

## FINANCING THE ACTIVITIES OF THE REGIONAL REVITALIZATION OPERATOR IN SILESIAN VOIVODSHIP

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### Abstract

The industrialization and urbanization conducted without respecting the rules of the environment has led to the destruction and degradation of many areas. The need of their revitalization especially in industrialized regions is a very important social and economic problem. One of the regions characterized by a large area of degraded land is Upper Silesia (Silesian Voivodeship). The project of the Regional Revitalization Operator, developed by a consortium of scientific research institutions, is oriented towards the development of extractive waste. The purpose of the study is to present the model, its structure, functions, objectives and tasks. In particular the financial aspects of the planned project are presented. The condition of the areas requiring revitalization, which constituted the potential of the supply of orders to the Operator, was examined. Equity financing based on the sale of revitalized land to investors was also characterized. The sources and instruments of external financing were also analyzed. They can come from both the state budget, EU funds and mining communities. Commercial financial instruments, which may constitute a component of the financing engineering of the Operator, are also presented.

**Keywords:** business model revitalization, revitalization operator, post-industrial brownfield sites

### 1. INTRODUCTION

Almost 30 year-long process of thorough restructuring of Polish industry sector caused significant changes in revitalisation processes. Restoring and assigning new economic, spatial, ecological and social functions to degraded areas have become a challenge that faced many problems in the past: starting with lack of necessary regulations and rules, through missing proper technologies and finances up to social disputes. Partly, these problems were solved by allocating financial resources from the Union Funds to revitalisation tasks as well as by underlining strategic revitalization tasks in the national documents, as significant tasks within the scope of shaping spatial order. These all matters cause that revitalisation in Poland is more and more important and intensified. It is treated by self-government units, experts, companies and citizens as a factor that conditions development and improvement of life conditions. It is also clearly emphasized in administrative documents determining directions of development of country, regions, poviats and communes. It is necessary to make even more widespread, multi-sector and more integrated effort in aid of taking the degraded areas out of crisis conditions. In this context, it is necessary to perform research and development works oriented at increasing of revitalisation operations. The paper presents one of the areas of such research, devoted to institutional and organizational solutions of the revitalization. The purpose of the study is to present the model, its structure, functions, objectives and tasks. In particular the financial aspects of the planned project are presented. Subject of the paper is the Regional Revitalization Operator in Silesian Voivodeship, in particular, financial aspects of its operations.

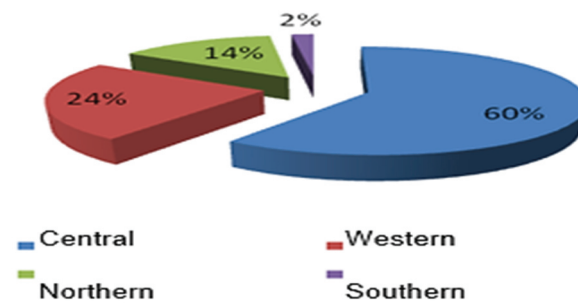
### 2. REVITALISATION OF DEGRADED AREAS WITHIN THE REGION - GENERATOR OF DEMAND FOR OPERATOR SERVICES

In the assumptions of the Silesian Voivodeship Regional Contract, complex revitalisation of districts and cities of high intensity of unfavourable social and economic phenomena is underlined. Government declared

establishing the National Revitalisation Program which would distinguish the meaning of operations performed comprehensively and multi-dimensionally as well as thematically and territorially coordinated and focused in order to achieve the assumed transformation within the crisis areas. This program entails solutions (plans, financing programs) of the state and self-government administration on the regional and self-government level. These assumptions are combined with the meaning of companies, which become one of the players interested in widely implemented revitalisation processes, such as companies financing (and supporting) revitalisation undertakings as well as the society itself. One of the consequences of these tendencies is the increase of complexity and dynamics of the surrounding within which all kinds of organizations operate and the success of an undertaking depends on mutual exchange of knowledge and cooperation. In this changing environment, the role of companies is more important than ever. Their operations affect the society in the economic, environmental and social fields both to local and global scale. Growing number of public and private partnerships increased the role of private sector within the scope of performing services traditionally perceived as public services. Moreover, even more number of stakeholders request the right to information, participation in consultations and engagement in decision making processes. One must emphasize that within the financial perspective 2014 - 2020, the main source of revitalisation project financing from the EU funds will be the resources of the Regional Operational Programme. Additional, complementary sources of co-financing will be the resources from the National Operational Programmes. Moreover, resources of the state budget and territorial self-government units' budget as well as the remaining resources, including private ones, will be the source of additional financing of revitalisation projects. Local (commune, city) revitalisation programs will be of key importance. Revitalisation processes, implemented in various organizational configuration, using many financing sources, require development of new business models, where operators of these processes, business partners and public organizations (including self-government) as well as scientific entities appear. Business models based of wide spread cooperation require development of key assumptions related to revitalisation operators functioning. Examples of effective development and application of such models can be noticed in the European Union [1, 2]. The Silesian Voivodeship is one of the European regions with the most number and significant area of post-industry terrains, including devastated, degraded as well as so called "ecological bombs" threatening life and health of citizens. This is a result of post-industry operations accumulation, including mostly the mining operations. Share of areas requiring reclamation and revitalisation of the Silesian Voivodeship in the total area of degraded and devastated land in Poland is 8%, whereas area of Silesia is 4% of the country. The Silesian Voivodeship is located in the southern part of Poland. It borders with Opolskie Voivodeship from the west, Łódzkie Voivodeship from the north and Świętokrzyskie and Małopolska Voivodeship from the east, whereas from the south side it borders with Czech Republic and Slovakia. The region covers the area of 12,331 km<sup>2</sup>. The Silesian Voivodeship (Region) has a strategic meaning for the country, from the perspective not only of problems but also innovative solutions, which based on new revitalisation technologies may develop and serve as model examples. Within spatial arrangement, the voivodeship is divided to 4 subregions, representing, according to the Development Strategy of the Silesian Voivodeship, the following areas of voivodeship development policy: central (5,578 km<sup>2</sup>), western (1,354 km<sup>2</sup>), northern (3,047 km<sup>2</sup>) and southern (2,352 km<sup>2</sup>). The Regional Revitalisation Operator (Operator) performed an analysis of development potential for each of the subregions in the following areas: (1) objects rendering harmless post-mining hard coal waste, (2) objects rendering harmless waste other than post-mining hard coal waste as well as neutral and hazardous waste dump yards, (3) potential locations of waste disposal, (4) post-industry areas, including degraded and areas destined for reclamation and revitalisation. Research concerning revitalisation needs based on many sources, databases and documents allow for determining that areas which can be the object of interest of the Regional Revitalisation Operator cover almost 7 thousand hectares.

Total area of post-mining hard coal waste rendering harmless objects is almost 2.5 thousand hectares and the remaining post-industry areas, including degraded and devastated, over 4 thousand hectares. The analysis of collective comparison presented on **Figure 1** clearly shows that the central subregion has the most areas requiring intervention - over 4 thousand hectares. The southern subregion has as little as 150 hectares of

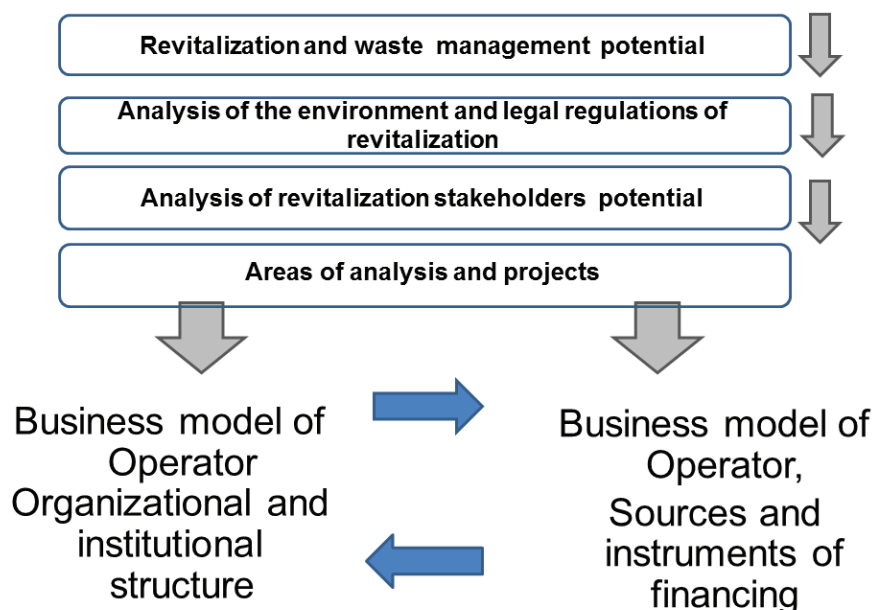
areas for revitalisation. The western and northern subregions cover over 2 thousand hectares in total of the areas in question. When analysing types of degraded areas in the Silesian Voivodeship , one may take note that the lands for revitalisation cover the most area (2,491.75 hectare - 37%), then post-mining hard coal waste dump yards (2,341.16 hectare- 34% ), then potential locations for waste disposal (1,441.71 hectare - 20%) and dump yards of waste other than mine waste (603.49 hectare -9%). These numbers selected from a wide spectrum of research show the scale of the problem which the Region faces and at the same time this is a generator of orders and projects portfolio for the Operator. This problem important for the Silesian Voivodeship can be solved within at least 20 years, thus the development and implementation of the Operator model is fully justified.



**Figure 1** Arrangement of post-industrial waste dumps by Sub-regions in Silesia Region.  
Source: own study.

### 3. METHODOLOGY OF RESEARCH

The study covered six problem areas that were at the same time stages of the project. Scheme research methods is presented in **Figure 2**. Within individual stages of the research, one used expert's methods, evaluation of investment effectiveness for degraded areas development projects, thorough analyses of spatial information and Region documentation, strategic analyses [3, 4, 5] and methodologies of business models construction [6, 7, 8]. Strategic analyzes and business models have been focused on innovation [9, 10], and environmental issues [11]. Based on analyses performed according to the adopted research methodology, one developed a business model concept of regional revitalization operator.



**Figure 2** Scheme of the research methods. Source: own study.

#### 4. BUSINESS MODEL OF OPERATOR- SOURCES AND INSTRUMENTS OF FINANCING.

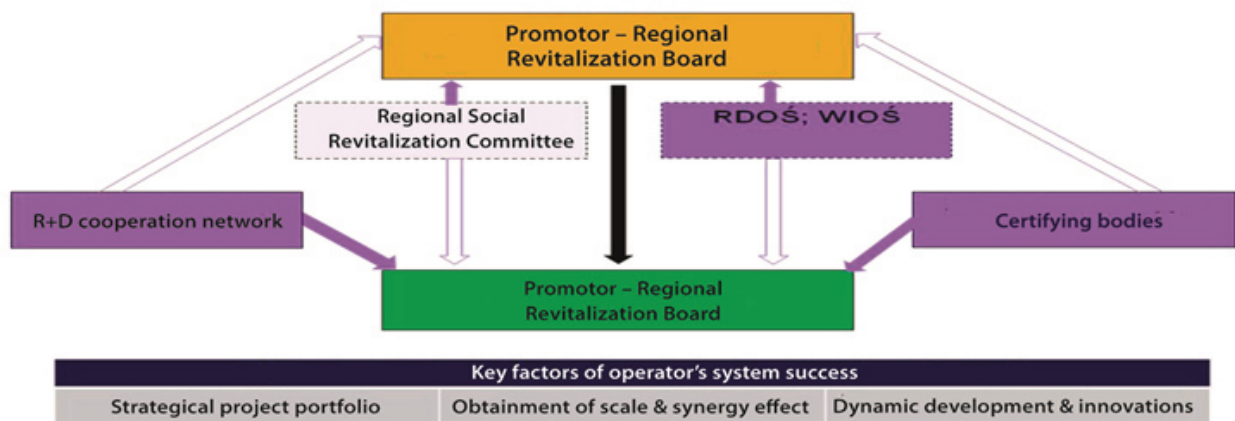
Regional Revitalization Operator Model is shown in the **Figure 3**. The Revitalization Operator Management System includes the following assumptions:

- institutional, indicating subjects participating in the operator’s system;
- formal & legal, including the Revitalization Operator assignment frames and ranges.

Scope of necessary revitalization works may be strongly different depending on the given degraded area type [12]. Selection of areas to be revitalized should take into account first of all the criteria deciding their investment attractiveness, including: access to a road infrastructure, density of population economic infrastructure [8].

The scale of revitalization needs for the Silesian Region presented in the previous chapter, requires significant financial resources (capital), thus wide and real identification of financing sources of its operations is so important element of the proposed model. Financing sources of operational and investment operations of the Revitalisation Operator can be divided to internal and external:

- Internal financing sources are sources generated by the Operator during its functioning, mostly resulting from implementation of revitalisation projects.
- External financing sources is foreign capital (aid funds, credits, leasing) as well as equity from emission of bonds. Aid funds that can be used by the Operator as well as organizations directly cooperating with it and affecting its operations and economical status are very important.
- The principle of financial model of the Operator is investing incomes from sale of revitalized areas, in the part claimable by the Operator, into purchase of degraded areas and performance of further revitalisation processes.
- Effective utilization of EU aid funds from the Regional Operating Programme
- northern subregions cover over 2 thousand hectares in total of the areas in question. When analysing types of degraded areas in the Silesian Voivodeship (**Figure 2**), one may take note that the lands for revitalisation cover the most area (2,491.75 hectare), then post-mining hard coal waste dump yards (2,341.16 hectare), then potential locations for waste disposal (1,441.71 hectare) and dump yards of waste other than mine waste (603.49 hectare).
- Financial funds of the National Centre for Research and Development and relief resulting from the act on innovativeness will be used by the Operator for development purposes and application of innovations.



RDOŚ - Regional Environment Protection Directorate

WIOŚ - Voivodeship Environment Protection Inspectorate

**Figure 3** Regional Revitalization Operator Model. Source: [12] and own study.

Internal financing sources of the Operator include:

- Incomes from sale of revitalised areas. The sales apply to areas covered by trust contract concluded with the Organiser or areas introduced by the Organiser as a contribution in kind. This also includes areas purchased from the Organiser or from different owners. Preferred buyers are investors declaring utilisation of these areas for business undertakings that create jobs. Organizations and natural persons are also entitled to buy such land.
- Incomes from revitalisation services performed by the Operator in aid of the Organiser or other client. This is the situation where the Operator cannot buy the title to the area. This may be caused e.g. by more favourable financing of revitalisation of a given object when the beneficiary of aid funds can only be a commune and there is also an opportunity to finance the revitalisation with emission of commune bonds.
- Incomes from sale of recovered and recycled products and generated new products. As a result of revitalisation processes, one gains products used in the power and road industry, sales of which reduces reclamation costs.
- Incomes from sale (part attributable to Operator) of revitalised areas within the scope of Public and Private Partnership. The Operator together with a commune and possibly with an Investor establishes common revitalisation undertaking, financing it with aid funds, emission of bonds and private capital. Revitalised area is sold in whole or part. Within this scope, one may use resources from the Polish Development Fund in aid of competitive economy within the area of infrastructure investments.
- Reduction of costs resulting from release from local fees upon the Operator's motion. Commune may pass a resolution concerning release from local fees concerning reclaimed areas. The same applies to fees for perpetual usufruct of land from the Treasury.

Aid measures are one of the most important sources of external financing of the Operator. These resources will be provided from the following programs and operations:

- Regional Operational Programme for Silesian Voivodeship. In particular, this is about resources coming from two types of operations. The first operation is "Improvement of SME development conditions". Within the scope of this operation, resources for the beneficiaries of this task allow them ordering revitalization works to Operator. Moreover, activity zones created as a result of land reclamation are important for SME development, including companies within Operator's cooperation network (ordering works, innovation transfer). The second is "Revitalization of degraded areas". The financial support will apply to complex tasks striving to recover socially, economically and environmentally degraded areas through restoration of previous or provision of new function.
- Infrastructure and Environment Programme. Tasks oriented at reclamation of degraded or devastated terrains and remediation of polluted areas will be supported. Financial support for such undertakings will only be possible, if current land owner is not responsible for pollution or degradation of environment. If within the area covered by reclamation activities polluted areas are present, their remediation will be a mandatory element of the project. Projects, implementation of which, results from commune environment protection programs or revitalization programs, will be preferred.
- Financial support of the European Investment Bank (EIB). This bank can provide loans for environment protection programs, which is an object of economic activity of Operator.
- National and regional targeted resources from the National Fund for Environment Protection and Water Management. Financial support is dedicated for limiting negative impact on the environment as well as repairing degraded lands through reclamation, including remediation together with waste disposal. Moreover, resources from this fund can be used for removal and rendering harmless of inadequately stored or warehoused waste, representing hazard to life or health of people or for occurrence of irreparable damage to the environment together with remedial operations concerning land surface within the scope of results caused by the removed waste.

- Program of the Voivodeship Fund for Environment Protection and Water Management in Katowice, called "Waste management and the Earth surface protection". The financial support is oriented at investments minimizing the volume of generated waste, increasing of recycling and limiting storage of the remaining waste, revitalizing post-industrial terrains and tasks related to ecological agriculture. The financial support from this fund can also be provided for investments within the scope of waste management, co-funded from foreign resources.
- Creation of the regional financial institution planned in the "Agreement in Aid of the Integrated Silesian Voivodeship Development Policy" will also be an important factor for Operator. Considering the needs of stable, long-term and flexible financing of regional development investments, it should support revitalization processes important for the Region.
- Financial resources from the National Centre for Research and Development are very important for the development and implementation of innovation in the Operator. This is about operations within the scope of the "Operational Programme - Smart Development 2014 - 2020"

Another important source of external financing is emission of bonds, which can be emitted by Operator together with municipalities (municipal obligations) or independently (corporate bonds).

- Municipal bonds. Through the emission of municipal bonds, municipalities, powiats, voivodeship may gain capital directly on the market, and resources thus obtains can be used for various purposes, including revitalization projects, which in the case of Silesian Voivodeship will be performed by Operator. Polish law provides the option for territorial self-government entities to emit bonds. Targeted (new) companies, e.g. municipalities together with Operator can be the bonds emitters, based on the Public and Private Partnership.
- Corporate bonds. This type of bonds can be emitted by entities running an economic activity, having legal personality as well as limited joint-stock partnerships. Operator will meet legal requirements concerning the emitter, specified in the Bond Law. According to regulations applicable since 2015, emission introduced to Catalyst market must have a value not less than 1 million PLN.

## 5. CONCLUSION

Scale of the natural environment degradation of some of the EU regions requires application of the assumed and innovative revitalization solutions. Silesian Voivodeship is one of such regions where 150 spoil tips are located which cover the area of 1.6 thousand ha with over 600 million ton of mining waste contained in them. Under such circumstances, one should look for and apply efficient undertakings allowing for reclamation and management of these terrains. The presented model of regional revitalization operator is a pioneer undertaking under Polish conditions, using revitalization experience from degraded EU areas, but also opportunities resulting from current ecological and innovative EU policy. The condition of effectiveness of Regional Operator is the provision of financial support for its operations. The presented internal sources of financial resources are related to a cycle covering revitalization and then sales of developed terrains, providing resources for purchasing another degraded terrains appropriated for revitalization. Sales of raw materials recovered from the tips will also be an important source of income (mostly coal). In case of external financing, one points to many various funds both assistance and commercial (e.g. bonds) as well as financing the research and development operations (Smart Development Operational Programme). Such wide spectrum of financing should contribute to reduction of operational risk of the Regional Revitalization Operator.

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