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## **EVALUATION METHOD OF REVITALIZATION WORKS IMPACT ON THE LEVEL OF LIFE IN SETTLEMENT UNITS**

**Abstract:** The rural space is constantly undergoing change, created predominately by factors of anthropogenic character. The basic tool for improving the living conditions of the population living in rural areas, since 2015, is revitalization, defined by the provisions of the Act on revitalization from 9th October 2015. The main purpose of this paper is to present an innovative evaluation method of revitalization works impact on the level of life in settlement units, with particular regard to social, environmental, spatial-functional and technical conditions.

**Key words:** spatial order, sustainable development, revitalization

### **INTRODUCTION**

Changes occurring in rural areas are the resultant of economic, social, political and cultural processes [Czapiewska 2014]. The large number of difficult-to-maintain indicators that generate rural development is the reason for the continually visible differences in the social, economic and technical activity of our rural areas. This state also deepens the fact that rural area possesses some of the original attributes and properties produced in the regular course of events, extremely difficult to transform [Lizewska, Knercer 2003].

The Act on Revitalization, introduced on 18 November 2015, provides the possibility of conducting spatial transformations by self-government units regardless of their size, scale of problems affecting the local community or sources of funding. The provisions of the Act from 9 October 2015 provide a number of practical tools supporting the preparation and normalization of the process of revitalization, requiring also the use of parameters describing the intensification of negative phenomena: social, environmental, spatial-functional and technical. The authors of this paper point out the need to include at the stage of revitalization programming process spatial principles of spatial order and sustainable management, since only that approach to the problem of revitalization can result in the minimization of social, spatial and ecological conflicts, thus improvement of the living conditions of the population living in rural areas. The main aim of the study is to present an innovative evaluation method of revitalization works impact on the level of life in settlement units, with particular regard to social, environmental, spatial-functional and technical conditions.

### **SUSTAINABLE DEVELOPMENT AND SPATIAL ORDER IN TERMS OF REVITALIZATION WORKS**

Hans Carl von Carlowitz, who at the beginning of the nineteenth century limited the concept of sustainable development to the forest sphere, developed the fundamental principle of forest management in such a way that the annual increment of the stand was equivalent of the wood harvested from that forest. This principle, propagated by all German Forest Schools, has become a model for other modern and developing countries of Europe at that time. At present, the concept of sustainable development encompasses much broader spheres of life and according to the provisions of the Act on Environmental Protection Law is a socio-economic development in which the process of integrating political, economic and social activities takes place, preserving the natural balance and the sustainability of basic natural processes, to guarantee the ability to meet the basic needs of

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individual communities or citizens of both the present generation and future generations. Korelewski claims that the goal of sustainable development is to better satisfy the physical and psychological needs of mankind by correcting his attitude towards nature [Korelewski 2004]. A slightly different view on rural development issues is presented by Durand and Huylenbroeck [2003], which argues that the implementation of sustainable rural development is primarily linked to the promotion of alternative sources of income for rural residents. Income, thus constituting an integral part of the revitalization work.

In turn, according to Bański, the idea of sustainable development is inextricably linked to the notion of spatial order, defined by law in the Act on spatial planning and development from 27 March 2003 as shaping of space that creates a harmonious whole taking into account in the orderly relations all functional and socio-economic, environmental, cultural and compositional and aesthetic requirements and requirements. Bański [2008] argues that if the needs of the present generation are to be realized without undermining the prospects of future generations for their satisfaction, which is the basic idea of sustainable development, spatial order is an indispensable element of such development. Korelewski [2004] also claims that the concept of balanced, multifunctional development of rural areas necessary to achieve an integrated order, including spatial, economic, social, ecological and cultural order, is a measure of the work done revitalization.

### **REVITALIZATION "YESTERDAY AND TODAY"**

Hull in 2004 pointed to the fact that the philosophical thesis underlying revitalization is the belief that biodiversity is a guarantee of the existence and further evolution of life in which there will be space for man and his world of culture and civilization. [Hull 2004]. In this statement, we can once again see the correlation between the fundamental assumptions of the concept of spatial order and sustainable development. The main idea presented in this statement applies today.

Another situation is with regard to many definitions developed at the beginning of the 20th century. For example, for the purposes of this study, the definition is presented in the Polish Language Dictionary, which specifies the concept of revitalization as: reconstruction of destroyed buildings or districts of the city [www.sjp.pwn.pl 2016.10.09]. This approach to revitalization was presented by many researchers and practitioners by 2015, by the definition of selective or fragmentary processes, usually focusing on easier to perform and providing faster but less significant effects such as renovations, maintenance, Adaptations, upgrades, renovation of buildings or reconstruction of roads.

At present the concept of revitalization has come to a legal definition and according to the provisions of the Act on revitalization from 9 October 2015, revitalization is a process of bringing out from a state of crisis the degraded areas, conducted in a comprehensive way, through integrated actions for the local community, space and economy, territorially focused, conducted by revitalization stakeholders based on the municipal revitalization program.

According to the aforementioned law, in order to develop diagnostics to assess the current state of implementation of the municipal regeneration program, the mayor or city president is obliged to conduct analyzes in which he will use objective and verifiable measures and research methods adapted to local conditions. The legislator gives a list of phenomena that should be assessed first. These include:

- social (particularly unemployment, poverty, crime, low level of education);
- economic (especially low level of entrepreneurship and poor local condition enterprises);
- environmental (in particular, exceeding environmental quality standards, the presence of life-threatening waste, human health or the environment);
- spatial-functional (especially inadequate technical and social infrastructure or poor technical condition, lack of access to basic services or poor quality, lack of urban solutions to changing function of the area, low level of communication service, shortage or poor quality of public areas );

- technical (in particular the degradation of the technical condition of buildings, including housing and non-functioning of technical solutions enabling the efficient use of buildings, in particular in terms of energy efficiency and environmental protection).

### **DEVELOPMENT OF THE METHOD – SELECTION OF EVALUATED PHENOMENA**

In order to develop method for assessing the impact of revitalization on the standard of living of the population of settlement units, a list of 50 phenomena related to their social, environmental, spatial-functional and technical conditions was prepared. In order to develop a final list of 10 phenomena (assessment indicators), they were subjected to a survey. The surveyed group consisted of 100 people, experts in social sciences, urban planning, economics and environmental protection. Based on the analysis of the results of the surveys conducted, 10 most important phenomena affecting the quality of life of the population were selected. As a result of statistical analyzes using STATISTICA software, values of weights have been established to indicate the significance of a given phenomenon. Determining the values of weights allowed us to apply the weighted-sum method to determine the impact of revitalization works on the standard of living of the population of settlement units. In the latter part of the study, these phenomena were called evaluation indicators. Their list and weight values are as follows:

- unemployment rate, long-term unemployed young people (% share of long-term unemployed young people in total population) [0.112];
- persons receiving fixed income allowance (% share of persons receiving permanent support in the total number of residents) [0.110];
- area of developed public spaces (m<sup>2</sup>) [0,108];
- number of public facilities not accessible to the disabled (number) [0,104].
- number of roads requiring repair (km) [0,100];
- number of roads requiring repair (quantity) [0.098];
- number of closed micro enterprises (quantity) [0.096];
- the number of households burning coal-fired dwellings (quantity) [0.094];
- number of illegal garbage dumps detected (amount) [0.092];
- number of buildings requiring demolition (quantity) [0.086];

### **DEVELOPMENT OF MEASURES AND EVALUATION PRINCIPLES**

In order to develop measures and evaluation principles for the impact of revitalization on the standard of living of the population of settlement units the point method was used. The proposed method allows to deduce all individually evaluated phenomena into one number which comprehensively expresses the overall quality of the object [Babicz-Zielińska, Rybowska, Obniska 2008]. Point scales combine the benefits of verbal scales and numerical scales. Every point of the scale has contractual numbers and the corresponding verbal term [Jędryka, Kozłowski 1986]. The precision of the results obtained depends on the correct definition of the individual quality levels, and this is the first condition for obtaining the correct results. The second condition is to train the assessment team to understand clearly the definitions of the individual features of the object.

Properly constructed point scale should meet four conditions:

- each degree of scale should correspond to a different level of quality that is relevant to the evaluator.
- each scale point (ie each level of quality) should have a clear definition of quality;
- the number of scale points should be limited and should not exceed 3 degrees;
- all features should be evaluated on a scale with the same number of points.

As part of subsequent tasks for previously developed measures, their descriptive scores have been developed. The list of ratings and scoring is as follows:

- unemployment rate, long-term unemployed young people: increase in the value of the measure (-1 point); value of the in unchanged (0 pts); drop in the value of the measure (1 point);
- persons receiving constant benefits: increase in the value of the measure (-1 point); value of the measure unchanged (0 pts); drop in the value of the measure (1 point);
- area of developed public spaces: decrease of measure value (-1 point); value of the measure unchanged (0 pts); increase in measure value (1 point);
- number of public facilities not accessible to people with disabilities: increase in the measure value (-1 point); value of the measure unchanged (0 pts); drop in the value of the measure (1 point);
- number of roads requiring renovation: increase of the measure value (-1 point); value of the measure unchanged (0 pts); drop in the value of the measure (1 point);
- number of newly created micro-enterprises: decrease in the value of the measure (-1 point); value of the measure unchanged (0 pts); increase in measure value (1 point);
- number of closed micro enterprises: increase in the value of the measure (-1 point); value of the measure unchanged (0 pts); drop in the value of the measure (1 point);
- number of households burning coal-fired dwellings: increase in the value of the measure (-1 point); value of the measure unchanged (0 pts); drop in the value of the measure (1 point);
- number of illegal garbage dumps detected: increase in measure value (-1 point); value of the measure unchanged (0 pts); drop in the value of the measure (1 point);
- number of buildings requiring demolition: increase of measure value (-1 point); value of the measure unchanged (0 pts); drop in the value of the measure (1 point).

Table 1. Table of increment values

1	2	3	4	5
No	Indicator	Output value	Value on the assessment date	Calculated value (3-4)
1	unemployment rate, long-term unemployed young people			
2	persons receiving fixed income allowance			
3	area of developed public spaces			
4	number of public facilities not accessible to the disabled			
5	number of roads requiring repair			
6	Number of newly created micro enterprises			
7	number of closed micro enterprises			
8	the number of households burning coal-fired dwellings			
9	number of illegal garbage dumps detected			
10	number of buildings requiring demolition			

Source: own study

The development of measures was necessary to create a model that would serve to assess the impact of revitalization on the standard of living of the settlement population.

The assessment should be made according to the following rules:

- the gauges described in this study should be used for evaluation and presented together with the weight values in table 2 (simplified assessment sheet),



- necessary for the assessment of the data should be obtained from the municipality's authority in the area where the assessed settlement unit is located,
- first of all, fill the cells of table 1 to determine the increment value,
- increment values along with the appropriate characters are the basis for determining the values of the meters in column 4 (table 2),
- after marking the appropriate value in column 4 of table 2, this value, after multiplying by the appropriate weight col 5 (Table 2), should be entered in column 6 (Table 2)
- all calculated values in column 6 (table 2) should be summed up,
- the sum value will indicate the level of changes occurring within a given time in the area of the object being analyzed.

Table 2. Simplified card of state

1	2	3	4	5	6
No	Indicator	Measure	Measure value	Weight	4 * 5
1	unemployment rate, long-term unemployed young people	increase in measure value	1	0,112	
		value of the measure unchanged	0		
		decrease in measure value	-1		
2	persons receiving fixed income allowance	increase in measure value	1	0,110	
		value of the measure unchanged	0		
		decrease in measure value	-1		
3	area of developed public spaces	increase in measure value	1	0,108	
		value of the measure unchanged	0		
		decrease in measure value	-1		
4	number of public facilities not accessible to the disabled	increase in measure value	1	0,104	
		value of the measure unchanged	0		
		decrease in measure value	-1		
5	number of roads requiring repair	increase in measure value	1	0,100	
		value of the measure unchanged	0		
		decrease in measure value	-1		
6	Number of newly created micro enterprises	increase in measure value	1	0,098	
		value of the measure unchanged	0		
		decrease in measure value	-1		
7	number of closed micro enterprises	increase in measure value	1	0,096	
		value of the measure unchanged	0		
		decrease in measure value	-1		
8	the number of households burning coal-fired dwellings	increase in measure value	1	0,094	
		value of the measure unchanged	0		
		decrease in measure value	-1		
9	number of illegal garbage dumps detected	increase in measure value	1	0,092	
		value of the measure unchanged	0		
		decrease in measure value	-1		
10	number of buildings requiring demolition	increase in measure value	1	0,086	
		value of the measure unchanged	0		
		decrease in measure value	-1		
Very positive impact	$0,5000 \leq x \leq 1,000$	Negative impact	$- 0,500 \leq x < 0,000$	Sum	
Positive impact	$0,000 \leq x < 0,500$	Very negative impact	$- 1,000 \leq x < - 0,500$	Grade	

Source: own study

## CONCLUSIONS

The entry into force of the Act on revitalization has created new opportunities for carrying out reliable revitalization works. However, the innovative approach to revitalization issues requires, the development of detailed projects for their implementation in this innovative method of assessing the effects of their implementation. The application of the method described in this paper allows:

- determine the level of change at any time interval,
- determine the level of change at any time during revitalization work,
- comparison of the level of change occurring in separate research objects, by computation to one value,
- in the case of negative evaluations of the processes under investigation, the basis for their modernization or complete abandonment of further negative changes,
- the results of the analyzes provided are valuable materials that can be used in social consultations.

## REFERENCES

1. Babicz-Zielińska E., Rybowska A., Obniska W. (2008) *Sensoryczna ocena jakości żywności*. Wydawnictwo Akademii Morskiej, Gdynia, s. 56.
2. Bański J. (2008) *Ład przestrzenny obszarów wiejskich ze szczególnym uwzględnieniem oddziaływania gospodarki rolnej*. Ekspertyza przygotowana na zlecenie Instytutu Ekonomiki Rolnictwa i Gospodarki Żywnościowej – Państwowy Instytut Badawczy. Warszawa.
3. Czipiewska G. (2014) *Wielofunkcyjny rozwój nadmorskich obszarów wiejskich (na przykładzie gminy Smołdzino)*. W: Instrumenty Kształtowania Przestrzeni Obszarów Wiejskich. UWM w Olsztynie. Olsztyn, s. 7.
4. Durand G., Huylenbroeck G. (2003) *Multifunctionality and Rural Development: A general framework*. Pp. 1-16 in Huylenbroeck, G. van & Durand G. (eds.): *Multifunctional Agriculture: A New Paradigm for European Agriculture and Rural Development*. Ashgate, Aldershot. UK.
5. Hull Z. (2004) *Filozoficzne podstawy rewitalizacji*. W: Rewitalizacja obszarów wiejskich Warmii i Mazur. Educaterra. Olsztyn, s.53.
6. Jędryka T., Kozłowski T. (1986) *Materiały do ćwiczeń z analizy sensorycznej*. Akademia Ekonomiczna w Krakowie. Kraków, s. 32.
7. Korelewski K. (2004) *Teoretyczne i praktyczne zagadnienia rewitalizacji obszarów wiejskich*. W: Rewitalizacja obszarów wiejskich Warmii i Mazur. Educaterra. Olsztyn, s 25-35.
8. Liżewska I., Knercer W. (2003) *Zachowane – ocalone? O krajobrazie kulturowym i sposobach jego kształtowania*. Stowarzyszenie WK „Borussia”. Olsztyn.
9. Słownik Języka Polskiego [www.sjp.pwn.pl](http://www.sjp.pwn.pl) (dostęp 2016.10.09).
10. Ustawa z dnia 27 kwietnia 2001 r. Prawo ochrony środowiska t.j. Dz.U. 2017 poz. 519.
11. Ustawa z dnia 27 marca 2003 r. o planowaniu i zagospodarowaniu przestrzennym Dz.U. 2017 poz. 1073.
12. Ustawa z dnia 9 października 2015 roku o rewitalizacji t.j. Dz.U. 2017 poz. 1023.