



World Scientific News

An International Scientific Journal

WSN 125 (2019) 159-168

EISSN 2392-2192

Environmental protection and water management of the country - analysis of expenditures on fixed assets, improving the condition of the environment in Poland

Justyna Imiołczyk

Faculty of Management, Czestochowa University of Technology, Czestochowa, Poland

E-mail address: justynacelica@gmail.com

ABSTRACT

The following study addresses the subject of environmental protection in the country. The essence of this concept was explained and its role in shaping eco-development was determined. The most important investment expenditures designated for the improvement of the level of environmental protection and water management in Poland were indicated. The amount of funds spent on fixed assets to improve the state of the environment was scaled.

Keywords: environmental protection, water management, sustainable development

1. INTRODUCTION

Environmental protection is currently a complex of very diverse activities undertaken by many different entities. It is obvious that in the system of a democratic state of law these activities must be based in law, above all also because they are considered to be of fundamental importance for the existence of contemporary societies. It is also important that in these activities the state should actively participate, because environmental protection is considered one of the most important so-called state integration functions. The aim of such state actions is

to ensure the functioning of society as a whole, by creating conditions to guarantee basic living conditions. [1]

Environmental protection should at least include providing the environment with the right (ecologically) development conditions, but emphasizes the need for a much broader understanding of it - a set of actions aimed at maintaining the natural basis of human existence together with taking care of all elements of these foundations, not necessarily having a direct impact on conditions of human life. [2]

In pursuing the objectives of the European Union's climate policy, in order to meet new challenges, Poland must be prepared for the necessity of moving to a low-carbon (low-carbon) economy. The development of such an economy requires integration of all its aspects around low-emission technologies and practices, efficient energy solutions, clean and renewable energy and pro-ecological technological innovations. [3] In a low-emission economy, energy and materials are effectively used or generated, and waste is removed or recovered using methods that minimize greenhouse gas emissions. A low-carbon economy therefore means human activity that brings profit to investors and economic growth in the country while minimizing the negative impact on the natural environment. [4]

The rapid progress of civilization has contributed to the development, but also caused the depletion of natural resources and ecological imbalances which translates into the creation of many destructions and threats. [5] The impact of man on nature leads to the growing problems of civilization, manifested in the unstable social and biological balance and significant air pollution, which threatens the health and life of people. [6]

2. THE NATURE OF ENVIRONMENT PROTECTION

The problem of socio-economic development of the beginning of the 21st century aims at respecting the human resources of the natural environment, manifested by the concept of eco-development. [7] The beginnings of eco-development are associated with the seventies of the twentieth century.

The term sustainable development was introduced during the UN conference in Stockholm during which the theory was adopted that the society implementing the idea of eco-development is: society, recognizing the supremacy of ecological requirements that can not be disturbed by the growth of civilization and cultural and economic development, capable of self-steering by its development in to maintain homeostasis and symbiosis with nature, thus respecting the cost-effective production and consumption and use of waste, taking care of the future consequences of actions undertaken, and thus also the needs and health of future generations. In order to implement extensive programs in the field of eco-development, it is necessary to secure its financing. This issue was devoted to several chapters in Part IV of Agenda 21, entitled "Implementation options". [8]

The issue of financing is extremely important in practice because in reality it determines the implementation of the sustainability policy. In particular, it is necessary to specify:

- sources of financing,
- ways of financing pro-ecological development programs,
- forms of financing, inter alia, through the establishment of a special international foundation,

- the amount of financial outlays needed to implement the Rio Conference's recommendations and recommendations,
- the manner of supervision of the funds used.

Financing of eco-development is a necessity, because the costs that would result from not taking action in this area could turn out to be greater than the costs of implementing the Agenda 21 recommendations. [9] Failure to take action will limit the future generations' choices of ways of further development. The text emphasizes that national and global environmental problems are interrelated. It also means the interrelations between national and international mechanisms for financing sustainable development.

Sustainability aims to bring about and then maintain a balance between the three systems that constitute: the social system (society), the economic (economic) system and the natural environment system. [10]

The idea of environmental protection dates back to the second half of the 19th century. In Europe, it grew out of a movement that responded to the dynamic process of industrialization and urban sprawl, and the increasing degree of air and water pollution. This results in the creation of numerous legal regulations increasing the level of environmental protection in individual countries. [11]

Ecological policy is a conscious and purposeful activity of authorities at various levels, conducted in relation to the natural environment. It involves creating conditions for the rational use of resources and values of the environment, its proper protection and skillful shaping on the basis of theoretical and practical knowledge acquired by humanity. The policy defines the goals, methods and means of environmental management. They are always dependent on internal conditions, mainly on the general state policy, the state of the environment and the economy, the state of social awareness, the aspirations and aspirations of the main social groups, as well as external conditions. [12]

The subject of interest in the ecological policy of the state, region and local government is the macrosystem, ie the economy, society and the environment. The subject of ecological policy are state authorities (parliament, government, minister of environmental protection), regional and local government authorities as well as the highest management of economic units. The term environmental protection law covers a set of standards regulating the rights and obligations of entities (states, organizations, units) in the use of environmental protection.

The solutions of the Act - Environmental Protection Law can not function and be interpreted in isolation from the system of protection of the environment as a whole. Polish legal solutions in the field of environmental protection can be defined by or guaranteed by international law or European Union law. Regulations regarding environmental matter distinguish damage caused by environmental impact, subject to remedy under civil law, environmental damage ("ecological damage"), related to violation of the state or function of natural elements (eg damage to protected species or protected natural habitats; damage to the potential or ecological status of waters).

Because environmental damage concerns in principle the environment as a common good, its estimation does not match the criteria for determining the market value, and to fix it - the mechanisms for determining compensation, the right to demand repair of such damage was granted to you. Based on these assumptions and assuming that environmental protection (understood as striving to maintain ecological balance in the environment) is one of the most

important goals of the modern state, and taking appropriate action is one of the most important tasks, it should be said that law in this field should play a double role. [13]

Legal norms should define, first of all, tasks that are necessary to achieve the assumed goal, and secondly, they should be a means (tool) by means of which these tasks will be performed. As a consequence, in the first role, the norms must define the tasks and responsibilities of the state (its bodies) and all entities that have an impact on the environment (as concerns the basic setting of tasks and obligations, above all the standards resulting from the highest-ranking legal acts). In the second role, legal norms are an autonomous tool for performing specific tasks, a tool that simultaneously regulates the form and manner of using other means (tools) - of a technical, economic, educational nature, etc. Legal norms must play both roles in parallel.

Modern techniques allow the use of tools to protect the environment at the highest level. On the other hand, the rapid development of industry is associated with new threats and potential environmental burdens. The dimension of environmental protection can be very general, not to say global, but also very individual, focused on small elements of the world around us. [14]

Environmental protection is associated with various types of human activity. Starting from pollution of air, water and soil, through waste management. Protection must therefore cover all elements of the environment, i.e. the surface of the earth, including soil and relief, and minerals, inland waters together with the marine environment and its resources, air, vegetation and animal world, landscape and recreational values, and greenery resources in cities and villages. In order to prevent and counteract unfavorable influences, measures are taken to protect against noise and vibrations, waste, radiation, chemical substances and against extraordinary hazards caused by investment, production or technical human activities.

Water management determines the use of water resources and socio-economic development. The state authorities play an important role in this respect: the ministry of the environment, water management boards, voivodship boards, poviats - but also municipalities and citizens. Water is one of the most important resources on earth, essential for all forms of life. [15]

It should be noted that the issue of water management in a broad sense is regulated in legal acts, which not only directly determine the protection of waters, but also refer to the environment in general. Despite the existence of various legal acts regulating issues related to water management, the law of July 18, 2001 plays a special role in water law. The subject of water law concerns:

- inland waters, and to a limited extent, of certain marine waters (with regard to flood protection and against pollution from land-based sources.) In addition, the rules for the protection of marine waters against pollution are regulated by separate regulations.),
- defining water management principles, in particular using them, protecting and shaping them, taking into account the need for comprehensive water management (both underground and surface) and water resources management in a manner consistent with the principle of sustainable development,
- the Act regulates the ownership of water and land covered with waters,
- regulates the principles of managing these components in relation to the State Treasury assets. Water management is conducted in such a way that, acting in accordance with the public interest, avoiding the avoidable deterioration of ecological functions of

waters and deterioration of the condition of terrestrial ecosystems and wetlands directly dependent on water.

Both the quantity and quality of water resources is crucial for the health of the population and for all sectors of the economy, which makes it a decisive factor in the standard of living of the society. Water management is a system economy, covering the whole problem of water needs in the whole country. Water management is defined as follows: "Water management, the national economy department, including the issues of supplying various areas of useful water economy in appropriate quantities, water protection against pollution, protection of the territory against floods, optimal management and economical management of water resources.

3. EXPENDITURE ON FIXED ASSETS FOR ENVIRONMENTAL PROTECTION AND WATER MANAGEMENT

The volume of expenditure on fixed assets for environmental protection in 2017 amounted to approx. PLN 6.8 billion (at PLN 6.5 billion in 2016), and expenditures on fixed assets for water management reached the level of approx. PLN 2.1 billion (PLN 1.7 billion in 2016). In 2017, expenditures on environmental protection and water management accounted for 0.34% and 0.10% of GDP, respectively. Despite the increase in environmental protection expenditures, their low level in relation to GDP indicates the necessity of further investing in this area in order to significantly improve the condition of the environment and prevent its degradation resulting from economic activity. As in previous years, the main investor in fixed capital expenditures for environmental protection are enterprises, next municipalities, and then budgetary units. The group of investors with the largest share of expenditures in the area of water management were budget entities, followed by enterprises and municipalities.

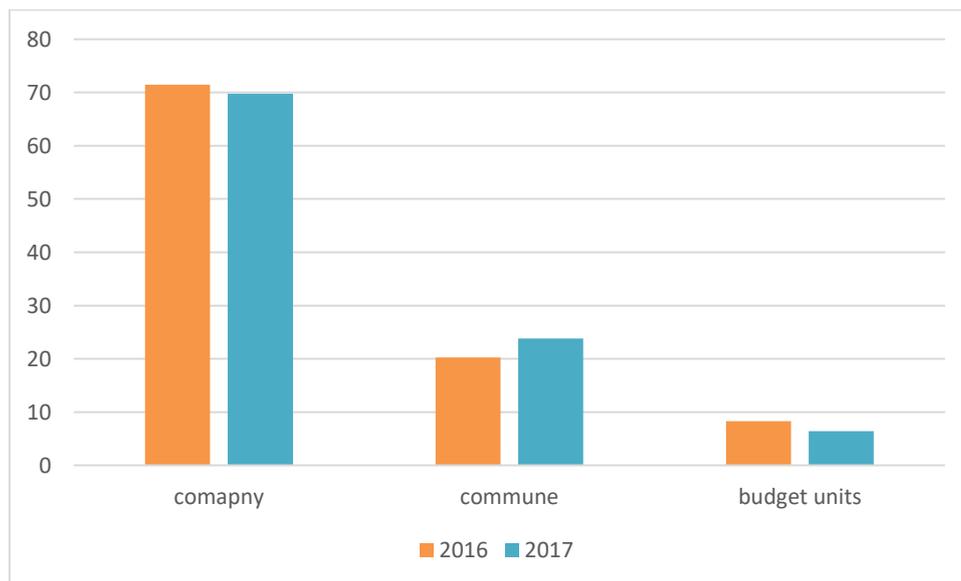


Figure 1. Structure of expenditures on fixed assets for environmental protection
[Source: <https://stat.gov.pl>]

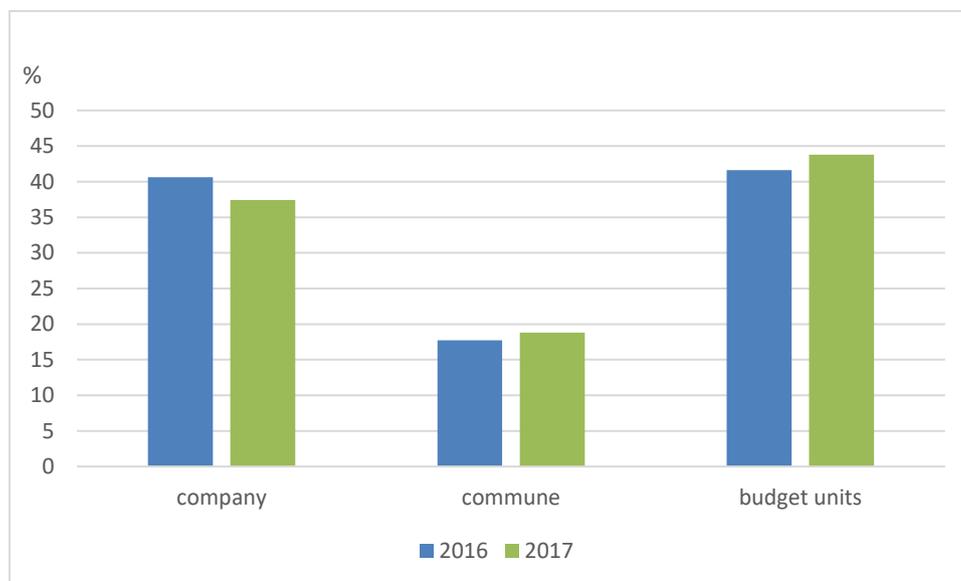


Figure 2. Structure of expenditures on fixed assets for environmental protection
 [Source: <https://stat.gov.pl>]

The largest expenditures on fixed assets for environmental protection were incurred in Śląskie Voivodships (16.9% of total expenditure on fixed assets for environmental protection), Mazowieckie (12.2%) and West Pomeranian (10.2%), while the smallest in Warmian-Masurian Voivodeship (1.7%), Świętokrzyskie (1.8%) and Lubuskie (2.3%).

In the water management, the largest expenditures were incurred in the following voivodships: Śląskie (23.5% of total outlays), Dolnośląskie (20.8%) and Mazowieckie (13.4%), while the smallest in Warmian-Masurian (1.5%) and Holy cross (2.0%).

Expenditure on fixed assets for environmental protection is classified according to 9 areas of environmental protection: 1. protection of atmospheric air and climate; 2. wastewater management and water protection; 3. waste management; 4. protection and restoration of utility value of soils and protection of ground and surface water; 5. reduction of noise and vibration; 6. protection of biological diversity and landscape; 7. protection against ionizing radiation; 8. research and development activities, and 9. other activities related to environmental protection (mainly administration and environmental management, education, trainings).

The structure of expenditure on fixed assets for environmental protection in Poland in 2017 was dominated by expenditures on wastewater management and water protection as well as on protection of atmospheric air and climate, with a share of 39.8% and 33.9%, respectively. The remaining 26.3% of expenditures are expenditures on waste management (12.7%), protection of biodiversity and landscape (2.0%), reduction of noise and vibrations (1.0%), protection of soils and groundwater, respectively. and surface (0.7%), for research and development (0.3%) and other activities related to environmental protection (9.6%).

In 2017, expenditures on fixed assets for wastewater management and water protection amounted to PLN 2.7 billion. The largest expenditures for this purpose were incurred in the following provinces: Mazowieckie (16.7%), Wielkopolskie (14.0%) and Śląskie (11.5%), the lowest in Lubuskie (1.7%), Świętokrzyskie (2.2%). and warmińsko-mazurskie (2.5%).

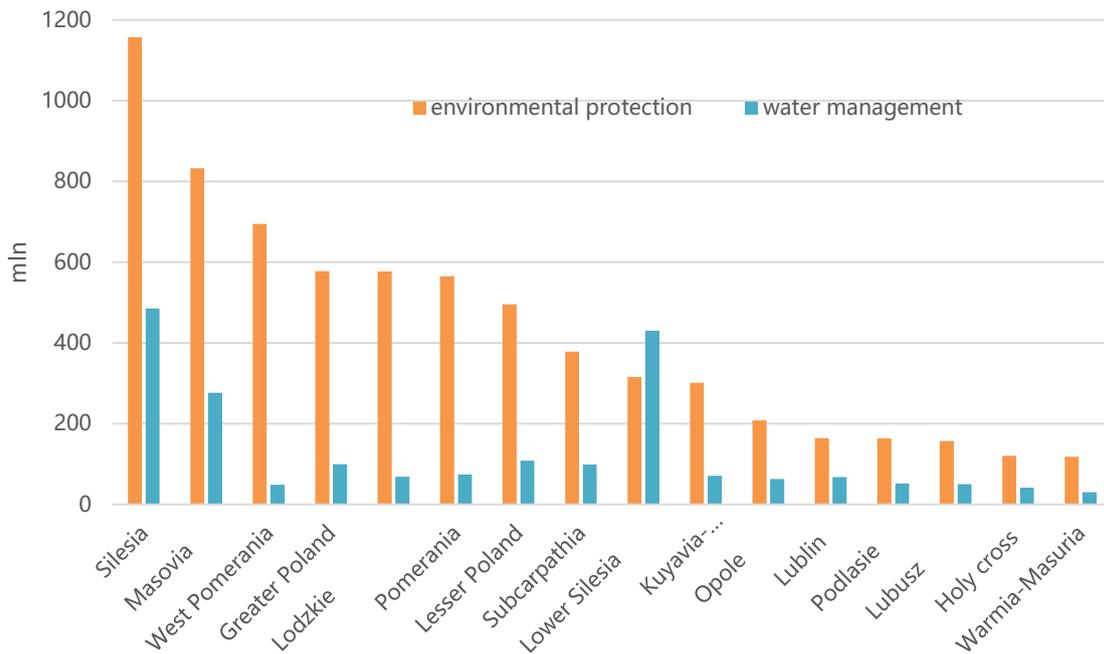


Figure 3. Expenditure on fixed assets for environmental protection and water management by voivodships in 2017.
[Source: <https://stat.gov.pl>]

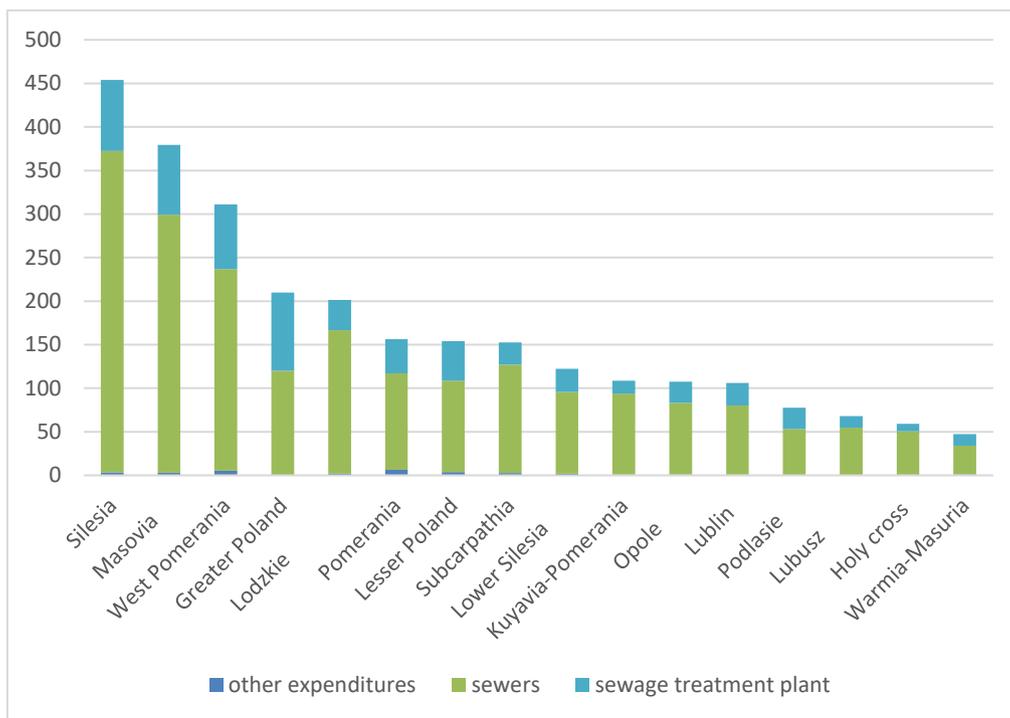


Figure 4. Expenditures on fixed assets for wastewater and water protection by volume of expenditures and voivodships in 2017
[Source: <https://stat.gov.pl>]

Water-related investments include water intake and supply (including water main and distribution network and construction of water quality control laboratories, including automatic water quality measurement stations), construction and modernization of water treatment stations, construction of water reservoirs (except fire-fighting tanks and daily equalizations), water, nautical and energy levels as well as locks and weirs, regulation and construction of rivers and mountain streams, construction of flood barriers and construction of pumping stations in depression areas.

In 2017, the amount of expenditures for water management amounted to approx. PLN 2.1 billion. The main stream of expenditures was directed to the construction of infrastructure providing drinking water. Investments in intakes and water supply accounted for 45.9% of all expenditure in water management.

In 2017, as a result of environmental protection investments, 21 sewage treatment plants with a total capacity of 68,000 m³ / day (including 18 municipal wastewater treatment plants with a total capacity of 5,000 m³ / day). 2,100 were handed over to operation km of sewage system discharging sewage and approx. 0.5 thousand km of sewerage system that discharges rainwater.

In the field of air protection, devices for reducing dust pollution with a capacity of 104,000 tonnes / year and devices to neutralize gas pollutants with a capacity of 10,000 tonnes / year. In 2017, devices and installations for waste disposal with a total capacity of approx. tonnes / year (including approx. 68% was the disposal of waste by landfill). In 2017, in terms of material effects of water management investments, water supply devices (ie water intakes and water treatment) were commissioned, with a total capacity of approx. PLN 86 thousand. m³ / d. The capacity of newly devoted water intakes amounted to approx. 50,000 m³ / day, and the efficiency of the water treatment station 36 thousand. m³ / day. In addition, 2.7 thousand were created km of water supply network, 14 km of rivers and mountain streams were adjusted, and about 24 km of flood embankments were built or modernized

4. CONCLUSIONS

Sustainability is a term that is still gaining popularity, for years widely used in scientific literature, legal acts or strategic documents. The essence of this concept seems understandable, but the definition and exact interpretation of what is sustainable development raises numerous discussions, both among theoreticians and practitioners. [16] Sustainable development has undoubtedly taken a key place among the development priorities of contemporary European societies and economies. [17]

In Poland, the issue of eco-development gained in the 1990s an appropriate constitutional and statutory rank. The ecocodevelopment paradigm was first recorded in the Polish Constitution of 1997 and thus gained fundamental importance for the implementation of the concept of eco-development at all levels of management (national, regional and local). Understanding the concept in question has evolved from the beginning of the 90s in both Polish and European legislation from the category of eco-development, through sustainable development, to the currently most commonly used name, sustainable development. The ongoing change is accompanied by a wider reference to the paradigm of this development in the country's most important strategic documents.

Legal regulations in the field of environmental protection in Poland form a separate system. An important element of the national system of environmental law are also the sources of international law and European Union law in force in Poland. In relation to them, and especially to EU law, national regulations are more and more often complementary and executive. Investments aimed at improving the state of the environment are increasingly recognized as priorities by both local and central authorities.

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