

Land-Use Planning as an Instrument to Create Win-Win Situations for Host Communities and Mining Companies

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CONTEXT: PUBLIC PERCEPTION OF MINING

- **Mining is indispensable for modern industrial economies, but it has a price: (negative) environmental and social impacts**
- **The picture the public has of mining is shaped by the past**
- **Historically, mining companies often showed social / environmental indifference and a nonchalant attitude towards impacts**
- **Mine development plans have to be embedded into long-term regional development plans management plans right from beginning**
- **This provides for (but does not ensure) long-term stable relationship with the mining region**
- **Mines should create a win-win relationship with the host communities**

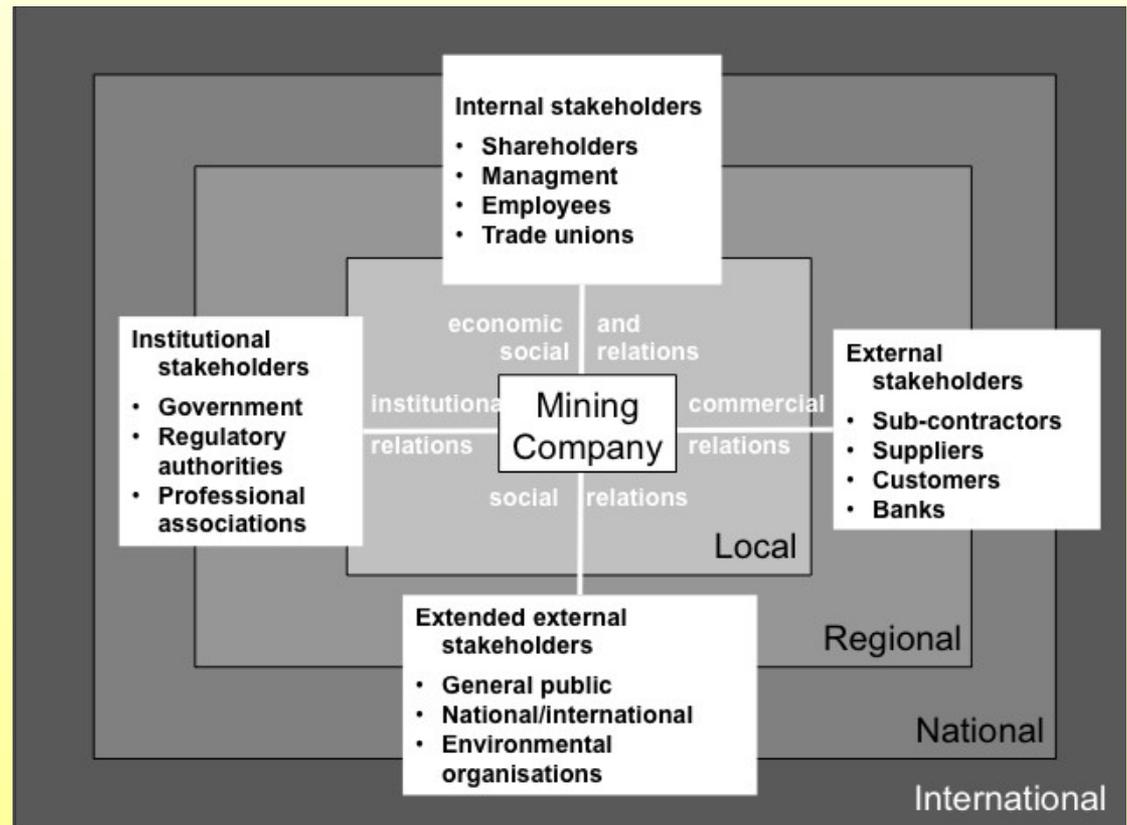
- **Although often being only a temporary land-use, mining and milling operations will permanently alter their sites and their surroundings**
- **A complete return to greenfield conditions will not be possible**
- **Open cast mines, spoil heaps, and/or tailings management facilities will remain at the surface**
- **These features will become legacies with which the host communities will have to live**
- **On the other hand, host communities have a vested interest in the sustainable and sustained development of their region**
- **Thus, a mine has to be integrated into the local socio-economic context and add value to the host communities.**

- **A mine impacts its environment and its socio-economic context**
- **Different stakeholders value impacts differently, depending on perceived benefits and burdens**
- **Impacts may lead to adverse reactions among the local population and beyond**
- **People have a natural and vested interest in the sustainable development of their regions**
- **Misunderstandings or disagreements over values and their non-respect by some actors are at the core of conflicts**
- **Mining projects, not only require (formal) environmental licenses, but also an (informal) ,social license to operate'**
- **Obtaining ,social licenses' increasingly faces difficulties anywhere in the world**

- **Land-use options are a problem of ‘social choice’:**
 - They involve a wide variety of concepts and criteria
 - Consequences of decisions are distributed in time and have distinctive time profiles
 - There is uncertainty due to natural system complexity and to social indeterminacies, such as unknown consequences of decisions etc.
 - It will not be possible to respect all rationales for acceptability simultaneously due to fundamental difference in norms and values
- The standard economics approach is to seek ‘rational’ justification for stakeholder choices based on preference
- Stakeholders differ in their interests and perceived rights or dues and may propose different principles for resolving this problem
- Each future land-use will produce different benefits, costs and risks that will be looked at differently by different stakeholders

WHO ARE THE STAKEHOLDERS ?

- A stakeholder can be ANY person or group, who claims to have an interest in a land-use decision
- It is important to be 'inclusive' in order to establish trust between the stakeholders



LAND-USE PLANNING FUNCTIONS

- **LUP is the key instrument to balance the varied interests and needs of all stakeholders and to resolve potential / actual conflicts**
- **LUP has to satisfy the natural resources, economic, housing and transportation network needs of stakeholders at all spatial scales**
- **LUP serves to protect the natural resources (e.g. NATURA2000 sites, aquifers, etc.) as well as sites of cultural and historic interest (e.g. UNESCO World Heritage Sites)**
- **Certain land-uses are mutually exclusive, while others can co-exist**
- **Conflicts often arise from a lack of mutual understanding and trust between stakeholders**
- **Note: it is usually taken for granted that biological and ecological natural resources have to be protected, while the need to protect mineral resources from ‘sterilisation’ by other land-uses frequently is not recognised or ignored.**

RECONCILING INTERESTS

- **A variety of initiatives are under way at EU Member State level, as well as at EU level, to develop land-use planning strategies that safeguard**
 - **mineral resources, and**
 - **at the same time the vested interests of various stakeholders**
- **Transparent and participative land-use planning processes will work towards resolving conflicts and thus to generate win-win situation for all (or most) stakeholders concerned**
- **These initiatives include *inter alia* the projects MINATURA2020 (2016-2018) and MINLAND (2017-2019)**
- **Similarly, the UNECE's group on resources classification has recognised the importance of integrating the social and environmental dimension.**

- **Non-renewable resources should**
 - **not only create value for mining companies and shareholders,**
 - **but also contribute to the infrastructure base and**
 - **provide an economic stimulus for sustainable development in the host region**
- **Land-use planning should foster sustainable development based on the available renewable and non-renewable resources**
- **The temporary land-use of mining should be integrated into the longer-term vision of regional development**
- **Exploitation of mineral resources provides wealth-generation opportunities for host communities**
- **Land-use planning should not foreclose this economic opportunity**

PROTECTING MINERAL RESOURCES

- **Mineral resources may have differing importance in a local, regional, national or international context**
- **Typically, gravel as building material would be of local or perhaps regional importance**
- **Conversely, certain metals may be of national or international importance for strategic reasons or as tradeable commodity**
- **This importance has to be balanced against the importance of other land-uses**
- **Particularly important mineral resources (Mineral Deposits of Public Importance, MDoPI) have to be protected against 'sterilisation' by exclusive land-uses**
- **Sterilisation means that land-uses that cannot be altered easily (e.g. housing developments, nature reserves) prevent the exploitation of a mineral resource.**

(NON-)EXCLUSIVE LAND-USES

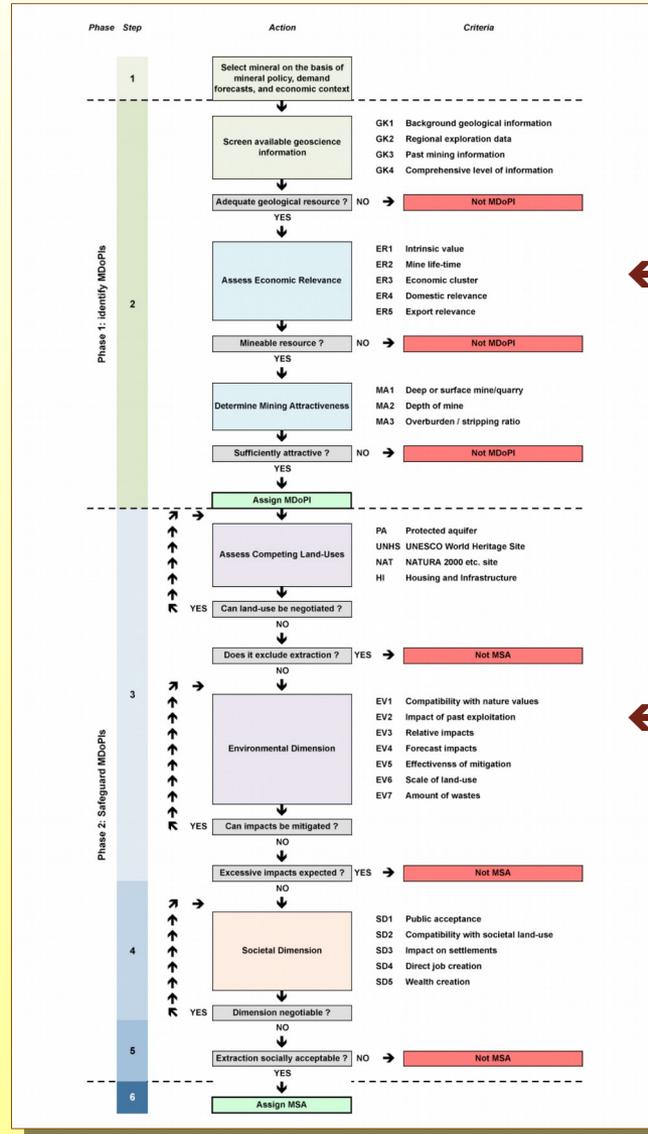
- **Mining at a first glance appears to be an exclusive land-use**
- **Similarly, nature reserves appear to be an exclusive land-use**
- **However, closer and objective inspection shows that many land-uses can co-exist, if properly delineated and managed**
- **Modern land-use planning should aim for multi-use zoning regulations to account for scarce resources and high population densities**
- **Planners need to understand the detailed requirements of each land-use in order to understand the real spatial requirements and possible impacts**
- **Land-uses may have a characteristic time-profile, are dynamic, rather than static, and should be based on development scenarios**
- **Land-uses may need to be based on functions, rather than features**

MDoPI SAFEGUARDING NEEDS AND FEATURES

- **Safeguarding aims to provide ‘access’ to mineral resources**
- **Safeguarding does not need to protect the ,footprint‘ of a mineral deposit**
- **Not the whole ,footprint‘ of an MDoPI may need to be designated as safeguarding area**
- **But: In gravel extraction and quarrying the safeguarding area is likely to be identical with the footprint of the MDoPI**
- **Conversely, for deep mines the footprint for providing access to a mineral deposit can be much smaller than the deposit itself**
- **Access to a mineral deposit can be from outside of the ,footprint‘ of a mineral deposit**
- **This would allow, for instance, the mining underneath a nature reserve (if there is no conflict due to e.g. groundwater draw-down)**

MEDIATION BETWEEN LAND-USE INTERESTS

- In order to mediate between potentially conflicting land-use interests a structured and transparent process is required
- For instance, the H2020-project MINATURA2020 aimed at developing such fair process
- An algorithm balances the varied interests



← MDoPI delineation

MDoPI delineation can be simple, based on existing maps or more complex

← Safeguarding

Safeguarding processes depend on MS regulatory requirements

WHAT IS IMPORTANT FOR WHOM ?

- **The concept of Mineral Deposits of Public Importance raises a number of questions:**
 - **What is meant by a ‘mineral deposit’ ?**
 - **Are these just known ones, or also suspected ones ?**
 - **Who are the ‘public’, governments, commercial companies, the general public ?**
 - **Who defines / decides what is ‘important’ ?**
- **Different stakeholders have different preferences for desirable trajectories of development and, hence, place different importance on different land-uses.**
- **This has led to the sterilisation of mineral deposits or delays in their proposed exploitation**
- **It may be noted again, that the ,importance‘ of ecological resources is assumed by default and usually such questions are not raised.**

PARTICIPATORY APPROACHES TO LAND-USE PLANNING

- **Land-use planning traditionally has been a political-administrative process with limited public participation**
- **In many jurisdictions zoning regulations are developed on a technocratic level within a political framework**
- **Land-use planning has become dominated by biological-ecological resources protection considerations**
- **The process needs to be opened-up to participatory approaches to balance societies' needs at all levels, regional to international**
- **A participatory approach is likely to be fair as it allows all stakeholders to bring their vested interests to bear**
- **A participatory approach allows for better recognition and distribution of benefits and burdens**
- **This has the potential to bring about win-win situations**

CONCLUSIONS

- **Mineral resources are indispensable for the functioning and further development of our societies**
- **High population densities and scarce resources are leading to land-use competitions and conflicts**
- **Such conflicts can be resolved by participatory land-use planning that aims for non-exclusive uses**
- **The concept of land-use planning has to be widened to three-dimensions thus increasing the options for non-exclusive use**
- **A participatory approach to land-use planning balances stakeholder interests at all scales**
- **Such a re-thinking of mineral resources protection and land-use planning has the potential to create win-win situations for all.**

THANK YOU VERY MUCH FOR YOUR ATTENTION !



The Golgatha of Mining