



Piotr **BOŁTRYK** • Karolina **OGRODNIK**

## PURPOSE CHANGE OF A SELECTED AREA – MULTI-CRITERIA ANALYSIS WITH FORMAL AND LEGAL PROCEDURE

Piotr **Boltryk** (ORCID: 0000-0003-2738-7068) – *Bialystok University of Technology*

Karolina **Ogrodnik** (ORCID: 0000-0002-6357-6870) – *Bialystok University of Technology*

Correspondence address:

Wiejska Street 45E, 15-351 Białystok, Poland

e-mail: k.ogrodnik@pb.edu.pl

**ABSTRACT:** The priority goal of this article is performing a multi-criteria analysis of the development method for a selected area, along with the characteristics of the main stages of formal and legal procedures related to changing the purpose of such an area. The theoretical part reviews the literature on the multi-criteria decision support in the field of area development planning. In addition, an analysis of the selected legal regulations is made. Then, based on the example of an area located in the suburban zone of Białystok, a multi-criteria analysis is developed using selected MCDM/MCDA methods: Fuzzy AHP and PROMETHEE. The approach proposed in this paper is addressed both to entities responsible for area development planning, as well as to individual investors.

**KEYWORDS:** multi-criterion analysis, spatial planning, Fuzzy AHP, PROMETHEE, procedures

## Introduction

In Poland, determining or changing the method of land development depends on many factors, both legal and factual. The criteria that guide investors in choosing a specific area vary depending on individual needs. The possibility of developing the area in the manner originally adopted in the investment plan undoubtedly plays a crucial part. However, often the selected property does not hold the desired development method, which may result in investors considering alternative ways of developing it. The choice of the direction of land development can therefore be considered a multi-criteria decision-making problem.

The priority goal of this work is to characterize formal and legal procedures related to changing the purpose of a selected area, as well as to indicate the usefulness of MCDM/MCDA methods in this process.

The first part of the work reviews the literature on the use of multi-criteria methods in area development planning. The most popular research problems (including the selection of the investment location, the analysis of the area's suitability, or the selection of a development strategy), sets of methods, as well as research locations are all indicated. The next part describes selected legal regulations that constitute the basis for a multi-criteria analysis. The case study pertains to a selected plot located in north-eastern Poland among valuable natural areas but, also, in close proximity to a voivodeship capital city. Three decision variants (alternative ways of developing this area) and seven quality criteria were proposed. Due to the above data set, the Fuzzy AHP method was used for weighing the criteria, while a method from the so-called European trend of multi-criteria methods – PROMETHEE – was proposed to rank the variants. The last part of the work presents conclusions and recommendations.

## An overview of the literature

MCDM/MCDA methods have been used for years as decision support tools in the field of area development planning (see Ogrodnik, 2019). Based on the analysis of the literature, it can be stated that the above-mentioned methods were most often used for:

- selecting investment locations (e.g. from the renewable energy sector (e.g. Tahri et al., 2015), waste management (e.g. Alkaradaghi et al., 2019), transport (e.g. Khahro et al., 2014; Eren & Katanalp, 2021; Broniewicz & Ogrodnik, 2020), industry (e.g. Kamali et al., 2017; Reisi et al., 2018),
- assessing the suitability of land for a specific purpose (e.g. Bunruamkaew & Murayama, 2011; Ali et al., 2019; Kolendo & Ogrodnik, 2021; Elboshy et al., 2022),
- selecting public investment projects (e.g. Pujadas et al., 2017).

It should be noted that MCDM/MCDA methods are also used to analyze the directions of development undertaken by local government units (e.g. selection of a development scenario for the municipality (Table 1) or for the analysis of the development methods assumed for individual plots or facilities (Table 2).

**Table 1.** Application of the selected MCDM/MCDA methods in spatial planning – selection of municipality development scenarios

Author (year published)	MCDM/MCDA methods	Goal	Set of criteria and variants	Case Study
Łuczak, Korsak (2010)	AHP	presentation of possibilities for using an analytical and hierarchical process to select a development scenario for a rural municipality	<ul style="list-style-type: none"> <li>main goal, divided into sub-goals and tasks</li> <li>3 scenarios</li> </ul>	Rokietnica municipality in the Wielkopolskie Voivodeship
Łuczak, Wysocki (2011)	FAHP	presentation of the possibility of using a fuzzy analytical hierarchical process to assess the importance of strategic goals and tasks at the municipal level	<ul style="list-style-type: none"> <li>the main goal divided into sub-goals and tasks</li> </ul>	Babinek municipality in the Wielkopolskie Voivodeship
Łuczak (2012)	FAHP	presentation of the possibility for using a fuzzy analytical hierarchical process to assess the importance of strategic factors that affect the development of a municipality	<ul style="list-style-type: none"> <li>the main objective divided into sub-objectives and a package of tasks (directions of action)</li> </ul>	Tarnowo Podgórne municipality Wielkopolskie Voivodeship
Łuczak, Korytkowska (2012)	AHP	using an analytical hierarchical process to assess the importance of strategic factors and select a development scenario in the municipality	<ul style="list-style-type: none"> <li>3 scenarios</li> <li>main goal divided into subgoals and tasks</li> </ul>	Sompolno municipality in the Wielkopolskie Voivodeship
Łuczak (2013)	FHA	presenting a fuzzy hierarchical analysis to assess the importance of strategic factors	<ul style="list-style-type: none"> <li>main goal divided into subgoals and tasks</li> </ul>	Rokietnica municipality in the Wielkopolskie Voivodeship
Łuczak, Wysocki (2013)	AHP	an attempt to apply an analytical-hierarchical process in performing a SWOT analysis of administrative units in order to assess the importance of factors influencing their development, together with the recognition of the types of development strategies	<ul style="list-style-type: none"> <li>4 strategies</li> <li>20 features</li> </ul>	municipalities of Międzyrzecz County in Lubuskie Voivodeship
Łuczak (2014)	AHP-LP	presentation of the possibilities for using the AHP-LP method to assess the importance of determinants of socio-economic development in administrative units	<ul style="list-style-type: none"> <li>main criterion divided into subordinate criteria and development determinants</li> </ul>	municipalities of Międzyrzecz County in Lubuskie Voivodeship
Kobryń, Kretuński (2017)	PROMETHEE	multi-criteria selection of the development strategy for a selected rural municipality	<ul style="list-style-type: none"> <li>4 strategy variants</li> <li>12 decision criteria</li> </ul>	Rzekuń municipality in the Masovian Voivodeship
Łuczak (2017)	AHP, FAHP	assessment of strategic factors and selection of a development scenario for local administrative units	<ul style="list-style-type: none"> <li>3 development scenarios</li> <li>the main strategic goal, divided into sub-goals and tasks</li> </ul>	the municipalities of Międzychód and Chrzypsko Wielkie in the Wielkopolskie Voivodeship

**Table 2.** Application of the selected MCDM/MCDA methods in area development planning – selection of land development methods

Author (year published)	Methods MCDM/MCDA	Goal	Set of criteria and variants	Case Study
Kobryń, Tarnacka (2015)	AHP, PROMETHEE, TOPSIS	choosing the optimal purpose for a part of a city center	<ul style="list-style-type: none"> <li>4 variants for changing the purpose of the selected area</li> <li>8 criteria</li> </ul>	33 real estate properties in Białystok, Podlaskie Voivodeship
Palicki (2015)	PROMETHEE	the use of multi-criteria analysis in a revitalization project	<ul style="list-style-type: none"> <li>4 revitalization concepts</li> <li>10 criteria</li> </ul>	the Old Slaughterhouse in Poznań, Wielkopolskie Voivodeship
Górski (2018)	MAUT	multi-criteria decision support for choosing the method of developing a plot for agritourism activities	<ul style="list-style-type: none"> <li>2 concepts</li> <li>9 criteria</li> </ul>	plot in Chojnice municipality, Pomeranian Voivodeship
Sobolewska, Walczak (2019)	AHP	analysis of the possibilities for changing the method of development for a post-industrial area	<ul style="list-style-type: none"> <li>3 variants</li> <li>13 criteria</li> </ul>	post-industrial facility in Zielona Góra, Lubuskie Voivodeship

Based on the above literature analysis, it can be stated that the AHP method and its modifications (FAHP, FHA, AHP-LP) are dominant. The outlined works present the possibilities of using the selected methods, both at the stage of factor weighing, as well as for the purpose of selecting a specific development scenario/method.

In this paper, a hybrid approach is proposed, i.e. Fuzzy AHP for criteria weighing and PROMETHEE for variant ranking. The next section of the paper presents the multi-criteria analysis algorithm and the formal-legal procedure.

## The formal and legal procedure for changing the method of development for a selected area

The plot being assessed is located in Kopisk, Dobrzyniewo Duże municipality, Białystok district, Podlaskie Voivodeship. The total area is 0.4266 ha.

According to the land and building register, the plot is considered agricultural land (arable land) of the lowest suitability for agricultural production (marked with the R-VI symbol, where R-I is the best soil in terms of quality and R-VI is the weakest; de facto unsuitable for agricultural production, see: annex to the regulation of the Council of Ministers of 12 September 2012 on the soil classification of land – Journal of Laws of 2012, item 1246).

For the area where the assessed plot is located; the municipality of Dobrzyniewo Duże, a local area development plan has not been adopted. In Poland, such a plan serves as a basic planning document that determines, in a binding manner, the intended use of the land. *„The local plan is the basic tool for regulating area development. It contains generally applicable provisions regarding the intended use of the land, its development and construction conditions, constituting a direct basis for issuing construction decisions and expropriating land for public purposes”* (Niewiadomski, 2023).

Therefore, in order to effectively implement any of the above-mentioned development methods, it is necessary to carry out a procedure aimed at, generally speaking, „de-agriculturalization” of the analyzed plot, assuming there is no local plan.

In this case, the statutory principle is Article 6 of the Act of 3 February 1995 on the protection of agricultural and forest land (Journal of Laws 2024, item 82) which states that land marked in the land register as a wasteland should be designated for non-agricultural purposes and, in the absence thereof, other land with the lowest production suitability. As established above, the analyzed plot is covered with agricultural land of the lowest quality class.

The first stage of converting agricultural land to non-agricultural purposes is changing its intended purpose. It is generally carried out as part of the adoption of a local area development plan and, in the absence thereof, on the basis of an individual decision pertaining to the conditions for construction and land development (Article 4, paragraph 2 of the Act of 27 March 2003 on area planning and development – Journal of Laws of 2024, item 1130).

The type of land on which an investment is planned is significant because, in the absence of a local area development plan, it is not possible to allocate agricultural land of classes I–III for non-agricultural purposes within the framework of a area development decision (judgment of the Provincial Administrative Court in Bydgoszcz of August 23, 2006, II SA/BD 494/06, Legalis). Issuing an area development decision is permissible only if the area does not require approval for changing the designation of agricultural land to non-agricultural purposes (Article 61(1)(4) of the Act on area planning and development; see also Bieluk, 2015). Such approval is necessary for agricultural land of classes I–III, unless the land is located within the administrative boundaries of cities (Article 10a in conjunction with Article 7(2) of the Act on the protection of agricultural and forest land). The village of Kopisk does not have a city status.

Obtaining development conditions (and thus changing the purpose of the land for the purposes analyzed in this article) is possible when the conditions of Article 61, Section 1 of the Area Planning and Development Act are met. For the purposes of this study, it should be assumed that all the planned functions are in line with the principle of proximity referred to in Article 61, Section 1, Item 1 of the Area Planning and Development Act. The principle determines the need to adapt new development to the existing conditions, including the urban and architectural features and parameters of the existing developments in the surrounding areas” (Okolski, 2014).

The concept of proximity cannot be merely understood as the nearest (directly neighboring) development. According to the judgment of the Regional Administrative Court in Łódź of 3 October 2007 (II SA/Łd 571/07), „*the area analyzed by the authority should be designated around the plot, i.e. in all directions, and not be limited to the area along the road adjacent to which the plot subject to the application is located. The legislator left the designation of the analyzed area to the discretion of administrative authorities, stipulating only that it should include the area around the plot at a distance of at least three times the width of the plot and no less than 50 m*”.

All plots located in the village of Kopisk are connected by one public road. According to the publicly available information the following activities are or were conducted in the village: commercial activities (a shop – 1.7 km from the plot in question) and recreational activities (agrotourism – 1.6 km from the plot in question). Additionally, it cannot be ruled out that not all residential houses in the area were built as part of agricultural homestead development (the nearest house is located in the immediate vicinity of the plot in question). Therefore, meeting the discussed conditions pertaining to proximity is possible. The remaining conditions imposed by the Act, i.e. access to a public road and availability of media, are also met in this case. The plot in question is located directly by the road, and it is also possible to connect electricity and water.

In order to obtain a decision on the development conditions, the planned investment must also comply with separate provisions (Article 61, paragraph 1, point 5 of the area planning and development act). In this context, it should be noted that the plot is located in naturally valuable areas, as it is:

- 1) in the area of the Knyszyńska Forest Landscape Park, for which Resolution No. XXIII/201/16 of the Podlaskie Voivodeship Assembly of 21 March 2016 on the Knyszyńska Forest Landscape Park (Journal of Laws of the Podlaskie Voivodeship of 2016, item 1502) applies. Therefore, at the stage of investment implementation and its subsequent use, the prohibitions contained in § 4 section 1 of the aforementioned resolution must be observed.
- 2) within the boundaries of the special bird protection area Natura 2000 Puszcza Knyszyńska (PLB200003), designated by the regulation of the Minister of the Environment on 12 January 2011 on the special bird protection area Natura 2000 (Journal of Laws No. 25, item 133 of 2011). Pursuant to Art. 22 sec. 1 of the Act of 16 April 2004 on nature conservation (Journal of Laws of 2021, item 1098, as amended), it is prohibited to undertake activities that may – individually or in combination with other activities – have a significant negative impact on the conservation objectives of the Natura 2000 area. For this area, the provisions contained in the Order of the Regional Director for Environmental Protection from 15 May 2014 on the establishment of a plan of protective tasks for the Natura 2000 Puszcza Knyszyńska area PLB200003 (Journal of Laws of the Podlaskie Voivodeship of 2014, item 1967) also apply.
- 3) within the boundaries of the special area of protection of habitats Natura 2000 Ostoja Knyszyńska (PKH200006) designated by the regulation of the Minister of Climate and Environment of 4 February 2021 on the special area of protection of habitats Ostoja Knyszyńska (Journal of Laws of 2021, item 473), for which the Regulation of the Regional Director for Environmental Protection in Białystok of 30 June 2014 on the establishment of a plan of protective tasks for the Natura 200 Ostoja Knyszynska area PLH200006 applies (Journal of Laws of the Podlaskie Voivodeship of 2014, item 2431, as amended).

In connection with the above, based on art. 96 section 3 of the Act of 3 October 2008 on providing information on the environment and its protection, public participation in environmental protection and on environmental impact assessments (Journal of Laws of 2021, item 237, as amended), the application for issuing development conditions may be subject to an opinion of the Regional Director for Environmental Protection in Białystok in terms of eliminating the need to carry out the procedure related to obtaining an environmental decision.

Obtaining development conditions is done upon application submitted to the municipality in which the plot is located. In this case, it is the Municipality of Dobrzyniewo Duże. The municipality generally has 30 days to issue a decision, then 14 days are needed for it to become final.

A legally binding decision on development conditions changes the purpose of the land from agricultural to investment (residential, tourist, or commercial and service). The next step that should be considered (before starting non-agricultural use of the land) is the exclusion of the land from agricultural production.

The rule is that each agricultural land whose purpose has been changed should be subject to the procedure of excluding it from agricultural production. The plot in question contains agricultural land of category VI. In such a determination, it is important to distinguish the origin of this land. If it is organic (better), the exclusion procedure must be carried out; but if it is mineral (worse), excluding the land from agricultural production is not required. An application to determine the origin of the soil can be submitted to the relevant district governor before the land is excluded from agricultural production. „*The basis for determining the origin of soils are soil and agricultural maps prepared and made available by the Chief Surveyor of the Country and, in doubtful situations, the district governor may additionally request a soil expert to prepare an appropriate opinion*” (Wszótek et al., 2016).

If it turns out that the plot in Kopisko contains land of organic origin, it will be necessary to submit an application to the district governor to exclude the land from agricultural production. Exclusion fees are charged for the issuance of such a decision. They can be paid as a one-off fee or as an annual fee (in the case of category VI land, the fee rate is PLN 87,435 per hectare). Importantly, this fee is reduced by the value of the land, determined according to market prices pertinent to a given location on the day when the land in question is excluded from production. The applicant is obliged to submit a valuation report together with the application for excluding the land from agricultural production. There is, therefore, a high probability that the exclusion fee will not apply, due to the fact that the value of the land may exceed the amount of the fee. The one-off fee is paid within 60 days from the date the decision to exclude the land from agricultural production becomes final. Annual fees (10% of the one-off fee) are payable for 10 years by June 30 each year.

The procedure at the district governor usually takes about 30-60 days, depending on the need for a thorough analysis of the documentation, including valuation reports.

It is worth noting that, if we adopt the development method solely in the variant of a single-family residential development, the Act on the protection of agricultural and forest land provides for an exemption from the fee obligation, but for no more than 0.05 ha (Article 12a of the Act on the protection of agricultural and forest land). In such a case, the procedure may become shorter by up to 50%.

Excluding land from agricultural production ends the procedure of converting agricultural land for purposes other than agricultural. A positive completion of this procedure allows the investor to apply for a construction permit (Siwkowska, 2019)

## Research methods

Figure 1 presents the procedure for the proposed multi-criteria analysis along with a brief description of the methods used.

**Table 3.** Scale of comparison of criteria

Definition	classic Saaty Scale	fuzzy triangular scale
Equal importance	1	1,1,1
Weak or slight	2	1,2,3
Moderate importance	3	2,3,4
Moderate plus	4	3,4,5
Strong importance	5	4,5,6
Strong plus	6	5,6,7
Very strong	7	6,7,8
Very, very strong	8	7,8,9
Extremely strong	9	9,9,9
<i>“If an activity “i” has one of the above non-zero numbers assigned to it when compared with activity “j”, then “j” has the reciprocal value when compared with “i”</i>	Reciprocals of above	Reciprocals of above

Source: Saaty, 2008; Ayhan, 2013.

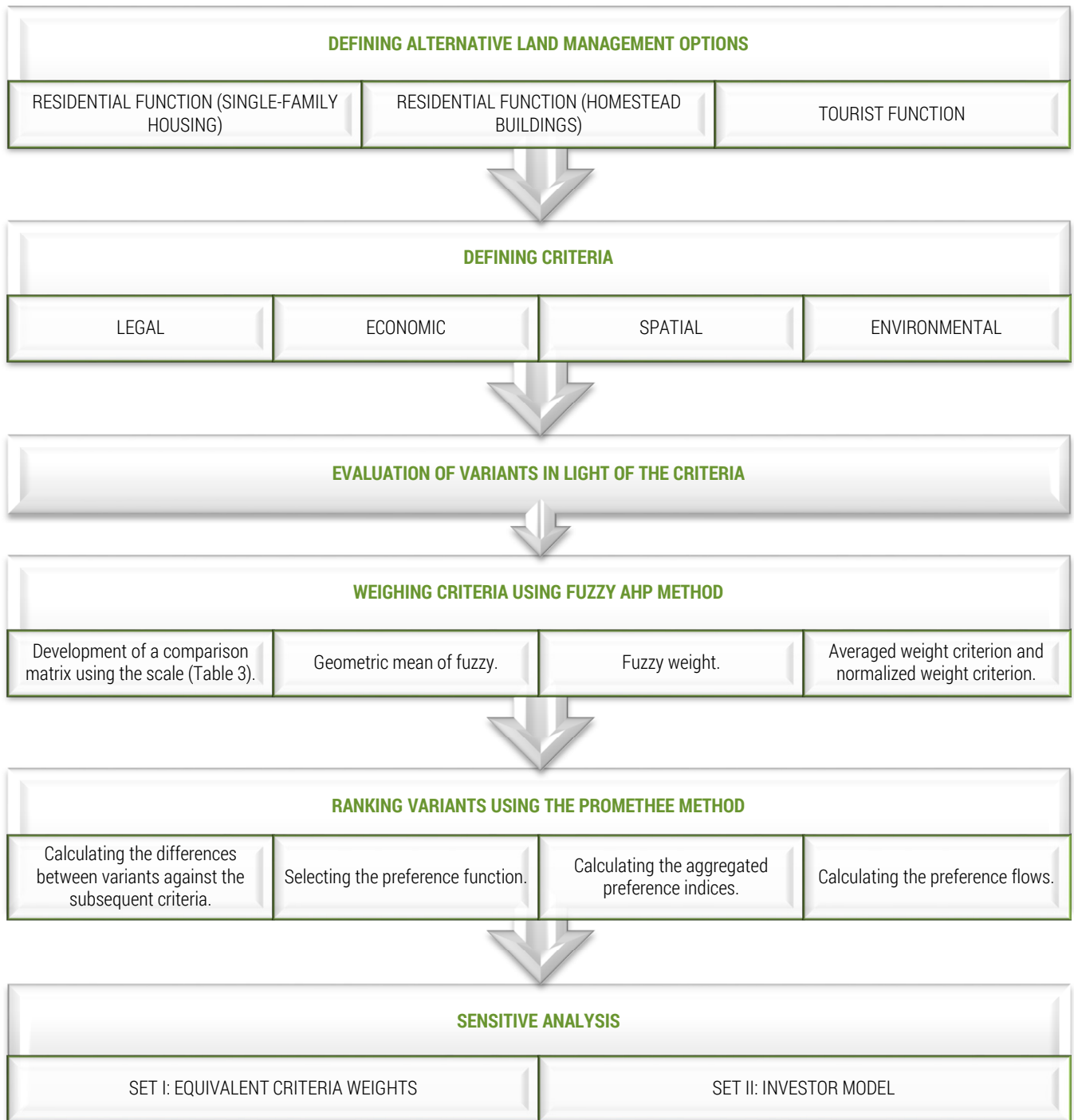


Figure 1. Flowchart

## Case study

The analysis pertains to a plot located in Kopisk (Dobrzyniewo Duże municipality, Białystok district, Podlaskie Voivodeship). Despite its short distance from a large urban center, the selected plot is characterized by a high natural value. Such a location influences the potential directions of development of this area. In connection with the above, this article proposes 3 alternative methods of development:

- W1: residential function (single-family housing development).
- W2: residential function (homestead housing development).
- W3: tourist function.



In the context of the above variants, decision criteria were proposed. Importantly, both legal criteria related to the procedure described above, as well as economic, spatial and natural criteria were taken into account. Due to the nature of the considered decision problem and the initial stage of the investment process, qualitative criteria were adopted. A total of 7 criteria were taken into account. The details are presented in Table 4:

K1: Compliance with the provisions of applicable planning documents.

K2: Estimated duration of the procedure.

K3: Estimated investment costs.

K4: Increase in the market value of the property.

K5: Change in the current functional and spatial structure.

K6: Improvement of infrastructure.

K7: Impact on the natural environment.

**Table 4.** Characteristics of decision criteria

ID	Criterion	Group	Character	Justification	Scale
K1	Compliance with the provisions of applicable planning documents	Legal	stimulant	The area selected for analysis is covered only by the study of conditions and directions of area development of the municipality.	qualitative 2-tier: yes/no
K2	Estimated duration of the procedure	Legal	destimulant	The degree of complexity of the procedure for changing the intended use of the selected area was taken into account.	qualitative 3-tier: none; long; very long
K3	Estimated investment costs	Economic	destimulant	Estimated investor costs at the stage of formal and legal procedure, as well as costs of design and implementation of the investment.	qualitative 3-tier: low; medium; high
K4	Increase in the market value of real estate	Economic	stimulant	Changing the development method will affect the attractiveness of the plot and, therefore, its market value.	qualitative 3-tier: low; medium; high
K5	Change of the current functional and spatial structure	Spatial	destimulant	The selected area is a rural area with high natural values.	qualitative 2-tier: yes/no
K6	Improving infrastructure	Spatial	stimulant	Investment activities within the plot may affect the condition of the infrastructure.	qualitative 2-tier: yes/no
K7	Impact on the natural environment	Environmental	destimulant	Included due to their location in naturally valuable areas (including Natura 2000 areas).	qualitative 3-tier: low; medium; high

## Results of the research

In the subsequent sections of the paper, the following is presented: obtained criteria weights, evaluation of variants in light of the criteria along with the final rankings. Based on the pairwise comparison of individual criteria using the Saaty fuzzy scale (Table 5), a set of weights was estimated (Table 6). Importantly, 2 sets were proposed, the first assuming equivalence of the analyzed criteria, and the second estimated using the FAHP method.





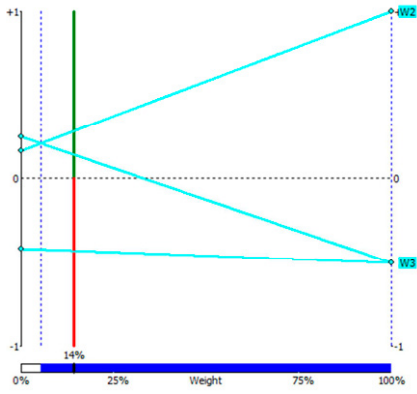


Figure 2. Visual Stability Intervals – K1

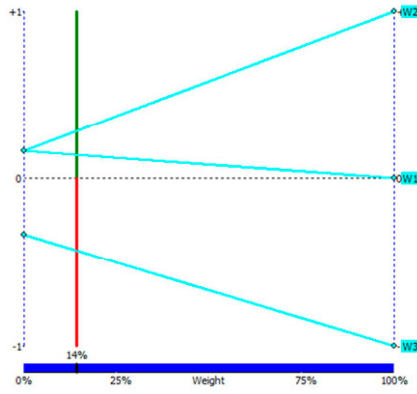


Figure 3. Visual Stability Intervals – K2

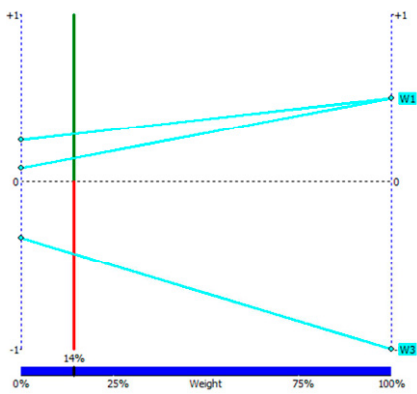


Figure 4. Visual Stability Intervals – K3

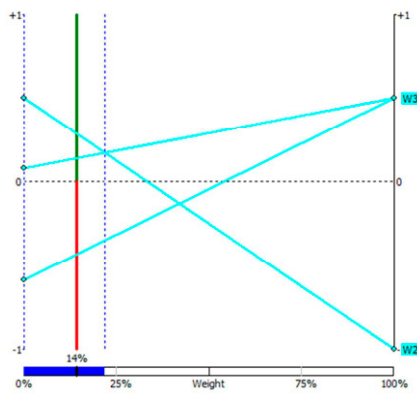


Figure 5. Visual Stability Intervals – K4

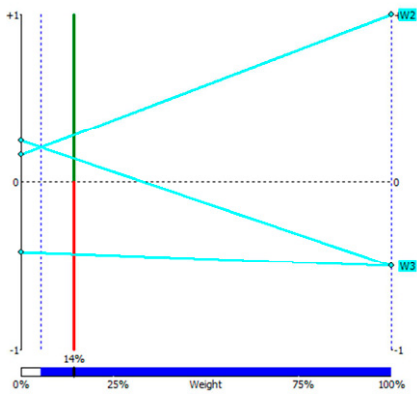


Figure 6. Visual Stability Intervals – K5

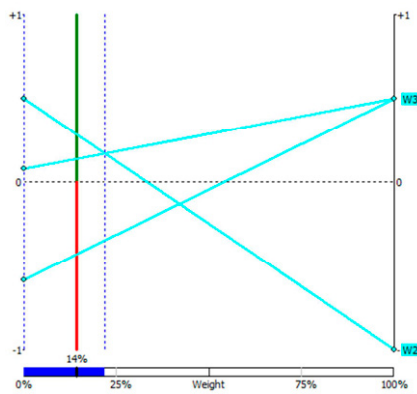


Figure 7. Visual Stability Intervals – K6

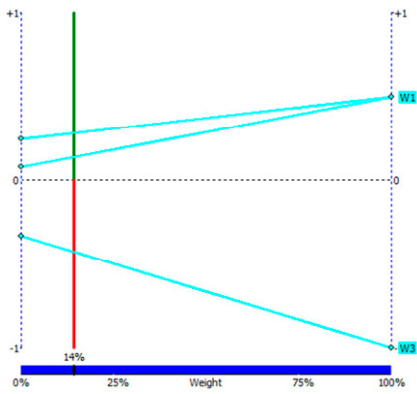


Figure 8. Visual Stability Intervals – K7

Source: authors' work using Visual PROMETHEE Academic.

**Table 6.** Set of criteria weights

Criteria	I set of weights (equivalent)	II set of FAHP weights – investor's model
K1	0.143	0.064
K2	0.143	0.262
K3	0.143	0.262
K4	0.143	0.262
K5	0.143	0.022
K6	0.143	0.064
K7	0.143	0.064

**Table 7.** Evaluation of variants in light of the criteria along with final rankings

	W1	W2	W3
K1	no	yes	no
K2	long	none	very long
K3	medium	medium	high
K4	high	medium	high
K5	yes	no	yes
K6	yes	no	yes
K7	low	low	medium
Net flow value (Phi) – I set of weights	0.1429	0.2857	-0.4286
PLACE IN THE RANKING – 1ST SET	2	1	3
Net flow value (Phi) – II set of weights	0.2830	0.1850	-0.4680
PLACE IN THE RANKING – 2ND SET	1	2	3

## Discussion and conclusions

First, the weighting results were discussed. As a result of the pairwise comparison of individual decision criteria from the investor's point of view, the highest weights were given to the criteria related to the duration of the formal and legal procedure, as well as to the economic criteria. The second place was taken by selected spatial and natural criteria, while the lowest weight was given to the criterion related to the functional and spatial structure. The application of the FAHP method at this stage made it possible – in addition to the pairwise comparison of criteria – to assign ratings in the form of a fuzzy triangular scale, which is particularly useful if we do not have full knowledge of the given criteria. The work also included a second set of weights, assuming their equivalence.

Due to the qualitative nature of the adopted criteria, the PROMETHEE method was used to rank the variants. Each criterion was assigned an appropriate scale (details in Table 4). Importantly, from the available preference functions, an ordinary function (usual) was assigned to each criterion. It was found that a 1-level difference with the adopted scale range is significant. The final ranking of variants was developed based on the Phi index value. The higher the net flow value, the higher the position of a given variant.

As part of the case study, a sensitivity analysis was also developed. The change in the set of weights influenced the final shape of the variant ranking. When the first set assuming the equivalence of criteria was applied, the first place was taken by W2, i.e. the residential function (homestead development), which involves the least interference with the existing functional and spatial structure. The

second place was taken by the variant assuming the construction of single-family housing, while the last place was taken by the tourist function, characterized by both a relatively complicated formal and legal procedure, as well as high costs and interference with the previous method of development.

Changing the set of weights to the so-called investor model, which prefers higher weight values for economic criteria, resulted in a change in the final ranking. The first place was taken by variant no. 1, followed by variant no. 2. The last place, as was the case with equal weights, was taken by the variant assuming the transformation of the selected area for tourist functions.

Based on the literature on the subject, selected legal acts and multi-criteria analysis, the following conclusions were drawn:

spatial planning decisions often require taking into account many, often contradictory, criteria concerning both legal aspects, as well as spatial or natural conditions, hence MCDM/MCDA methods can serve as a useful support instrument,

in the case of preliminary analyses performed as part of the investment process, it is recommended to use fuzzy multi-criteria methods, which take into account the level of uncertainty typically present at this stage and the common lack of precise, quantitative data.

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## The contribution of the authors

Conceptualization, P.B. and K.O.; literature review, P.B. and K.O.; methodology, K.O.; writing, P.B. and K.O.; conclusions and discussion, P.B. and K.O.

The authors have read and agreed to the published version of the manuscript.

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Piotr BOŁTRYK • Karolina OGRODNIK

## ZMIANA PRZEZNACZENIA WYBRANEGO TERENU – ANALIZA WIELOKRYTERIALNA WRAZ Z PROCEDURĄ FORMALNOPRAWNĄ

**STRESZCZENIE:** Priorytetowym celem artykułu jest analiza wielokryterialna sposobu zagospodarowania wybranego terenu wraz z charakterystyką głównych etapów procedury formalnoprawnej związanej ze zmianą przeznaczenia tego terenu. W części teoretycznej dokonano przeglądu literatury z zakresu wielokryterialnego wspomaganie decyzji w planowaniu przestrzennym. Ponadto, dokonano analizy wybranych przepisów prawa. Następnie, na przykładzie terenu zlokalizowanego w strefie podmiejskiej Białegostoku, opracowano analizę wielokryterialną przy użyciu wybranych metod MCDM/MCDA: Fuzzy AHP oraz PROMETHEE. Zaproponowane w niniejszej pracy podejście kierowane jest zarówno do jednostek odpowiedzialnych za planowanie przestrzenne, jak również do indywidualnych inwestorów.

**SŁOWA KLUCZOWE:** analiza wielokryterialna, planowanie przestrzenne, Fuzzy AHP, PROMETHEE, procedura