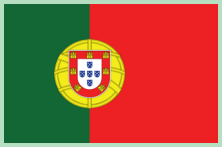
Case 13: Co-existence of Somincor Neves-Corvo polymetallic underground in a Natura 2000 area



This good practice case responds mainly to the challenge of mining in a Natura 2000 area with the necessary adjustments to the environmental constraints, with mining company strongly committed with high standards on social licence to operate.

Minland Good Practice Stream Topics:

C) Assessment of whether minerals and other land uses have been introduced on equal footing
G) Assessment of integration of social aspects and civil society involvement (SLO)

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Part 1: Case Overview

1.1 Executive summary

This case presents a very good Social License to Operate example, in Portugal, developed by Somincor - Sociedade Mineira de Neves-Corvo, SA., for the polymetallic underground mine, located in the Iberian Pyrite Belt in the Baixo Alentejo region, in the south of Portugal. This mine is called NEVES-CORVO and is located around 220 km from Lisboa and 102 km from Faro.

This mine is one of the EU largest underground copper mines and started its operation in 1988. Yearly outputs around 220K Tons of copper concentrate, 145K Tons of zinc concentrate and 10K Tons of lead concentrate, employing directly around 2000 workers. Presently, the mine is more than 1.000m deep.

The mine is located in Natura 2000 area within the Special Protected Areas (SPA) of Castro Verde and the Site of Community Interest (SCI) of Guadiana.

The mining project has been subjected to EIA and got approved with constraints due to the Nature Conservation Area. All the extensions/activities have been licensed.

Mining company has complied with all the obligations and has gone far beyond. The company has developed several programs and increased corporate social responsibility by developing actions to support local communities.

The Government also supports this initiative, by allowing a part of the value of the royalties that the company has to pay to the State to be allocated to develop actions in the region; in order to improve life quality of local communities, to increase public awareness, acceptance and trust in the mining sector.

To achieve this, the good networking work developed by the mining company with stakeholders, is very important and also increases the acceptance of the mine by local population, decision makers and Non-Governmental Organizations.

1.2 Overview of Key Good Practice Aspects and recommendations

Good Practice Aspect 1: Assessment of whether minerals and other land uses have been introduced in equal footing

Principle of parity: Land use decision makers recognizes the importance of the mineral resources and assesses the project with equal footing as other natural resources; this mine is located in Natura 2000 areas, and in the Iberian Pyrite Belt (one of the most important VMS provinces in the EU).
There are several actions taken by the mining company to increase the biodiversity in the region.
The principle of parity has been accepted due to all the work that has been done during the last 30 years in Portugal, among Governmental organizations, mining companies, land use and environmental decision makers.

Transferability: Create higher trust, transparency and proximity between mining company, mining authority and local land use decision makers.
The organizations with knowledge and competences on mining (mining authority, geological survey, universities and other experts) should present scientific, solid and substantiated arguments in order to explain the importance of mineral resources which are also natural resources.
To achieve this it is important that all the players (mining, land use and environmental) understands each other, and agree on essential and elementary issues, that are equally important to each of them. Every player must leave its “comfort zone” and make the necessary adjustments. The actors must be willing to compromise in order to reach a common ground.

Good Practice Aspect 2: Assessment and extent of integration between minerals and land use policies

Principle of coexistence: Consider the possibility of having different activities in the same area, with mining being a temporary activity which may be developed in coexistence with other activities in rural soil.
The organizations with knowledge and competences on mining (mining authority, geological survey, universities and other experts) should present scientific, solid and substantiated arguments in order to explain the importance of mineral resources which are also natural resources.

Transferability: Create regulatory framework on land use and mining accepting the possibility of coexisting activities in rural soil, similar to what happens in Portuguese legislation on rural soil. Law 54/2015 and DL 80/2015 and DR 15/2015.

Good Practice Aspect 3: Assessment of integration of social aspects and civil society involvement (SLO)

Mining company has high environmental and social standards, which are recognized by the authorities and local population, increasing cceptance, trust and commitment.
Government created royalties policy with focus on strengthening social, environmental and cultural standards, for the benefit of local communities.
Agreements and development of research with several Portuguese universities and NGOs for the increase of biodiversity in the area of the mine and surroundings.

Transferability: Mining companies have to be committed to high standards and have close relationship with local communities, authorities and NGOs, prior to opening the mine.
Create regulatory framework on the use of the royalties paid by the mining companies in applying part of the money in local developments.
Create partnerships between mining company, universities and NGOs.

1.3 Mineral resource groups

Metals

Part 2: Case description

2.1 Case description

Somincor- Sociedade Mineira de Neves-Corvo, SA., was created in July 24th 1980, after the discovery, in 1977, of a massive sulfide deposit with significant amounts of basic metals, mainly copper and zinc. Somincor is part of LUNDIN group.

Somincor Neves Corvo Mine is located in the south of Portugal, in Baixo Alentejo region in the Iberian Pyrite Belt which is one of the largest Vulcano Massive Sulphides provinces in the world. With excellent infrastructures built (railway, motorway, energy, airports nearby and access to sea port), Neves-Corvo is 220 km from Lisboa and 102 km from Faro.

Somincor Neves-Corvo mine has 6 massive sulphide deposits: Corvo, Graça, Neves, Zambujal, Lombador and Semblana. Presently, the mine is more than 1.000m deep at Lombador deposit. The mine is estimated to operate until 2027 although there is the possibility of operating far beyond, depending on the results of studies for the expansion of the waste dam facilities and further exploration works. This mine is one of the EU largest underground copper mines and started its operation in 1988. Yearly outputs around 220K Tons of copper concentrate, 145K Tons of zinc concentrate and 10K Tons of lead concentrate, employing directly around 2000 workers.

The mine is located in Natura 2000 area within the Special Protected Areas (SPA) of Castro Verde and the Site of Community Interest (SCI) Guadiana. There are a **Protection Area for Wild Birds** and **several Habitats** according to the Habitats Directive n.º 92/43/CEE (Habitat 92D0, Habitat 6310, Habitat 4030 (Anex B-I).

The mining project has been subjected to EIA and got approved with constraints due to the Nature Conservation Area. All the extensions/activities have been licensed.

Mining company has accomplished with all the obligations and has gone far beyond. The company has developed several programs and increased corporate social responsibility by developing actions to support local communities. Al this is being done on a voluntary basis by the company and also with some help from the Government which allows that up to 20% of the value of the royalties that the company has to pay to the State may be allocated to develop actions in regions where the mine operates to improve life quality and local programs, to create transparency conditions for mining companies to operate with a social “license”, to increase public awareness, acceptance and trust on the mining sector.

So the mining company develops several programs, in particular: Social programs for their employees, their families and general community; Environmental programs for the mining area and

surroundings, including protocols with NGO's and universities; Research, technical innovation and technology programs creating an expert network in the region, focused on the development of new best available techniques.

The mining company also takes innovative actions to disclose the work that has and is being done: prepared a field guide and a Film "The sound of earth-a mine of biodiversity" which is available here in PT/EN.

Currently, the situation in terms of nature conservation is very good, and we can tell that the existence of the mine has brought a big advantage for the local communities and the biodiversity in the area.

For all these the good networking work with stakeholders has been very important and also the proximity to the communities.

2.2 Responsible institutions

- Institution 1: DGEG – Direção Geral de Energia e Geologia
  DGEG is the Portuguese Mining Authority, who regulates, assesses and inspects the activity.
- Institution 2: ICNF– Instituto de Conservação da Natureza e da Biodiversidade

  ICNF is the Nature Conservation Agency, who has the jurisdiction on Natura 2000 areas and who issues opinion in all that connects to the activities in this area.
- Institution 3: APA – Agência Portuguesa do Ambiente

  APA is the National Environmental Authority, who regulates environmental impact assessment and assesses monitoring results and licenses some activities connected to mining activity
- Institution 4: CCDRA – Comissão de Coordenação e Desenvolvimento Regional do Alentejo

  CCDRA is the Regional land use decision maker, who coordinates the land use plans and applies the principles of parity and coexistence in them
- Institution 5: CMs – Câmara Municipal de Castro Verde (CMCV) e Câmara Municipal de Almodovar (CMA)

  The CMCV e CMA are the municipal political decision makers.

2.3 Case stakeholders

- NGO's
- Communities
- Society

These stakeholders were involved in several initiatives, meetings were held and the mining company took good note of their needs and interests and addressed them by creating programs and projects that aim to fulfil those.

2.4 Context

The Iberian Pyrite Belt (IPB) is a Variscan metallogenic province that is located in SW Portugal and Spain, and hosts the largest concentration of massive sulphide deposits worldwide- Zn–Pb–Cu and Zn–Cu–Pb metal content types. The dimension of the IPB is about 250 Km length and varies from 20 Km to 70 km wide. IPB contains more than 90 Vulcano massive sulphide (VMS) deposits, with mineral resources around 1700 Million tonnes (Mt), with 14.6 Mt Cu, 34.9 Mt Zn, 13.0 Mt Pb, 46,100 t Ag, 880 t Au and other associated metals, such as Sn. The Neves Corvo deposit where the mine is located, is the second biggest VMS in the world and one of the eight giant (≥100 Mt) VMS deposits in the IPB. The other eight giant deposits are Aljustrel (Portugal) and Rio Tinto, Tharsis, Aznalcóllar-Los Frailes, Masa Valverde, Sotiel-Migollas and La Zarza (Spain).

The deposit is completely blind with no surface expression, and has been discovered on 1977 by gravimetric geophysics which detected an important anomaly.

The mine started its operation on 1988 with copper production (extremely high Cu grades) and later some tin production. On 2005 there has been an expansion on drilling with the focus on Zinc. On 2010 there was the discovery of a new important deposit "Semblana", and now there are at least 6 discreet massive sulphide lenses identified in the Neves-Corvo mine.

Later on 2008, when the mine was already in full activity, the Natura 2000 network concluded the definition of the Castro Verde Special Protection Area (SPA) and the Site of Community Importance (SIC) of Guadiana, which overlaps with the mining site. The Castro Verde Special Protection Area (SPA), is the most representative steppe area in Portugal, with a total area of 85.345 hectares; the landscape is mainly composed of slightly undulated plains that cover wide low altitude areas (between 100 and 300 m). The stream valleys and the random quartzite outcrops characterize

the landscape. In this SPA the extensive farming practices are predominant, being the traditional farming system based on extensive dry farming of cereals rotating with fallow lands, which results in an annual mosaic of crops, ploughed lands, stubbles and fallow lands. The fallow lands are generally used as pasture for sheep and cattle. In this SPA there are also holm oak groves (montados), scrub forests and small olive plantations. The diversity and abundance of steppe birds is the responsible for the protection status of this SPA. There are a Protection Area for Wild Birds and several Habitats according to the Habitats Directive n.º 92/43/CEE (Habitat 92D0, Habitat 6310, Habitat 4030 (Anex B-I).

The Site of Community Importance of Guadiana, with an area of 39,257 ha, is mainly riparian, as it includes Guadiana River and many of its tributaries, where e The Guadiana River and some of its tributaries (Vascão, Oeiras and Terges/Cobres streams) are considered as of great value to nature conservation, functioning as an important corridor for many terrestrial and aquatic species. Guadiana Site is home to several species of endemic Iberian freshwater fishes, such as saramugo (Anaecypris hispanica), barbo-de-cabeça-pequena(Barbus microcephalus) and boga-do-Guadiana (Chondrostoma willkommii), some examples which happen to be endemic to the Guadiana Riverbed valleys surrounded by cliffs shelter a very diverse Mediterranean flora. The Guadiana Site also belongs to the historical occurrence area of the Iberian lynx (Lynx pardinus) and to the corridor of priority areas for its conservation, as it still maintains areas with potential habitat that can be enhanced to restore the essential conditions for the presence of this species.

The mining project has been subjected to EIA (2007) and Zinc Extension Project (2017) and got approved with constraints due to the Nature Conservation Area. All the extensions/activities have been licensed.

The EIA highlighted potential negative environmental impacts of the SPA and has identified a range of possible best-practice mitigation measures to reduce these impacts, which have been adopted by the mining company:

- SOMINCOR has developed a corporate and site strategy for reducing energy use and Green House Gases emissions which are monitored and reported as part of the Air Quality Greenhouse Gas Management Plan (“AQGHGMP”).
- The water management system was redesigned and reengineered in order to accomplish with the legal framework for the water quality.

The Mining company always used the best available techniques and best solutions to operate within a sensitive Natura 2000 area. All required a big effort and investment from the mining company and from the stakeholders to overcome the challenges.

SOMINCOR has a Community Investment Policy that seeks to build capacity in local communities, improve the social and environmental conditions in communities nearest the operations and to

create opportunities for employees to be SOMINCOR ambassadors in their communities. A significant amount of money has been and is being spent on education, community wellness, local supplier development and road safety initiatives. The SOMINCOR Community Investment Policy outlines the company's mission statement, objectives, priorities, exclusions and application process for funding organisations and projects.

The Portuguese Government is also committed with SLO, and has taken measures to promote that part of the money from the royalties is applied in the mining region by the company with other stakeholders, to improve life quality of the population.

The DGEG, representing the State which is the owner of the mineral resource, in the contract signed with the mining company (Somincor), has allowed that up to 20% of the amount of the royalties due to the State may be used by the mining company in local and regional programs/initiatives for the benefit of local communities. The value of exploitation royalties may be subject to a deduction up to 20% of the amount receivable in the following actions:

- % In local/regional social responsibility programs;
- % In local, regional or national environmental programs and geological and mining heritage projects;
- % To support projects proposed by local authorities (municipalities, districts) covered by the area of the mining concession;
- % in R&D internal mining projects focused on mineral optimisation of metal recovery

The Rules that need to be followed are:

-Portuguese Mining Authority (DGEG) has to approve the projects, programs and actions that will be developed with the use of up to 20% of the royalties.

-Portuguese Mining Authority (DGEG) will keep a database on the information spent by the mining companies in each activity/region in order to monitor this good practice.

This initiative has contributed to increase public awareness, acceptance and trust on the mining sector, and the results have supported the adoption of this innovative policy in other mining contracts. All this helps to build trust and transparency relationships between the populations, stakeholders, mining company and the Government, creating conditions for this mining company to be recognized to be operating with a social "license".

Part 3: Case Evaluation

3.1 Impact achieved

Impact 1 - Somincor vision and strategy include development of a high performance, motivated culture, achieving a safe, productive and healthy work environment, and to conduct their business activities ethically and transparently. Somincor belongs to Lundin Mining which is committed to giving back to the communities in which they operate by funding important social programs.

Impact 2- DGEG/Government policy on royalties: Since 2012 the Portuguese Government introduced a new royalties policy, which is supported by the National Strategy for Geological Resources- Mineral Resources (NSGR-MR) in the objective INCREASE SUSTAINABILITY ON ROYALTIES USE.

The royalties policy considers that up to 20% of the value of the royalties due to the Government may be used directly on sustainable projects for the benefit of local communities. This value may be applied to local and regional programs, plans and projects proposed by the civil society." The new royalties policy is achieved:

- By allocating part of the money coming from mining companies in regions where mining occurs to improve life quality and local programs.
- By creating transparency conditions for mining companies to operate with a social "license".
- By increasing public awareness, acceptance and trust on the mining sector.

So the mining company develops several programs, in particular:

Social programs:

- Protocol with "Association of Black Knights Village": Social project to support Hippotherapy and Therapeutic Riding lessons for children and youngsters with development disabilities from Almodôvar, Castro Verde municipalities and surrounding areas.
- Lunchbox Project Smile in Motion: Social design with the Alentejo Local Health Unit for delivering lunch boxes to needy students.
- Protocol with Several Group of Schools: Social project to support students of needy families with school supplies and food.
- Protocol to be concluded with the Senior University in Castro Verde: Social project, to support seniors in Castro Verde municipality.

- Farmers agreement: made agreements with local farmers so they can maintain the agricultural activity in about 50% of the company's land.

Environmental programs:

- Biodiversity Promotion Protocol: Environmental project in collaboration with the Government Body Institute for Nature Conservation and Forestry, in order to implement measures to protect the Saramugo- an endemic fish from the Guadiana basin- classified as "critically endangered" by the New Red Book of Vertebrates of Portugal.

- Noise minimization Project: Social and environmental design to reduce noise in the industrial area and nearby populations. In fulfilling its legal obligations, Somincor worked on its noise mapping, having noted the influence of the mining complex laboring noise in the nearby residential areas of the mining site.

- Projects with NGOs: for the protection of Nature and universities for the protection of endangered species (plants, lichens, fauna)

Research, technical innovation and technology programs:

- Project on Concentrates Quality Improvement : Research Project which aims to minimize penalizing minor elements in the concentrates. Somincor established a collaboration with the Laboratory of Kamloops Global ALS Canada, one of the most advanced laboratories in the world in this area which uses state of the art test equipment in mineralogical analysis. The study and analysis of concentrates aim to remove the penalizing elements and thus greatly increase its value.

- Recovery Improvement Project: Research Project on grinding optimization studies and regrinding's, also developing improvement on water quality studies. This project is a partnership with Grinding Solutions (England), Ian Warfc Research Institute of Australia, Imperial College of London, Technical University of Lisbon and the Faculty of Engineering of Porto University.

The mining company also takes innovative actions to disclose the work that has and is being done: prepared a field guide and a Film "The sound of earth-a mine of biodiversity" which is available here in PT/EN.

Now, the situation in terms of nature conservation is very good, and we can tell that the existence of the mine has brought a big advantage for the local communities and the biodiversity in the area. This has brought better infrastructure in the region, more direct and non-direct jobs in two municipalities, higher educational skills for children and youth, higher level of education for population with cultural impacts.

3.2 Good Practice Aspects: Elements and their transferability

Principle of parity:

In this case we face a situation where different natural resources compete for the same land: from one side we have one natural resource- mineral resource which is of great importance because belongs to a world class deposit located in the Iberian Pyrite Belt (as explained in 2.4), from the other side we have the definition of Natura 2000 areas which are also important natural resources (as explained in 2.4).

The mine started about 20 years before the final definition of the Natura 2000 areas, and has never created significant negative impacts in the surroundings and never harmed the natural heritage, allowing to classify the area as SIC and SPA.

Mining and land use decision makers have recognized the importance of both of the natural resources, and have agreed in creating conditions to harmonise these two different overlapping uses of land (for mining and for Natura 2000).

For transferability it is important to accept that mining activity developed in a responsible way may be an added value and also compatible with high exigency environmental standards.

It is also important to communicate, listen and be constructive when finding solutions. All players must understand each other (mining, land use and environmental), and agree on essential and elementary issues, that are equally important to each of them. Every player must leave its “comfort zone” and make the necessary adjustments.

Principle of coexistence:

Consider the possibility of having different activities in the same area, with mining being a temporary activity which may be developed in coexistence with other activities in rural soil.
Present strong arguments in order to explain the importance of mineral resources which are also natural resources.

For transferability it is important to create regulatory framework on land use and mining accepting the possibility of coexisting activities in rural soil, similar to what happens in Portuguese legislation on rural soil. Law 54/2015 and DL 80/2015 and DR 15/2015.

Social License to operate:

Mining company has high environmental and social standards, which are recognized by the authorities and local population, increasing acceptance, trust and commitment.

Government created royalties policy with focus on strengthening social, environmental and cultural standards, for the benefit of local communities.

Agreements and development of research with several Portuguese universities and NGOs for the increase of biodiversity in the area of the mine and surroundings.

For transferability the mining companies have to be committed to high standards and have close relationship with local communities, authorities and NGOs, prior to opening the mine.

The Government should create regulatory framework on the use of the royalties paid by the mining companies in applying part of the money in local developments and programs.

Create partnerships between mining company, universities and NGOs.

GOOD PRACTICE ASPECT 1:

Introduction of the principle of parity

Key elements (of Good Practice Aspects)	Suggestions for Transferability (of Key Elements)
Principle of parity: Mining and land use decision makers have recognized the importance of both of the natural resources, and have agreed in creating conditions to harmonise these two different overlapping uses of land (for mining in the Iberian Pyrite Belt which is one of the most important VMS provinces in the World and for Natura 2000).	For transferability it is important to accept that mining activity developed in a responsible way may be an added value and also compatible with high exigency environmental standards. It is also important to communicate, listen and be constructive when finding solutions. All players must understand each other (mining, land use and environmental), and agree on essential and elementary issues, that are equally important to each of them. Every player must leave its “comfort zone” and make the necessary adjustments. The objectives are: • Create higher trust transparency and proximity between mining company, mining authority and local land use decision makers. For this, meetings are held with stakeholders and decision makers, and a lot of fruitful discussion is taken. • Present strong arguments in order to explain the importance of mineral resources which are also natural resources. This should be done by the mining company and the mining authorities.

GOOD PRACTICE ASPECT 2:

Co-existence of land use introduced in legislation

Key elements (of Good Practice Aspects)	Suggestions for Transferability (of Key Elements)
Regulatory aspect: Consider the possibility of having different activities in the same area, with mining being a temporary activity which may be developed in coexistence with other activities in rural soil. Several actions and programs have been taken by the mining company to increase the biodiversity in the region. At a national level has been created regulatory framework on land use and mining accepting the possibility of coexisting activities in rural soil, similar to what happens in Portuguese legislation on rural soil. Law 54/2015 and DL 80/2015 and DR 15/2015. This might be applied also at regional level.	The Government at national or regional level depending on the administrative structure of the country/region, should prepare a piece of legislation where considers flexibility and co-existence of different land uses for each areas in the land use planning. The European Commission may also issue recommendations to the Member States on this land use practice.

GOOD PRACTICE ASPECT 3:

Re-investment into local communities

Key elements (of Good Practice Aspects)	Suggestions for Transferability (of Key Elements)
Mining company has high environmental and social standards, which are recognized by the authorities and local population, increasing acceptance, trust and commitment. Communication SOMINCOR has a Community Investment Policy that seeks to build capacity in local communities, improve the social and environmental conditions in communities nearest the operations and to create opportunities for employees to be SOMINCOR ambassadors in their communities. A significant amount of money has been and is being spent on education, community wellness, local supplier development and road safety initiatives. The SOMINCOR Community Investment Policy outlines the company's mission statement, objectives, priorities, exclusions and application process for funding organisations and projects.	Mining companies have to be committed to high standards and have close relationship with local communities, authorities and NGOs, prior to opening the mine.
wwGovernment created royalties policy with focus on strengthening social, environmental and cultural standards, for the benefit of local communities.	Create national or regional regulatory framework on the use of the royalties paid by the mining companies in applying part of the money in local developments.
Agreements and development of research with several Portuguese universities and NGOs for the increase of biodiversity in the area of the mine and surroundings. Due to the sensitive area on biodiversity the mining company decided to invest in research in the area and signed protocols with experts and Universities.	Industry, Government or universities should take the initiative to create partnerships between mining company, universities and NGOs.