



APPLICATION OF A METHOD FOR THE MULTIDIMENSIONAL ASSESSMENT OF THE CURRENT STATE OF POLISH HEALTH RESORTS ON THE EXAMPLE OF PIWNICZNA AND KRYNICA-ZDRÓJ

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Summary

The presented research concerns a multi-faceted assessment of the existing condition of selected Polish health resorts. The aim of the research was to apply the above-mentioned evaluation in the context of possibilities to improve the condition of the space, attractiveness, and functioning of Polish spas that have been struggling with a number of problems of a political and economic nature, which originated in World War Two. Although intended to improve the functional environment of health resorts, the Health Resort Act contains provisions perceived as barriers to the development of health-related and other associated functions that are necessary for the appropriate operation of health resorts. This leads to a conclusion that the function – however deeply rooted in Polish culture – requires a new approach to health resort functioning in today's circumstances. The new approach should be founded on a deep, careful, and detailed diagnosis of the condition of health resorts in Poland, which will perhaps enable the application of a multi-faceted assessment of the existing condition (MCSA). MCSA is modelled on a method developed in the 1970s in the United States of America by a landscape architect and spatial planner Ian McHarg. The main idea behind the development and application of this assessment method is to facilitate decision-making for planning, design, and investment activities, with a particular focus on local government. The case study carried out by the authors concerns two Polish health resorts located in the Małopolskie Voivodeship.

Keywords

Polish health resort • Pivniczna-Zdrój • Krynica-Zdrój • multidimensional assessment of the current state • current state diagnosis

1. Introduction

Developed countries are haunted by adverse cultural and demographic processes, such as population ageing and lifestyle diseases that lead to premature death. They include stress, mental illnesses, cardiovascular diseases, respiratory system diseases, overweight, obesity, and others. At the same time, medicine and technology are advanced,

and people become more mobile and aware of their health needs. One of the consequences is the growing popularity of health-resort tourism, a type of health tourism where health-resort resources are used.

Poland had 45 health resorts in 2022 [Sanatoria 2022]. Their number varies slightly over time depending on whether specific resorts do or do not meet the criteria in the Act of 28 July 2005 on health-resort medical care, health resorts, health-resort protection areas, and health-resort municipalities (the Health Resort Act).

Curative powers of water have been put to use as far back as Antiquity, and the first Polish health resorts were established in the Middle Ages. It was the beginning of such resorts as Cieplice-Zdrój and Łądek-Zdrój [Nieroda 2012]. The development of health resorts has always hinged on the presence of curative resources, knowledge of their properties, possibilities of using them, and general economic conditions. The Polish Act on Health Resorts was enacted in 1922 to regulate funding and environmental and urban planning matters relevant to health resorts. The interwar period saw a dynamic expansion of health resorts. [Nieroda 2012, Gonda-Soroczyńska and Szkaradkiewicz 2014, Piskozub 2010]. Landscape qualities of mountainous and submontane areas combined with tourist attractions and trails available to the patients were valuable assets [Pudełko 2006, Bernat 2018, Cembruch-Nowakowski et al. 2021]. Another highlight was the outstanding architecture typical of health resorts, which drew on local traditions. The health-resort style – also known as the ‘Swiss’ style – was characteristic not only of medical service facilities, such as resort treatment buildings, inhalation facilities, or pump rooms, but also of hotels and boarding houses with vast accommodation potential. The same style was used in covered walking promenades, which are popular in Lower Silesia [Piróg 2011, Piróg 2013], graduation towers, acoustic shells, restaurants, cafés, gazebos, retro weather stations, and other facilities that improve the overall health-resort experience. After some time, the ‘Swiss’ style was replaced by modernist architecture.

World War II did more than just hinder the development of health resorts. It destroyed about 50% of health-resort infrastructure [Bonikowska 2019]. After the war, health resorts and hospitality facilities were nationalised in Poland [Oleszek and Gonda-Soroszyńska 2013]. The neglect from that time still affects many health resorts today. The development of health-resort urban structures – especially redevelopments during socialism – significantly changed historical layouts. Nevertheless, historical layouts of Polish health resorts are considered to be relatively well preserved. It was the time of a doctrine that health-resort towns should be replaced with health-resort districts. Researchers believe it had the most destructive impact on the spatial qualities of health resorts in Poland [Węclawowicz-Bilska 2012]. Another adverse trend that damaged the spatial quality of Polish health resorts was the construction of large sanatorium buildings in the 1960s and 1970s as a result of one of two approaches to health-resort planning in the second half of the twentieth century. The first one – employed in most European countries – was to continue the traditional development of health-resort towns. The other one, found in selected health resorts of then-socialist countries, was based on the construction of large modernist sanatorium facilities for several hundred

patients. This concept resulted in buildings of a completely new scale. They were much larger than any previous health-resort constructions and followed a different style than the one typically dominating health resorts [Węclawowicz-Bilska 2012, Oleszek and Gonda-Soroszyńska 2013].

Polish health resorts are widely researched. They are discussed at such conferences as those held by the Lesser Poland Chamber of Polish Architects in Krynica in 2012 or Szczawnica in 2013. Efforts are made to revitalise health resorts and their public spaces, including resort green spaces [Bernat 2020, Wiktorowski 2010]. They are completely relevant and in line with European and global trends [Hurkała 2010, Bernat 2018, Bernat 2020]. Some positive examples are the projects in Szczawnica [Hurkała 2010, Wilkosz-Mamcarczyk 2016] by Thermaleo and Krynica [Bernat 2018]. Regrettably, these tasks are rarely comprehensive and consistent. Undertaken fragmentarily, disconnected from the context, and with no bird's-eye-view design concept for the space, they fail to yield the expected result or can even degrade the quality of the space in Polish health resorts, which can be poor to start with. According to Bernat and Harasimiuk [2019], many municipalities pursued the status of a health resort in recent years. One of the reasons is that the status comes with tangible and intangible benefits. Still, it is important to make sure that existing health resorts are cared for so that they can be models for those seeking to join this group.

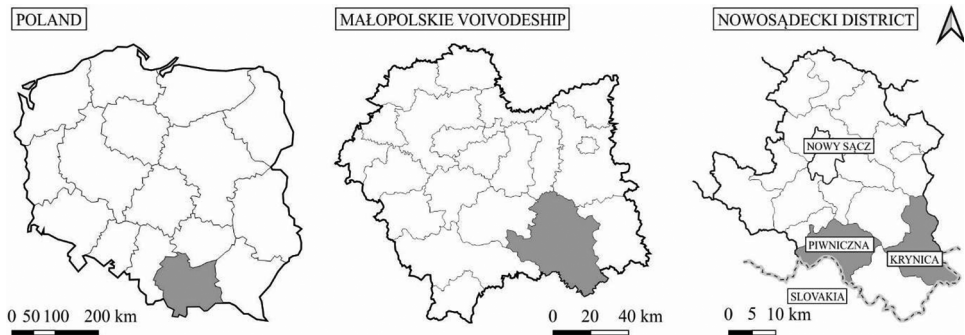
2. Object and methods

The object of the study is to apply a multidimensional assessment of the current state to selected health resorts in Poland. The purpose of the study is to verify whether an assessment developed in the late twentieth century, using such objects as a mountain health resort in Lower Silesia, is applicable to functional and developmental problems of health resorts today.

The desk research involved primary sources, a map analysis, iconography, and secondary sources to investigate the development of Krynica-Zdrój and Piwniczna health resorts. The literature search focused on the functioning and development of Polish health resorts. The literature research combined with map and iconography analysis and expanded with field studies regarded the multidimensional current-state assessment. The project was pursued in the first half of 2022.

The research area was two health resorts, Krynica-Zdrój and Piwniczna. They were selected because they belong to the largest groups of health resorts in Poland; Krynica-Zdrój is classified as a mountain health resort, and Piwniczna is a submontane health resort. The main assumption is that the health resort has a very specific, unique function of a locality hinging on the occurrence of natural therapeutic resources and that it is a great challenge to shape and plan the function in a vague legal and funding environment. Considering developmental barriers posed by difficult topography, the location of mountain and submontane health resorts is a considerable complication [Modzelewska 2012]. This is why we selected two out of eight mountain and submon-

tane health resorts in Małopolskie Voivodeship in the Beskid Sądecki mountain range (Fig. 1).



Source: Authors' own study

Fig. 1. Research area location

The multidimensional current-state assessment (MCSA) is fashioned after a method developed in the 1970s in the United States by a landscape architect and spatial planning expert Ian McHarg. It was proposed by Ewa Kubica following her study of the Łądek-Zdrój town [1987] and the city of Gliwice [1996]. The method should be based on commonly understood criteria (common cultural experience). At the same time, the adopted survey method should not lead to simplifications falsifying the results [Kubica 1999]. We consider the valuation of the current state and dialogue with users to be a necessary step of design preparation. The method is intended to facilitate planning, design, and project decision-making, especially for local authorities.

The method is a result of a search for ways to assess space in order to streamline the decision-making process regarding the validity and order of urban planning tasks followed by organisational and project-related efforts. The primary assumption for the method is that it should be clear and easy to verify both for decision-makers (such as local governments or designers) and residents. Therefore, it starts with a division of the study area into functional units, which is based on landform and land cover taking into account the nature of the development, e.g., its functions. The division is established individually for each location, so units with different functions may differ significantly in area. An assessment of each unit is then carried out in terms of general impression, cleanliness, aesthetic value, technical condition, historic value, and scale of development. The stages of the multidimensional existing-state assessment are shown in Table 1. Considering the health-resort function of the analysed localities, we have expanded the analysis (Item 4, Table 1) to cover natural curative resources and the resort's therapeutic profile.

Table 1. Stages of the multidimensional current-state assessment (MCSA)

1.	Area segmentation into structural units
2.	Value assessment: cleanliness, aesthetic value, technical value, historical value, extent of development, overall impression
3.	Assessment verification through repetition (reassessment by several independent teams);
4.	Analysis of functions, land ownership, development state, and external links;
5.	Pre-selection of problem areas (usually located at the junction of the lowest and highest rated units) for designs based on prior assumptions;
6.	Selection of sites and determination of necessary activities;

Source: based on Kubica [1999]

3. Results

Krynica-Zdrój and Piwniczna are part of Krynica-Poprad Health Resorts together with Muszyna and Żegiestów. The localities differ significantly. Krynica is a mountain health resort. It is often referred to as a pearl of Polish health resorts. The area of the town is 39.7 km² with a population of 10,353 (in 2021, Poland in Numbers). Piwniczna is a mountain health resort. The town area is 38.3 km² with 5,782 residents (in 2021, Poland in Numbers). Moreover, health resorts have different spatial-functional structures, natural curative resources, medical facilities, accommodation potentials, quality of the resort space for patients, and popularity. The differences will help verify the usefulness of the method for diagnosing the current state and the applicability of the conclusions to design decision-making regarding various functional aspects of health resorts at different scales.

3.1. Krynica-Zdrój

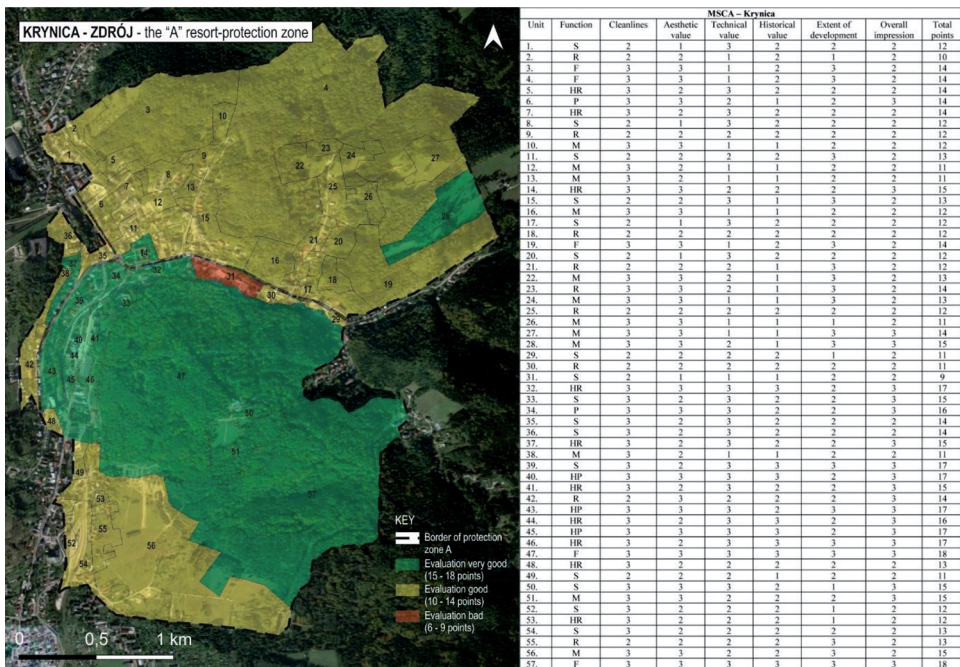
3.1.1. Profile of the health resort

Krynica-Zdrój is situated in the Carpathians, along the valley of Krynica and its tributaries, the Palenica and Czarny Potok with CO₂-rich mineral waters. The health resort is dated to the sixteenth century when the Main Spring was harnessed [Rajchel and Rajchel 2005]. It developed in the nineteenth and twentieth centuries thanks to Professor Zuber and his discovery of a unique alkaline CO₂-rich water equal to waters from Karlovy Vary or Vichy. People come there to treat cardiovascular, digestive, urinary tract, and gynaecological diseases. It is popular thanks to its unique curative and natural resources but also such cultural assets as the globally acclaimed tenor Jan Kiepura or naïve Lemko painter Nikifor Krynicki [Górka and Their 2020]. The town is a popular skiing resort.

Local governments have been pursuing the effort to improve the competitiveness of Krynica-Zdrój for two decades through various development strategies, local development plans, revitalisation projects, and promotion [Borowiec and Dorocki 2014]. Krynica is the most popular health-resort town in Lesser Poland according to representatives of health resort and sanatorium facilities [Report: Tourism... 2015].

3.1.2. Application of the multidimensional current-state assessment

The specific research area in Krynica is the health-resort protection zone A, which the Health Resort Act [2005] defines as *an area where health-resort treatment facilities and equipment, as well as other objects for health-resort treatment or patient or tourist service, are located or planned (...) and where the percentage of green spaces is not lower than 75%*. Zone A in Krynica is 336.6 ha big, 82% of which is green spaces. There are eleven sanatoriums, two hospitals, a natural treatment institute, a sanatorium and hospitality centre, a treatment and rehabilitation centre, three pump rooms, a resort park, and two municipal parks in the zone [Krynica Health Resort Documentation 2019]. We divided the area into 57 units to assess their functional, formal, aesthetic, and historical values and the level of development. The scores were then aggregated and converted into ratings: very good: 18–15 points, good: 14–10 points, poor: 9 points or fewer. Thirty-nine units were rated ‘good’. The promenade, Dietl boulevard, Main Pump Room, Treatment Buildings, and Park Hill were rated ‘very good’. We assigned this rating to a total of 17 units. The decisive factors, in this case, were aesthetics, historical value, and general impression. One unit was rated ‘poor’ (Fig. 2).



Source: Authors' own study

Fig. 2. MSCA for the A resort-protection zone in Krynica-Zdrój; indications in the table: HR – health-resort zones, HP – high-profile areas, R – residential, S – services, P – parks, F – forests, M – meadows, RV – river, RR – railroad, credit A.K.

3.2. Piwniczna

3.2.1. Profile of the health resort

Piwniczna-Zdrój is a Carpathian health resort. The town is situated in the valley of the Poprad, on its bend between Jaworzyna Krynicka to the east and Radziejowa to the west. Just like Krynica, Piwniczna is famous for its high-CO₂ waters, the most precious mineral waters of the Nowy-Sącz area. The Poprad valley is also referred to as the 'Poprad balneology hub' [Rajchel 2009]. Piwniczna-Zdrój is a mud-treatment health resort specialising in pulmonary system, digestive tract, and rheumatic problems [Farbaniec 2012, Report: Tourism... 2015]. Despite its rather modest size, the resort has achieved a strong market position in the treatment of the upper and lower respiratory system, digestive tract, musculoskeletal system, obesity, neurotic conditions, and general malaise with natural curative resources [Piwniczna-Zdrój Health Resort Development Plan 2009].

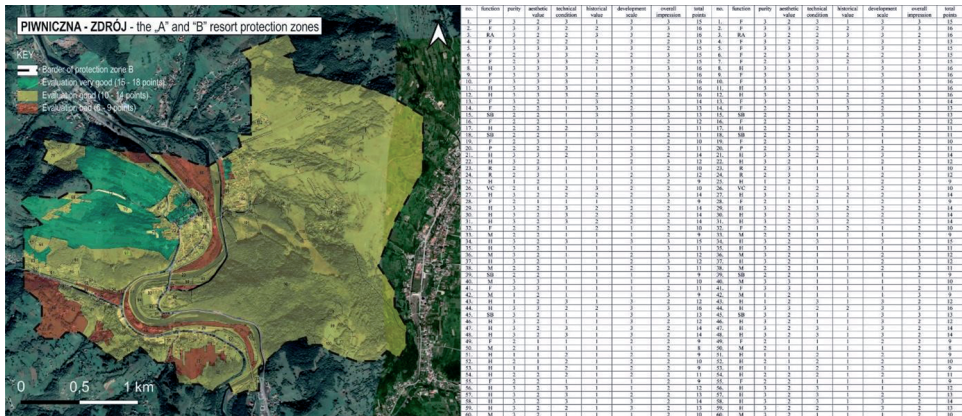
The town was founded by king Casimir III the Great in 1348. It went through an economic boom in the late eighteenth and early nineteenth centuries after the Nowy Sącz–Muszyna railway was built. A physician from Lviv, Dr Juliusz Korwin Gąsiorowski discovered the town's curative mineral waters in 1885. It coincided with the recognition of the curative properties of the local microclimate in pulmonary and digestive system therapies [Piwniczna-Zdrój Health Resort Development Plan 2009].

According to the Health Tourism in Lesser Poland Report [2015], Piwniczna was among the localities with the worst accommodation potential together with Wapienne, Bochnia, Swoszowice, and Żegiestów-Zdrój. There are 15 ski lifts near Piwniczna, including in nearby villages of Koszarzyska-Sucha Dolina and Wierchomla [Nieroda 2012]. It is a tourist trail hub popular among enthusiasts of mountain trekking, horse riding, whitewater kayaking, and winter sports.

3.2.2. Application of the multidimensional current-state assessment

The specific research area in Piwniczna is its health-resort protection zones A and B. The Health Resort Act [2005] defines zone B as *an area adjacent to zone A and surrounding it, designated for objects that have no adverse impact on the curative properties of the health resort or the health-resort protection area and do not disturb the treatment process*. The minimum share of green spaces in zone B is 55%. The zones are 56.86 ha and 429.27 ha big, respectively and total to 486.13 ha [Resolution on the Statute of the Piwniczna-Zdrój Health Resort 2010]. The health resort has one health-resort treatment facility Limba for 5000 patients a year, a pump room in the Zawodzie district, a part at the Limba sanatorium [Piwniczna-Zdrój Health Resort Development Plan 2009] and the Resort Park as a landscaped forest complex. We divided the area into 121 units to assess their functional, formal, aesthetic, and historical values and the level of development. The scores were then aggregated and converted into ratings: very good: 18–15 points, good: 14–10 points, poor: below 9 points. Eighty-four units were rated 'good'. These are mostly residential, commercial, and road and pedestrian transport areas. Units in the centre of the town, near the market square and the Resort Park were

rated ‘very good’. A total of 18 units received this rating. We rated another 19 units by the river in the central part of zone B and at its southwestern boundary as ‘poor’. This rating is due to neglect in the areas in the river valley and near the main attractions in the town. Their state degrades the spatial quality of the health resort and makes the town look neglected (Fig. 3).



Source: Authors' own study

Fig. 3. MCSA for the A and B resort-protection zones in Piwniczna-Zdrój; indications in the table: HR – health-resort zones, HP – high-profile areas, R – residential, S – services, P – parks, F – forests, M – meadows, RV – river, RR – railroad, credit N.F.

4. Summary

4.1. Krynica-Zdrój

Health-resort protection zone A in Krynica was rated as ‘good’ and ‘very good’ in the multidimensional current state analysis. Most units received the highest possible rating, which reflects the high quality of land use and allure of the central part of the health resort. The good and very good rating is due to the pertinent regeneration processes that have been carried out in the spa area in recent years. Consequently, the suggested interventions only concern one unit that received a negative rating, due to poor condition, neglect, and inconsiderate use (No. 31). The results provided foundations for design guidelines for the areas rated ‘poor’. In order to increase the functionality of the area and its attractiveness, it is proposed to implement:

- a diversification of the development – enriching the area with small architectural objects,
- a new arrangement of decorative greenery,
- a replacement of the pedestrian route surface, depending on the financial possibilities.

4.2. Piwniczna-Zdrój

The assessment results for Piwniczna are worse. Land use and spatial quality in this health resort are linked to its size and the fact that it is less recognisable than Krynica. The river is beyond any doubt an asset. It is an opportunity to build health-resort promenades, an important component of resort public space. The assessment yielded guidelines for the poorly rated units. The priority redevelopment area is the site along the Poprad river (units 26, 82, 83, 87, and 88) (Fig. 3). It is visible from places that are the main attractions of the town. Particular attention in this case was paid to enhancing the quality of the space and borrowing views that users – residents, patients, and tourists – observe from popular locations in the town. These areas have a great potential to become rest areas with pathways and park furniture. It is therefore proposed to implement:

- a transformation of the currently unused area into attractive green landscaped spaces in line with current urban landscaping trends,
- a new layout of pedestrian routes enriched with small architectural objects and decorative greenery.

Another area relevant to the health-resort function is the one immediately adjacent to the Artist Pump Room and the Spring (units 23 and 109) (Fig. 3). This location is much frequented by people seeking curative water, but it is not landscaped in any way. We propose to:

- improve the allure of this space by introducing more consistency around the Pump Room,
- open the area to strollers with pathways,
- improve the road surface,
- install park furniture and lighting.

For the assessment to be objective, it has to be repeated by independent researchers following the same methodology. Its results have to be verified, and guidelines have to be proposed. The process should be followed by juxtaposing the results with outcomes of a dialogue with residents. Still, already this single survey demonstrated that the method can be employed to generate detailed guidelines for selected sites. Future research should include repeated MCSA in the health resorts followed by interviews with residents and patients.

5. Conclusions

The results obtained after applying the WOSI reflect the nature of the development of the two spas. In order to obtain a fully objective result, as intended by the creator of the method, it should be repeated by an independent team of experts. This repetition will provide an opportunity to identify the advantages and disadvantages of the method. It seems that interesting results can be obtained from the application of WOSI complemented by social surveys among spa residents, visitors and managers.

There is a need for a new approach to health resorts, resources and threats analysis, and search for new directions to guide their space and development. The multidimensional current-state assessment can be useful to people in charge of health resorts who have to make decisions and prioritise actions to improve their functioning and enhance the quality of space, while conserving natural resources and retaining the functionality and attractiveness of the developed and natural spaces.

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