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# PRIORITIES AND NEW CHALLENGES OF THE LOCAL ENVIRONMENTAL POLICY IN THE SILESIA REGION

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**ABSTRACT:** The main aim of this paper is to assess the implementation of the main priorities of the local environmental policy in the Silesian province, and to identify new areas of action undertaken by local authorities in the field of environmental policy. The basic research methods used in the paper include the analysis of the literature and available data on the environment condition in the Silesian province and primary data obtained through surveys conducted within statutory research: Department of Environmental Management and the Department of Social and Economic Policy at the University of Economics in Katowice, within the years of 2012 and 2015. Based on the obtained results, three priority groups were determined:

- I. "traditional", which included issues related to water and wastewater management and municipal waste management,
- II. a constant low level in the hierarchy of local authorities' priorities – issues related to the revitalization and rehabilitation of brownfield sites, noise protection and ecological construction;
- III. "emerging" with the greatest increase in the rank awarded by the local authorities – the problems of creating a low carbon economy and air protection, the protection of ecosystem services in urban areas, flood protection.

**KEY WORDS:** environmental policy, local sustainable development, municipality, Silesian voivodship

## Introduction

The Silesia region is the most intensively developed area in Poland, and the natural environment quality in the province is, to a large extent, spatially diversified. In addition to areas of a high conservation value, there are also those heavily degraded as a result of intensive and long-term industrial activities, expanded transport network combined with high traffic intensity and due to insufficient investments in the environmental protection infrastructure. These conditions constitute a difficult challenge for local authorities creating and implementing the policy at the local level, which is aimed at protecting and improving the natural environment and the rational use of resources. Great progress in the field of environmental protection, which took place in the province in the past few years, is largely owed to local authorities, priorities determined by local authorities, and implemented investments. At the same time, there are still problem areas requiring urgent corrective measures (cf. Preisner, Pindór, 2003, p. 198–213; Preisner, Pindór, 2014, p. 12–14). The main purpose of this paper is to assess the implementation of main priorities of the local environmental policy in the province and to identify new areas of activities undertaken by local authority units in the field of the environmental policy.

## Local environmental policy

The environmental policy can be defined as a conscious and purposeful activity of the country in terms of use, maintenance and shaping of environmental principles of the nation development, including economy development (Poskrobko, 1999, p. 70–74; cf. Górka, Poskrobko, Radecki, 1998, p. 63–98; Graczyk, 1999, p. 45–54; Janikowski, Krupanek, 2000, p. 83 – 98). The shaping of the environmental policy should be conducted in a multifold manner, not only with the use of legal regulations in the form of acts or special purpose funds established for this purpose, but also with the use of activities undertaken at the local level. The Act on Environmental Protection Law (Prawo ochrony środowiska, Ustawa z dnia 27 kwietnia 2001r., Dz.U. 2001 nr 62 poz. 627), which among environmental protection authorities, in addition to the staroste, governor or minister mentions commune heads, mayors and presidents of cities (Art. 376), draws the attention to this issue. The municipality's environmental policy most often includes the following issues (Sekuła, 2002, p. 47–56):

- creation of legal foundations,

- involvement of local environmental policy creators (authorities, non-governmental organisations, enterprises, local community) in the process of its creation,
- protection and shaping of the natural environment together with the indication of priorities of action,
- determination of pro-ecological directions of the municipality development, in order to make them consistent with assumptions, principles and objectives of sustainable development, which result from global Agenda 21 as well as the national and regional environmental policy,
- the right choice of instruments for the environmental policy implementation, which make it possible to implement sustainable development principles.

Among the tasks assigned to the local authorities, the following can be mentioned (Górski, 2009, p. 81–100):

1. Tasks of a directly executive nature – they consist in performing the activities, which have a direct impact on the environment condition (i.e. reduction in the use of resources or neutralisation of pollutants). These tasks include, among others, those related to land management and maintenance of green areas, water and wastewater management, and waste management;
2. Tasks of an organisational nature – they consist in stimulating positive changes in terms of environmental protection through development of strategic documents setting out the objectives and directions of action, and environmental education.

The scope of the environmental policy at the local level is determined, on the one hand, by law provisions that constitute a frame for mandatory activities, and on the other hand, by problems, needs, and expectations of the environment users. Law provisions indicate necessary tasks that should be implemented by local authorities, among which it is possible to distinguish two groups: tasks dedicated to individual components of the environment (among others, environmental protection, water protection, protection of habitats) or tasks related to specific pollutants, e.g. protection against waste, and protection against noise (Rzeńca, 2016, p. 97).

There are existing gaps in the theory of the creation of local environmental policy and modern, integrated systems for the provision of environmental services by local authorities. Although, there are guidelines on the ways and standards of providing different types of services (e.g. water, wastewater, and municipal waste management), they are not coordinated and do not respond to the key environmental challenges (climate changes, the loss of biodiversity). Local authorities have problems with the creation and practical implementation of development priorities related to the systems of environmental

services compatible with sustainable development principles. Significant gaps also relate to new areas of services, such as ecosystem services as well as opportunities and constraints associated with the maintenance of this type of services in urbanised areas. The international studies in this area significantly accelerated mainly through the creation of the International Society for Ecological Economics – ISEE in 1989, the implementation of Millennium Ecosystem Assessment global project (2001–2005) and the implementation of TEEB – The Economics of Ecosystems and Biodiversity project (2007–2010) by Germany, the European Union, and United Nations. In Poland, the issue of analysing ecosystem services in cities was taken within the framework of the projects implemented by the Sendzimir Foundation.

### Research methods

Basic research methods applied in the paper include an analysis of the subject literature and available data in terms of the environment condition in the Silesian province, and primary data obtained with the use of surveys. Surveys have been carried out:

- in 2012 within the framework of statutory research of Department of Environmental Management at the University of Economics in Katowice – title: “Assessment of the sustainable development programming in Silesian communes”;
- in 2015 within the framework of statutory research of Department of Social and Economic Policy at the University of Economics in Katowice – title: “Sustainable development policy in the national, regional and local dimension”.

In both editions, the survey was addressed to all 167 municipalities of the province, however, the questions were answered by 70 municipalities in 2012 and by 108 in 2015. Surveys among local authorities in both editions were conducted using CAWI method and due to insufficient reimbursement supplemented by sending questionnaires by mail. The direct surveys among local authorities are aimed at identification and assessment of: the level of knowledge as well as environmental awareness, priorities, needs and barriers in this respect and taken actions on the provision of public services of the environmental nature and related to environmental protection. The research are equally based on diagnostic and prediction approaches. On the basis of the results of the above surveys using scientific induction methods, the conclusions on the sustainable development policy in the Silesian communes were formulated.

## Environmental priorities for activities of the Silesian province municipalities – results of the research

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A decisive role in creation of the local environmental policy is played by municipal authorities presenting its purposes and priority areas of action. In the conducted surveys, the local authorities were asked to determine, on a six-point scale (priority, very important, important, quite important, secondary and irrelevant), the level of importance of individual activities, such as:

- collective water supply,
- collective discharge and treatment of municipal wastewater,
- storm water drainage,
- municipal waste management,
- air protection,
- transport (including the development of environment-friendly forms of transport),
- protection and maintenance of green areas,
- ecological construction,
- soil protection, revitalisation and rehabilitation of brownfield sites,
- flood protection,
- environmental education,
- alternative energy sources,
- energy efficiency improvement,
- conservation of nature and biodiversity,
- noise protection.

On the basis of the obtained results, three groups of priorities were distinguished:

- I. “traditional” that includes such areas, to which a constant and high interest (issues classified as priority or very important in both editions of the survey, i.e. in 2012 and 2015) is related.
- II. the one of a constant low level in the hierarchy of municipal priorities (issues considered secondary or irrelevant in both editions of the survey).
- III. “emerging” with the greatest increase in the rank granted by local authorities, i.e. with the highest increase of indications in priority or very important categories.

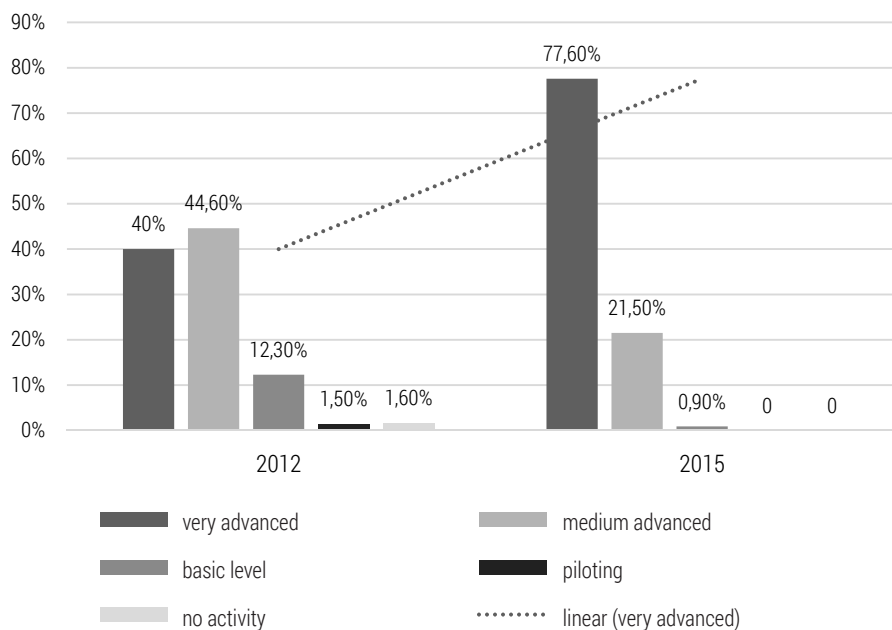
Among “traditional” priorities, there were areas included in own tasks of the municipal local authority (which means obligatory execution) and those satisfying the basic needs of the local community. These issues may include:

1. **Collective discharge and treatment of municipal wastewater** – most municipalities of the province consider this issue priority or very important (more than 82% in 2012 and more than 85% in 2015). There are no responses regarding this problem to be irrelevant. In the Silesia region,

there is still a problem of wastewater treatment insufficient levels, which is reflected in significant degradation and pollution of water resources. However, it should be noted that, thanks to many municipal investments (construction of sewerage networks and wastewater treatment plants), significant progress in wastewater treatment was obtained. In 2014, the emission of municipal wastewater discharged through the sewerage network was 148.0 hm<sup>3</sup>, including 99.4% that was subjected to treatment (Wojewódzki Inspektorat Ochrony Środowiska w Katowicach, 2015, p. 56–58). The problems of insufficient sanitation of rural and recreation areas, and quality problems, e.g. an insufficient level of municipal and industrial wastewater treatment, control of the state of functioning and operation of holding tanks to domestic wastewater and household wastewater treatment plants, also remain unsolved. These problems are not always observed at the municipal level. According to the results of surveys in 2015, a problem of pollution with municipal wastewater is positioned by most municipalities as occasionally occurring (more than 54% of responses), and the percentage of municipalities, which notice problems related to uncontrolled discharge of wastewater is approx. 27%. The problem of water pollution by industrial wastewater is positioned by the vast majority of municipalities as the one not occurring in their area (approx. 66% of respondents in 2015), although, it is a kind of pollution that is dominant in the province – only 69.6% of industrial wastewater was subjected to the treatment process (Wojewódzki Inspektorat Ochrony Środowiska w Katowicach, 2015, p. 56–58).

2. **Collective water supply.** This problem was recognised, at the same time, as priority or very important by more than 80% of municipalities in 2012 and more than 86% of them in 2015. Most municipalities considered the level of advancement of their activities in terms of collective water supply to be very advanced (73% in 2012 and 81% in 2015). The simultaneous occurrence of a problem of poor quality of drinking water at varied intensity was declared in 2015 by more than 30% of municipalities of the province, and carrying out the projects, aimed at improving water quality, was declared by 43.5% of the surveyed local authorities.
3. **Waste management** – was considered a priority issue or very important one by more than 77% of surveyed municipalities in 2012 and more than 84% of municipalities in 2015. The increase in the number of municipalities positioning this issue as priority or very important can be associated with the introduction of a new municipal waste management system, in which the municipality becomes responsible for waste and the way of its management, on 1 July 2013. The surveyed municipalities were asked about the progress of activities in this field – in 2012, the distribution of

responses was steady, with a slight majority of municipalities determining its level of advancement as average. In 2015, the vast majority of municipalities found that activities taken by them in the field of waste management are very advanced. A very low percentage of municipalities responded that activities in the discussed field are at the piloting or basic levels. Data are illustrated in figure 1.



**Figure 1.** Level of advancement in the municipality of municipal waste management (% of valid responses)

Source: based on data from surveys among local authorities conducted in 2012 and 2015.

Despite the appreciation of this problem and many undertaken tasks, it is difficult to talk about sufficient progress in this regard. A new waste management system introduced in 2013 did not lead to the solution of many problems. Such an example may include illegal municipal waste disposal sites, which often appear on the outskirts of cities and in green areas. The existence of this problem is confirmed by the carried out surveys. Although, the municipalities determine their level of advancement in the field of waste management as very advanced, and at the same time, most of them admit that they observe the problem of illegal landfills on their area. In 2015, in the Silesian province, 33% of respondents admitted that this problem often

occurs in this area, almost 60% observes this problem occasionally, and only 8.5% of local authorities admit that this phenomenon does not occur in the municipal area.

The second group of priorities includes the areas characterised by a constant, low interest of local authorities, which can include:

1. **Environmentally friendly construction** – these activities at the municipal level particularly relate to the design and implementation of investments, such as, e.g. educational infrastructure, municipal and education construction (e.g. with the use of information posted on the municipality's website or in the local authority newspaper). In this range, a decrease in the number of municipalities positioning this issue as secondary or irrelevant (47.2% of surveyed municipalities in 2012 and 27.3% of them in 2015) was reported, but at the same time, no significant increase of progress of action (in 2012, 45% of municipalities reported the lack of activities related to the promotion or implementation of ecological construction, and in 2015, this percentage was 42.7%) was observed.
2. **Noise protection** – at the same time, this problem was considered secondary or irrelevant by 20% of municipalities in 2012 and more than 15% of surveyed municipalities in 2015.
3. **Soil protection, revitalisation and rehabilitation of brownfield sites** – were a secondary or irrelevant issue by more than 36% of surveyed municipalities in 2012, and more than 30% of municipalities in 2015. At the same time, the Silesian province is an area characterised by a large number of brownfield sites, which is the result of the highest industrialisation of the country. Revitalisation of such lands has been one of the most difficult environmental, economic and social problems to solve in the region, and the number of lands requiring rehabilitation generally does not decrease, which means that taken measures are ineffective (in 2012, the number of such lands was 4819 ha, and in 2015, it was 4819 ha (GUS, Warszawa 2016). The lack of the local authorities' interest in revitalisation problems was also affected by the lack of clear legal regulations in this field. On 18 November 2015, a new act on revitalisation (Journal of Laws of 2015 item 1777), the basic idea of which is to extend the catalogue of own municipal tasks, entered into force. The new act provides new opportunities for the municipalities' activities in this area, and these changes may affect a greater interest in the problem in the future. The surveys were conducted prior to the introduction of these regulations.

Based on the obtained data, the areas of the highest increase in interest of local authorities were distinguished – the so-called “emerging” priorities (see table 1). Within this group, it is possible to distinguish the following areas:



1. creation of a low-carbon economy and air protection, which can include alternative energy sources, energy efficiency improvement, and air protection;
2. protection of ecosystem services in urban areas (conservation of nature and biodiversity, and green areas);
3. flood protection.

**Table 1.** Priorities of the municipalities' activities (the highest increase in interest)

Priority or very important area 2012	Priority or very important area 2015	Change
Alternative energy sources and energy efficiency improvement – 13.3%,	Alternative energy resources – 29.1% Energy efficiency improvement – 35%	More than 15%
Conservation of nature and biodiversity – 21.1%	Conservation of nature and biodiversity – 33%	Approx. 12%
Green areas – 23%	Green areas – 34.3%	More than 11%
Flood protection – 47.6%	Flood protection – 57.4%	Approx. 10%
Air protection – 54.1%	Air protection – 62.3%	More than 8%

Source: based on data from surveys among local authorities conducted in 2012 and 2015.

One of the main factors that had an impact on the increase in importance of the above issues is poor air quality within the entire area of the province. In recent years, as a result of activities taken to improve the natural environment condition, the level of air pollution in the region decreased, admittedly, but still compared to other provinces, the Silesian province occupies a leading position in the country in terms of particulate and gas pollutants to the air. These problems are noticed at the local level, but surveyed local authorities indicate low emissions from residual buildings (more than 77% of respondents – data in details presented in table 2) as the main environmental problem. Further problematic areas indicated by local authorities include established habits and behaviours of inhabitants (e.g. burning garbage in furnaces) reported by 82% of surveyed municipalities and the lack of sufficient control instruments (control instruments were considered insufficient by 68% of local authorities in relation to individuals, and 64% of local authorities in respect of enterprises). In order to be successful, activities aimed at the environment condition improvement and emission decrease should cover the entire complex area of the so-called low-carbon economy, including determined priorities related to the use of alternative energy resources and energy efficiency improvement.

**Table 2.** Problems related to air protection in the Silesian province in 2015 (% of valid responses)

Description of the problem	The problem often occurs within the municipality	Intensification of the problem is not so large or occurs on the municipality territory	The occurrence of this problem is not observed within the municipality
Industrial plants emitting pollutants into the air	15.9	41.1	43.0
Low emission from residential buildings	77.3	18.9	3.8
Pollution resulting from the heavy traffic of cars	36.5	49.1	14.4

Source: based on data from surveys among local authorities conducted in 2015.

Another significant problem, which occurs in the province, includes flood risks in urban areas. These phenomena are the effects of increasing urbanisation, and above all: building up more and more areas with impermeable materials (roads, parking lots, pavements), rapid discharge of rain water from urbanised catchments with the use of the sewerage system, increasing the area of commercial and residential buildings, reduction of areas of wetlands. It results in the increase of irregularity in the flow of rivers, the danger of extreme situations (droughts and water shortages, floods), unfavourable changes in the so-called small water cycle and the increase of losses caused by floods resulting from heavy rainfalls. In the province, 13 municipalities of those surveyed in 2015 admitted that they carry out projects related to the reduction of risks associated with rainwater, e.g. disintegration of the cities' areas. The surveys also present a significant decrease in the number of local authorities, which do not show activities in the field of flood protection (from 26% in 2012 to 10% in 2015).

Another element contributing to the increase in importance of new priorities is a growing rank of urban greenery (increasing awareness of local communities and expectations in this scope). Until recently, urban greenery was perceived by many people as a category of cost, which brings at most a range of more or less intangible benefits. However, it changes, and well-arranged greenery becomes an element of generated profits. City dwellers often seek residential and service areas, which are attractively decorated with greenery. Modern analyses show the increase in value of the land properly developed with the use of greenery from several to 25% (Greinert, Szczecińska, 2015). It is possible to notice slowly increasing awareness of local authorities in relation to the importance of environmental protection and biodiversity. The lack of knowledge and awareness of consequences con-

nected with discontinuation of activities related to the protection of green areas can result in the loss of essential and valuable ecosystem services, which contributes to real economic losses in the budgets of municipalities. As a result, restoration of ecosystems and/or finding an alternative solution may occur to be a process that is very costly, lengthy, and sometimes impossible to be implemented (Lorek, 2015, p. 27–43). According to the carried out surveys, the number of local authorities, which do not take any activities in this field (from 33% in 2012 to 21% in 2015) decreased. Among the local authorities surveyed in 2015, there were also those that carried out the projects related to valuation of ecosystem services in their area. Although these are the first pioneering projects (3 in the province), however, they give a chance to popularise such activities among other local communities.

## Conclusions

The shape of development processes at the local level is affected by the effective implementation of environmental policy and the use of its resources. The basic task for local politicians constitutes a choice of priorities and shaping of development directions appropriate for the local community. In practice, the activities of municipalities often constitute priorities for development and investments in diverse areas of services provided to inhabitants. According to the municipalities' declarations, the problems related to water and wastewater management, and municipal waste management were priority issues. Many investments implemented by the municipalities in this scope resulted in a significant improvement in quality and availability of these services as well as the improvement of the environment condition. However, the quality issues in water and wastewater management, and those related to the effective implementation of municipal waste management remain unsolved. Environmental problems and social expectations in the region also force changes in the local environmental policy. The most important new priority challenges in the region include the area associated with the air quality improvement and low-carbon economy implementation. The activities to maintain essential services provided by ecosystems constitute an equally important direction of activities in the highly urbanised and industrialised region, such as Silesia. The success of implementation of such programmes is determined by the strength of involvement of local politicians and the local community. Based on the obtained data, it can be stated that awareness of municipal authorities related to environmental threats and benefits associated with the use of environment-friendly solutions increases, but this process continues very slowly.

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