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**FORESIGHT STUDIES IN FACILITATING
THE DEVELOPMENT AND MANAGEMENT
OF A REGION
(PRACTICAL EXPERIENCE IN SILESIA)**

Abstract: Out of necessity, this work presents only selected aspects of the comprehensive foresight studies carried out in the Silesian region between 2006 and 2012. The studies focused on regional, technological, metropolitan and spatial considerations as well as on investigation of their interrelations. The studies were carried out in three stages and they constituted a uniform whole as far as their intellectual and strategic aspects are concerned. Each of the studies resulted in the formulation of recommendations regarding the strategy and policy of regional governance.

Key words: Technology foresight, regional foresight, metropolitan foresight, land use foresight, regional policy, spatial policy.

Introduction

Over a six year period (2006 to 2012), several thorough foresight studies were carried out in the Silesian region, including three series of regional foresight studies. Their goals were both intellectual/research and strategic. The intellectual dimension of the regional foresight studies in the Silesian region implies that the research principles and methodologies applicable to studies concerning the future were employed and that various aspects of the pace of change in the region were also taken into account. The studies also considered comprehensive considerations over integral development adjusted to be consistent with the character of this particular region (*i.e.* a region now entering its post-industrial phase). The foresight studies were performed with the intent of applying them in practice – the researchers wished to create a tool for implementing new development policies and strategic management at the regional level.

The overall concept of the foresight studies carried out in the Silesian region could be divided into several approaches or aspects:

- regional/technological: used for creating new regional politics and technological development strategies;
- metropolitan/technological: useful for implementing the principles of metropolitan policy in the region from new, with particular attention being paid to various metropolitan functions and public services;
- regional/spatial: the focus here is on generating such new spatial planning and development policy for the region so as to make long-term re-allocation of the economy and settlement possible.

The regional foresight studies presented herein are the result of three institutions working together and jointly making use of their respective research, scientific, and developmental potentials. These institutions were: Central Mining Institute (*Główny Instytut Górnictwa*, project leader), Silesian University of Technology (Politechnika Śląska) and University of Economics in Katowice (*Uniwersytet Ekonomiczny w Katowicach*). These three institutions formed a consortium in order to effectively complete the projects (*i.e.* the foresight studies in question). The foresight projects were funded from operational programmes in the sector, such as the *Increased Competitiveness of Companies Operational Programme (Wzrost konkurencyjności przedsiębiorstw)* and the *Innovative Economy Operational Programme*.

1. Ideas underlying regional foresight studies

In the first decade of the 21st century, systematic foresight studies were started in various regions of Poland. Their aim was to facilitate and support regional and spatial development policies. The summary of the first series of regional foresight studies carried out in Poland [Klasik, Markowski 2010] emphasized that there were two primary reasons justifying performing such studies in Poland:

- re-construction of economic and spatial structures,
- intention to accelerate fostering of a new economic model based on knowledge and innovativeness.

If these two processes are merged, the result is significant spatial consequences.

The fact that certain regions of Poland entered their post-industrial phase (to which the above-indicated processes correspond) resulted in the emergence of significant post-industrial urban areas in need of comprehensive renewal and rehabilitation. It should also be noted that the new and technologically advanced economic activities, as well as international enterprises, are constantly seeking new locations in the areas in which they do not yet operate (green field sites) and expect that the authorities of a given region will aid them in finding such locations. Consequently, public authorities have a duty to continuously monitor and anticipate desirable tech-

nological and structural changes and their spatial consequences. In many cases, the overall impact of rehabilitation, renovation, and creation processes is adverse and detrimental to the spatial development of the regions (including the management of land).

Foresight studies carried out in Poland (particularly the extensive studies performed in the Silesian voivodeship) demonstrated two characteristic features. Firstly: studies consider jointly the structural and technological changes concerning the strategic aspects of activities and innovative projects. Secondly: they additionally consider the entire area of the region as one whole integral with its internal structure (including large urban agglomerations, zones where land is put to use, and other locations).

Examining the policy of structural and technological changes in the light of strategic activities and innovative projects allows to make foresight studies more specific in terms of their focus and technology. This leads to identification of promising sectors of regional economies which could then be given priority treatment within developmental policies. Restructuring regional economies while at the same time implementing technological changes refreshes the developmental policy of a given region and makes it more dynamic. If this approach is used it is possible to achieve intelligent and sustainable development and to counteract social exclusion (in line with the principles of the Europe 2020 project). All this means that the foundations for a new economy could be created by merging the research and development sector with the technologically advanced sectors. This should ensure a smooth transfer of new technologies to the regional economies. It is also worth noting here that, as far as structural and technological change is concerned, the cultural sector (working together with business and technology sectors) is slowly taking the lead: it is the key to creative and innovative industry [Klasik 2011]. The new model of regional economic dynamics now emerging is shaped by market, regulatory, and social mechanisms. Its characteristic features should be: increased resistance of regional economies to crises and their capacity for internally-triggered expansion.

The methodology of the foresight studies as applied to the development and spatial planning of regions includes certain core principles, methods, and procedures:

- for creating a concept of regional development in the form of a set of sectors, activities, and functional areas,
- for creating multiple scenarios presenting the evolution of the region, the sector, or of the space.

Main methodological stages:

Step one: internally structuring areas covered by foresight studies and considering them in connection with sets of indicators demonstrating the influence of various external forces.

Step two: performing a STEEP analysis and a prospective structural analysis in order to prepare a model presenting the changes to processes within the areas investigated and the types of external factors.

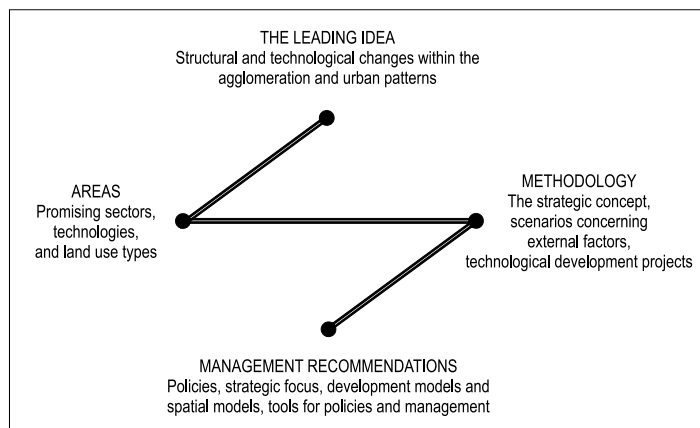


Figure 1. Foresight measures in the development of a region

Source: Compilation of data prepared by A. Klasik and F. Kuźnik.

Step three: making use of specialist assessments in defining the external driving factors/forces and formulating hypotheses constituting the basis for preparing alternative scenarios concerning the impact of external factors.

Step four: dividing the desirable structural and technological changes (jointly constituting the entire concept of the development of areas covered by foresight studies) by sector.

Creating a developmental concept (including a concept of technological development viewed in connection with reference scenarios presenting different external conditions) is *de facto* the beginning of considering and making strategic decisions concerning the most innovative of projects and technologies.

The overall concept of foresight studies concerning the development and spatial planning of regions should also include strategic recommendations. Such recommendations make the studies concerning policy and decision-making useful and increase the intellectual (cognitive) value of the studies. At the heart of any recommendations resulting from regional and technological foresight studies lie innovative solutions regarding the developmental policy and spatial planning within the regions. This „opens new doors” and allows to:

- implement new types of policies (most of them technology-oriented) within the priority developmental areas of a given region;
- create source strategic options involving a “strong push” applied to promising technological areas and innovative solutions regarding spatial development and usage of land;
- create new management bodies and governance principles on the regional level.

Furthermore, such strategic recommendations also involve organizing the policy and management tools for managing the development of a given region. Thanks to them it is possible to create new sets of tools for policies and strategic management.

The following diagram presents the structure of foresight concepts for development of a region that involve a leading idea, areas, methodology, and recommendations for policy and management.

2. Profiles of foresight studies concerning the development of a given region

From the perspective of the Silesian foresight studies (which are outlined below), it may be assumed that there are three basic profiles for such studies as follows:

- studies concerning the technological development of the region aimed at identifying the direction of technological changes in the newly emerged and the developing economic sectors of the region;
- studies into the development of the main metropolitan area of the region aimed at identifying technological changes in the metropolitan public services sector,
- research into the land usage and management within the region aimed at identifying the directions for spatial relocation of economy and settlement.

It should be emphasized that the special character of the industrial region (now at its post-industrial stage) in question (the Silesian region) has had an impact on the profiles of foresight studies carried out there.

The profiles of the foresight studies indicated above form a logical whole even though the ideas behind subsequent foresight projects were not all created at the same time. When the idea behind the first foresight project (concerning the technological development in the region) was gradually transformed into something specific, it was not yet certain what shape the subsequent projects would take, and whether or not they would be performed at all. The results of the completed project had an impact on the profile of subsequent foresight initiatives. Considered as a whole, these projects allow to define a new developmental pattern and spatial development planning concept for the Silesian Voivodeship. The underlying principle is the development of the metropolitan area by facilitating the technological development of the region, developing the core metropolitan area, and achieving development through a significant re-allocation of the economy and settlement in spatial terms.

There are several coexisting temporal perspectives in the development of the metropolitan region. The great technological “push forward” for the region mostly concerns the decade to come, whereas the core agglomeration of the region has been a trigger for its urbanization for at least two decades. Significantly re-allocating the economy and settlement in the region opens up the way for long-term changes which commence immediately and which will continue for almost two generations.

A brief description of the foresight studies concerning the spatial development and management of the region can be found in Table 1.

Table 1

Profiles of foresight studies concerning the spatial development
and management of the given region

Constituting Elements	Regional and technological foresight	Metropolitan and technological foresight	Land use and management foresight
Subject matter	sustainable technological development versus pro-technological development of the region	Technologization of the infrastructure in urban agglomerations versus the metropolization of urban agglomerations	Mechanisms underlying changes to location patterns in the region versus the evolution of land use
Field	key technological areas of the region considered by sectors	Priority areas of the metropolitan development of urban agglomerations	The most prevalent types of land use considered in light the most important constituting elements of the region
Strategic activity	portfolios of priority technologies recommended for implementation	Demand chains of metropolitan services	Spatial structures of economy and settlement
Beneficiary groups	the environment and institutions applying technologies	Operators and recipients of metropolitan services	Denizens and local communities, companies and investors, non-governmental organizations

Source: Compilation of data prepared by A. Klasik and F. Kuźnik (Tables 1-4).

In the above-indicated profiles (case studies), the following constituting elements were identified each time:

- the subject matter of the foresight studies (highlighting the challenges and strategic problems which the region faces);
- the area of the foresight studies as part of which research efforts are focused on the most important subject matters essential in the light of the region's future;
- strategic activities resulting from the findings of foresight studies; presented in the form of packages, portfolios, chains of causes and effects, complex spatial structures, *etc.* thanks to which the future of the region can be considered in well-structured terms;
- beneficiaries of foresight solutions; those entities within the region on whose potential and activity the future of the region depends, which should be made a part of the development and management policy for the region and invited to take part in it.

The above-indicated profiles of the foresight studies demonstrate different approaches to research and different expectations concerning the results of a given foresight project.

The underlying principle of technological/regional foresight was the strategic change of the technologies used in the region. This approach to foresight research was based on a certain input principle: that a significant „leap forward” in technology is necessary in the economy of a region which has already completed the restructuring of its former flagship economy. This leap should take into account the old and the new sectors of the economy in the region alike. Research and analytic efforts as part of foresight studies focused on the conditions and capacity for effecting technological changes in the economy of the region. The progress of the foresight studies began from scenarios presenting the developmental conditions in the region through an evaluation of the capacity of the research and development sector to the generation of futuristic key technological groups. The final results of foresight studies were key groups of technologies and priority technologies in selected areas/sectors of the region's economy.

Metropolitan/technical foresight was based on the assumption that the already progressing metropolitan development of the region may be hindered or stopped by shortages in the metropolitan infrastructure and by the technological underdevelopment of metropolitan public services. Metropolitan business-oriented functions and metropolitan functions developed using public money and in the public sector all contribute to strengthening the metropolitan character of a region. The latter functions manifest themselves as metropolitan public services. What the region and its core urban agglomeration (now becoming increasingly metropolitan) need is a technological “leap forward” in terms of its structure and in terms of the public services it offers. This approach to foresight studies focuses on the conditions and capacity for effecting a strategic technological change in the sector of metropolitan public services joined with metropolitan services provided by business entities. The foresight studies begin by examining the conditions and scenarios regarding the development of the core metropolitan area of the region through learning whether or not it is possible (and how) to develop selected parts of metropolitan public services, before progressing to innovative projects and priority technologies for these parts.

The character of foresight research into land use and management was spatial. This approach is parallel to the two approaches indicated above and, even though it departs from them to some extent, it also constitutes a conclusion of the regional/technological and metropolitan/technological approaches. The fact that the economy of the region undergoes significant changes and restructuring naturally results in certain necessary spatial changes. The underlying principle of the land management and usage foresight was that the overall consequences of spatial changes for the region are negative, since generally positive economic transformations are accompanied by negative spatial consequences. The focus of this approach to foresight studies was: identify new mechanisms underlying changes to the management and usage of land, identify new ways in which land is used, create a preliminary vision of the spatial pattern of the economy and settlement in the region.

3. Three generations of foresight studies in the Silesian Region

3.1. Priority technologies making the sustainable development of the Silesian Voivodeship possible – 2020 estimates¹

Foresight studies concerning technological priorities in light of the development of the region were aimed at increasing the competitiveness of the business sector by preparing and implementing a technological policy for the region. The core of this foresight project (belonging to the technological/regional approach) was formed by the principles contained in *Regional Innovation Strategy for the Silesian Voivodeship 2003-2013* and a diagnosis of the intellectual, technical, and organizational potential of the business and research sector in the region (see Table 2).

Studies into and the evaluation of the potential of the research and development sector, as well as research into the investment attractiveness of the region, made it possible to define 6 priority technological areas (and to assume that their number will increase in the future). Their number did increase after the second stage of foresight studies was completed, with the medical engineering sector being added. The following 5 technological areas constitute the starting point for the future economic specialization of the region:

- biotechnologies,
- energy technologies,
- materials engineering technologies,
- IT and communication technologies,
- medical technologies,

Considered as a whole, these contribute to the development of both the technology and the innovation sector. Other technological fields form the foci for the research and development potential. These include:

- environmental technologies,
- transport technologies.

The information and communication technologies area referred to above could also be included to some extent. These areas should significantly increase the investment attractiveness and settlement attractiveness of the region.

¹ See also:

- Feasibility study for the project:
- Priority technologies making the sustainable development of the Silesian Voivodeship possible Part 1 (editors: A. Klasik, F. Kuźnik), Central Mining Institute, Katowice, 2008.
- Priority technologies making the sustainable development of the Silesian Voivodeship possible Part 2 (editors: K. Czaplicka-Kolarz, A. Karbownik), Central Mining Institute, Katowice, 2008.
- Priority technologies making the sustainable development of the Silesian Voivodeship possible Part 3 (editors: K. Czaplicka-Kolarz, A. Karbownik), Central Mining Institute, Katowice, 2008.

Table 2

Priority technologies making the sustainable development of the Silesian Voivodeship possible – 2020 estimates

Idea I: summary of the project	<p>Idea:</p> <ul style="list-style-type: none"> ● Defining priorities for the technological development of the region ● Defining principles for the technological policy of the region <p>Scope of the project:</p> <ul style="list-style-type: none"> ● Foresight studies within the following technological fields: <ul style="list-style-type: none"> ○ biotechnologies ○ technologies for the energy sector ○ technologies for the environmental protection sector ○ IT and telecommunication technologies ○ technologies for the materials engineering sector ○ technologies for the transport and transport infrastructure sectors ○ medical engineering technologies (identified as part of foresight research)
Methodological principles of the project	<ul style="list-style-type: none"> ● International studies and a review of regional foresight projects ● Regional studies, preparing models/scenarios presenting the conditions for technological development in the region ● Scenarios and estimates concerning technological development, as well as road maps concerning key technological areas ● Strategic recommendations for the technological policy of the region
Recommendations for the management policy	<ul style="list-style-type: none"> ● Sectors of technological development in the region and a technological portfolio of the region ● Directions of the technological development policy of the region ● Initiatives and tools of the technological development policy of the region
Beneficiaries of the project	<ul style="list-style-type: none"> ● The local government of the voivodeship and its subordinate institutions for facilitating regional development ● Institutions/structures for distributing innovative solutions and technologies ● Companies from the technological sector of the region
Institutions performing the project	<ul style="list-style-type: none"> ● Główny Instytut Górnictwa (Central Mining Institute, leader of the project) ● Silesian University of Technology ● University of Economics in Katowice

As far as the methodological principles of the present foresight project are concerned, the most important consideration is the merging and integration of regional and technological foresight. Regional foresight involved the preparation of a number of scenarios – a total of 7 scenarios were created presenting the pro-technological development conditions in the Silesian Voivodeship. In preparing the said scenarios presenting the technological development conditions, the following methods were employed: STEEP analysis, prospective structural analysis, Delphi methods, surveys, specialist opinions, *etc.* Scenarios presenting pro-technological development conditions in the region formed the guiding principles of technological foresight. The most important con-

sideration here was the work of seven technological panels preparing an estimate/vision of the technological development of each technological area considered. The most important input data were external and internal conditions of technological development of the region along with an evaluation of the intellectual, technological, and organizational potential of the research and development sector of the region. The evaluation of the research and development potential of the region involved an attempt to present the already existing achievements and to indicate promising research foci for the region. An important and valuable set of data used at the preparation stage of the scenarios presenting conditions and the concepts of technological development for the region were the opinions of the technological and regional experts. Expert panels for specific areas made their own lists of important technologies (including critical technologies); then, these lists became a basis for several technological development concept variants. The work of specific-subject expert panels resulted in the preparation of a road map for the implementation of selected groups of crucial technologies.

Strategic recommendations for the technological policy of the region were defined at three levels:

- **Level one** concerns activities aimed at creating conditions favourable for development in the above-indicated technological areas. This level comprises three directions of the technological policy of the region: metropolization, knowledge management and the internationalization of the research and development sector.
- **Level two** focuses on creating conditions for the development of particular sectors of the economy on the basis of key technologies from a given technological area. The core principle of the technological policy at this level is the strengthening of intellectual, technological, and organizational potential within the research and development sector, institutions distributing innovative technologies, and the business environment.
- **Level three** focuses on the development of key technologies within a given technological area. Directions for technological policy involve technological leadership, technological perfection, acquisition of technologies, and diversification of technological innovations.

3.2. Technological foresight applied to the development of the public services sector in the Upper Silesian Metropolitan Area – 2030²

Foresight studies focusing on the development of metropolitan public services are aimed at speeding up the metropolization process of the Upper Silesian Agglom-

² See also:

- Feasibility study for the project
- K. Czaplicka-Kolarz *et al.* Summary report concerning the performance of task II of the *Technological foresight regarding the development of the public services sector in the Upper Silesian Metropolitan Area*. Diagnosis of the conditions and status of the implementation of contemporary technologies in the metropolitan services sector. Central Mining Institute, Katowice, August, 2010.

eration by means of enhancing the technology behind the region's infrastructure and the technology connected with the provision of the said services. The starting point for the creation of the concept of this foresight project were the decisions taken as part of the upper *Silesian Voivodeship Development Programme 2020* and the recommendations resulting from regional/technological studies. The research horizon for the foresight studies was the year 2030 (see Table 3).

The strategic focus of metropolitan/technological foresight concerned public metropolitan services rendered in the following fields:

- health,
- culture,
- environment,
- transport.

These areas became priorities in light of accelerating the metropolization process of the Upper Silesian Agglomeration. Integrating the metropolization process regarding these services with the metropolization process regarding the Upper Silesian Agglomeration was important in light of the methodological principles of foresight research concerning the development of the public services sector. Consequently, the development of metropolitan public services was considered to be one of the conditions for accelerating the metropolization process of other aspects of the metropolitan functions.

A scenario-based approach was employed twice in the course of the foresight studies. The first time was as part of the preparation of five scenarios presenting the conditions for the development of the metropolitan functions of the USMA and a vision of its spatial structure; the second time was as part of general methodological work on the preparation of scenarios presenting the conditions underlying the development of the four areas of public services indicated above (*i.e.* health, culture, environment, and transport). Estimates/scenarios presenting the development of metropolitan public services constituted a separate branch of the foresight studies, and were sector-specific and paid particular attention to technological considerations.

The source of the core methodology for the metropolitan/technical foresight studies was the first generation foresight studies (*i.e.* regional/technological foresight). The metropolitan approach also shared some characteristic features:

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- K. Czaplicka-Kolarz *et al.* Summary report concerning the performance of task III of the *Technological foresight regarding the development of the public services sector in the Upper Silesian Metropolitan Area*. Technological scenarios presenting the technological development of metropolitan services. Central Mining Institute, Katowice, April, 2011.
 - K. Czaplicka-Kolarz *et al.* Summary report concerning the performance of task IV of the *Technological foresight regarding the development of the public services sector in the Upper Silesian Metropolitan Area*. Strategic recommendations. Central Mining Institute. Katowice, August 2011.
 - A view of the future of metropolitan public services in the Upper Silesian Metropolitan Area (editor: J. Bondaruk), Central Mining Institute, Katowice, 2011.

Table 3

Technological foresight applied to the development of public services sector in the Upper Silesian Metropolitan Area – 2030

Idea I: summary of the project	<p>Idea:</p> <ul style="list-style-type: none"> ● Supporting and facilitating the development of the Upper Silesian Metropolitan Area (USMA) ● Supporting and facilitating the technological development of metropolitan public services sector <p>Scope of the project:</p> <ul style="list-style-type: none"> ● The following metropolitan public services considered as points where technologies are to be applied: <ul style="list-style-type: none"> ○ health, ○ culture, ○ environment, ○ transport.
Methodological principles of the project	<ul style="list-style-type: none"> ● Scenarios presenting the development of the metropolitan functions of USMA, spatial concepts of USMA, priority technological areas ● Scenarios presenting the external conditions for the development of various technological areas ● Road maps for the implementation of innovative projects and innovative technological solutions divided by technological areas ● Strategic recommendations for the metropolitan policy
Recommendations for the management policy	<ul style="list-style-type: none"> ● Types of the development policy of metropolitan public services ● Functions and principles of the policy for developing metropolitan public services ● Strategic foci for the development policy of metropolitan public services ● Spatial models presenting the development of infrastructure and the organisation of service provision of metropolitan public services ● Strategic management system for the metropolitan development of the region
Beneficiaries of the project	<ul style="list-style-type: none"> ● Cities governing the USMA ● Local government of the voivodeship and its subordinate institutions managing metropolitan infrastructure and public services ● Specialized institutions rendering metropolitan services in the region subordinate to the government
Institutions performing the project	<ul style="list-style-type: none"> ● Główny Instytut Górnictwa (Central Mining Institute, leader of the project) ● Silesian University of Technology ● University of Economics in Katowice

- identification of the driving forces behind the development of particular sectors; this was researched twice: once using expert opinions and then using the results of the prospective structural analysis (while the scenarios presenting conditions were being prepared);

- testing the scenarios (created in an endogenic and aspirational manner) presenting the development of sectors by means of confronting the external considerations indicated in them;
- approaching the stage where innovative projects and technological innovations are defined as part of the foresight studies.

Strategic recommendations for the metropolitan policy included:

- proposed types of metropolitan development in the region (taking the situation in the Upper Silesian Metropolitan Area into account);
- functions and principles underlying the specific spatial metropolitan policy of the USMA;
- strategic directions of the metropolitan policy – merging the active and passive approaches;
- spatial models presenting the development of the infrastructure used for rendering metropolitan public services and organizing the provision process for metropolitan public services;
- principles underlying the creation of a strategic management system for metropolitan services.

3.3. Challenges regarding sustainable land use in the Silesian Voivodeship – scenarios for 2050³

Prospective studies focusing on long-term (*i.e.* up until 2050) changes in the manner in which land is managed and used in the region were aimed at identifying challenges which the spatial re-allocation of economy and settlement will face. These studies were the first of this type in Poland. They were not directly connected with spatial planning for the Silesian Voivodeship and the spatial management for the said Voivodeship (see Table 4).

Regional/spatial foresight studies opened up a new vista for spatial management and planning, which can be divided into several aspects:

- systemic perspective focusing on the mechanisms of change in the usage and management of land;
- scenario perspective focusing on the conditions underlying change in land use and the evolution of spatial planning and management;
- a perspective taking into account the challenges connected with using land in the region in a sustainable manner;
- an approach presenting a new vision of the spatial policy of the region.

³ See also:

- Project feasibility study
- The challenges of sustainable land use using Silesia as an example – 2050 scenarios (ed. L.Trząski), Główny Instytut Górnictwa, Katowice 2012 (monograph in preparation for printing).

Table 4

Challenges regarding using land in a sustainable manner
in the Upper Silesian Voivodeship – scenarios for 2050

Idea I: summary of the project	<p>Idea:</p> <ul style="list-style-type: none"> ● Facilitating and supporting spatial planning in the region by means of preparing a sustainable land use model ● Facilitating and supporting the process of significant spatial re-allocation of the economy and settlement <p>Scope of the project:</p> <ul style="list-style-type: none"> ● Structuralising areas within the region using retrospective studies and research into the attractiveness of land ● Identifying the characteristic features of the region and preparing scenarios presenting changes to the usage of land in the region
Methodological principles of the project	<ul style="list-style-type: none"> ● Historical, retrospective, and land evaluation studies, as well as the opinions of external specialists concerning selected manners of land use in the region ● Pattern maps presenting changes in the way in which land is used in the region ● Scenarios presenting changes in the way in which land is used in the region ● Strategic recommendations for the spatial policy of the region
Recommendations for the management policy	<ul style="list-style-type: none"> ● New axiological and toolbox basis for the spatial policy of the region regarding the supporting of sustainable development ● Decision-making procedures defining the manner in which governmental and local government bodies at the voivodeship level and other local government bodies need to co-operate as far as the locating of investments is concerned
Beneficiaries of the project	<ul style="list-style-type: none"> ● Governmental administration ● Local government of the voivodeship and its subordinate institutions taking part in spatial planning and management ● The local governments and administrative bodies of poviats and gminas ● Professions actively taking part in spatial management ● Institutions functioning within the real estate market
Institutions performing the project	<ul style="list-style-type: none"> ● Główny Instytut Górnictwa (Central Mining Institute, leader of the project) ● Silesian University of Technology ● University of Economics in Katowice

The systemic approach to the foresight studies was based on four aggregate and fourteen basic typical ways in which land is used/managed in the Silesian Voivodeship. The manner in which land is used constituted the basis for preparing the division of the entire region into several functional areas: the Upper Silesian Metropolitan Area, 3 agglomeration areas, 7 agricultural, tourist- and recreation-focused areas, and 1 rural area; these were subsequently described in terms of their 13 spatial characteristics. The final result of the systemic foresight studies consisted of a set of systemic maps, *i.e.* diagrams presenting the relations between various features of land use and

the types of the entities taking part in the decision-making process connected with the usage and management of land in the region.

Another approach to regional/spatial foresight studies was the scenario-based approach. It comprised five scenarios presenting the evolution of spatial structures within the region under the influence of external forces. The five scenarios were:

- globalization and the directions of trends and tendencies,
- changes of the development pattern,
- dominant spatial development pattern,
- taking possible crises into account,
- steady and harmonious development.

These scenarios allowed us to generate a vision for land use generally, and land use in the region.

The third approach to regional/spatial foresight studies involved comprehensive analyses investigating the challenges for sustainable land management and usage. Several sets of possible challenges were considered and, eventually, the following challenges were considered to be the most important:

- ensuring the general availability and good quality of transport and industrial infrastructure in the region;
- ensuring dense and versatile new urban development (also in suburban areas);
- ensuring the continuity, existence, and availability of the environmental system of the region;
- ensuring that land (including post-industrial areas) is reclaimed.

The fourth approach to foresight studies presented a vision of the spatial policy of the region comprising:

- purpose and principles of spatial policy in the region,
- mechanisms and tools of spatial policy.

Merging the concept of spatial policy with the concept of spatial development allowed to define certain strategic recommendations.

Strategic recommendations for the spatial policy of the region focused on:

- preparing procedures and system tools for the policy of re-allocation of the economy and settlement of the region,
- providing the local government of the voivodeship with a new concept and methods for implementing spatial policy,
- presenting an outline of the functional areas of the voivodeship and their structural types.

The innovativeness of the spatial policy of the region is an element worth emphasizing here because the methodology and procedures employed as a part of such policies prepared so far were considered insufficient and ineffective by professional circles. What will most probably change is the legal system underlying spatial planning. A touch of freshness for the spatial policy of the region may also result from the urban policy currently being implemented.

4. A strategic reflection

After completing the set of foresight studies, their usefulness was examined in light of regional policy facilitating the development of a region and spatial policy shaping the manner in which the region is managed in spatial terms. The implications of foresight for real estate management were also taken into account. Foresight studies present the most important tendencies and practical solutions so that thinking, planning, and implementing the principles of regional development and spatial development policies may be integrated. Teams of researchers commencing with regional foresight studies on their own and teams which are entrusted with such studies by public authorities should never lose sight of the usefulness of the results of their work.

A condition precedent for the pursuit of foresight studies, useful in strategic and political terms, is the ability to co-operate with specialists from other fields who have sufficient knowledge and perspective and with people involved in the decision-making processes behind public policy (as well as in the business and civil sectors).

Foresight studies may be considered a valuable tool for initiating strategic policy, especially in places where a new conceptual framework and innovative solutions are expected and needed. They are a start-up tool that allows to commence implementing the principles of a policy in a professional manner. Whether or not such activities are followed up depends on the strength and effectiveness of the co-operation between specialists from different fields and on the various political and decision-making factors.

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