

SPATIAL PLANNING AS A TOOL FOR PROTECTION OF MINERAL SPRINGS IN POLAND

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Abstract

There is a growing interest in the intake and use of mineral springs. Although their deposits are largely renewable, they should be managed in a rational way. There is no denying the fact that the proper management and protection of mineral springs is significantly facilitated by the possibility of utilizing available tools ensured by spatial planning. It provides the possibility of introducing certain restrictions imposed by the Act on health resort treatment, health resorts and protected health resort areas as well as on health resort communes into the acts of local law, such as local land use plans. The purpose of this research paper is to describe the role of spatial planning at the local level in the protection of mineral spring deposits. It analyzes local land use plans which are in force in health resort communes. The research was carried out in the health resorts of Lesser Poland Province.

Key words: local land use plan, health resort, mineral springs, Lesser Poland Province

Introduction

Pursuant to (ACT, 2011), mineral spring is groundwater, which is not contaminated chemically or microbiologically, which is characterized by natural variability of physical and chemical properties and contains:

- dissolved solid minerals – not less than 1000 mg/dm³, or
- ferrous ion – not less than 10 mg/dm³ (ferruginous waters), or
- fluoride ion – not less than 2 mg/dm³ (fluoride water), or
- Iodine ion – not less than 1 mg/dm³ (iodide waters), or
- divalent sulfur – not less than 1 mg/dm³ (sulphide waters), or
- metasilic acid – not less than 70 mg/dm³ (silicon waters), or
- radon – not less than 74 Bq/dm³ (radon waters), or
- unbound carbon dioxide – not less than 250 mg/dm³.

Groundwater, which has been recognized as mineral springs with healing properties, is assigned very high value by the Polish legislation (DOWGIAŁŁO, 2004). Therefore, these deposits are the property of the State Treasury and are subject to special protection (ACT, 2011). This protection is very often manifested by the establishment of health resorts in the areas where mineral springs occur (ACT, 2005). It is aimed at preventing negative consequences which both industrial activities and improper management may have on mineral spring deposits (CIEŻKOWSKI et al., 2010). As it is the case with other niche, but extremely important spatial conditions, such as deposits of renewable energy sources (BIEDA, BIEDA, 2017) or landslides (BYDŁOSZ, HANUS, 2013), this protection should be implemented using spatial planning tools (KORELESKI, 2008).

There are 45 towns (or their parts) in Poland that have the status of a health resort. The region with the largest number of health resorts (11) is Lower Silesian Province. The second place is taken by Lesser Poland Province (9). The distribution of health resorts in Poland is illustrated in Figure 1.

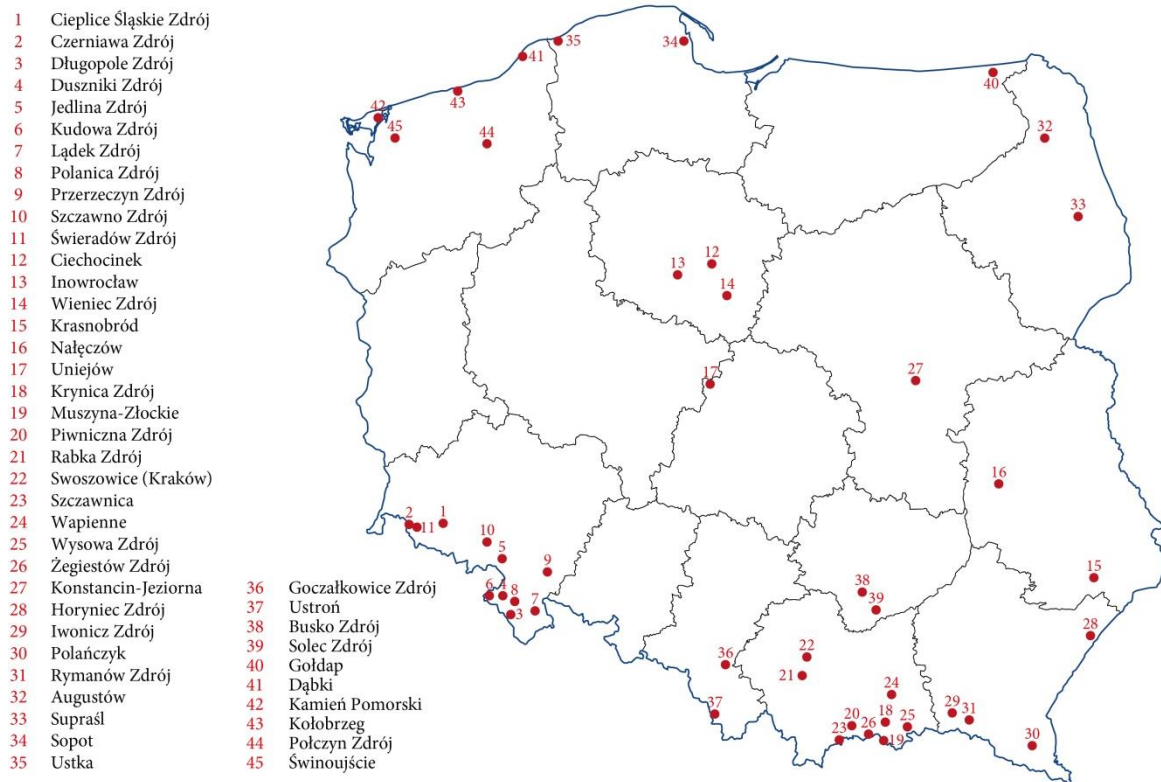


Fig. 1. Distribution of health resorts in Poland.
Source: (www.healthresort.pl, access: 15.02.2018).

Since the use of all mineral resources depends largely on proper management of space and compliance with restrictions related to the protection of their deposits (GOŁAŚ, 2017; KRYZIA, KRYZIA, 2017), and because rational management of deposits and securing current and future needs of mineral spring extraction requires cooperation of various public administration authorities (PTAK, PARASZCZUK, 2017), the purpose of this research paper is to describe the role that spatial planning documents implemented at the local level have in the protection of mineral spring deposits.

Methodology and materials

Mineral springs are a national treasure and their protection is a basic obligation of commune bodies (ACT, 2005). This obligation is implemented by introducing various restrictions, which are enforced by the local land use plan (KORELESKI, 2009). Therefore, part of the research studies involved a comparative analysis of the provisions included in local land use plans which are in force in the health resort communes of Lesser Poland.

Due to the fact that the mineral spring deposits located in Lesser Poland constitute 1/3 of the country's total deposits, and their flow is 1,566.2 m³/h (RESOLUTION, 2003), the research area has been narrowed down to one region. The mineral springs occur in the southern part of Lesser Poland and the concentration of their intakes occurs in the border area of the Province in the Nowy Sącz sub-region. Their distribution in the Province has been presented against other mineral deposits (Figure 2).

The mineral spring deposits located in Lesser Poland resulted in the establishment and development of the health resorts such as Krynica, Muszyzna, Piwniczna, Rabka-Zdrój, Szczawnica, as well as Wapienne near Sękowa, Wysowa near Uście Gorlickie and Swoszowice. The characteristics of these health resorts are summarized in Table 1.



Fig. 2. Location of main mineral deposits relative to areas of natural value in Lesser Poland: ◆ – mineral springs.
Source: (RESOLUTION, 2003).

Table 1. Characteristics of health resorts in Lesser Poland Province.

No.	No. in Fig. 1	Name of health resort	Commune	Type of health resort
1	18	Krynica-Zdrój	Krynica-Zdrój	mountain
2	19	Muszyna	Muszyna	piedmont
3	20	Piwniczna-Zdrój	Piwniczna-Zdrój	piedmont
4	21	Rabka-Zdrój	Rabka-Zdrój	mountain
5	22	Swoszowice	Kraków	lowland
6	23	Szczawnica	Szczawnica	mountain
7	24	Wapienne	Sękowa	piedmont
8	25	Wysowa-Zdrój	Uście Gorlickie	mountain
9	26	Żegiestów-Zdrój	Muszyna	mountain

Source: Own study.

The analyzed local land use plans are included in the following resolutions (as amended):

1. Resolution No. XV/181/2004 of the Town and Health Resort Commune Council of Muszyna of March 12, 2004 on the local land use plan for Żegiestów in the Commune of Muszyna.
2. Resolution No. XVII/112/2004 of the Commune Council of November 26, 2004 on the adoption of the local land use plan for the Commune of Sękowa
3. Resolution No. XVII/100/2004 of the Town Council of Szczawnica of July 26, 2004 on the adoption of the local land use plan for the town of Szczawnica for the mining area "SZCZAWNICA I", extended with the adjacent investment areas within the survey limits set out in § 2.

4. Resolution No. XL/489/2006 of July 20, 2006 of the Town and Health Resort Commune Council of Muszyna on the local land use plan for the area in the town of Muszyna in the Commune of Muszyna.
5. Resolution No. XLIII/333/06 of the Town and Commune Council of Piwniczna-Zdrój of July 28, 2006 on the adoption of the local land use plan for the town and commune of Piwniczna-Zdrój, Structural Unit "A.II" - Zawodzie.
6. Resolution No. XLVIII/457/2010 of the Commune Council of Uście Gorlickie of November 10, 2010 on the adoption of the local land use plan for the commune of Uście Gorlickie I "Wysowa - Blechnarka - Ropki - Hańczowa".
7. Resolution No. XXVII.165.2012 of the Town Council in Krynica-Zdrój of June 27, 2012 on the adoption of the local land use plan for Krynica-Zdrój Health Resort (area 1 - Zdrój).
8. Resolution No. XII/130/11 of the Krakow City Council of April 13, 2011 on the adoption of the local land use plan for the area "Swoszowice - Uzdrowisko".
9. Resolution No. LIV/367/14 of the Town Council in Rabka-Zdrój of October 10, 2014 on the adoption of the local land use plan for the "A" protection zone of the health resort Rabka-Zdrój.

Results

There are three types of protection zones in health resorts, marked with the letters "A", "B" and "C" (ACT, 2005). Their characteristics are demonstrated in Table 2.

Table 2. Characteristics of protection zones in health resorts.

Denotation	Ground cover	Located facilities	Remarks
A	not less than 65% of green areas	<ol style="list-style-type: none"> 1) health resort treatment facilities and devices; 2) facilities for health resort treatment or for patient or tourist service, to the extent not hampering the functioning of health resort treatment (especially boarding houses, restaurants or cafes). 	there is an obligation to develop a local land use plan for the whole zone
B	not less than 50% of green areas	<ol style="list-style-type: none"> 1) facilities that do not affect adversely the healing properties of health resort or its protection zones, as well as service and tourist facilities that are unobtrusive for patients (including hotels or recreation, sports and communal facilities); 2) residential facilities; 3) other facilities associated with satisfying the needs of people staying in this area. 	area adjacent to "A" zone, constituting its surroundings
C	not less than 45% of biologically active areas	<ol style="list-style-type: none"> 1) affecting the preservation of landscape and climatic values as well as protection of natural resources of raw materials with healing properties. 	area adjacent to "B" zone, constituting its surroundings

Source: Own study based on (ACT, 2005).

Local land use plans for individual zones contain restrictions defined by the Act (ACT, 2005). Of course, most of them concern the "A" zone (Table 3).

All the restrictions presented in Table 2 can be found in the analyzed local land use plans developed for the health resort communes of Lesser Poland Province. In the plan prepared for the Swoszowice health resort, it was even contained that *in the health resort protection zones there are restrictions, orders, limitations and permissions resulting from separate regulations regarding health resort treatment and health resorts, as well as from the statute of a health resort*. In Rabka-Zdrój on the other hand, *investments allowed by the plan's settlements may be implemented provided that the conditions set out in the separate regulations, in particular the regulations relating to the "A" zone specified in the Act on health resort treatment, health resorts and protected health resort areas as well as on health resort communes, are taken into account*.

There are situations when, for some reason, communes allow some minor deviations from statutory provisions. In Krynica, for example, *it is allowed to earmark part of the service development area, located within the historic urban layout of the town of Krynica-Zdrój, entered into the register of monuments "A"-278/M, denoted with the symbol 1.Uz.1, for the water bottling plant, pending its transfer outside the "A" health resort protection zone*.

Table 3. Restrictions resulting from the Act on health resort treatment, health resorts and protected health resort areas as well as on health resort communes.

No.	Restrictions	„A”	„B”	„C”
1	construction of industrial plants	X	X	X
2	construction of single-family and multi-family residential buildings	X		
3	construction of freestanding garages	X		
4	construction of commercial facilities with a surface area of more than 400 m ²	X	X	
5	construction of petrol stations and distribution points of petroleum products	X	X ¹	
6	construction of motorways and expressways	X		
7	construction of above-ground car parks	X ²	X ³	
8	construction of base stations for mobile telephony, radio and television broadcasting stations, radiolocation stations and other stations emitting electromagnetic waves, excluding communication devices for the needs of public safety and rescue services	X	X	
9	construction of building structures that may always have significant environmental impact ⁴	X		
10	construction of water impounding structures on rivers as well as hydroelectric power plants and wind farms	X		
11	opening landfills of solid and liquid waste, scrap metal yards and collection points for agricultural products, chemical fertilizer depots, chemical agent depots and fuel depots	X	X	
12	opening camping sites, construction of chalets and bungalows	X		
13	running open-air markets, with the exception of souvenir shops, sale of folk products, regional products, in the forms and places determined by the commune	X		
14	conducting farming activity	X		
15	keeping livestock	X		
16	organizing car and motorcycle rallies	X		
17	organizing mass events	X		
18	recovering mineral raw materials other than natural raw materials with healing properties	X	X	X
19	felling of forest and park trees, with the exclusion of maintenance cuts	X	X ⁵	X ⁵
20	carrying out drainage works and other activities causing unfavorable change of existing water conditions	X	X	X
21	carrying out activities that have a negative impact on the physiography of health resort and its urban layout or healing properties of the climate	X	X	X

¹ Closer than 500 m from the boundary of the "A" zone.

² With the number of parking spaces exceeding 15% of beds in spa hospitals, sanatoriums and boarding houses, however, not exceeding 30 parking spaces; and above-ground car parks in front of service facilities with a number of parking spaces not exceeding 10.

³ With the number of parking spaces exceeding 50, except for underground and above-ground multi-level car parks.

⁴ Including in particular: car service workshops, smokehouses, tanneries, with the exception of building facilities aimed at improving the sanitary state of the health resort, in particular water and sewage system, gas network, gas boiler rooms, drilling for the intake of mineral springs

⁵ And felling specified in forest development plans.

Source: Own study based on (Act, 2005).

Conclusions

There is a growing interest in the intake and use of mineral springs, which is mainly resulting from their increasingly common application in recreation and bottling industries, as well as from the growing interest in therapies of illnesses and nourishing treatments. Their deposits are largely renewable, but their management should be conducted in a rational manner, with the use of modern organizational and technical solutions, in accordance with formal and legal conditions and based on results of performed research studies. Reasonable use of these resources can trigger the development of the economies of regions where their deposits occur, and consequently also for the national economy.

There is no denying the fact that the proper management and protection of mineral springs is significantly facilitated by the possibility of utilizing available tools ensured by spatial planning. However, it should be remembered that:

1. Even if a specific provision is not included in the local land use plan, it does not mean that it is allowed. The Act on health resort treatment, health resorts and protected health resort areas as well as on health resort communes, which contains restrictions on health resort protection zones, has a higher rank than any local law.
2. Local land use plans are not always prepared for the whole area of the health resort. The "A" protection zone must always be covered by the plan. Usually, communes strive to develop a local plan for the "B" zone as well. The "C" zone is frequently covered only partially.

3. The plans developed before the Act on health resort treatment, health resorts and protected health resort areas as well as on health resort communes entered into force (2005) should have been updated with its provisions. Therefore, when dealing with these planning documents, special attention should be paid to the updatedness of the version of the local plan which is being used.

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