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IMPLEMENTATION OF POLISH AND UKRAINIAN EXPERIENCE OF PUBLIC - PRIVATE PARTNERSHIP IN TERRITORY SUSTAINABLE DEVELOPMENT

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Abstract
The article analyses the practical application of public-private partnership (PPP) models in the context of rural sustainable development based on the Polish experience. The purpose of the article is to provide a theoretical justification and develop practical recommendations for the implementation of the PPP mechanism in the rural areas of Ukraine through the improvement of waste management tools considering Poland's experience of sustainable development. The main research methods, focused on the use of comparative, situational and strategic analysis tools, have provided results that may be useful to public managers of the agro-economic sector and private investors. The study demonstrates the strategies and mechanisms that have contributed to successful cooperation between public institutions, private sector entities and all stakeholders to promote sustainable growth.

Keywords**:** *development, implementation, experience, public-private partnership, rural area, sustainable growth.*
JEL Codes: *D83, O10, R28, Q01, Q18.*

Introduction

Rural areas are an economic, social and cultural space for transforming the system of values, restoring degraded areas and creating their investment attractiveness, preserving the ecological environment, so the formation of an effective mechanism should lead to an improvement in the quality of life of residents, stimulate the economy and restore spatial order. Since the stakeholders in rural communities include local authorities, businesses, the general public, financial institutions and non-governmental organizations, public-private partnerships and social participation should be considered as the most important factors in rural regeneration. The study shows the dynamics of public-private arrangements based on the analysis of examples of successful cooperation between local authorities and the private sector in the EU countries (World Bank, 2020). The study focuses on the use of public-private partnership instruments in the process of sustainable development of rural areas on the example of the construction of a waste incineration plant in the Wielkopolska Voivodeship in Poland (Raport, 2013, 2016; Biuletyn, 2023).

The critical situation with the generation, accumulation, storage, processing, recycling and disposal of waste in rural areas of Ukraine is characterized by a sharp increase in the level of environmental, social and economic threats caused by military aggression, economic and environmental crises, etc. that have slowed

down the implementation of strategic programs and projects for sustainable rural development. In addition, the current waste management problems in Ukraine are particularly large and complex due to the dominance of resource-intensive technologies in the national economy and are exacerbated by the lack of an appropriate response to these challenges over time. The large scale of resource use and raw material specialization of the rural economy, together with the outdated technological base, have determined and continue to determine high rates of waste generation and accumulation, mainly in rural areas. The way out of this situation is to increase the economic potential of rural areas and develop measures to ensure the sustainable development of territorial communities, based on the introduction of Polish PPP experience in the field of waste management. The subject of the study is public-private partnerships as a form of exercising the own and delegated powers of local governments, in particular in the field of waste management (Raport, 2013,2016: Biuletyn, 2023).

In the process of studying the current problems of public-private partnership development, many attempts have been made to identify the success factors and challenges that public and private partners have to face in fulfilling their tasks defined by the legislative and contractual framework. The results of the study by Chan (2013) show that all success factors can be grouped into five main groups, which include: factor 1 - stable macroeconomic environment; factor 2 - division of responsibilities between the public and private sectors; factor 3 - transparent and efficient procurement process; factor 4 - stable political and social environment; factor 5 - proper government control.

Unlike previous authors, Morzoro (2010) notes that "the study of the effectiveness of public-private partnership mechanisms is justified by two main reasons. The first reason is pragmatic - the real need to finance public infrastructure at the expense of non-state capital, the second reason stems from the need to fill the gap in economic theory, especially in institutional economics and finance, in the field of public investment. The study of the efficiency of public-private partnership mechanisms is justified by two main reasons. In order for economic decisions, including those related to investments in public utilities, to be acceptable, they must meet the following criteria: effectiveness, i.e., to produce results, to achieve the planned effect; efficiency, i.e., to contribute to achieving the greatest effect without unnecessary expenditure of resources; and consistency, i.e., compatibility with the legal and cultural environment".

According to V. Yakobchuk (2017, 2023), L. Symonenko O. Zakharina, (2021), I. Kostetska (2023), N. Vynnychenko (2018), and Y. Bodashevska (2023) attracting investment capital through cooperation in the implementation of projects based on the public-private partnership formula brings mutual benefits to the public and private entities involved. All members of the local community, including residents, entrepreneurs, and future investors, can benefit from the project. This primarily includes technical infrastructure (e.g. municipal roads, bridges, water supply, etc.), social infrastructure (e.g. healthcare, social assistance, primary education, kindergartens, etc.), public order and safety, and issues related to spatial and environmental management (e.g. land management, environmental protection, etc.). All of this constitutes local development in its broadest sense, for which local authorities are primarily responsible.

Bing Li, A. Akintoye, P. J. Edwards (2005), Gross - Gołacka E., Plotnikova M. & Žukovskis J. (2022) proposed the following classification of success factors:

- efficiency of the procedure: transparency of the tender process, competitive bidding, good management practices of the public partner, commitment and proper cooperation of public authorities, public support, proper distribution of tasks between partners, accurate and realistic cost-benefit analysis, government

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participation in the form of guarantees, diversity of potential benefits, political support,

- project feasibility: easy technical feasibility of the project, appropriate risk allocation, involvement and responsibility of the public and private sectors, strong private consortium, favorable regulation, - government support: government involvement through guarantees, diversity of potential benefits, political support,
- favorable economic conditions: stable macroeconomic environment, sound national economic policy,
- accessibility of financial markets.

M. Kania (2017) notes that "public-private partnerships should lead to a mutually beneficial situation.

A win-win approach to the enterprise is important in the context of proper preparation of the procedure for selecting a private partner. It is worth recalling that, according to information on the Polish PPP market, only one in five private partner selection procedures results in the conclusion of a PPP agreement. This situation may be the result of insufficient consideration of the needs and expectations of the other party to the agreement".

Jefry Delmon (Delmon, 2004, 2011) proposes to consider the development of public-private partnerships and the promotion of its use for public purposes, which requires the creation of harmony between all the elements that arise together, of which there are four

- favorable policy environment and a transparent, precise and supportive legal and regulatory system
- proper selection, preparation and implementation of projects
- setting realistic and achievable assumptions about expected project revenues,
- availability of instruments/sources of investment financing.

According to R. Cieślak, B.P. Korbus (2009) and A. Jakubowska (2013), cooperation in public-private partnership projects brings mutual benefits to the public and private entities involved. Tangible benefits can be obtained by all members of the local community: residents, entrepreneurs, and future investors. This primarily concerns technical infrastructure (e.g. municipal roads, bridges, water supply, etc.), social infrastructure (e.g. healthcare, social assistance, primary education, kindergartens, etc.), public order and safety, and issues related to spatial and environmental management (e.g. land management, environmental protection, etc.). All of this constitutes local development in the broadest sense, for which local authorities are primarily responsible.

Thus, having analyzed the approaches of foreign and Ukrainian researchers, our hypothesis suggests that a systematic approach to the implementation of the Polish experience of PPP in Ukraine will become the basis for sustainable development of rural areas, including during post-war restoration and modernization, ensuring the economic, environmental and social development of territories. The main hypothesis of the presented study is the assumption that the implementation of successful Polish cases of PPP in the field of waste management in the rural economy of Ukraine will ensure the activation of mechanisms for implementing the Sustainable Development Goals (Act, 2017), expand resource provision and contribute to improving the quality of life of the population.

The purpose of the article is to provide a theoretical justification and develop practical recommendations for the implementation of the PPP mechanism in the rural areas of Ukraine through the improvement of waste management tools considering Poland's experience of sustainable development. Based on this assumption, the task of the article is to provide a theoretical justification and develop practical recommendations for the implementation of the PPP mechanism in the rural economy of Ukraine through the improvement of waste management tools in rural areas.

The main research methods, focused on the use of comparative, situational and strategic analysis tools, have provided results that may be useful to public managers of the agro-economic sector and private investors.

The object of research is the process of forming the foundations of sustainable rural development. The subject of the research was the theoretical provisions and practical mechanisms of sustainable rural development in Ukraine, using the Polish experience of public-private partnerships.

The advantage of the study is the use of the author's methodology for assessing public-private partnerships through a sociological survey (structured and unstructured interviews). The results of the study will be useful for businesses and local governments. They will help to organize the socio-economic practices of public-private partnerships, taking into account the environmental consequences they cause.

Methodical approach

Today circumstances prompted the Government of Ukraine to develop an appropriate legislative framework and formulate the National Waste Management Strategy in Ukraine until 2030 (Strategy, 2017), which will prevent the deepening of the economic and environmental crisis and the aggravation of social tensions in society and will accelerate the reform of the waste management system. At the same time, we believe that such measures will not achieve comprehensive positive results unless benchmarking of global experience in waste regulation and management is carried out, where the most successful project was the Waste Management System for the City of Poznan (Project, 2013), which has been one of the most important and costly projects implemented in Poland since 2010. The effectiveness of this project was ensured by the possibility of co-financing with the European Union under the Infrastructure and Environment Operational Program 2007–2013 (Program, 2013). The purpose of the planned project was to organize and structure municipal waste management in the city of Poznan and the surrounding 10 communes. It brought the waste management system in line with formalized, legal, technical, economic and environmental criteria, both at the national and European levels, and ensured compliance with the legal framework for municipal waste management set out in the Act on the maintenance of cleanliness and order in municipalities.

The study of Poland's experience in implementing the PPP mechanism in the practice of managing rural economic development in the field of waste management was conducted during 2009 - 2023 (Biuletyn, 2023) on the basis of statistical and analytical data systematized and recorded on official websites, legislative and regulatory acts of the European Commission; the Council of Ministers of Poland, the Ministry of Funds and Regional Policy of Poland, the Verkhovna Rada of Ukraine, the Cabinet of Ministers of Ukraine, the Ministry of Economy of Ukraine.

The study used reporting and analytical information of domestic and international organizations; scientific works of domestic and foreign authors, which highlight the fundamental provisions of rural development and PPP; electronic resources available on the Internet; the results of the authors' own research, primary reports of territorial communities in Poland and Ukraine, which formed the basis for analytical calculations performed in the course of the study, and the results of a survey of officials of Polish and Ukrainian local governments. These materials were used to review the theoretical and legal framework for regulating public-private partnerships in the European Union, Poland and Ukraine; identify the organizational and legal forms used in the provision of services by local governments in Poland; identify the main problems encountered in the organization and management of projects in Poland, using the

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example of the waste management system of the city of Poznan; and analyze the procedure for organizing and managing projects and the selection of tools for choosing a private partner (Biuletyn, 2023).

In the course of the study, general scientific and special methods were applied, namely: regulatory and legal, which involved the analysis of legal norms of the PPP mechanism in Poland and Ukraine; comparative approach, which was focused on comparing management decisions developed in different legal systems; modelling tools, statistical analysis and practical cases were used. A significant role in the study was given to the monographic method in analyzing PPPs in the Wielkopolska Voivodeship in the field of waste management; induction and deduction tools were used to reveal the essence of the process of economic development of rural areas. The study used elements of scientific abstraction in comparing PPP processes as a factor of rural development in Poland and Ukraine; graphical tools for assessing the development of PPP processes and their grouping by functional basis in territorial communities. The article systematizes the scientific and practical aspects of adapting the European experience of organizational and economic support for the development of PPPs for rural areas of Ukraine (Biuletyn, 2023).

Results

One of the main tasks of the development of local self-government based on democratic principles, as the experience of Poland shows, is to provide the most socially significant and socially important services to meet the needs of every citizen and ensure sustainable development of the territories. Thus, the existing deficit of public funds and assets in the provision of services in the fields of medicine, education, healthcare, revitalization, sports and tourism, and waste management is the main motivating factor for finding innovative solutions and forms of co-financing based on the use of PPPs (Biuletyn, 2023). Therefore, we believe that the People First PPP model proposed by the United Nations Economic Commission for Europe (World Bank, 2020) as a priority form of public-private partnership is able to ensure the fulfilment of basic human needs, act as a mechanism for achieving the Sustainable Development Goals by 2030 (Act, 2017), and cooperate with local governments and the private sector in the PPP formula, which we have analyzed and presented in Table 1.

Table 1. Comparative characteristics of public-private partnerships in Poland and Ukraine as of 2023

№	Sphere	Contracts	Cost (mln zł)	Contracts	Cost
		Poland		Ukraine	
1	Infrastructure of transport	92	7,280.00	-	-
2	Sport & Tourism	165	6698.00	2	-
3	Telecommunication	25	2178.00	-	-
4	Waste management	22	1871.00	1	-
5	Revitalization	22	1699.00	-	-
6	Water infrastructure	41	1656.00	5	-
7	Energy	28	1281.00	5	-
8	Energy effectiveness	69	1070.00	-	-
9	Public builds	19	979.00	-	-
10	Save healthy	32	876.00	2	
11	Transport service	34	515.00	-	-
12	Housing	21	441.00	-	-
13	Education	27	374.00	-	-

14	Culture	17	215.00	-	-
15	Other	36	433/00	3	
	Total	∑=647	∑=27.6.00 mln zł	∑=18	∑-

**Source: Authors' own research based on data from the Ministry of Finance and Regional Policy of Poland and the Ministry of Economy of Ukraine.*

The experience of entities implementing PPPs in Poland from 2009 to 2023 (Table 1) shows that this mechanism brings economic effects and benefits to each party to the cooperation. According to the Ministry of Poland, the procedures for selecting a private partner were most often initiated by urban municipalities (32%), rural municipalities (18%) and municipalities combining rural and urban areas (16%). At the same time, the table reflects the passive attitude of Ukrainian public authorities to this mechanism. Thus, according to the Ministry of Economy of Ukraine, as of 01.01.2023, 193 PPP agreements have been concluded since 2009, but only 18 of them are being implemented (9 concession agreements, 5 joint venture agreements, 4 other agreements), 162 agreements are not being implemented (116 are not being implemented, 46 are terminated/expired), and 13 are suspended due to the armed aggression of the Russian Federation. Thus, in the field of waste management, this means that business entities should seek cooperation and interest from a private partner.

Our task was to show that the development of PPPs in rural areas requires the most attention, so we focused on research and practical experience of Poland in this area (Buleten, 2023). To do this, we analysed the main indicators used to analyse the degree of investment in rural development through PPP mechanisms in Poland, assessing the scope, number of contracts and their value (Table 2). Thus, Table 2 shows that one of the most popular areas of PPPs for rural areas in Poland is waste management.

Table 2. Indicators of attracted investments in rural areas of Poland on PPP terms

№	Sphere	Contracts	Cost (bn zł)
1.	Public builds	1	9975.40
2.	Education	4	4264.70
3.	Waste management	3	37418.89
4.	Energy effectiveness	15	191494.97
5.	Energy	1	13798.48
6.	Water infrastructure	20	340821.77
7.	Transport service	7	3111.24
8.	Culture	1	1473.69
9.	Sport & Tourism	7	37728.23
10.	Transport service	7	4367.44
11.	Housing	1	9975.40
	Total	∑=71	∑=731192.42

**Source: own research of the authors based on data from the Ministry of Finance and Regional Policy of Poland and the Ministry of Economy of Ukraine.*

However, it is impossible to conduct an appropriate analysis of the implementation of PPPs in rural areas of Ukraine according to the above indicators due to the lack of information in open sources. At the same time, our survey of local government officials in 56 territorial communities in 6 oblasts of Ukraine showed that there is a demand for PPPs to be involved in the rural economy and a number of problems that can be successfully solved only through the use of public-private partnership mechanisms (see Figures 1 - 4). Thus, when asked whether it

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is possible to use PPPs in the community, 98% of Ukrainian officials answered "yes" and only 2% said that it was impossible to apply such a mechanism (Figure 1).

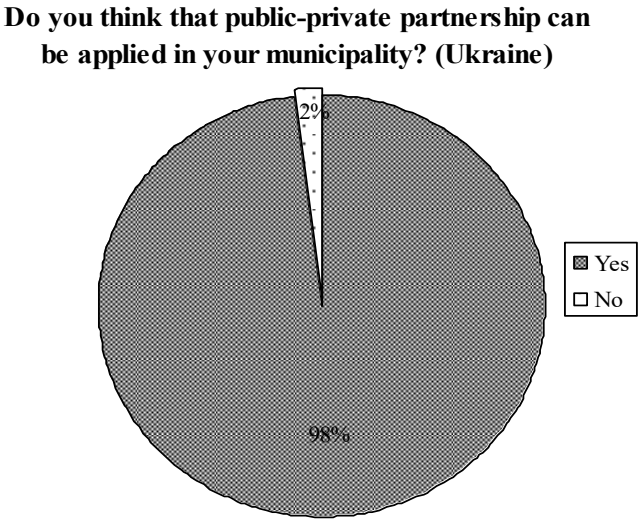

Figure 1. Representative assessment of the possibility of applying PPPs by local self-government bodies in Ukraine

**Source: own research of the authors.*

When asked about the factors that, in the opinion of the officials, are the main obstacles to engaging the private sector in the provision of socially important services, the representative group identified that the implementation of PPPs in communities is limited due to the lack of specialists who could start/control/organize the work on PPP implementation (54%). Another reason that limits the implementation of the PPP is the need to improve skills and qualifications (44%) (Figure 2).

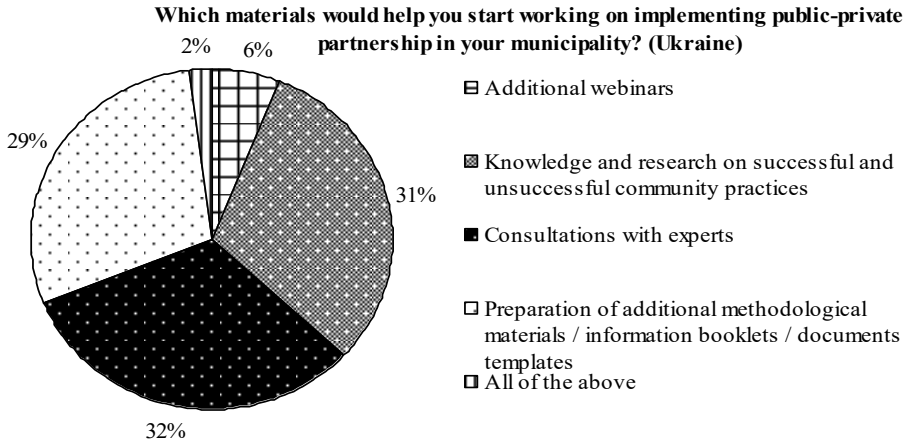

Figure 2. Representative assessment of the factors that, according to the representatives of Ukrainian territorial communities, hinder the implementation of PPP in their communities

**Source: own research of the authors.*

Based on the analysis of the responses received, we see that the officials of Ukrainian territorial communities believe that consultations with experts (32%), research of successful and unsuccessful practices (31%), preparation of analytical materials (29%), development of training sections (6%) and application of all proposed measures (2%) will help to intensify work in this direction (Figure 3).

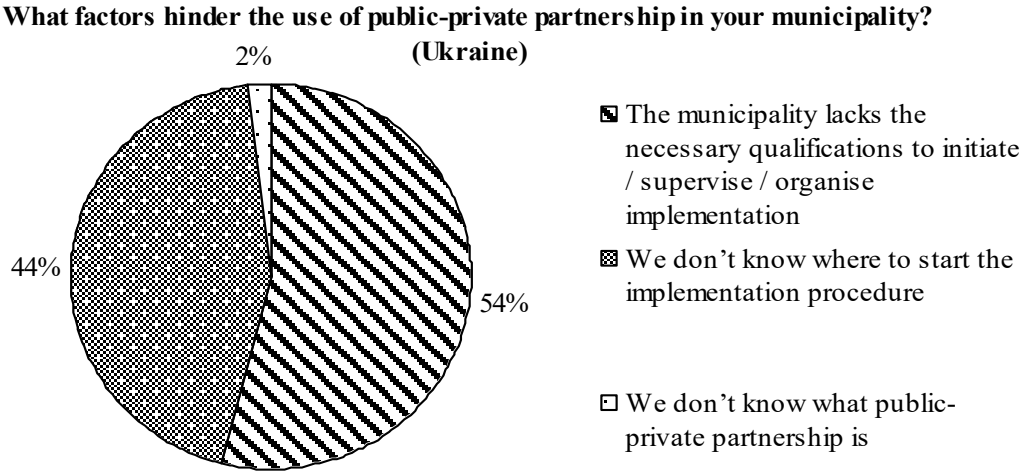

Figure 3. Representative assessment of factors that, in the opinion of local community officials in Ukraine, will help increase their capacity to implement PPPs in Ukraine

**Source: own research of the authors.*

Overall, 100% of respondents gave a positive answer to the question about the need to use successful foreign cases of managing PPP mechanisms in rural areas based on a comprehensive analysis and mapping (Figure 4).

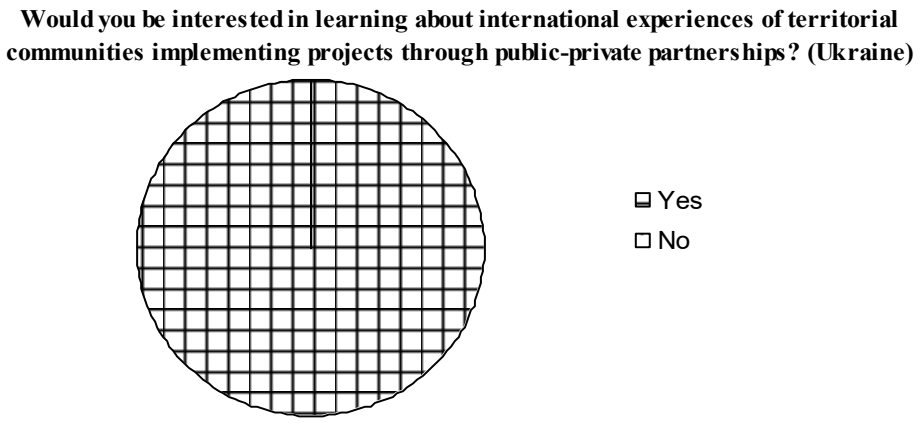

Figure 4. Representative assessment of responses of local government officials in Ukraine to the survey of foreign PPP projects implemented

**Source: own research of the authors.*

Thus, the analysis has shown that the main challenge is to provide a management decision support system, as well as the availability of specialists capable of implementing standard scientific and technical innovations in their work, and to engage the main beneficiaries and recipients of socially important services. The results of the survey revealed the expediency of implementing the positive Polish experience, which showed that the application of

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mechanisms for coordinating the interests of public authorities, private business and community residents will align the interests of all stakeholders, within the framework of their commitments, to enhance the economic development of rural areas. It should be noted that local governments, by attracting private capital, which has the ability not only to monitor the implementation of contracts but also to provide conditions for active attraction of private investment, ensure the efficiency of the rural economy.

The above has led to the need to reflect the directions and ways of post-war recovery, to create a Roadmap for the development and implementation of a local economic development strategy based on the example of the successful Project in the Wielkopolsko Voevodstvo. When studying the evolution of the development of MSW in the Wielkopolsko Voevodstvo, we saw that since 2006, 1,130,604 mg of household waste has been generated, thus Poznan produces about 250,000 mg of household waste annually. This implies that the voivodeship, excluding the city of Poznan, produces about 880,000 million mg of waste, which remains in rural areas, as the main method of municipal waste management in the territories is its disposal in landfills in rural areas (Raport, 2013, 2016; Biuletyn, 2023).

In our opinion, the main effect of the PPP in the field of waste management is generated as a result of a rational distribution of powers and functions of stakeholders, so the private sector is best suited to solve the tasks of designing, building, financing, managing and maintaining a complete thermal transformation of the residual fraction of mixed municipal waste with a nominal capacity of up to 210,000 tones per year of municipal waste processing (ITPOK), while the public authorities are responsible for collecting, transporting and sorting waste from consumers for 25 years. The ITPOK includes an installation for dismantling bulky waste (IDOW). The plant will accept and process waste from an area with a total population of 740,000 people. This area includes the Poznan metropolitan area: the City of Poznan, Buk Commune, Czerwonak Commune, Pobierzyska Commune, Kleszczewo Commune, Kostrzyń Commune, Oborniki Commune, Swarzędz Commune, Suki Las Commune, Murowa Gosłina Commune. The municipal waste collected from the territory of Poznan is currently disposed of at 5 landfills, namely in Suki Lazy, Mniecz, Białęk, Konin and Rumianek. It is estimated that the amount of waste generated in the area covered by the project will gradually increase (Raport, 2013, 2016; Biuletyn, 2023).

The project is recommended to be used in agglomerations with a population of more than 300,000 inhabitants, thermal waste disposal methods with energy recovery in a cogeneration system, i.e. with the production of heat and electricity. The general assumption for the municipal waste management system under the Project is based on its technological and economic optimization with the expansion of the existing waste management system to include a new facility for thermal treatment of the residual fraction of mixed municipal waste, the so-called ITWTP. The municipal waste-to-energy (electricity and heat) plant was built adjacent to the existing facilities, and the area served by the target waste management system includes 9 adjacent rural municipalities united in an Inter-Municipal Union, which together form the municipal waste management region (Raport, 2013,2016, Biuletyn, 2023).

The system is organized in accordance with the provisions of the Law on Keeping Municipalities Clean and Orderly and the Waste Law (Ustawa, 1996), with ITWRC having the status of a so-called regional facility and being based primarily on selective waste collection. It will include the collection and disposal of selectively collected waste:

-raw waste (plastic, wastepaper, white glass, colored glass, metals) - in the container system and in the bag system

-green waste (waste generated as a result of green space maintenance);

-bulky and problematic waste - in the system of stationary and mobile problematic waste collection points;

construction waste - in the system of "on-call service"

-stationary waste collection points.

The rest of the mixed waste stream goes directly to the residual mixed municipal waste thermal treatment plant (MRWTP). The plant also accepts waste from the so-called ballast energy fraction, i.e. mainly high-calorific waste separated in the process of raw material recovery, bulky and repair waste that will not be suitable for recycling and/or reuse:

- construction of a thermal processing plant for the residual fraction of mixed municipal waste (ITPOK)

- location on the territory of the combined heat and power plant.

The entire waste management system at the project site consists of a system for collecting, treating and transporting household waste, including waste from selective collection, as well as a system for its processing and disposal. The main assumption for optimizing the waste management system under the Project is the expansion of the existing system with the simultaneous use of a thermal conversion plant for the residual fraction of mixed municipal waste to recover the energy contained in the waste.

In accordance with the current Act on Keeping the Region's Communities Clean and Tidy (Ustawa, 1996), the waste management system of which the Municipal Association is a part, individual waste streams are sent to so-called regional plants. The ITPW meets all the requirements to qualify as a regional municipal waste treatment plant, as it meets the requirements of the best available technique or technology, provides thermal treatment of waste, and the capacity of the ITPW is sufficient to receive and treat waste from an area with a population of at least 120,000 inhabitants. As stipulated by law, the main prerequisite of the waste management system has been and remains to minimize waste generation and maximize the use of raw materials and energy.

The project, which entrusted a private partner with the construction, financing, maintenance and management of the incinerator, has resulted in improvements in environmental conditions, recovery rates and the maximum amount of waste acceptable for disposal under the Landfill Directive. This included:

- reducing the weight and volume of waste in landfills,

- significant elimination of untreated waste disposal in landfills,

-generation of green energy through the incineration of household waste, and thus effective landfill management and reduction of associated environmental risks.

The project in question is a classic example of a hybrid project, as it is being implemented in the PPP mode with the envisaged participation of EU funds. Given the complex nature of the investment, the innovative way of implementation, and the fact that the investment has reached the stage of selecting a private partner, it should be assumed that the experience gained in connection with the preparation and implementation of the project can be interpreted as a specific practice for other projects of this type that are planned to be implemented in Ukraine. The experience gained in connection with the project is also a valuable source of knowledge in terms of investing in waste treatment projects from outside the waste management sector with an investment value exceeding PLN 700 million, in which a biomass waste PPP agreement was concluded at the same time (Raport, 2013).

One of the important elements of the PPP agreement defining the financial charges is the use of EU funds, it was envisaged that in case of a positive decision of the EC, the EU subsidy would be transferred to the private partner as

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the city's own contribution. This contribution is included as part of the remuneration, with the stipulation that it will be transferred to the private partner to cover eligible costs incurred during construction. The transfer of financial capital will reduce the borrowing needs of the private partner, which means that the private partner's debt level and debt service costs will be lower. As a consequence, the level of fees paid to the private partner for the operation of the incinerator will be proportional. As a result, the level of local charges levied by the city on residents to finance the waste management system will be less burdensome than in the absence of EU funds.

The need for EU funding is related to both the need to raise funds for the implementation of the strategic project and the significant impact of EU funding on the accessibility of waste management services from the perspective of the municipality and its residents. The EU grant allows to reduce the above costs by approximately 1/3 compared to the costs that would have been incurred in the absence of funds. The estimated amount of the subsidy is PLN 352 million. The project in question belongs to the group of so-called large projects, as its total investment costs exceed EUR 50 million (Raport, 2013).

In the case of large projects, the European Commission decides whether to confirm EU funding for a particular investment. The decision on co-financing is made only after the national authorities have completed the project appraisal and concluded an agreement with the beneficiary. In the case of projects eligible for EU funding, the processes of applying for EU funding and selecting a private partner may take place in parallel. According to the project, the costs associated with the project implementation are borne by the Private Partner, who will send invoices received from subcontractors to the municipality (Figure 5).

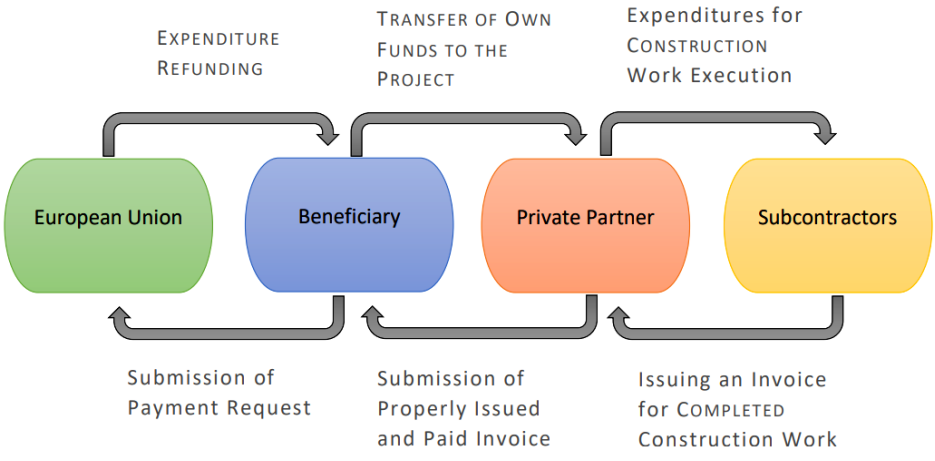

Figure 5. Distribution and accounting of grants and financing between the main beneficiaries of the Project

**Source: own research of the authors (Raport, 2013, Partnerstwo publiczno-prywatne w ramach funduszy UE 2014–2020).*

The amount of the EU grant may be changed in cases specified in the grant agreement, legislation or guidelines for the use of EU funds, including, but not limited to - the need to recalculate the financial gap indicator (on the basis of which the grant is calculated) - changes in the material or financial scope of the project - imposition of financial adjustments on the city. In the event of additional revenues not taken into account when concluding the contract, the parties will take all measures to establish a new level of EU funding. The

structure of funding sources for this project as a project co-financed by the EU is presented below (Raport, 2013). The construction cost of the plant is estimated at approximately PLN 700 million, of which the EU co-financing may amount to a maximum of PLN 352 million (i.e. approximately 45% of the total cost – Figure 6).

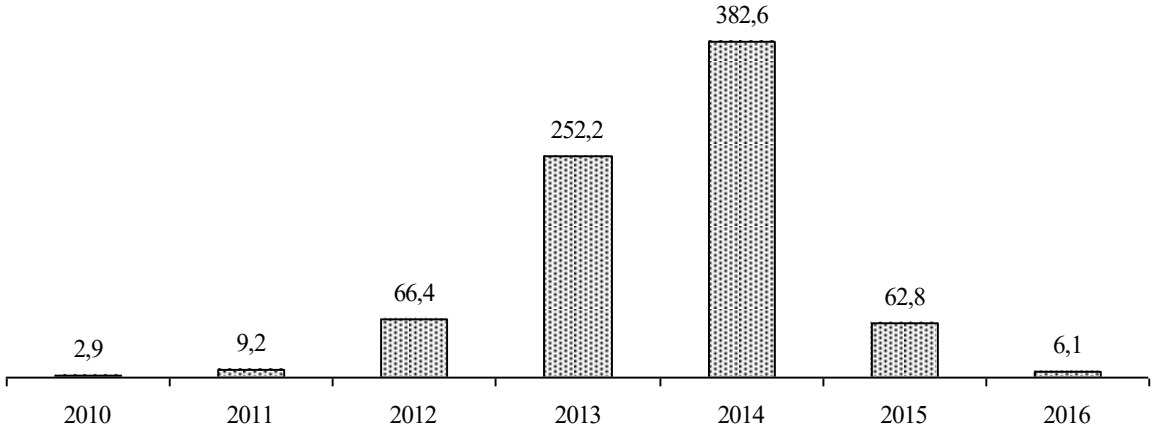

Figure 6. Expenditures of the Project investment funds: PLN 783 million net for 2010-2016
**Source: own research of the authors (Raport, 2013, Partnerstwo publiczno-prywatne w ramach funduszy UE 2014–2020).*

The total net capital costs of the Project are estimated at PLN 783 million (in nominal prices), of which PLN 709 million is earmarked for the construction and equipping of the ITPO (including design and heat and power supply). A summary of investment expenditures for 2010-2016 is presented above (Raport, 2013, 2016).

It is preliminarily assumed that the Project will be financed from the following sources (Fig. 7):

- a grant from the Cohesion Fund under the Operational Programme Infrastructure and Environment 2007-2013 in the maximum amount of PLN 352.0 million;
- own funds of a potential private partner in the amount of PLN 397.5 million;
- own funds of the City of Poznan in the amount of PLN 33.7 million (including the maximum amount of the EU grant).

Particularly noteworthy are the requirements regarding the conditions relating to the economic and financial capacity and technical capability of the entities interested in participating in the relevant proceedings. With regard to the first condition, the contracting authority indicated that the procedures are open to private partners with financial resources or creditworthiness of at least PLN 700 million. This amount is equivalent to the estimated value of the investment task (Raport, 2013, 2016).

It should be noted that in terms of the economic and financial viability criterion, the customer's expectations were fully consistent with the estimated cost of the project's capital expenditures. This was justified by one of the assumptions, which was that the private partner was responsible for securing project financing. In this situation, the condition that the private partner had financial resources in the amount corresponding to the above costs was to ensure its ability to implement the project.

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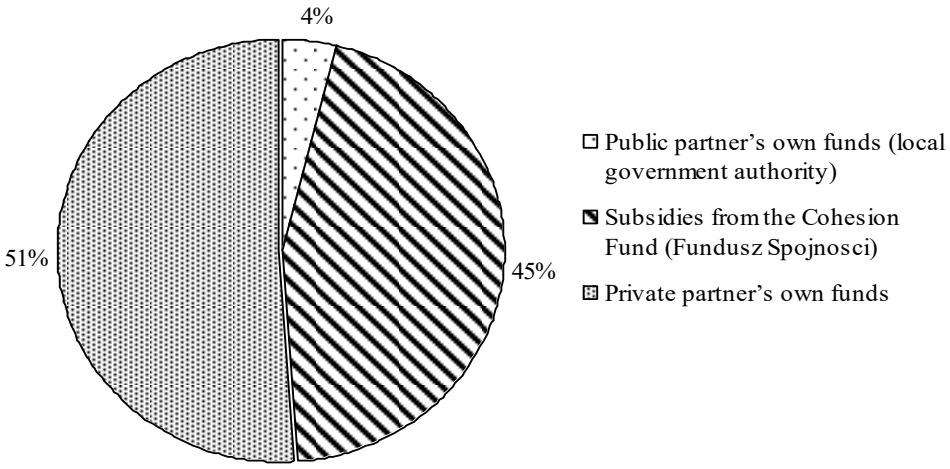

Figure 7. Preliminary structure of the Project financing [%]
**Source: own research of the authors (Raport, 2013, 2016).*

The construction of a waste incineration plant in the PPP formula is an efficient and effective way to invest in the rural economy for the following reasons

- local authorities are able to benefit from the experience and know-how of the private sector;
- the risk sharing used in a PPP agreement ensures that each party to the contract assumes those risks that each party to the contract can better manage, which, accordingly, also leads to a lower bid price;
- PPPs make it possible to ensure 100% financing (so-called financial closure) of the investment by the private partner at the date of submission of the proposal, so that the payment in the form of an entrance fee is spread over many years;
- from the beginning of the investment, the local government knows the full costs of operating the facility for the entire period of the agreement, since it is the private partner who calculates all the risks in his proposal;
- the infrastructure created within the PPP meets the highest quality standards, as the private partner builds "for himself;
- the implementation of a PPP project is more efficient (and faster), and therefore more effective, than in the traditional model.

As of June 30, 2023, the Polish Ministry of Funds and Regional Policy (Biuletyn, 2023) has created a database of potential PPP projects that contains information on investments at the preparation stage, starting with the selection of advisors, performance evaluation and beyond. It allows filtering and generating reports, taking into account the stage of project preparation (divided into: search for an advisor, pre-implementation analysis, call for proposals, negotiations, submission of proposals, evaluation of proposals). The database can be a valuable source of information for potential private partners and investors, as well as financial institutions and banks, on the number, type, volume, scale and location of planned PPP investments in Poland. We will monitor trends in investment intentions in the form of PPPs in rural areas, which are found.

We will monitor the trends of investment intentions in the form of PPPs in rural areas, which are at the stage of idea and will be implemented in the future.

Based on the previous experience and established PPP practices in Poland, we plan to continue analyzing foreign practices of cooperation with the private sector in the field of waste management in connection with the increased requirements for local authorities due

to changes in legislation in this cluster, including the implementation of European legislation. Well-established cooperation between all those involved in this social task is necessary to achieve a common goal, which is, among other things, to increase the level of waste utilization and recycling in the region and to develop facilities that will help solve current problems with the management of certain waste fractions. One of the most important challenges for rural areas at the moment is to develop the most effective formula for dealing with high-energy waste, construction waste, sewage sludge, and bulky waste.

Today, under the conditions of martial law, it is difficult to assess the types and trends of future PPP projects in rural areas, but looking at the current situation in local governments, we believe that municipalities will seek support from the private sector to implement their own and delegated waste management tasks as defined by law.

We believe that PPPs are not only a form of cooperation between a private partner and a local government, but also a tool for implementing other public tasks, as the mandatory powers of the authorities in the field of household waste management include ensuring the construction, maintenance and operation of facilities and equipment for the utilization and disposal of hazardous waste separated from household waste. Playing an economic, environmental and social role in the life of the territorial community, the development and support of the effective functioning of PPPs helps to attract additional financial resources to ensure sustainable development of rural areas, since in exercising their powers, local governments usually have limited resources, lack innovative technologies and qualified specialists.

Conclusions

The study has shown that today, sustainable development of territories at the local level should be given special attention by both public authorities and the private sector, public and international institutions, and other stakeholders. In our opinion, PPPs should play a decisive role in rural local development as a process in which the community, private and public sectors effectively cooperate to create and maintain the best conditions for economic, cultural, social and ecological development of the territories, as well as create jobs, which ensures the well-being of the community and the rational use of resource potential. This process is closely related to the formation of environmental awareness and responsibility among the authorities, businesses and residents of communities. It determines the state of the natural environment and the health of rural community residents..

This process is necessary to create mechanisms and tools focused on meeting the basic needs of people - People First PPP, which is proposed by the United Nations Economic Commission for Europe as a mechanism for achieving the Sustainable Development Goals by 2030, preserving the ecosystem and creating prospects for future generations. Poland's experience in PPP shows that the effectiveness of sustainable rural development is determined by a sufficient degree of awareness, planning, and coordination of processes involving all stakeholders.

In the implementation of the PPP model, an important role in achieving the Sustainable Development Goals is assigned to the private sector, which has sufficient resources and resource potential (funds, intellectual innovations, etc.) to create and develop infrastructure facilities. In order to stimulate the development or implementation of rural development strategies and achieve the potential economic growth of the rural economy, public authorities should ensure.

- Close coordination and cooperation between sectors, departments, enterprises, organizations responsible for specific tangible and intangible assets (facilities, resources, etc.)
- Establishing a clear division of responsibilities in political and technical regulation to ensure further effective joint work

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- Improving the management of operational and financial information for decision-making, as well as increasing the capacity for infrastructure development.

- creating a competitive environment, strengthening the factors that create formation of a competitive environment, strengthening the factors that create the country's competitive ability; improvement of the business management system; improvement of the investment climate; improvement of lending.

- tax incentives for business, innovative approach to project implementation.

- provision of various forms of state aid (loans, grants, state guarantees, subsidies, grants, tax benefits, guarantees, reimbursements

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