

# The impact of the Regional Operational Programme for the Lower Silesia Voivodeship for 2007-2013 for the environment and infrastructure for environmental protection in the voivodeship<sup>1</sup>

**Bartosz BARTNICZAK**

**Wroclaw University of Economics, Poland**

**Abstract:** State of the environment and environmental infrastructure is one of the factors determining the quality of life of residents in a given territory. The main objective of the Regional Operational Programme for the Lower Silesia voivodeship for 2007-2013 was to increase the level of living in Lower Silesia, and to improve the competitiveness of the region while respecting the principles of sustainable development. Implementation of this objective was to be achieved through the implementation of the objectives assigned to individual priorities. The aim of the priority IV Environment and Ecological Safety was the improvement of the environment, preventing its degradation and conservation of biodiversity and natural assets of Lower Silesia, as well as the improvement of safety in the region through counteracting natural and technological risks and eliminating their effects and to support active in this range of emergency services. Objective of the study is to show how the implementation of projects funded under Priority IV contributed to improve the environment and infrastructure for environmental protection. For this purpose, will be compared with the results of completed projects statistics regarding the state of the environment and environmental infrastructure in the region. The analysis will be carried out in the various environmental components that correspond to the thematic focus of the various activities carried out under Priority IV. The analysis will therefore be conducted in the area of waste, water and wastewater management, air quality, flood protection infrastructure, restoration of degraded land, protect the environment from natural and technological risks and to protect biodiversity.

**Keywords:** Regional Operational Programme, environment, Lower Silesia Voivodeship

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## 1. Introduction

The main objective of Regional Operational Programme for the Lower Silesian voivodship for 2007–2013 was: Improve the quality of life of Lower Silesia inhabitants and increase the region's competitiveness while respecting principles of sustainable development (Lower Silesia Marshal's Office 2008). The Programme had also three detailed objectives:

1. Increase in economic activity based on knowledge and innovation.
2. Development of infrastructure facilitating the improvement in the quality of the environment, investment conditions and running business activity.
3. Improvement of living conditions of inhabitants and growth of competitiveness of the region through modernisation and development of social infrastructure.

From the environmental point of view the most important was second objective. ROP support was granted under 10 thematic priorities. One of them was priority connected to environmental protection. It was priority four: Improvement of the natural environment and improvement of ecological and flood safety in Lower Silesia. This priority was divided into seven actions. The implementation of each of them had to contribute to the achievement of specific objectives (Tab.1).

Table 1. Objectives of implementing each actions from priority IV

Action	Objective
4.1 Waste management	Improving the environment and preventing its degradation by arrangement waste management.
4.2 Water and sewage infrastructure	Improving the environment and living conditions by organization water and wastewater infrastructure and expansion of water supply.
4.3 Improving air quality	Improving air quality by reducing emissions from utilities.
4.4 Flood and drought prevention	Reduce the risk of flood and drought prevention and combating its effects by supporting the construction and modernization of the necessary infrastructure.
4.5 Reclamation of degraded areas	Improving the quality of the environment through the rehabilitation of degraded areas (mainly post-industrial and post-military), which consists in adapting these areas for nature conservation, recreation and green economy.
4.6 Support institutions dealing with environmental protection	Increasing protection against the effects of natural and technological hazards, removing their effects, restore the environment to a proper condition and strengthen the selected elements of the environmental management system.
4.7 Biodiversity conservation and environmental education	The preservation of environmental potential of the region.

Source: Lower Silesia Marshal's Office (2008).

A very important aspect will therefore be to answer the question of how implemented within the ROP projects contributed to improving the environment, as well as environmental infrastructure in the voivodeship. An analysis allowed to identify areas where the impact was very large, but also those in which the effect was small, and thus support should be provided in the next financial period. Improvement of the environment, improving infrastructure for environmental protection is achieved thanks to the many investments made from many different sources. Projects can be funded from national sources (investors' own funds, earmarked funds) but also from various foreign sources (Bartniczak, Ptak 2009: 61-145). The funds from the European Union are granted under the various programs implemented at both the national and regional level. The line of demarcation indicates what projects are implemented under the various programs and at what level (Ministry of Infrastructure and Development 2015). The result is that in some areas support may be granted only at national level which means that the intervention of regional level is very limited.

Table 2. Basic information about supported projects under priority 4

Action	Number of projects	The total cost of the projects (PLN)	The amount of funding with the European Union (PLN)
4.1 Waste management	35	179 106 055.56	102 114 525.22
4.2 Water and sewage infrastructure	53	404 033 444.72	255 675 015.72
4.3 Improving air quality	12	5 966 832.96	4 551 428.91
4.4 Flood and drought prevention	18	87 415 316.99	61 537 625.79
4.5 Reclamation of degraded areas	29	12 382 533.60	9 457 850.81
4.6 Support institutions dealing with environmental protection	25	69 717 682.38	46 082 624.51
4.7 Biodiversity conservation and environmental education	49	64 131 290.99	43 789 140.73
Total	221	822 753 157.20	523 208 211.69

Source: Own elaboration based on Ministry of Infrastructure and Development 2015.

221 projects were granted support under priority 4 (Tab.2.). If we look at the number of projects nearly 24% of supported projects were projects connected to water and sewage infrastructure and more than 22% were projects connected to biodiversity conservation and environmental education. The total value of supported projects was more than 822 mln PLN. The funding from European Union was more than 523 mln PLN. Share of the support of the European

Union amounted more than 63%. Nearly 49% of support was granted to projects involving water and sewage infrastructure. And nearly 20% in areas of waste management.

The purpose of this article is to show the changes in the environment, as well as changes in environmental infrastructure in Lower Silesia in 2007-2013. In the next step the effects of projects co-financed by the ROP will be analyzed. This will allow to identify areas where intervention ROP had the greatest impact on improving the environment and environmental infrastructure.

## **2. ROP impact on the environment and environmental infrastructure in Lower Silesia voivodeship in 2007-2013**

The first analyzed area is waste management. Generation of waste is a growing worldwide problem due to the growing population, increasing the production of consumer goods and technological progress (Ekoportal 2015). Table 3 presents basic information on waste management in the Lower Silesia voivodeship in 2007-2013.

In the voivodeship in 2007-2013 was collected over 6.5 million tonnes of waste. More than 6.1 million tons were mixed waste, and just less than 0.5 million tons were collected selectively. As a positive situation could be assessed increased proportion of waste collected selectively in relation to the total waste. This share in 2013 compared to 2007 was higher by 6.2 points. percentage. A downward trend can be observed in amount of waste generated and recovered during the year. Also decreased of about 5.6 percentage points the share of waste recovered in waste generated during the year. Number of operational landfill sites on which municipal waste are treated were reduced over 60% in 2009-2013. At the same time the area of operational landfill sites on which municipal waste are treated were reduced by more than 40% of. 2505 unauthorized dumps were eliminated in the years 2008-2013.

Improvement in the situation in the area of waste management was possible to achieve thanks to projects which were released under action 4.1 ROP. The implementation of these projects allows to recover more than 34.3 thousand. t of waste per year (Lower Silesia Marshal's Office 2014). More than 58 thousand. people were covered by separate collection of waste (Lower Silesia Marshal's Office 2015), which will contributed to increase the amount of waste

collected in a selective ways, as well as to increased the share of waste collected selectively in the total waste. 204 thousand people were covered by waste management system thanks so more waste will be collected in selectively ways (Lower Silesia Marshal's Office 2014). The increase in the amount of waste collected in a selective ways had an influence purchase 162 containers for selective waste collection, as well as the purchase of a vehicle for selective waste collection. Of the 2505 liquidated unauthorized dumps 74 were liquidated due to the supported projects (Lower Silesia Marshal's Office 2014). Effects of implemented projects were also: 6 composting plants and 5 sorting plants were built and 4 sorting plants were modernized, 5 waste transfer stations were built and about 460 thousand. m<sup>3</sup> were increased the capacity of landfills (Lower Silesia Marshal's Office 2014).

Table 3. Basic information on waste management in the Lower Silesia voivodeship in 2007-2013

Specification	2007	2008	2009	2010	2011	2012	2013
Waste collected during the year (thous. t)	975.7	928.5	990.1	994.4	914.9	902.4	853.7
Mixed waste collected during the year (thous. t)	929.2	867.5	912.5	923.7	849.4	828.8	760.1
Waste collected separately during the year (thous. t)	46.6	61	77.6	70.8	65.5	73.6	93.7
Waste collected separately in relation to the total waste (%)	4.8	6.6	7.8	7.1	7.2	8.2	11.0
Waste generated during the year recovered (with the exception of municipal) (thous. t)	25 020.2	23 883.6	22 804.8	23 163.1	24 196.0	23 581.8	23268.5
Share of waste recovered in waste generated during the year(%)	72.9	70,8	68.5	69.0	69.0	68.3	67.3
Operational landfill sites on which municipal waste are treated (pcs)	-	-	79	51	42	39	30
Area of operational landfill sites on which municipal waste are treated(ha)	-	-	290.0	234,7	209.0	200.6	168.7
Number of unauthorized dumps (pcs)	-	390	350	456	414	382	513

Source: Own elaboration based on Local Data Bank 2015.

Table 4. Basic information about water and wastewater management in the Lower Silesia voivodeship in 2007-2013

Specification	2007	2008	2009	2010	2011	2012	2013
The length of the water supply network(km)	13 604.6	13 888.3	14 110.8	14 429.5	14 345.2	14 681.4	15127.1
Population using the water-line system (people)	2 622 028	2 625 512	2 629 053	2 668 184	2 672 697	2 679 347	2 679 644
Share of population connected to the water supply network (%)	91.1	91.3	91.4	91.5	91.6	91.9	92.1
Length of working sewerage network (km)	7 201.3	7 584.0	7 918.9	8 248.6	8 733.2	9 290.4	9647.4
No. of people connected to the sewerage network	1 924 740	1 940 651	1 950 600	1 986 325	2 021 539	2 044 359	2 058 871
Share of population connected to the sewerage network (%)	66.9	67.5	67.8	68.1	69.3	70.1	70.8
The number of municipal wastewater treatment plants (peaces)	201	203	209	208	217	224	230
Population using municipal wastewater treatment plants (people)	2 168 458	2 185 429	2 181 935	2 215 199	2 240 268	2 250 679	2 263 230
Share of population connrcted to the municipal wastewater treatment plants (%)	75.3	76.0	75.9	75.9	76.8	77.2	77.7
Size (capacity) of wastewater treatment plants by project(m <sup>3</sup> /24 h)	772 150	798 667	789 839	794 474	869 105	840 621	840 956
Discharged treated waste water during the year (dam <sup>3</sup> )	100 685.7	97 911.6	99 450.2	102 064.3	102 219.4	101 331.1	102 796.8

Source: Own elaboration based on Local Data Bank 2014.

Another very important area of conducted research is water and sewage infrastructures. Water is one of the renewable raw materials complying with a number of very important functions in the economy. The validity of these functions causes that water must be protected from contamination. Also water should be rational and economical uses. Protection both qualitative and quantitative water resources is an integral part of environmental protection (Chief Inspectorate of Environmental Protection 2014). Basic information on water and wastewater management in the Lower Silesia in 2007-2013 are presented in Table 4.

The second very important area of study subjects were water and sewage infrastructure. The length of the water supply network from year to year systematically increased. This increased were more than 1522.5 km, which is more than 11.1%. The number of people using the water-line system also increased. Share of population connected to the water supply network increased by 1 percentage point. The length of working sewerage network also increased from year to year. Its length has increased by 2 446.1 km. Systematically increased population connected to the sewerage network. The share of population connected to the sewerage network in years 2007-2013 increased by 3.9 percentage points. The number of municipal wastewater treatment plants were increased of 29. About 95 thousand were increased population using municipal wastewater treatment plants. Share of population connected to the municipal wastewater treatment plants were increased about 2.4 percentage points. The size (capacity) of wastewater treatment plants were increased by almost 9%. In 2013 compare to 2008 more than 102.8 dam<sup>3</sup> amount of discharged treated waste water during the year. Analysis of these data allows you to draw a clear conclusion about the vast improvement of the situation in the field of water and wastewater management in the voivodeship.

The projects implemented under RPO had a very large impact on the situation in the field of water and wastewater in the voivodeship. 218 km of water supply network were built. It was more than 14% of the built network in 2007-2013. 13 682 people were connected to the water supply network. It was nearly 24% increase in the number of people using the water supply network. 282 km sewerage network were built. It can therefore indicate that one in ten kilometer built in the voivodeship was built by the beneficiaries of the ROP. 17 037 people were connected to the newly built or upgraded sewage system. The number of people using the sewerage network in 2007-2013 increased by 134 131 people, so nearly 13% connected through the implementation of the analyzed projects. Projects will help to discharge 2 254 490 m<sup>3</sup> of sewage. 6 municipal

wastewater treatment plants were built. 10 municipal wastewater treatment plants were renovated. 8 water treatment plant were built and 9 were renovated. More than 2.5 thousand m<sup>3</sup> waste water could be treated.

The information contained in the conducted so far studies show that the opinion relate to significant progress in the area of water and wastewater are given by representatives of institutions managing the environment. In the opinion of the representative Regional Fund for Environmental Protection and Water Management Wroclaw water and sewage is one of the areas where the greatest improvement is noticeable. In the voivodeship are municipalities where the indicator for the share of the population using the sewerage system is close to 100%. Representatives of environmental inspection indicated that the amount of waste water treatment plants in these communities, as well as their capacity is sufficient and there is no need for a further measures in this area. From the other hand there are large needed in the construction of the sewerage network in rural areas. Financial support should be directed where there are gaps in infrastructure according to the needs of both the construction of the sewerage system and the modernization of the sewerage treatment plant. In rural areas, should be considered the merits of building domestic sewerage treatment plants. Representatives of environmental inspection also highlighted the improvement of the technical condition of the water supply network. This contributed to the reduction of water losses.

Air quality was another area subjected to analysis. The primary objective of activities related to the protection of the air should be to maintain air quality in areas where it is good and improving in other areas (Voivodship Inspectorate of Environmental Protection 2012). Such activities are very important due to the fact that air pollution very significant impact on human health and on nature. Public statistics provide very limited information on emissions because this information is limited only to emissions to the so-called plants especially noxious to air purity. In 2013 in the voivodeship were 146 such companies. Information about Emissions of air pollutants from plants especially noxious to air purity are shown Table 5.

Emissions of gaseous pollutants was on average at the level of 16.1 million tonnes per year. Emission of particulates pollutants was on average at the level of almost 5.0 million tons per year. Emissions of gaseous pollutants are showed downward trend. It is worth noting that almost all particulates pollutants are retained or neutralised in pollutant reduction systems. In



case of gases pollutant the level of retained or neutralised in pollutant reduction systems were 90%.

Table 5. Emissions of air pollutants from plants especially noxious to air purity in 2007-2013

Specification	2007	2008	2009	2010	2011	2012	2013
Emission of air pollutants-gases (thous. t/year) including:	16677.1	16958.6	15466.6	16343.7	15942.2	16039.6	15286.4
carbon dioxide	16578.6	16870.7	15381.2	16260.9	15866.4	15963.1	15222.8
sulphur dioxide	60.9	54.1	54.9	54.2	48.4	48.1	38
nitrogen oxides	20.9	19.0	18.5	19.2	18.7	18.9	16.3
carbon oxides	11.1	9.3	7.9	7.8	7.1	7.4	7.1
Methane	4.0	4.2	2.9	0.2	0.2	0.2	15222.8
Emission of air pollutants - particulates (t/year)	6.7	6.4	5.2	5.2	4.1	4.0	3.7
Pollutants retained or neutralised in pollutant reduction systems - particulates(thous. t/year)	2408.9	2428.5	2204.3	2745.7	2812.4	2811.3	2554.8
Pollutants retained or neutralised in pollutant reduction systems – gases (thous. t/year)	860.9	830.7	781.9	825.8	913.4	628.9	608.7
Pollutants retained or neutralised in pollutant reduction systems in percent of pollutants generated – particulates	99.7	99.7	99.8	99.8	99.9	99.9	99.9
Pollutants retained or neutralised in pollutant reduction systems in percent of pollutants generated – gases	89.7	90.4	90.2	90.9	92.3	89.2	90.6

Source: Own elaboration based on Local Data Bank 2014.

The share of industrial plants in air pollution is significant, however, carried out for many years studies show that the greatest impact on the occurrence of exceedances of air quality standards are emissions from municipal and residential sectors for example low emissions and road transport. The main reason is the combustion of low-quality fuel (e.g. bad quality coal, not seasoned wood and coal silt), and also burning waste in furnace. This contributes to air pollution with PM10 and benz(A)pyrene. While car traffic is responsible for the emission of nitrogen dioxide and fine dust (Voivodship Inspectorate of Environmental Protection 2012).

Carried out in the last twenty years air quality monitoring in Lower Silesia showed a significant improvement in air quality mainly in relation to sulfur dioxide, nitrogen dioxide and particulate matter. Reduction these emissions were mainly the result of the investment in industrial sector (Voivodship Inspectorate of Environmental Protection 2012). Unsolved problems is still low emissions and emissions from transport. Air protection is an area where there is still much to do, and support in particular should be directed to the elimination of low emission.

Analyzed projects will contribute little to the improvement of air quality because only 8 heat sources were modernized. Also 6.98 t sulfur dioxide, 0.58 t nitrogen oxides and 742.3 t carbon dioxide were reduced yearly emission. These projects, however, help to improve air quality by reducing emissions and concentrations of pollutants in areas where they were implemented.

Carried out so far research (Lower Silesia Marshal's Office 2014) has shown poor air quality in the voivodeship. To exceed the acceptable level of concentration of pollutants mainly occurs during the winter. The main problem is the low emissions and the burning of waste in household stoves. Activities which will be taken in the near future should concentrate to encourage to join the collective heating network. The factor limiting pollution in cities is the construction of bypasses. This contributed to reducing the problem of environmental pollution caused by emissions from transport means. Therefore, the biggest challenge in the coming years is the need for eliminating low emissions.

Because of the risk of flooding in the region an important area that needs to be analyzed is the implementation of projects aimed at the construction and modernization of infrastructure which reduced flood risk. Despite the validity of flood protection issues available data on the state of the infrastructure are very limited. There are 1 326.5 km embankments and 3005 different types of hydraulic structures in the voivodeship (storage reservoirs, tanks dry, relief channels, pumping stations, etc.) (Lower Silesia Board of Amelioration and Water Structures in Wroclaw).

Due to the range of needs in the field of anti-flood infrastructure can indicate that the implementation of projects financed from the ROP contributes little to reduce the threat of flood and combating its effects. More than 59 thousand residents are protected against flooding thanks to realized projects. 10 projects are realized in the field of infrastructure into flood prevention

and drought. 16 flood protection facilities were constructed, renovated or rebuilt. 9135 hectares were covered by flood protection. More than 37 km of watercourses were modernized and more than 9 km of flood embankments were regulated. Over a 675 meter retaining wall were built. 61.8 thousand. m<sup>3</sup> of water were retained within the small and large retention (Lower Silesia Marshal's Office 2014).

The next analysed area was reclamation of devastated areas. Indeed, thanks to the reclamation is possible to restore the natural landscape, the achievement of the soil or soil with substances consistent with the standards laid down by current law. This helps to give or restore degraded areas utility or natural value (City Consulting Institute 2013). Table 6 presents data on the area of land requiring reclamation and reclaimed and managed in Lower Silesia.

Table 6. The area of land requiring reclamation and reclaimed and managed in the voivodship in 2007-2013

Specification	2007	2008	2009	2010	2011	2012	2013
Devastated land requiring land reclamation(ha)	5289	5704	4755	3608	5892	5898	6569
Degradaded land requiring land reclamation(ha)	1964	1719	2276	2441	2355	2178	1747
Land reclaimed during the year(ha)	185	26	57	10	128	173	153
Land managed during the year (ha)	2	120	7	10	0	9	41

Source: Own elaboration based on Local Data Bank, [www.stat.gov.pl/bdl](http://www.stat.gov.pl/bdl)

In this table we have some basic information about situation in voivodship in years 2007-2013. At the end of 2013, in the voivodeship there was more than 6.5 thousand hectares of devastated land and more than 1.7 thousand hectares of degraded land requiring reclamation. In 2013 compared to 2007 there was about 217 hectares less of land demanding reclamation. In 2007-2013 it was possible to reclaim 732 hectares and manage 189 hectares.

Implementation of projects under the ROP, allowed to reclaim and recovery of 72.59 ha. Among the reclaimed space was 45.31 hectares of former industrial and 1 ha of post-military areas. 2 300 m<sup>2</sup> of green spaces were transferred into recreational areas. The surveyed projects are improving the environment by performing the remediation work. It should be noted, however, that in the voivodeship there are very substantial needs in the field of reclamation. The result is that the completed projects contributed little to reduce the area of land requiring reclamation.

Public statistics do not provide information on the actions taken to protect against the effects of natural and technological hazards, removing their effects, restore the environment to

appropriate state and strengthening of selected elements of the environmental management system.

Analysis of results of completed projects allows for the formulation of an application for their significant impact on increasing protection against the effects of natural and technological hazards and removing their effects. They also helped to restore the environment to appropriate state and strengthening of selected elements of the environmental management system. 4 projects were completed in the field of prevention of threats. 47 fire engines fitted with equipment to carry out rescue and disaster recovery were purchased. 18 units of firefighters were supported. More than 1139 km<sup>2</sup> were covered by Measure rescue center for fire protection.

Another area subjected to analysis of the impact of ROP on the behavior of environmental potential of the region through environmental education and the creation of regional mechanisms for the protection and development of biodiversity, green spaces and special gardens. One of the factors determining the environmental potential of the region is the area of protected areas. Basic information on this topic are presented in Table 7.

Table 7. Legal protected areas and the number of trees and bushes planted in years 2007-2013

Specification	2007	2008	2009	2010	2011	2012	2013
Legal protected areas (ha)	360 918.8	359 688.8	362 429.7	369 870.5	371 007.0	371 020.0	371109.7
Share of legal protected areas in total area (%)	18.1	18.0	18.2	18.5	18.6	18.6	18.6
The number of trees planted	17 204	12 231	13 301	13 651	11 921	8 221	7072
The number of bushes planted	190 499	133 715	143 332	120 572	226 679	70 265	70839

source: Own elaboration based on Local Data Bank, [www.stat.gov.pl/bdl](http://www.stat.gov.pl/bdl)

The surface of protected areas were increased. At the end of 2013 its share was 18.6%. In 2007-2013, the province planted over 83 thousand trees and more than 955 thousand bush. Analysis of the effects of co-financed projects does not allow us to formulate a clear conclusion to what extent these projects helped to preserve the environmental potential of the region through environmental education and the creation of regional mechanisms for the protection and

development of biodiversity, green spaces and special gardens. Implementation of projects contributed without doubt to increase the level of environmental awareness and knowledge of the region's population. The effects are:

- 16 environmental education centers received support,
- 79 thousand people benefited from education centers,
- 18.4 thousand people benefited from the established infrastructure of environmental education,
- close to 152 thousand people benefited from the path of nature-education,
- pedestrian and bicycle path were marked with a length of 104 km on the Natura 2000 sites,
- 9 nature path were marked with information boards,
- 920 hours of educational activities were conducted,
- 15 viewpoints were built (Lower Silesia Marshal's Office 2014).

### **3. Concluding remarks**

To sum up, it is possible to say, that analysed projects contributed greatly to improve waste management in the voivodeship and to improve water and sewerage infrastructure. From the other hand analysed projects had little impact on improving air quality in the voivodeship, improvement in flood protection infrastructure were not enough due to very high demand in this area. In spite of the realized projects there is still big demand to reclaim land.

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### ***Wpływ Regionalnego Programu Operacyjnego dla Województwa Dolnośląskiego na lata 2007-2013 na środowisko i infrastrukturę ochrony środowiska w województwie***

#### ***Streszczenie:***

Streszczenie: Stan środowiska a także infrastruktury ochrony środowiska jest jednym z czynników decydujących o jakości życia mieszkańców na danym terytorium. Celem głównym Regionalnego Programu Operacyjnego dla Województwa Dolnośląskiego na lata 2007-2013 było Podniesienie poziomu życia mieszkańców Dolnego Śląska oraz poprawa konkurencyjności regionu przy respektowaniu zasad zrównoważonego rozwoju. Realizacja tego celu miała zostać osiągnięta poprzez realizację celów przypisanych do poszczególnych priorytetów. Celem realizacji priorytetu IV Środowisko i bezpieczeństwo ekologiczne była poprawa stanu środowiska naturalnego, zapobieganie jego degradacji i zachowanie różnorodności biologicznej oraz walorów przyrodniczych Dolnego Śląska, a także poprawa poziomu bezpieczeństwa w regionie, poprzez przeciwdziałanie naturalnym i technologicznym zagrożeniom, likwidację ich skutków oraz wspieranie działających w tym zakresie służb ratowniczych. Celem opracowania będzie pokazanie jak realizacja projektów dofinansowanych w ramach priorytetu IV przyczyniła się do poprawy stanu środowiska oraz infrastruktury służącej ochronie środowiska. W tym celu porównane zostaną efekty zrealizowanych projektów z danymi statystycznymi dotyczącymi stanu środowiska i infrastruktury środowiskowej na terenie województwa. Analiza przeprowadzona zostanie w poszczególnych komponentach środowiska, które odpowiadają zakresowi tematycznemu poszczególnych działań realizowanych w ramach priorytetu IV. Analiza prowadzona będzie zatem w obszarze: gospodarki odpadami, gospodarki wodno-ściekowej, jakości powietrza, infrastruktury przeciwpowodziowej, rekultywacji terenów zdegradowanych, ochrony środowiska przed zagrożeniami naturalnymi i technologicznymi oraz ochrony bioróżnorodności.

***Słowa kluczowe:*** Regionalny Program Operacyjny, środowisko, województwo dolnośląskie  
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