asia is rich with opportunity for the mining and metals sector with Asian companies rapidly catching up with North America and Europe in global mining investments.

Many countries regard mining as their main source of income, especially in Saudi Arabia, China, and Iran.

The first oil storage zone extends east to northwest China, south from Mesopotamia plain, Persian Gulf and the Iranian Plateau. From the east to Myanmar, and south to Sumatra.

The second oil storage zone rises from Sakhalin island to the north and passes through Hokkaido and the east of Taiwan island.

The third oil storage zone is located in western Siberia.

The Persian Gulf oil and gas fields located in Saudi Arabia, the oil reserves account for 60% of the total reserves in the world.
some of the world’s largest historic mines
undeveloped mineral deposits

proven mineral richness through history times
nearly unexplored by modern geological and geophysical methods

Myanmar’s case
APML has collected and compiled data from the British Geological Survey and Geological Survey of India to create one of the most comprehensive mineral databases in Myanmar.
✓ Use unrivalled, privately held geologic and mining database containing historic mine maps, proprietary surveys, and hundreds of thousands of assays to build the most prospective exploration portfolio in the country.
✓ Use leading-edge expertise and the best exploration technology to maximise discovery potential.
✓ Partner with industry-leading groups, leveraging our database in return for a share of generated projects.

On the doorstep of three of the world’s largest emerging economies
Another company is interested in Myanmar’s rich mines: Access Asia Mining PTE LTD is focused on the exploration of gold and copper deposits within underexplored mineral provinces in Australia and Myanmar.
Challenges for Myanmar mining industry in receiving social license:

- Water resource pollution
- Deforestation
- Land and crops damages
- Unsafty extraction
SLO IN THAILAND

Obtaining the recognition and trust from the Thai government – the lessons learnt from SSK Limestone Quarrying in Saraburi (ASEAN Secretariat, 2017).

✓ Environmental management
✓ Mine rehabilitation and biodiversity conservation
✓ Productivity and resource efficiency
SLO IN VIET NAM

The success of Nui Phao Mining (Tungsten) in achieving social license:

The success of Nui Phao didn’t come easy for Masan Resources, as the key milestones included acquiring funding, resolving community resettlement activities and training its workforce correctly to run the most efficient operation possible.

✓ Building the trust with mining stakeholders
✓ Supporting local enterprises
✓ Health, Safety and Environmental management
✓ Developing public-private partnership
The European mining industry has a long tradition, yet today it is also among the continent's most modern and most innovative industrial sectors. Discovering new deposits, mining and ore dressing all require major emphasis on research and development. Mining exploration, extraction and beneficiation are now supported by high-level technologies. The industry also promotes advancements in the areas of environmental, health and safety protection.

The European mining industry is fundamental for the continent's economic well-being. Consumption of aggregates, industrial minerals and metals in Europe has grown rapidly over the past decade. Today, Europe is almost self-sufficient in producing many industrial minerals and aggregates. However, it is a significant net-importer of most metals and metal ores.
MINE CLOSURE PLAN / SOCIAL LICENSE TO OPERATE

MINE CLOSURE PLAN

Remediation: The cleanup of the contaminated area to safe levels by removing or isolating contaminants.

Reclamation: The physical stabilization of the terrain (dams, waste rock piles), landscaping, restoring topsoil, and the return of the land to a useful purpose.

Restoration: The process of rebuilding the ecosystem that existed at the mine site (where applicable) before it was disturbed.

Rehabilitation: The establishment of a stable and self-sustaining ecosystem, but not necessarily the one that existed before mining began.

SOCIAL LICENSE TO OPERATE

The European mining industries, considering the consequences of mining process to the environment and therefore to the community, are now more willing to use environmentally friendly mining practices and contribute to the sustainable growth of the communities.

According to Eurobarometer, in the EU, public acceptance of the extractive industries is low, compared with other economic sectors, while trust in mining companies is generally higher in countries outside the EU.
The main tenets of the environmental policy are:

• maintenance of all equipment used to protect the natural environment in good working order

• identifying new technological solutions limiting industrial impact on the environment and implementing them as and when required and feasible

• development of waste management technologies and a continuous increase in the share of recycled waste in the total volume of generated waste,

• ongoing partnership with the local communities and government authorities for the benefit of the environment

• collaboration with the Ministry of the Environment in terms of the implementation of national environmental policy
Being a good neighbor is understood by the company as being responsible for respecting the social and cultural values of the regions where KGHM operates.

A perfect example of building relations with neighboring communities is the implementation of KGHM's CSR strategy in the Copper Belt in Poland. The company has for years supported local communities in activities connected with environmental protection, health protection, sport promotion, and the development of the arts and education. The company runs large scale programs promoting health, an active lifestyle and voluntary work.
POLYMETAL INTERNATIONAL (is an Anglo-Russian precious metals mining company)

Mine closure plan:
• To provide timely and effective closure planning and implementation of related measures
• To reduce financial, social and environmental risks when the operation closes and optimize social, economic and cultural opportunities for the host community
• To ensure the safety and stability of structures and facilities during and after the closure and for further and subsequent use
• To ensure that adequate financial resources are available to meet the full cost of closure
• To ensure that business is conducted in a socially responsible way and that obligations towards the dismissed personnel are met
Socio-economic contribution of the company:

• paying regional taxes
• invest in local communities — funding education, health, culture and infrastructure
• Job offers for the locals
GRECIAN MEGNESITE (is a Greek mining company that has to do with the extraction of magnesite)

Environmental plan:
• A biological waste treatment plant for the municipal waste of the company's employees.
• Development of action plans for energy saving
• Use of biomass fuels in their rotary kilns
• A recycling unit in the pre-enrichment plant that recovers the water used in the facility and reduces by 90% the fresh water consumption requirements of the facility.
Their contribution to community:

• Job offers
• Financial support to the local community
• Agreement with the town hall that:
  • The company has active role in the firefighting activities at Chalkidiki
  • The company receives the burnt land and restores it
Mining in Africa

FACTS

55% of the world’s diamonds led by Botswana and Congo

110 There are over 110 listed mining companies with operations in South Africa

22% Africa produces about 483 tons of gold- 22% of the world’s total production.

60% of the mining in Africa is gold mining.

30% Africa hosts 30% of the world’s mineral reserve.

source: miningafrica.net
• Mining of gold in the Sutherland (Giyani) goldfield began by Sutherland and Button in 1970. Currently, all the gold mines in the Sutherland goldfield have ceased operating and they were abandoned without any rehabilitation.
Toxic Dust blowing off Mine Dumps across Krugersdorp and Johannesburg
ANGLOGOLD, BARRICK AND RESOLUTE CO. PART OF THE SOLUTION.

- $200,000 annually would be paid to the governments of the mining areas
- $125,000 annually would be paid to an “empowerment fund” to finance national development projects
- Agreement for the purchase of local products
A miner in a rural artisanal gold mine chisels gold ore out of the earth in eastern Congo.
SOCIAL LICENSE TO OPERATE IN AMERICA

- It is obtained by respecting and understanding customs, culture, history and traditions of the region that the mine will be built
- A company can determine if it is obtained by making public surveys
- Without it even huge projects can be put on hold

It is determined by the public if a company takes an SLO or not
Paste-tailings are now dried out and laid flat in a facility, which makes them less volatile and more compact.

New technologies which use the excess cerium in stockpiles. Xsorbx uses cerium’s magnetic properties to remove phosphorus from water.

Using waste heat from mining to generate steam and power, thus decreasing the carbon footprint.

Molycorp had some profit with these policy changes until it filled for bankruptcy because of Chinese competition.

<table>
<thead>
<tr>
<th>Technology</th>
<th>Old Method</th>
<th>Green Mining Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Use and Emissions</td>
<td>Large amounts of grid power were necessary. Equipment used high-emission fuels like diesel and propane.</td>
<td>The mining site will have its own heat and power plant running on natural gas. Equipment will also run on natural gas.</td>
</tr>
<tr>
<td>Water Use/Wastewater production</td>
<td>Huge amounts of freshwater had to be pumped to the site for use. This water would then be used and up to 850 gallons of waste water would be produced per minute which then had to be pumped miles away to evaporation ponds.</td>
<td>Almost the entire initial freshwater brought in to start the process can be recycled. More than 120 acres of evaporation ponds will be eliminated and freshwater consumption will be reduced by about 90%.</td>
</tr>
<tr>
<td>Tailings</td>
<td>Mine tailings needed to be stored behind a tailings dam along with the wastewater.</td>
<td>Water will be removed and recycled from the tailings to create a paste. The paste will be layered and impact on the environment will be minimized.</td>
</tr>
<tr>
<td>Air Emissions</td>
<td>Harmful chemicals had been emitted into the atmosphere from previous methods.</td>
<td>The harmful chemicals are still produced, but now there are flue gas treatment plants to minimize CO2 and other chemical emissions.</td>
</tr>
</tbody>
</table>
TAMBOGRANDE PROJECT, NORTHERN PERU

- 125 million dollars project in Peru put on hold because of the community
- Concerns about how the mining would affect water
- 25% of the residents had to move out
- Riots and violence against the project management
- The project ultimately failed to obtain a SLO
EAGLE ROCK QUARRY PROJECT, CANADA

- Called by many a perfect example of how to obtain an SLO
- Respect to local people
- Early communication
- Recognition of every local situation
Oceania has 1,341 records of mines listed by the United States Geological Survey (USGS). The most commonly listed primary commodities in Oceania mines are Gold, Iridium and Nickel. Because of the large Australian mining sector, Oceania is also one of the biggest contributors to mining worldwide, on par with Latin America and Europe.
1. Enable all stakeholders to have their interests considered during the mine closure process.

2. Ensure the process of closure occurs in an orderly, cost-effective and timely manner.

3. Ensure the cost of closure is adequately represented in company accounts and that the community is not left with a liability.
4. Ensure there is clear accountability and adequate resources for the implementation of the closure plan

5. Establish a set of indicators which will demonstrate the successful completion of the closure process

6. Reach a point where the company has met agreed completion criteria to the satisfaction of the community and regulating agency
The mining operation's negative impacts on social infrastructure, community members' perceived contact quality and procedural fairness in dealing with company personnel significantly affected the community's acceptance of the mining operation through inferred trustworthiness of the company.

The results of path analyses in an Australian mining region showed that building trust with local communities was crucial for mining companies to obtain and maintain a social licence to operate.

The results highlight the importance of fair treatment and high-quality engagement of mining companies with communities, alongside mitigation of operational impacts, in securing and holding a social licence to operate.
Newcrest practises progressive landscape rehabilitation, undertaking continual work throughout the life of a mine.

➢ Each operation sets rehabilitation objectives based on considerations such as regulatory requirements, mine plan objectives, business resources, closure plan objectives and stakeholder considerations.

➢ Their approach to progressive rehabilitation aligns with regulator and stakeholder expectations, while taking into account the availability of operational areas based on mine plans.

➢ They consider whether future mining is likely to affect specific areas of the mine footprint to avoid rehabilitated areas being redisturbed later.
BIBLIOGRAPHY

• INTRODUCTION

https://www.ogel.org/article.asp?key=3856

• ASIA

http://apmining.com/
http://accessasiamining.com/index.html
https://en.wikipedia.org/wiki/Mining_in_Asia
https://www.researchgate.net/publication/333578661_SOCIAL_LICENSE_TO_OPERATE_IN_SOUTHEAST_ASIAN_MINING
• AMERICA

https://open.library.ubc.ca/cIRcle/collections/ubctheses/831/items/1.0081173

• AFRICA

https://www.sciencedirect.com/journal/resources-policy
• OCEANIA


- https://static.miningintelligence.com/store/assets/images/australiaandoceania/2.jpg


- https://www.newcrest.com/
YOUR ATTENTION IS APPRECIATED!!!