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Reclamation of post mining areas

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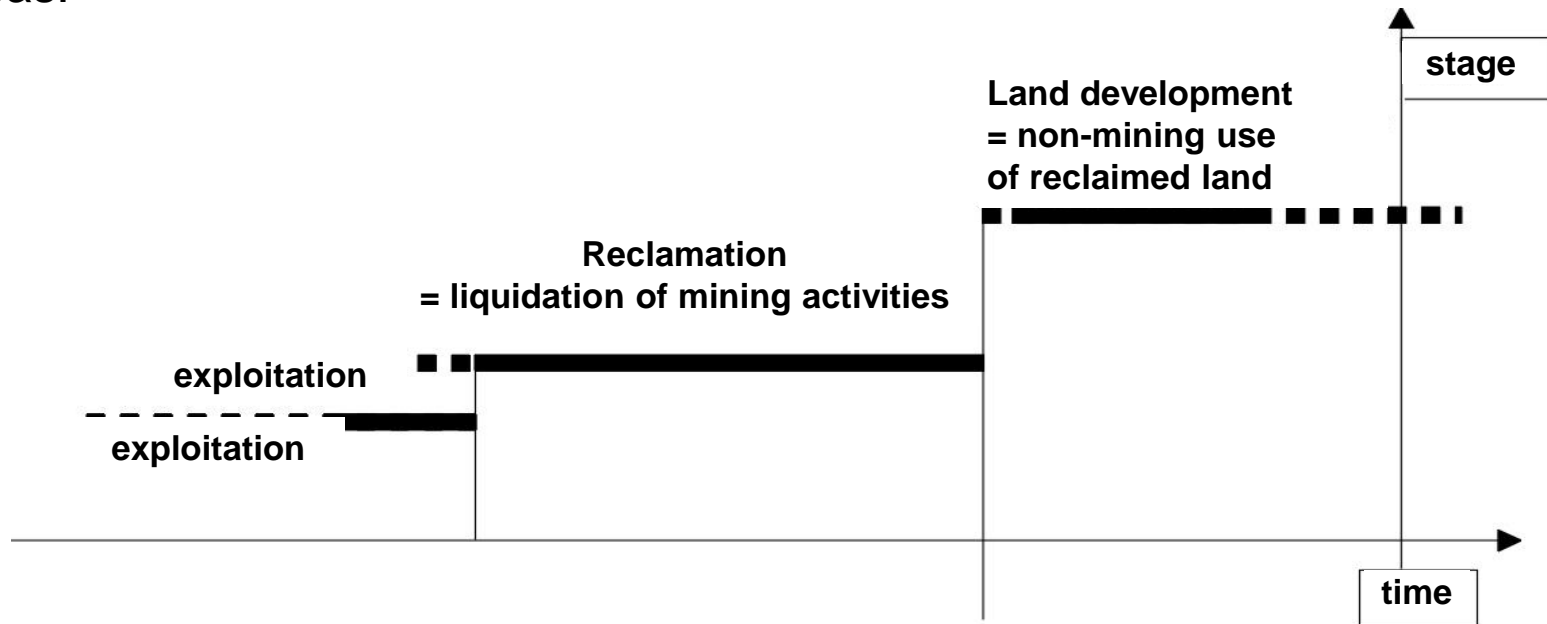
The analysis of the terms/terminology of returning the utility of natural functions to post-mining areas

- **Restoration** means the return to the original state of the altered land, the state before degradation,
- **Rehabilitation** understood as the return to the utility/natural state according to the original land development plan. However the return to the utility/natural state should be in accordance with the aesthetic qualities of the surrounding areas. One should bear in mind that this term should allow flexibility of choosing the method of development
- **Reclamation** is mainly used in the UK and in the USA.
 - ✓ In British terminology *reclamation* is the process of gaining or recovering land, bringing it into a condition for cultivation or other use (Sweigard 1992),
 - ✓ USA National Academy of Sciences, however, treats this term as the site is hospitable to organisms that were originally present or others that approximate the original inhabitants. Reclamation infers that the pre- and post disturbance land uses are nearly the same (Sahu and Dash 2011 after: Kuter 2013),
 - ✓ this term may also be found in other publications discussing the issues of restoring the utility or natural values to post-mining areas (Dogan and Kahrman 2008; Cuff and Goudie 2009; Kaźmierczak et al. 2014; Sphiwe and Amponsah-Dacosta 2016; Lima et al. 2016).

The analysis of the terms/terminology of returning the utility of natural functions to post-mining areas

Division into two stages:

- **Reclamation** - understood as restoring or giving the usable values to degraded or devastated land by appropriate land modelling, improvement of physical and chemical grounds properties, water regulation, soils restoration and roads construction or reconstruction.
- **Land development** – the stage of agricultural, forestry or other use of reclaimed areas.



The analysis of the terms/terminology of returning the utility of natural functions to post-mining areas

- **Revitalization** the term covering both stages: *reclamation* and *land development*, and it means the state restoration, giving the opportunity to perform the utility function of this area.
The basic objective of revitalization is economic and social recovery (there is no obligation of restoring the altered land to its original functions).
Revitalization should be all-embracing and involving a number of multiconnected, complementary and mutually reinforcing activities aiming at triggering a qualitative and positive change within a particular area.

The offered classification of ways of reclamation

General way of reclamation	Functions of the general way of reclamation	Specific way of reclamation
Agricultural	Agricultural production and agricultural and food processing	Cropping
		Breeding
Forest	Increasing forest resources and plantations	Forestry
		Protection
		Recreation
Aquatic	Increasing water areas, water retention and regulation	Water management
		Recreation
Natural	Preserving, proper use of and recreating natural resources and elements, especially wildlife vegetation and animals as well as natural complexes and ecosystems	Nature reserve
		Landscape park
		Protected landscape area
		Species protection
		Nature monuments
		Inanimate nature documentation site
		Ecological areas
		Landscape-nature protected complex
		Natura 2000 areas
		Natural succession
Economic	Expanding industrial, communal and service as well as recreational and sports areas	Housing
		Industry
		Services
Cultural	Preserving and promoting artistic objects and those connected with	Scientific

The offered classification of ways of reclamation

The essence of the offered classification is a possibility of joining the ways into semantic combinations in the following form:

<general.specific>

<general.specific,specific>

<general+general.specific+specific>

- the post-mining excavation pit will be used as a swimming area and there will be the adjacent developed green areas, natural succession areas and sports services facilities. The general ways will be: aquatic, natural and economic; and the specific ones will be: green areas, natural succession and services. This will be described as follows:

aquatic.recreation

natural.green areas, natural succession

economic.services.

Legal conditions for reclamation in Poland

- **Environmental Law**
- **Geological and Mining Law**
- **Act on the protection of agricultural and forest land**

Environmental law

- Who causes environmental pollution, bears the costs of removing the effects of this pollution.
- The principle of liability for environmental damage - so-called principle „polluter pays ” (art. 7),
- Undertaking the exploitation of mineral deposits is obliged to take the necessary measures to protect the resources of the deposit, the surface of the earth ..., successively carry out reclamation of post-mining areas and restoration of other natural elements to the proper state (art. 126).
- On specific issues, in the case of detailed rules for the management of the mineral deposit and environmental protection related to the exploitation of the deposit, applies to the law – Geological and mining law.

Geological and mining law

- In case of liquidation of a mining plant, in whole or in part (art. 129) entrepreneur is obliged:
 - ✓ secure or eliminate mining excavations and equipment , installations and facilities of the mining plant
 - ✓ secure the unused part of the mineral deposit
 - ✓ secure the adjacent mineral deposits
 - ✓ take the necessary measures to protect the excavations of neighboring mining plants
 - ✓ **take the necessary measures to protect the environment and land reclamation and land management after mining activities.**
- **For land reclamation, the relevant regulations on the Act of 3 February 1995 on the protection of agricultural and forest land apply**

Act on the protection of agricultural and forest land

The entrepreneur is obliged to reclaim at his own expense as a person who caused the loss or reduction of the value of land use

Reclamation is planned, designed and implemented at all stages of mining activity

Reclamation is carried out as land becomes completely redundant, partially or for a specified period of time for industrial activity

Reclamation should be completed within 5 years after the cessation of industrial activity

Scheme of post-mining areas reclamation of a mining plant

Entrepreneur applies to the competent county superintendent for decisions on the reclamation and development of post-mining areas

To the application for a decision on the right of reclamation and development the entrepreneur elaborates the documentation of reclamation, which is subject to control of the implementation of the reclamation obligation

In matters of reclamation and the development of post-mining areas, the competent county superintendent shall issue decisions after consulting:

1. Director of appropriate District Mining Authority,
2. Director of the Regional Directorate of State Forests (in the case of the planned forest reclamation),
3. Commune mayor (city mayor, city president).

The competent county superintendent may issue decisions on reclamation and development matters, which specify:

1. degree of limitation or loss of value in use (established on the basis of two separate expert opinions),
2. person obliged to land reclamation,
3. direction and timing of land reclamation,
4. recognition of reclamation as completed.

Scheme of post-mining areas reclamation in case of liquidation of a mining plant

Entrepreneur shall draw up an *Operation Plan of the liquidated mining plant* or its marked part

Reconciliation of the *Operation Plan of the liquidated mining plant* with the competent commune mayor, the mayor of the city or the president of the city

Decision of the Director of the District Mining Authority approving the *Operation Plan of the liquidated mining plant* or its marked part

Payoff of the funds collected on the Mine Liquidation Fund

Act on the protection of agricultural and forest land

Failure of reclamation obligation



In the case of non-completion of land reclamation for up to 5 years after the cessation of mining activities, the annual fee increased by 200% from the date on which land reclamation should be completed



Decision concerning the obligation to pay each year to a separate bank account of the voivodship management board or the Forest Fund, by the person causing the limitation of the land use value, the equivalent of the annual fee in the part where the value of land use has been reduced

Scheme of post-mining areas reclamation in case of liquidation of a mining plant

Notification of the county superintendent , by 28 February of each year, about changes in land reclaimed in the past year



Supervision and control of land reclamation -
Director of the District Mining Authority



Decision of the competent county superintendent on the recognition of the reclamation completed, after inspection of the reclamation



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Thank you!



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