

Case 12: Fokis Bauxite Mining: A case of reconciliation and co-existence of different land uses



This good practice case responds to Assessment of whether minerals and other land uses have been introduced on par.

Minland Good Practice Stream Topics:

C) Assessment of whether minerals and other land uses have been introduced on equal footing

H) Assessment of strategic consideration of safeguarding

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Part 1: Case Overview

1.1 Executive summary

The case of bauxite in the prefecture of Fokis (Region of Sterea Ellada) is a good practice case showcasing the possibility of mining to co-exist with different and competing land uses.

In the prefecture of Fokis a significant mining and metallurgical activity relates to bauxite takes place: three mining companies and one metallurgical industry while the area in which those industries operate is quite extended. At the same time, Fokis is well known for its archaeological and cultural heritage (Delphi archaeological site, byzantine monasteries etc), for naturalistic landscapes (regions of Natura 2000 and environmental sensitive areas) has intense touristic activity (ski centers) and also hosts Mornos, one of the most important water reserves for the capital of Greece Athens.

Despite all the different and conflicting land uses, the mining and metallurgical activities are still operating generating significant income for the Region. This was possible only after bilateral compromises, especially in order to gain local social acceptance. The solution was for the mining companies to stay underground and be invisible as long as possible and to harm the least possible surface area.

1.2 Overview of Key Good Practice Aspects and suggestions

The principal good practice aspects for the case of Fokis bauxite are the following:

- **The acknowledgment of mining interest of the Region through the inclusion of the mining in Spatial Planning can be helpful for the promotion of mining**
- **Respect for other land uses and compromise with related legislations. This could mean the change of the current mining practice (from surface to underground for example), but on the long term this practice will help gain social acceptance and build the trust with local communities.**
- **In land use planning, the declaration of extensive zones as “Regions of Exclusive Mining Exploitation” must be avoided as can lead to severe reaction by local community. It is preferable to allow mining to co-exist with other activities and not ask for exclusivity.**

1.3 Mineral resource groups



Part 2: Case description

2.1 Case description

The case of bauxites' extraction in Fokis prefecture presents an interesting aspect of the relationship between the minerals industry and land use planning, for the case of Greece.

The exploitation of Bauxites in the Prefecture of Fokis is competing with numerous other land uses:

- Exploitation and protection of archaeological sites and landscape
- Tourism
- Natura regions/ environmentally sensitive areas
- Water reserves

Yet, even though the environment appears very challenging for the realization of mining activities,

three mining companies are active and extract bauxite, while one of the biggest aluminium plants is also operating in the area. But this was not the case from the beginning. The decision of the authorities to designate large areas to mining exploitation led to severe reactions by the local community, which in some point also raised international interest for the protection of Delphic landscape. The solution came only when the mining activities were limited to smaller areas and the decision was taken to allow only underground mining. Therefore, the case of Bauxite consist one good example on how actual mining can be compatible with other land uses.

2.2 Responsible institutions

In Greece, the licencing and permitting of the Non- Energy Extractive industry involves both the Central government as well as the Regional/ Local authorities (L.3852/2010), namely:

- **The Ministry of Environment and Energy (YPEN) at the national level,**
- **the 7 De-centralised (Regional) Administrations (tiers of ministries) and**
- **the 13 Administrative Regions**

The mineral type, the size of the project/activity, any land use peculiarities of the area of intervention (i.e. frontier area, protected area), or/and the land ownership legal status determine which one from the above mentioned authorities will issue which license.

YPEN is the responsible authority for approving the exploitation of “Ores” as well as for issuing exploitation permits for industrial minerals and marbles. Furthermore, YPEN is the responsible authority for the environmental permitting of both surface and underground mines, as well as for the limestone quarries of the cement industry, all mines and quarries that are situated within protected areas such as Natura 2000, industrial mineral quarries that occupy areas larger than 250 acres, asbestos mines, etc.

On the other hand, the Administrative Regions grant exploration permits for ores, as well as for the industrial minerals and marbles occurring in private areas. The De-Centralized Administration grants consent for exploration activities for marbles and industrial minerals on public (state-owned lands), while the Administrative Region grants exploitation permits for aggregates on private areas, as well as exploitation of clays for the production of clay bricks or roof tiles, and extraction of slate slabs.

For the case of bauxite in Fokis prefecture, the ministry of environment and energy was the responsible body for issuing the exploitation and environmental licences while the Region of Sterea Ellada was the responsible body for issuing the Regional Spatial plan.

2.3 Case stakeholders

Aside from the institutions stated in 2.2 above, there are three categories of stakeholders. These are:

- A. Mining Companies.**
- B. Citizens/Individuals.**
- C. The Non-Governmental Organisations.**

2.4 Context

Bauxite extraction in the area of Fokis takes place over an extended area, as the Bauxite ROM ore is transferred and fed to the alumina plant, the only plant of this kind in Greece and one of the major aluminium plants at European scale. Thus, the activities related to raw material operations are in a very large scale and can affect a wide area of the Region. Regarding the ownership regime, the bauxite deposits are state owned but their exploitation is realised by three mining companies and is ruled by the Mineral Code (MC) dispositions.

Apart from the significant bauxite reserves, the area of Fokis also is well known for important archaeological, historical and cultural sites. For example, in this area, the Delphi archaeological site is located, therefore actions for the protection of the monuments and the landscape are in place. Furthermore, the presence of such a prestigious and world-class monument signifies increased touristic activity throughout the whole year. The area experiences increased touristic activity during the winter months due to the presence of one of the most well-known ski-centers in Greece (also the one closest to the capital of Greece, Athens). Fokis prefecture is also well known for hosting areas with high naturalistic significance (natural parks, Natura areas), therefore restrictions for the protection of environmentally sensitive areas are also in force. Last, but not least in the list of competing land uses, in the area also hosts Mornos water reserves; one of the major water reserves for the supply of the capital with water.

During the first period of bauxite mining, the ore was mined through open pit mining excavations. The importance of the mineral reserves led the authorities to concede to the mining companies large rights in the Fokis area and an extensive zone was declared as a “Region of Exclusive Mining exploitation “. This spatial planning designation triggered a significant opposition by the local community having as a peak the lodging of appeals by the Delphi authorities to the Council of the State asking for the annulment of the ministerial decision endorsing the Regional Spatial Plan. The reactions ceased only after **the designation of smaller areas for mining AND the decision for**

underground mining.

Therefore, the Fokis case is a characteristic case where the neighbouring of many competing land uses had significant impacts on land use planning policies in the Region of Sterea Ellada (Regional Spatial Plan under revision) as well as for the terms and conditions for the licensing of the individual mines. In the new Regional plan, designation of mining zones is not envisaged, despite the importance of these Mineral Raw materials and only underground exploitation of bauxite is allowed. **The Fokis case highlights that even for regions with complex and multiple land uses, it is possible for mining to co-exist with other activities.**



Part 3: Case Evaluation

3.1 Impact achieved

Due to the many commitments and restrictions enforced by the archaeological legislation for the protection of the Delphic landscape, underground mining was enforced as the designated method for bauxite extraction. This fact was beneficial for the mining companies active in the region since:

- The social acceptance of mining by the local communities was improved.
- The rehabilitation cost has decreased.
- The extraction efficiency was improved.

Currently, the landscape problems at the mining regions have been completely eliminated and the only remaining issues are located at the coastal area, at the bauxite transfer zone.

3.2 Good Practice Aspects: Elements and their transferability

GOOD PRACTICE ASPECT 1: Coexistence of mining with other land uses (tourism, cultural heritage, areas of naturalistic interest)	
Key elements (of Good Practice Aspects)	Suggestions for Transferability (of Key Elements)
<p>Acknowledgment of mining interest of the Region through the inclusion of the mining in Spatial Planning.</p> <p>The Regional Spatial Plan for Central Greece provides for the extractive sector the following strategic guidelines:</p> <p>a) Recognizes that the Region holds a distinct position in the international and European economic and business system due to its industrial production, the range of its MRM and the magnitude of the business groups operating in its territory.</p> <p>b) Designates the entire bauxite zone as zone of exclusively mining activity with the comment that this designation concerns the mining properties (only underground) whereas the local planning will determine the specific exploitation zones.</p>	<p>The designation of “suitability zones” for the extractive sector is a useful tool to establish priorities among different and conflicting activities.</p>
<p>Respect for other land uses and compromise with related legislations</p> <p>The restrictions imposed primarily by the archaeological survey led to the underground exploitation of bauxite. The decision of underground mining allowed the favourable designation of regional land planning.</p>	<p>Underground exploitation (when applicable) can diminish the negative reactions and allow co-existence of mining with other activities.</p>
<p>The declaration of extensive zones as Regions of Exclusive Mining Exploitation must be avoided as it can lead to severe reaction by local community.</p> <p>The Delphi authorities lodged appeals to the Council of the State asking for the annulment of the ministerial decision endorsing the Regional Spatial Plan. The reactions ceased only after the designation of smaller areas for mining AND the decision for underground mining.</p>	<p>The designation of areas for exclusive extractive use may provoke serious problems to the activity, especially if these zones embrace towns and settlements, important archaeological sites and landscapes etc.</p> <ul style="list-style-type: none"> • Only local spatial plans may proceed to the designation of extractive zones of main or exclusive use, applied on the ground (with coordinates).