



ZONING AS AN INSTRUMENT OF LANDSCAPE PROTECTION OF HEALTH SPA RESORTS IN POLAND

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Abstract

The paper discusses the issue of the “A”, “B”, “C” zones of spa protection regulated by “The law on spa treatment, health resorts and its protected areas, and on health resort administrative districts” (2005) as part of the spa area or spa protection area, defined in a spa statute, established in order to protect healing medical properties and natural medical resources in the respect of values of environment protection and spa facilities. The aim of the research, the results of which are presented in the paper, was to identify the problems related to the functioning of protection zones in spas in Poland. In addition, an attempt was made to assess the efficiency of zoning as an instrument of landscape protection, defined by the European Landscape Convention as a geographical-psychological reality perceived in a multi-sensory way. In the course of the research, selected planning and strategic documents were analysed, including spa statutes. On their basis, the cities in Poland with the largest and smallest area of the A zone of spa protection and health resorts in Poland according to the size of the area of different types of spa protection zones were compared. The outcomes of the research were juxtaposed with the conclusions drawn in the report of the Supreme Audit Office (2016). It was shown that the spa protection zones, due to their protection, the function that determines the preservation of the therapeutic qualities of the landscape should be treated as an indispensable tool for protecting the landscape of spa resorts.

Keywords: landscape, noise, health resort, protection zone, spatial planning

INTRODUCTION

Zoning is an instrument of landscape protection used in spatial planning (including issues of protection of heritage 2011). In the architectural-landscape units method (JARK), it is an element of design guidelines aimed at showing the main directions of landscaping (Bogdanowski *et al.* 1979). Within specified borders, the zones embrace areas of similar qualities. On their basis, it is possible to identify the natural, optimal direction of their shaping from the viewpoint of landscape architecture so that spatial order is introduced giving the area an aesthetically pleasing form. There are distinguishing zones of transformation, protection and re-cultivation.

In the light of the “The Act on the protection and care of historical monuments” (2003) in the study of conditions and directions of spatial development of a community as well as the local spatial development plan, “depending on the needs, the conservation protection zone is established encompassing the areas on which the plan’s provisions apply restrictions, prohibitions and orders aimed at protecting historical monuments in this area”. Among them there are the exhibition protection zone and the landscape protection zone.

The “Act on amending certain acts in connection with the enhancement of landscape protection tools” (2015) indicates the need to isolate priority landscapes as part of a landscape audit as “particularly valuable to society due to its natural, cultural, historical or aesthetic-scenic values and as such requiring preservation”. In view of the Act of 16 April 2004 on the protection of nature, the competences of the voivodship self-governing body include designation within the priority landscapes in the protected landscape area of landscape protection zones, which are in particular the foreground of expositions, viewing axes, viewpoints and built-up areas distinguished architectural form, along with an indication of the prohibitions in force therein. In addition, it was pointed out that the protection plan for a landscape park should include, among other things, defining the boundaries of these zones important for preserving landscape values of a landscape park.

The Law on Environmental Protection (2001) introduces, among others, the institution of silence zones. The “Act on spa treatment ...” (2005) introduces spa protection zones as part of the spa area or spa protection area, defined in the spa statute, separated for the purpose of protecting healing medical properties and natural curative resources, environmental values and spa facilities. However, the Act does not specify the area of individual zones. In addition to the criterion of the minimum share of green areas, it draws attention to the purpose of each zone and the restrictions applicable to them. Bans (especially buildings) concerning spa protection zones have been a subject of discussion in recent years due to the ongoing investment process (Jankowska 2014, Lizak 2016, Dryglas

and Golba 2017). The authors of this paper are of the opinion that spa protection zones are necessary for the protection of the landscape, although the restrictions in force should be verified.

AIM AND METHODS OF RESEARCH

The aim of the research, the outcomes of which are presented in the paper was to identify the problems related to the functioning of protection zones in spas in Poland. In particular, the size of the spa protection zones was assessed and an attempt was made to recognize whether they are necessary to protect the landscape of spas in Poland. The landscape is understood in accordance with the European Landscape Convention as a geo-psychological reality, perceived in a multi-sensory way.

The research procedure was divided into several stages. In the first stage of the research, the results of which are presented in the article, the regularity in the size of the area of individual spa protection zones was searched for, including the regional location and size of the town. It was assumed that the larger the area of zones, the better the operating conditions of the spa. In addition, an attempt was made to recognize what the share of green areas within individual zones was. However, due to the incompleteness of data for individual spas, these analyses were abandoned. Similarly, the problem of the shape of zone surfaces and their compactness was omitted. As part of this stage of the study, selected planning and strategic documents were analysed, in particular resolutions of municipal councils of individual spa towns regarding the statutes of communes (towns) of health resorts. On their basis, data on the size of individual protection zones were compiled as of June 2017. The results of the research were referred to the conclusions drawn in the report of the Supreme Audit Office of 2016.

SPA AS A SPECIAL AREA

A spa in accordance with the “Act on spa treatment ...” (2005) is an area where health resort treatment is carried out, which is separated for the purpose of using and protecting natural healing resources available there and which was granted the status of a health resort. A town applying for such a status must meet jointly a number of conditions. It should have deposits of natural medicinal resources and a climate with proven medicinal properties. In its area there must be spa treatment facilities and spa treatment equipment, prepared for conducting spa treatment. In addition, it should meet the requirements set out in the environmental protection regulations in relation to the environment and have technical infrastructure in the field of water and sewage management, energy, mass transport, as well as waste management. If the environmental conditions (raw mate-

rials, climate) and infrastructure in the field of environmental protection are met but there are no treatment plants, the status of the spa protection area is granted. Both the health resort and the spa protection area are a special area that is subject to specific rules of operation (Dryglas and Golba 2017).

In the area of a spa or spa protection area, there are three types of zones marked with the letters “A”, “B”, “C”, differing in the percentage share of green areas. However, the Act does not specify the area of individual zones. In addition to the criterion of the minimum share of green areas, it draws attention to the purpose of each zone and the restrictions applicable to them. The “A” zone, for which the percentage share of green areas is not less than 65%, covers the area where the spa facilities as well as other facilities, including those for patient or tourist service (guest houses, restaurants or cafes) are located or planned. Zone “B”, for which the percentage share of green areas is not less than 50%, covers the area adjacent to the zone “A” constituting its surroundings, which is intended for non-burdensome service, tourism and other facilities or covered by the boundaries of the national park/nature reserve or is a forest, sea or lake. The “C” zone, for which the percentage share of biologically active areas is not less than 45%, covers the area adjacent to the “B” zone and its surroundings as well as the area affecting the conservation of landscape and climatic values and protection of natural resources. The most restrictive restrictions apply in the “A” zone, where it is forbidden not only to locate industrial plants and large commercial facilities but also to organize car and motor rallies, mass events and entertainment activities disturbing the silence of the night. Here, there are very stringent standards regarding permissible short-term noise levels, resulting from the specificity of the area and the need to ensure acoustic comfort (50/45 dB in the day, 45/40 dB at night, depending on the source of noise). Additionally, for the “A” zone, within 2 years of obtaining the status, the spa commune has the obligation to draw up and adopt a local spatial development plan. Zones should be determined at the stage of creating a spa frame and then finally defined and described in the spa statute.

Currently, there are 45 statutory health resorts in Poland (additionally, the status of an underground health resort was granted to Wieliczka). Most of them are located in the south of Poland, which is associated with the occurrence of mineral waters, peloids or healing gases, which due to geological conditions make this part of the country more privileged. Most spas are located within the administrative boundaries of cities, mostly small ones, for which the curative activity becomes a catalyst for development (Cieślak 2014). A small town has a so-called human touch and the most individualized character easy to recognize and interpret in terms of perception; here also more often one can find places where there is direct interaction between the urbanized environment and the open landscape, which may facilitate the processes of psychophysical renewal. Only three spas: Konstancin-Jeziorna, Sopot and Swoszowice, are located within the

agglomeration (Warsaw, Tri-City, and Krakow respectively). Eleven, however, are located in rural areas (including Borcz and Gonda-Soroczyńska 2006, Gonda-Soroczyńska and Soroczyńska 2010, Gonda-Soroczyńska 2011) with open, natural landscape of high quality (also in the sound layer, the so-called acoustic comfort). Ciechocinek and Kołobrzeg are the largest health resorts in terms of the number of treatment facilities, while Augustów, Krasnobród, Supraśl, Piwniczna, and Wapienne are the smallest ones.

According to the classification introduced by the Polish Standard PN-Z-11000: 2001 “Spas-terminology, classification and general requirements” dominate the spa, that is, the spa, in which treatments with the use of water are the basis in the therapeutic activity. The second place is occupied by mud spas, while the next by climate, coastal and seaside spas. The hypsometric criterion allows to distinguish mountain (8), piedmont (14), lowland (17) and coastal (6) health resorts. They are as follows:

1. lowland health resorts (up to 200 m above sea level): Augustów, Busko Zdrój, Ciechocinek, Goczałkowice-Zdrój, Gołdap, Horyniec-Zdrój, Inowrocław, Konstancin-Jeziorna, Kraków-Swoszowice, Krasnobród, Nałęczów, Połczyn-Zdrój, Przerzeczyn-Zdrój, Solec-Zdrój, Supraśl, Uniejów, Wieniec-Zdrój,
2. seaside resorts (up to 3 km from the Baltic Sea): Dąbki, Kamień Pomorski, Kołobrzeg, Sopot, Świnoujście, Ustka,
3. foothill (piedmont) health resorts (from 200 to 400 m above sea level): Cieplice, Czerniawa-Zdrój, Długopole-Zdrój, Duszniki-Zdrój, Iwonicz-Zdrój, Kudowa-Zdrój, Muszyna, Piwniczna-Zdrój, Polanica-Zdrój, Polańczyk, Rymanów-Zdrój, Szczawno-Zdrój, Ustroń, Limestone,
4. mountain health resorts (from 400 to 800 m above sea level): Jedlina-Zdrój, Krynica-Zdrój, Łądek-Zdrój, Rabka-Zdrój, Szczawnica, Świeradów-Zdrój, Wysowa, Żegiestów-Zdrój.

Valuable natural qualities, proximity to protected areas (national parks, landscape parks) and forests, interesting monuments, scenic and compositional values, attractive public spaces and cultural, sports and entertainment events attract more and more tourists. Spas become recreation centres, places attractive for active or cultural tourism (Kasprzak 2016) and its various types (including congresses and festivals). However, it is necessary to eliminate or limit actions adverse to spa treatment or healthcare. The most important factors determining the attractiveness of the spas mentioned in the survey (Rapacz *et al.* 2009, Szromek 2013) are: the unpolluted/pristine natural environment, the friendly attitude of local residents and safety. Aesthetics and cleanliness in the spa park are also important. The revitalization of historic buildings (including spa parks), the construction of new spa facilities, the arrangement of public space and its modern arrangement (including Wójcikowski 2015) contributed to the increase in

the attractiveness of health resorts. More ways to raise the attractiveness of spas is seen, among others, in the care and enlargement of decorated green areas and a rise in the range of services in the field of sport, recreation and culture, implemented both near the town itself and in its further vicinity (Węclawowicz-Bilska 2008, 2009, 2013).

Spas are therapeutic places, where health recovery, both physical and mental is fostered, among others, due to the presence of landscapes with therapeutic properties, most often associated with naturalness (greenery, water), beauty, harmony, diversity, homeliness, uniqueness, rich symbolism (of nature/natural environment), viewpoints and the presence of positive multi-sensory stimuli (Gesler 2003, Bernat 2017a).

RESULTS

The analysis of the available data showed that in Poland there are 219255.91 ha of spa protection zones (at present/as of June 2017), in this the total of all A zones covers 7386,6 ha, the total of B zones – 29250,62 ha, all of C zones – 175088,01 ha. The localities that top the list of spa protection zones with areas exceeding 10,000 ha include: Horyniec-Zdrój (12 925 ha), Duszniki-Zdrój (12 226 ha), Połczyn-Zdrój (11 900 ha), Busko-Zdrój (10 992 ha), Muszyna (10 956 ha), Supraśl (10 722 ha). However, the towns with the largest area of zone A are: Kołobrzeg, Supraśl, Krynica, Konstancin-Jeziorna, Dąbki, Ciechocinek, Świeradów-Zdrój, Łądek-Zdrój, Muszyna, and Ustroń (Table 1). The area of zone A in each of the mentioned cities exceeds 244 ha and has the maximum value of 627 ha in Kołobrzeg. In its size, no regularity was noticed in relation to the location of the spa – considerable area is at the seaside, lowland and mountain and foothill spas (Table 2). Similarly, the smallest areas of zone A characterize all of the mentioned types of spas according to the location criterion. Their values differ significantly from the above-mentioned upper values (they are at least 10 times lower). Due to the important role of greenery in preserving the therapeutic properties of the spa landscape, all trees, park squares and gardens should be protected around a given town. Monument trees deserve special attention. In 2017, more than 1507 monumental trees grew in the spa towns in Poland, represented by 26 coniferous species and 50 deciduous species. They were present most often within parks, whose total number within health resorts is 84, of which less than a half (33) are historic parks (> 100 years) (Bernat 2017b). It should also be noted that the towns with the largest number of spa treatment plants have the largest share of zone A in the total area of all spa protection zones (Table 1).

Table 1. Places in Poland with the largest area of zone A of spa protection

No	Name of locality	Location	Zone A area in ha	% of total area of protection zones	Total of all protection zones in ha
1.	Kołobrzeg	seaside	627,05	24,4	2 567
2.	Supraśl	lowland	450	4,2	10 722
3.	Krynica	mountain	336,2	8,4	4 020
4.	Konstancin-Jeziorna	lowland	333	4,2	7 900
5.	Dąbki	seaside	327,5	9,7	3 382
6.	Ciechocinek	lowland	325,2	21,4	1 521
7.	Świeradów-Zdrój	mountain	274,4	10,7	2 561
8.	Lądek-Zdrój	mountain	294,92	4,4	6 751
9.	Muszyzna	foothill	260,59	2,4	10 956
10.	Ustroń	foothill	244,55	4,1	5 927

Source: own study

Table 2. Places in Poland with the smallest area of zone A of spa protection

No.	Name of locality	Location	Zone A area in ha	% of total area of protection zones	Total of all protection zones in ha
1.	Wapienne	foothill	38	2,2	1700
2.	Długopole-Zdrój	foothill	40,1	1,8	2 206
3.	Kamień Pomorski	seaside	46,66	1,2	3 816
4.	Swoszowice	lowland	54,21	7,9	684
5.	Piwniczna-Zdrój	foothill	56,86	1,5	3 830
6.	Przerzeczyn-Zdrój	lowland	60,1	1,4	4 448
7.	Jedlina-Zdrój	mountain	81,58	4,7	1 744
8.	Solec-Zdrój	lowland	84	0,9	9 118
9.	Szczawno-Zdrój	foothill	88,39	6,0	1 474
10.	Żegiestów-Zdrój	mountain	91,58	1,0	9521,73

Source: own study

In order to make an in-depth comparison of the spa towns, the spas with the largest areas of protection zones (in all, A, B, C) were listed in each type of location (Tab.3.).

In the group of seaside resorts, Ustka has the largest area of protection zones, but it is much lower than in the case of the leading health resorts, representing other types of location. The largest towns have the smallest total area of all spa zones. Five spas have an A zone with an area of 140 – 627 ha. Sopot, which is part of the Tri-City agglomeration, has the smallest zone C. The smallest spa in Dąbki has the largest zone B.

Table 3. Health resorts in Poland according to the area of spa protection zones (from the largest to the smallest)

No.	Location	Total of all protection zones in ha	Zone A area in ha	Zone B area in ha	Zone C area in ha
1.	seaside (6)	Ustka (6899), Kamień Pom. (3816), Dąbki (3382), Kołobrzeg (2567), Sopot (1723), Świnoujście (970)	Kołobrzeg (627,05), Dąbki (327,5), Ustka (171), Świnoujście (159), Sopot (140), Kamień Pom. (46,66)	Dąbki (2731,60), Kołobrzeg (1276,85), Sopot (1089), Ustka (467,88), Kamień Pom. (302), Świnoujście (173)	Ustka (6259,88), Kamień Pom. (3815,61), Dąbki (3054,4), Kołobrzeg (663), Świnoujście (638), Sopot (494)
2.	lowland (17)	Horyniec-Zdrój (12 925), Połczyn-Zdrój (11 900), Busko-Zdrój (10 992), Supraśl (10 722), Krasnobród (9 607), Solec-Zdrój (9 118), Gołdap (8 304), Konstancin-Jeziorna (7 900), Przerzeczyn-Zdrój (4 448), Augustów (3322,03), Uniejów (3 207), Nałęczów (2 389), Wieniec-Zdrój (1648), Ciechocinek (1 521), Inowrocław (1005), Goczałkowice-Zdrój (815), Swoszowice (684)	Supraśl (450), Konstancin-Jeziorna (333), Ciechocinek (325,5), Krasnobród (216), Połczyn Zdrój (185), Busko-Zdrój (167), Uniejów (156), Horyniec-Zdrój (142), Gołdap (141,5), Goczałkowice-Zdrój (140), Nałęczów (133,9), Wieniec-Zdrój (120), Inowrocław (111), Augustów (89,55), Solec-Zdrój (84), Przerzeczyn-Zdrój (60,1), Swoszowice (54,21)	Horyniec-Zdrój (2474), Połczyn-Zdrój (1583), Supraśl (1398), Krasnobród (1100), Konstancin-Jeziorna (1043), Nałęczów (962,70), Busko-Zdrój (812), Uniejów (681), Goczałkowice-Zdrój (675), Gołdap (652,5), Solec-Zdrój (544), Ciechocinek (521,6), Wieniec-Zdrój (312), Augustów (304,41), Przerzeczyn-Zdrój (259,9), Inowrocław (226), Swoszowice (95,95)	Horyniec-Zdrój (10309), Połczyn – Zdrój (10132), Busko-Zdrój (10013), Supraśl (8874), Solec-Zdrój (8490), Krasnobród (8291,4), Gołdap (7510), Konstancin-Jeziorna (6524), Przerzeczyn-Zdrój (4128), Augustów (2928,07), Uniejów (2370), Nałęczów (1292,4), Wieniec-Zdrój (1216), Ciechocinek (674,2), Inowrocław (668), Swoszowice (533,92)

No.	Location	Total of all protection zones in ha	Zone A area in ha	Zone B area in ha	Zone C area in ha
3.	foothill (14)	Duszniki-Zdrój (12226), Muszyna (10956), Rymanów-Zdrój (7899), Ustroń (5927), Iwonicz-Zdrój (4550), Piwniczna-Zdrój (3830), Kudowa-Zdrój (3399), Polanica-Zdrój (2603), Czerniawa-Zdrój (2561), Długopole-Zdrój (2206), Wapienne (1700), Polańczyk (1474,4), Szczawno-Zdrój (1474), Cieplice (1394)	Muszyna (260,59), Ustroń (244,55), Duszniki-Zdrój (210), Polanica-Zdrój (165), Iwonicz-Zdrój (155), Polańczyk (144), Rymanów-Zdrój (115), Cieplice (111), Czerniawa-Zdrój (99), Kudowa-Zdrój (92,99), Szczawno-Zdrój (88,39), Piwniczna-Zdrój (56,86), Długopole-Zdrój (40,1), Wapienne (38)	Muszyna (2390,73), Czerniawa-Zdrój (1560), Polanica-Zdrój (716), Ustroń (597,56), Długopole-Zdrój (592), Rymanów-Zdrój (541), Duszniki-Zdrój (475), Iwonicz-Zdrój (434), Piwniczna-Zdrój (429,27), Kudowa-Zdrój (367,49), Szczawno-Zdrój (354,06), Polańczyk (279), Cieplice (240), Wapienne (221)	Duszniki-Zdrój (11541), Muszyna (8304,39), Rymanów-Zdrój (7246), Ustroń (5084,89), Iwonicz-Zdrój (3961), Piwniczna-Zdrój (3343,87), Kudowa-Zdrój (2938,52), Polanica-Zdrój (1722), Długopole Zdrój (1574,1), Wapienne (1441), Cieplice (1043), Polańczyk (1034,4), Szczawno-Zdrój (1031,55), Czerniawa-Zdrój (902,4)
4.	mountain (8)	Żegiestów-Zdrój (9521,73), Łądek-Zdrój (6751), Wysowa (5651,56), Krynica-Zdrój (4020), Rabka-Zdrój (3670), Szczawnica (3290), Świeradów-Zdrój (2561), Jedlina-Zdrój (1744)	Krynica-Zdrój (336,2), Łądek-Zdrój (294,92), Świeradów-Zdrój (274,4), Rabka-Zdrój (168,1), Szczawnica (119,5), Wysowa (101,56), Żegiestów-Zdrój (91,58), Jedlina-Zdrój (81,58)	Wysowa (1750), Łądek-Zdrój (1402,52), Świeradów-Zdrój (1384,6), Krynica-Zdrój (788,1), Rabka-Zdrój (722,4), Żegiestów-Zdrój (434), Szczawnica (248,18), Jedlina-Zdrój (151,65)	Żegiestów-Zdrój (8996,15), Łądek-Zdrój (5053,34), Wysowa (3800), Szczawnica (2922,11), Krynica-Zdrój (2895,7), Rabka-Zdrój (2779), Jedlina-Zdrój (1510,82), Świeradów-Zdrój (902,4)

Source: own study

In the group of lowland spas, it is worth noting that in each of the next four towns, the area of all protection zones is over 10000 ha. Three spas have an A zone of over 300 ha. The largest is located in a small health resort Supraśl and covers 450 ha. However, the largest areas of zones B and C occur in the Horyniec-Zdrój health resort.

Two foothill towns have around 11000 ha of spa protection zones. Noteworthy is the Muszyna health resort, where the size of zone A is up to 260 ha. In addition, zone C has a high value of 8304 ha here. Three of all foothill towns have zone A from 210 to 260 ha. In total, as many as eight villages have over 100 ha of zone A, the smallest in small foothill spas. Zone B has the maximum of

2390 ha. Seven piedmont spa resorts have zone B in the range of 429 – 700 ha.

In mountain resorts, the total area of all protection zones has the value of about 1700 to around 9500 ha, i.e. its maximum value is lower than in the case of lowland and piedmont spas. The area of zone A is in the range of 81-336 ha. Three villages have a B zone in the range of 1300-1750 ha. Noteworthy is the health resort of Żegiestów-Zdrój, where the largest zone C is located, constituting at the same time over 90% of the area of all spa protection zones of this town.

DISCUSSION

The status of a spa is associated with certain benefits, which include arousing the interest of tourists, which can be considered as an important factor stimulating local development. In addition, spa communes have the right to collect so-called spa fees from people staying in their area for health, tourism, recreational and training purposes, and receive from the state budget specific subsidies for spa tasks, including infrastructure development, in the amount equal to the income from the spa fee in the previous year. In addition to the benefits mentioned, it is also necessary to remember the responsibilities of the spa commune, e.g. maintaining high quality of the natural environment in the area. Granting a town or municipality the status of a health resort, i.e. a special protection area, entails many legal consequences, including limitation of ownership, creation of specific norms for the area to have order and obligation to pay additional fees. Due to ambiguous statutory provisions, prone to disputes of interpretation, it is advisable to verify them, especially in relation to prohibitions in force in particular zones (Jankowska 2014, Lizak 2016, Dryglas and Golba 2017).

In view of the report of the Supreme Audit Office (2016), municipalities did not monitor the state of the environment and did not use the basic tool to prevent the breach of the regulations applicable to spas, i.e. for zone A, and did not adopt resolutions regarding the local spatial development plan or did not update it after receiving the spa status. In two of the eleven spa communes, the plan was not passed and in three the existing plans did not encompass the entire area of zone A (up to 90% of the area). Four of the plans did not include the guidelines set out in Article 38a of the “Act on spa treatment ...” (2005). This had an impact on the construction of facilities threatening the environment, including sources of noise (a large retail outlet and a car park in Dąbki). Moreover, public transport issues which were not dealt with resulted in noise level being exceeded in ten out of eleven inspected communities (the noise levels were exceeded by 3 to 42 % during the day and 8 to 29 % at night). It needs noting though that adhering to present norms for noise levels in A zones in spas is unlikely (Kuchcik and Baranowski 2013, Dryglas and Golba 2017). This is due to the presence of various noise sources, often in a large or extended area. However, failure to comply with

statutory requirements (which include exceeding noise standards) may lead to the loss of the spa status. Preliminary observations showed that the development of health resorts, also related to the opening up to tourists, resulted, among others, in construction or modernization of catering facilities and hotels, especially in seaside resorts (Kołobrzeg, Świnoujście, Ustka), which may lead to a reduction in landscape values. In order to prevent this, spa communes should make use of spa protection zones as an important instrument for landscape protection.

CONCLUSIONS

1. Spa protection zones, due to their protective function, which determines the preservation of therapeutic properties of the landscape, should be treated as an indispensable tool for the landscape protection of spa towns. Therefore, they should be maintained and strengthened by rigorous (including statutory bans) provisions in planning and strategic documents, especially in the local spatial development plan, and their reliable enforcement.
2. Protection of landscape values in the light of statutory provisions is to serve mainly the C zone, so it should be as effective as possible.
3. In several spa towns, too much attention is paid to the protection zones. Spa statutes contain loopholes, including the area of individual/particular zones. There are also irregularities in the data, e.g. for Żegiestów-Zdrój, the area of the C zone had been increased by 1218,28 ha, which was pointed out in the report of the Supreme Audit Office (2016).
4. Size is not a sufficient criterion for assessing the effectiveness of spa protection zones as an instrument of landscape protection. The shape of the boundaries of individual zones is also important, their compactness (whether they occur in one or several patches), the share of green areas, appropriate spatial management (neighbourhood of functions) of individual zones conditioned by the presence and quality of local spatial development plans.

In order to evaluate the efficiency of zoning as an instrument of landscape protection (in a multi-sensory approach) more thoroughly, actions (especially investments) that are undertaken in particular spas should be identified and compiled with records in planning and strategic planning documents for spa communes.

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