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## URBAN REGENERATION AND SUSTAINABLE DEVELOPMENT – AN ATTEMPT TO ASSESS A SUSTAINABLE CHARACTER OF REVITALISATION PROCESSES IN POLAND

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**ABSTRACT:** A study conducted for the purposes of the article aimed at assessing the degree of sustainable development achieved in the urban regeneration processes carried out in Poland. It covered a study of urban regeneration programmes adopted in cities with powiat rights, where these processes are regularly monitored. Based on the analysis and interpretation of these documents, on the grounds of a methodology created for the purpose, the conducted processes were assessed in the context of the sustainable development principles. The article aims to answer the following questions: (1) to what extent the implemented projects fit into this paradigm, (2) to what extent they contribute to its achievement, and, more generally, (3) how to examine the issue of sustainable development in regeneration processes – as the current study is the first such research in Poland. The study, which proves that, for the moment, the revitalisation activities are not too advanced, nor too harmonious, should lead to further, more in-depth research on the subject.

**KEYWORDS:** urban regeneration, urban renewal, revitalisation, sustainable development, development policy

## Overview of the literature

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The concept of sustainable development (SD) was formulated in the report of the UN World Commission for Environment and Development in 1987 (Report, 2017, p. 41), and popularised at the 1992 Earth Summit in Agenda 21 and Rio Declaration, and by the creation of the UN Committee on Sustainable Development (Siemiński, 2008, p. 1). The final stage was the 2015 proclamation by the UN of 17 Sustainable Development Goals (SDGs) to be achieved by the member states in 2030 (Agenda, 2015) and the Paris Agreement (2015) assuming climate neutrality by 2050. The SD has thus become a new development paradigm, occupying a key place in strategic documents of other bodies, such as the OECD, EU and respective countries. Although there is no special holistic strategy in Poland covering all dimensions of the SD in one document, the concept is referenced in the Constitution (Konstytucja, 1997, Art. 5). The term has also been defined in the Polish legal system (Ustawa, 2001). Generalising and synthesising definitions, it can be stated that the SD is a broad concept meaning development: (1) of a permanent nature, (2) respecting the balance between economic, social and environmental goals, taking into account the preservation of resources for future generations (Fiedor, 2001, pp. 13-17). Development understood in this way requires a comprehensive approach, i.e. equal treatment of all the goals mentioned above.

In turn, urban regeneration (urban renewal, revitalisation, rewitalizacja – in Polish) is a concept that evolved with time to become a city development policy focused on permanent counteracting economic, social, spatial and environmental deficits of a specific area (e. g., Roberts, 2000, p. 17). Similarly, the term is defined under Polish legislation (Ustawa, 2015, Art. 2.1). The current understanding of the term arises from such documents as The New Charter of Athens (2003), Leipzig Charter on Sustainable European Cities (2007), which emphasises the need to conduct an integrated urban policy in crisis areas, or The New Leipzig Charter (2020) which refers to interventions aimed at “just city”, “green city” and “productive city”. Urban regeneration as a policy that fits into the SD paradigm is widely confirmed by scientists (e. g. Brebbia & Galiano-Garrigos, 2016; Charlot-Valdieu & Outrequin, 2007; Opoku & Akotia, 2020). Although they agree that it plays a crucial role on the road to the cities’ sustainable development, they also see barriers, mainly political, that could make such an achievement impossible or incomplete (e. g. Couch & Dennemann, 2000; Evans & Jones, 2008).

Respective studies show methodological differences in assessing the sustainability of revitalisation activities. Broadly, these methods can be divided into two categories. In the first one, the assessment is based on indicators

derived from the SDGs set in international or national strategic documents, which are analysed in the urban regeneration context (Ye, 2019). It consists of assigning specific categories and selected indicators to each of the SD dimensions. Proponents of this solution rely on various methodologies and propose various types and a number of indicators, e. g. Hemphill et al. (2004): 6 categories and 52 indicators, Peng et al. (2015): 4 categories and 22 indicators, Zheng et al. (2017): 6 categories and 27 indicators.

The second type features the rating that evolved from the building certification systems (e.g. Dussard, 2016; Adewumi, 2020). These systems, such as the UK BREEAM, the US LEED-ND and the German DGNB, were created in the 1990s as an attempt to set standards for designing buildings in the SD spirit. Other systems include the Brazilian AUQA (Cherqui, 2005), the Vietnamese HKTS (Dussard, 2016, pp. 13-14) or the French HQE2R and HQDIL (Charlot-Valdieu & Outrequin, 2007). In the 21<sup>st</sup> century, these systems, Neighbourhood Sustainability Assessment Frameworks (NSAFs), began to be used to assess the sustainability of entire neighbourhoods (Dussard, 2016, pp. 13-14). Such is also the goal of the “EcoQuartier” certificate, introduced in France in 2009, confirming that the revitalised area meets the SD criteria (Kaczmarek, 2017).

Other assessment methods focus on a selected dimension of the SD (most often the environmental pillar) (Lee & Chan, 2009; Toli & Murtagh, 2017) or qualitative research (Akotia et al., 2020). Among the latest approaches, the model is based on an analytical network process and zero-one goal programming (Nesticò et al., 2020).

In Poland, Borys (2014) is in line with the first presented trend. Since the 21<sup>st</sup> century, different sets of indicators examining local, regional and national development were developed by Statistics Poland (GUS) as part of the Local Data Bank (BDL). The process of their creation has not been finished, either by the GUS (e.g. GUS, 2011) or scientists (e.g. Gus-Puszczewicz, 2013; Borys, 2014; Kornak & Kostecka, 2018). As for the SD indicators, GUS worked on their creation till 2018, when they were substituted by the new set resulting from the adoption of Agenda 2030 by Poland. A pioneering study based on the LEED-ND system concerned a housing estate in Iława (Modrzewski & Rybak, 2015).

## Context, subject and purpose of the study

In Poland, revitalisation needs appeared after the country's accession to the EU. From the very beginning, the instrument was perceived as an important element of the SD (Billert, 2007; Berbesz, 2017; Ciesiółka, 2017, p. 10). Thus, the sustainable development principles should underlie the program-

ming of Polish revitalisation processes, while the SD indicators are useful in monitoring the achievement of the objectives (Topczewska, 2009). So far, however, no attempt has been made to investigate this issue, although the question of the sustainable nature of the conducted processes, due to legal and financial conditions, seems particularly important.

The legal basis for revitalisation processes was, firstly, the Act on Municipal Self-Government (Ustawa, 1990), then, after 2015, also the Act on Revitalisation (Ustawa o rewitalizacji) (Ustawa, 2015). The latter specifies the rules and procedures for conducting revitalisation processes, from the document preparation to its evaluation (Ibid, Art. 1). The Act does not refer directly to the SD paradigm, but its notion results from the definition of the revitalisation concept stressing its comprehensive and integrated nature (Ibid, Art. 2.1). So, it can be assumed that on the ideological level, i.e. in the revitalisation programme, planned interventions follow the SD spirit, as they counteract dysfunctions diagnosed in various fields and are complex and integrated with other activities.

But due to the existing financial conditions, the assessment should instead concentrate on the sustainability of actually implemented projects. Contrary to the processes carried out, for example, in Germany or France, which involve government and regional financial support, no special fund for revitalisation activities has been established in Poland. Urban regeneration is an optional municipal task, so it is a municipality that is responsible for financing the implementation of the programme. Cities can apply for external funds, mainly from the EU, but without any certainty, at the stage of creating the programme, that they will get them. As a result, a low projects implementation is being observed (Jadach-Sepioło, 2021, p. 62).

The sustainability of Polish urban regeneration processes was the subject of the study, which aimed to answer the following questions: (1) to what extent do the implemented projects fit into the SD paradigm, (2) how do they contribute to its achievement and to what extent. A broader question concerns (3) a possible research method for the subject, as it is the first study of the type in Poland. The research hypothesis that the investigation would like to verify is that the specific Polish conditions may act as a brake in achieving the SD in the degraded areas.

## Research methodology

The study was conducted based on data analysis, including, in particular, programme and reporting documents, legal regulations and expert opinions on the urban regeneration processes in Poland. It was of a quantitative and qualitative character, including an interpretation of the studied documents.

For the purpose of analysis, a research tool in the form of a questionnaire was also created. It consisted of 14 questions, allowing an appropriate assignment of the analysed phenomena. The background for the analysis was the above-presented literary studies, which helped to order the definition issues and to deepen the knowledge about the global trends in examining the SD in the urban regeneration processes.

Several assumptions were made in order to answer the research questions. Firstly, the cities with *poviat* status (*miasta na prawach powiatu*) were selected for the study. They are the largest Polish urban centres featuring the longest and most advanced urban regeneration processes. They are also considered the most efficient and effective in financing, thus, the most advanced in implementing planned projects (Jadach-Sepioło, 2021, p. 241). For these reasons, the preliminary analysis included 62 revitalisation programmes.

Secondly, due to the precise preparation and implementation principles, the oldest programmes created based on the Act on Revitalisation (Ustawa, 2015), i. e. in 2016 and 2017, were selected for further analysis. Such revitalisation programmes (*gminne programy rewitalizacji*) were acknowledged as the most comprehensive and integrated documents, so the most in line with the SD paradigm. They also should be monitored regularly. This criterion was met by 11 examined cities.

Thirdly, for the purpose of the analysis, elements of the methodology developed by Arcadis for the Ranking of Polish Sustainable Cities (Borys et al., 2021) were used. On the one hand, it is based on the Arcadis Sustainable Cities Index (Arcadis, 2018), which fits in with the global trends of the SD assessment, and, on the other, it is the best-known, repeated periodically study in Poland. So, following Borys et al. (2021), a division into 3 dimensions (pillars) of the SD, i. e. society, economy and environment, was adopted, together with specific categories. Then to the latter, the dysfunctions identified in the diagnostic part of the revitalisation programmes and the corresponding remedial projects: (1) planned and (2) implemented (or in progress), i. e., identified in the monitoring reports, were assigned. Afterwards, the implemented projects were compared with the planned ones, which allowed to define the percentage of successfully implemented projects.

It should be noted that not all categories created by Boris et al. (2021) are typical for urban regeneration processes, for demography, tourism and resource consumption related to general development. However, due to the methodological consistency, they were included in the study – as it turned out, they virtually did not influence the results. Then, an achieved balance within a given dimension due to the completed projects was examined. For this purpose, the categories in which the diagnosed dysfunctions were not accompanied by any corrective actions were also taken into account (a reverse situation, i.e. planned/implemented measures despite no dysfunc-

tion, was not found). They were then compared with the dysfunctional categories, in which projects were designed and implemented, using the following formula:

$$x = \frac{\sum_{i=1}^{i=n} p_i}{n} \cdot 100\%, \quad (1)$$

where:

$x$  – the percentage of the SD achievement,

$n$  – number of categories with a diagnosed problem,

$p$  – degree of the projects' implementation:

$p = 0 \Leftrightarrow DP = + \wedge \% = x^*$

$p \in <0.1>$

\* % – percentage share of the implemented projects in the total number of the planned projects in a given category. DP – dysfunction / problem confirmed in the diagnostic part of the revitalisation programme.

Summing up the respective dimensions' results enabled assessing the process's sustainability.

The authors are aware of the methodological challenges they faced. The most important of them is related to the difficulty of assigning dysfunctions (problems) and projects to the categories and even dimensions, mainly because the Act on Revitalisation (Ustawa, 2015) and, consequently, the revitalisation programmes distinguish 5 types of crisis phenomena (social, economic, technical, environmental, and spatial and functional ones). Hence, it was necessary to assign the identified dysfunction / remedial project to the appropriate pillar and category. Inevitably, the choice had to be sometimes arbitrary, though decisions were made consistently, i. e. the same assignment for the same dysfunction/project. Another problem was the number of projects planned to eliminate a dysfunction within a given dimension or category – sometimes it was one project, sometimes several dozen. In this case, it was assumed that the planned number was adequate to restore the balance in a given pillar or category. A significant limitation is also a short implementation period of the programmes, as the oldest were created in 2016 and 2017, and the latest monitoring studies were from 2020.

For this reason, the study covered the most advanced cities with poviát status. All these doubts raise questions as to the objectivity and accuracy of the findings. However, the authors are convinced that despite the methodological limitations, the study shows general trends that characterise the urban regeneration processes in Poland in the SD context and initiate a debate on this subject.

## Research results

The study began with the social dimension, consisting of 7 categories (Table 1). This dimension was the least addressed by the remedial activities. It should be noted that despite the diagnosed problems within the categories of demography and security, no actions were planned. In the case of demography, as explained in the methodological part, it seems justified, although it should be noted that Wałbrzych and Świnoujście planned some pro-demographic activities. It is more surprising that, except for Gdynia, no measures were foreseen to improve security.

**Table 1.** Assessment of the implemented remedial activities in the social dimension in comparison to the planned ones, taking into account the diagnosis of the dysfunctional categories

City	Category														SD of the dimension [%]
	Demography		Health		Education		Culture		Poverty and living conditions		Safety		Participation of society in creating the city		
	DP	%	DP	%	DP	%	DP	%	DP	%	DP	%	DP	%	
Poznań	+	x	-	x	+	x	-	100.0	+	100.0	+	x	+	100.0	100.0
Płock	+	x	-	x	+	x	+	66.7	+	66.7	+	x	+	100.0	75.0
Wałbrzych	+	0.0	+	100.0	+	100.0	+	60.0	+	0.0	+	x	+	66.7	70.0
Słupsk	+	x	+	100.0	+	100.0	+	33.3	+	100.0	+	x	+	50.0	69.6
Kalisz	+	x	+	0.0	+	100.0	+	50.0	+	66.7	+	x	+	80.0	64.3
Gdynia	-	x	+	100.0	+	x	-	x	+	75.0	+	9.1	+	83.3	45.5
Leszno	-	x	+	0.0	+	x	+	66.7	+	33.3	+	x	+	50.0	45.5
Koszalin	-	x	+	x	+	50.0	-	x	+	100.0	-	x	+	0.0	42.9
Bytom	+	x	+	30.0	+	30.0	-	x	+	34.5	+	x	+	x	32.7
Gorzów Wielkopolski	-	x	-	x	+	100.0	+	0.0	+	60.0	+	x	+	0.0	30.8
Świnoujście	+	0.0	-	x	+	0.0	-	x	+	20.0	-	x	+	0.0	12.5

DP – dysfunction/problem confirmed in the diagnostic part of the revitalisation programme.

% – percentage share of the implemented projects in the total number of the planned projects in a given category.

+ – problem diagnosed in the diagnostic part of the revitalisation programme.

- – a problem not diagnosed in the diagnostic part of the revitalisation programme.

x – no remedial action planned/implemented in a given category.

Source: author's work.

Poznań, which implemented all planned activities, turned out to be the best for the number of the completed projects. Świnoujście, where only one of 4 planned activities was implemented, was the worst. A detailed list of the categories, dysfunctions and the remedial interventions carried out in relation to the planned activities is presented in Table 1.

Although Poznań is the most advanced in terms of the projects' implementation, it is difficult to talk about the sustainable nature of the activities carried out there, as, in 3 dysfunctional categories, no remedial activities were planned. The same is true for other cities, except for Gdynia, which planned and took action in all dysfunctional categories (Figure 1). Thus, Gdynia achieved a 66.8% of social sustainability. Other cities with relatively balanced interventions are Słupsk (54.7%), Płock (46.8%) and Wałbrzych (46.7%). The least harmonious process is observed in Świnoujście (5.0%). The degree of achieving a balance in the social pillar of the examined cities is presented in Figure 1.

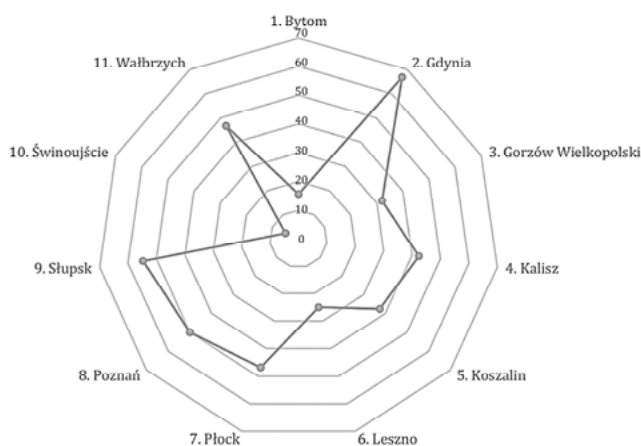


Figure 1. Degree of achieving a balance in the social dimension as the result of the implemented revitalisation activities in the examined cities

Source: author's work.

The economic dimension was examined by 5 domains (Table 2). This dimension should be considered the most important in terms of the activities planned by the cities, as in 8 of them, economic projects constituted the highest percentage of all planned interventions. Poznań deserves, again, attention as the economic projects account there for nearly 74% of the total intervention, and their implementation degree is also the highest. The cities deviating from this rule include Świnoujście, where social projects dominate, and Koszalin and Wałbrzych, with the dominant environmental intervention.



Again, the lowest number of the implemented projects was recorded in Świnoujście, where no attempts were made to solve problems diagnosed in 2 categories. In most of the remaining cities, projects were planned in all dysfunctional categories, suggesting that if the measures are fully implemented, one could speak of achieving a full equilibrium in this dimension. A detailed comparison of the categories, dysfunctions and remedial intervention carried out in the economic pillar is presented in Table 2.

**Table 2.** Assessment of the implemented remedial activities in the economic dimension in comparison to the planned ones, taking into account the diagnosis of the dysfunctional categories

City	Category										SD of the dimension [%]
	Economic development and employment		Public finance and spatial planning		Transport		Tourism		Access to the labour market		
	DP	%	DP	%	DP	%	DP	%	DP	%	
Poznań	+	x	+	95.7	+	100.0	-	x	-	x	97.1
Słupsk	-	x	+	73.3	+	88.9	-	x	+	80.0	79.3
Kalisz	+	x	+	64.7	+	75.0	-	x	+	100.0	66.7
Płock	+	100.0	+	58.8	+	100.0	-	x	+	0.0	65.2
Leszno	+	100.0	+	63.2	+	66.7	-	x	+	0.0	61.5
Wałbrzych	+	100.0	+	53.1	+	85.0	+	x	+	100.0	59.8
Gdynia	-	x	+	75.0	+	20.0	-	x	+	100.0	52.2
Gorzów Wielkopolski	+	0.0	+	27.3	+	42.9	-	x	+	75.0	39.1
Bytom	+	14.3	+	63.3	-	x	-	x	+	6.3	36.7
Koszalin	+	x	+	14.3	+	0.0	-	x	+	100.0	20.0
Świnoujście	+	x	+	16.7	+	x	-	x	+	0.0	14.3

DP – dysfunction/problem confirmed in the diagnostic part of the revitalisation programme.

% – percentage share of the implemented projects in the total number of the planned projects in a given category.

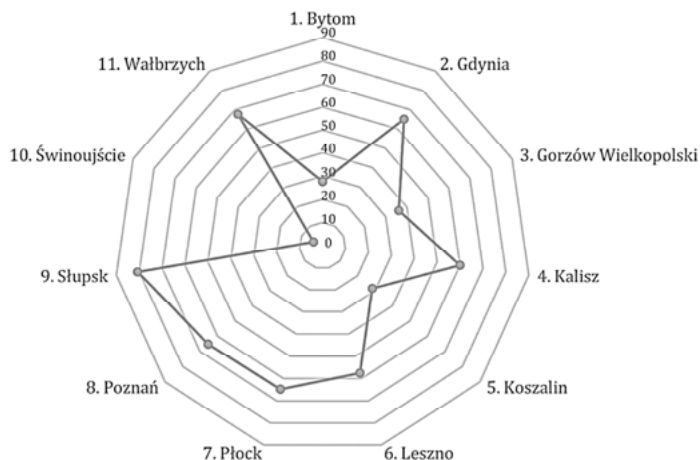
+ – problem diagnosed in the diagnostic part of the revitalisation programme.

- – a problem not diagnosed in the diagnostic part of the revitalisation programme.

x – no remedial action planned/implemented in a given category.

Source: author's work.

In the case of this pillar, the lack of intervention, despite the diagnosed dysfunctions in some categories, was also identified. The resulting dimension imbalance is visible mainly in Świnoujście (4.3%), Bytom (27.7%) and Koszalin (28.5%). The most balanced approach is featured in Słupsk (80.7%), Wałbrzych (67.6%) and Gdynia (65.0%). The level of equilibrium in the economic dimension of the examined cities is presented in Figure 2.



**Figure 2.** Degree of achieving a balance in the economic dimension as the result of the implemented revitalisation activities in the examined cities

Source: author's work.

**Table 3.** Assessment of the implemented remedial activities in the environmental dimension in comparison to the planned ones, taking into account the diagnosis of the dysfunctional categories (as in Table 1)

City	Category														SD of the dimension [%]
	Climate change		Air		Biodiversity		Land use		Waste management		Network devices		Resource consumption		
	DP	%	DP	%	DP	%	DP	%	DP	%	DP	%	DP	%	
Poznań	+	100.0	+	x	-	x	+	100.0	+	x	+	x	-	x	100.0
Świnoujście	+	x	+	x	-	x	+	100.0	-	x	-	x	-	x	100.0
Kalisz	+	100.0	+	x	+	100.0	+	91.7	+	x	+	100.0	-	x	95.2
Słupsk	+	100.0	+	x	-	x	+	85.7	-	x	+	66.7	-	x	81.8
Bytom	+	80.0	-	x	-	x	+	66.7	-	x	+	0.0	-	x	66.7
Leszno	+	100.0	+	100.0	-	x	+	45.5	+	x	+	100.0	-	x	62.5
Płock	+	100.0	-	x	-	x	+	50.0	-	x	+	x	-	x	55.6
Gdynia	+	100.0	-	x	-	x	+	20.0	-	x	+	50.0	-	x	44.4
Gorzów Wielkopolski	+	100	+	x	-	x	+	42.9	+	x	+	0.0	-	x	44.4
Wałbrzych	+	40.9	+	100.0	-	x	+	90.0	+	x	+	18.9	-	x	40.1
Koszalin	+	0.0	+	x	-	x	+	50.0	-	x	+	0.0	-	x	9.1

Source: author's work.

In the environmental dimension, 7 areas were distinguished (Table 3). It is worth noting that in this pillar, a smaller number of remedial projects were planned compared to in the economic dimension. In 4 cities, no activities in the category of waste management were planned, despite the problem diagnosis.

Also, in the environmental pillar, the highest degree of projects' implementation was recorded in Poznań, although no intervention was planned in 3 out of 5 categories in which dysfunctions were diagnosed. All scheduled activities in Świnoujście were implemented, but no projects to counteract the crisis in the "climate change" category were foreseen. The least number of implemented projects and the lowest percentage of achieving sustainability in the pillar was noticed in Koszalin. The list of categories, dysfunctions and the remedial interventions carried out in the environmental pillar is presented in Table 3.

The highest environmental sustainability, as the result of the activities carried out, was achieved in Leszno (69.0%) and Słupsk (63.3%), the lowest in Gorzów Wielkopolski (28.6%) and Koszalin (12.5%). Compared to other pillars, it is worth noting that the implemented environmental interventions are, in general, characterised by a higher degree of sustainability. Except for Gorzów Wielkopolski and Koszalin, all other cities achieved at least 50%. Figure 3 shows the degree of achieving a balance in the environmental dimension of the examined cities.

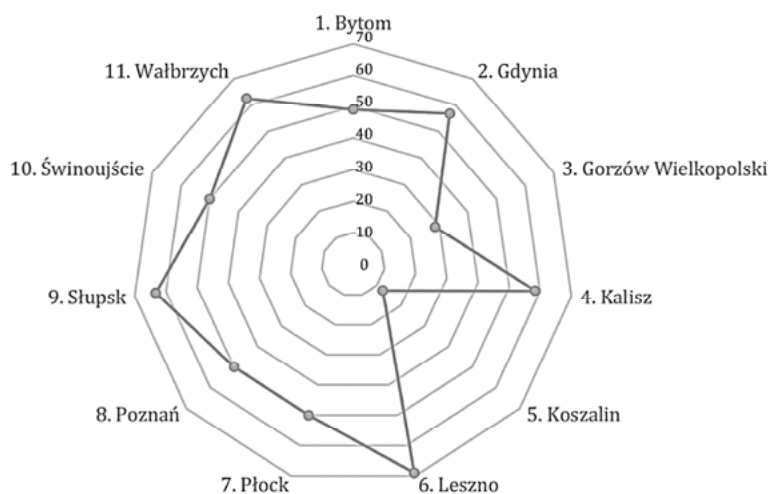


Figure 3. Degree of achieving a balance in the environmental dimension as the result of the implemented revitalisation activities in the examined cities

Source: author's work.

By the adopted methodology, the sustainable nature of the revitalisation process is demonstrated by: (1) properly planned intervention, i.e. planning a remedial action for the diagnosed development deficits; (2) implementation of the planned projects. The study shows that the revitalisation process is the most sustainable in Gdynia (63.2%), Słupsk (62.7%) and Wałbrzych (57.2%). On the other hand, the least balanced results are noticed in Świnoujście (13.7%), Koszalin (26.2%) and Bytom (27.0%). In general, it can be concluded that even the most advanced cities are not yet close to achieving full sustainability. The degree of achieving the SD as the result of the revitalisation activities carried out in the examined cities is presented in Figure 4.

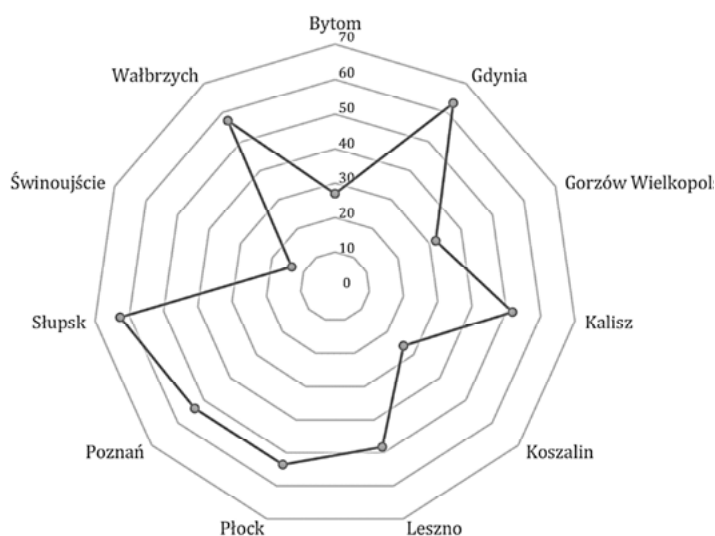


Figure 4. Degree of sustainable development achieved as the result of the implemented revitalisation activities in the examined cities

Source: author's work.

## Conclusions

Despite the methodological limitations, it seems that the proposed methodology is appropriate for a preliminary assessment of trends in conducting urban regeneration processes in Poland in the context of sustainable development, proving the research hypothesis. The study also allowed us to draw some general conclusions regarding the diagnosis, planning and implementation of revitalisation activities under the current legal (Ustawa, 2015) and financial conditions, which are:

- the provisions of the Act (Ibid) indirectly imply that the planned process should be carried out in accordance with the principles of sustainable development;
- the actual planning of the process by the cities, however, is not entirely consistent, as the activities to counteract the diagnosed dysfunctions within the respective SD dimensions are not always planned;
- the existing financial conditions (lack of funding at central and regional levels) are an obstacle to the sustainability of the intervention;
- due to economic conditions, even assuming that the research covered a relatively short period, it can be argued that cities will not be able to implement all planned activities;
- even a high degree of the projects' implementation in a given category does not translate into achieving a sustainable character of the intervention (example of Poznań);
- due to the above, the intervention carried out by the cities will not be fully comprehensive and integrated, as it stands in the Act on Revitalisation (Ibid). Thus the regeneration processes will not be fully sustainable and in line with the SD paradigm.

In the context of the undisputed importance of the SD and the results of the study, the following solutions might be proposed: (1) development of an integrated sustainable development strategy at the national level and link it to the Act on Revitalisation (Ibid), or (2) inclusion in the latter a direct requirement of planning a coherent intervention respecting the SD principles. It seems that the current legal conditions do not fully ensure such intervention. The planning and implementation of the process depend on the cities themselves, their authorities' awareness, institutional capacities, human capital, and financial possibilities. On the other hand, under the existing financing conditions, the planned intervention must be thoughtfully tailored. Hence it seems that more sustainable actions are possible only in smaller than currently designated revitalisation areas, which will feature fewer needs.

A more detailed picture of what causes cities to carry out revitalisation activities in a more or less sustainable manner could be provided by qualitative research based on the analysis of case studies with in-depth interviews with people responsible for urban regeneration processes and assessment of the changes during field research.

### The contribution of the authors

Paulina Basińska (review of the literature, desk research, data collection and analysis, interpretation of the results) 50% of the involvement.

Edyta Tomczyk (review of the literature, desk research, data collection and analysis, interpretation of the results) 50% of the involvement.

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