

METHODS OF SPATIAL DEVELOPMENT

Landscape near Poland's
"Island Beskid" range

The environment is crucial to socioeconomic development and to human well-being. Properly performed spatial planning efforts allow the natural environment to be shaped in a rational way, by identifying the possibilities and directions for its development.

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The environment affects each of us, because we live embedded in it and interact with its various elements. According to Article 3 paragraph 39 of Poland's Environmental Protection Act, the environment is understood as comprising all natural elements, including those transformed as a result of human activity, in particular the surface of the Earth, minerals, bodies of water, air, the landscape, the cli-

mate and other elements of biological diversity, as well as interactions between these elements (*Dziennik Ustaw* 2001, no. 62, item 627, as amended). On the basis of this definition, it is worth noting that the environment is understood as including both animate elements (the plants and animals around us) and inanimate elements (bedrock, climate factors such as temperature and precipitation, different landforms and relief, etc.).

Since the emergence of the concept of "sustainable development" – starting in the late 1960s, when UN Secretary-General U Thant's report was released – the importance of the natural environment as an equal and inseparable element of development has been gaining greater and greater emphasis. The Rio Dec-



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laration of 1992 (one of the main documents adopted at the 1992 United Nations Conference on Environment and Development) states as follows: “The right to development must be fulfilled so as to equitably meet the developmental and environmental needs of present and future generations” (Principle 3 of the Declaration).

Benefits from nature

The activity of mankind influences the environment in various ways (scientists often refer to such human influence as “anthropopressure”). However, it should be remembered that the environment also determines possible human activities and – according to the “principle of purpose,” formulated by Professor Stefan Kozłowski – economic (and partly social) goals and objectives should stem from the circumstances of the natural environment (at any territorial scale, including the local scale).

The various functions that the environment serves for humans have been the subject of research in various sciences for many years, and are increasingly being described using the term “ecosystem services” – referring to the various types of goods and services provided by nature that benefit humans and contribute to human prosperity. Ecosystem services can be described, analyzed, and classified in various ways. The most recent 2018 classification, developed by IPBES (Intergovernmental Science-Policy Platform

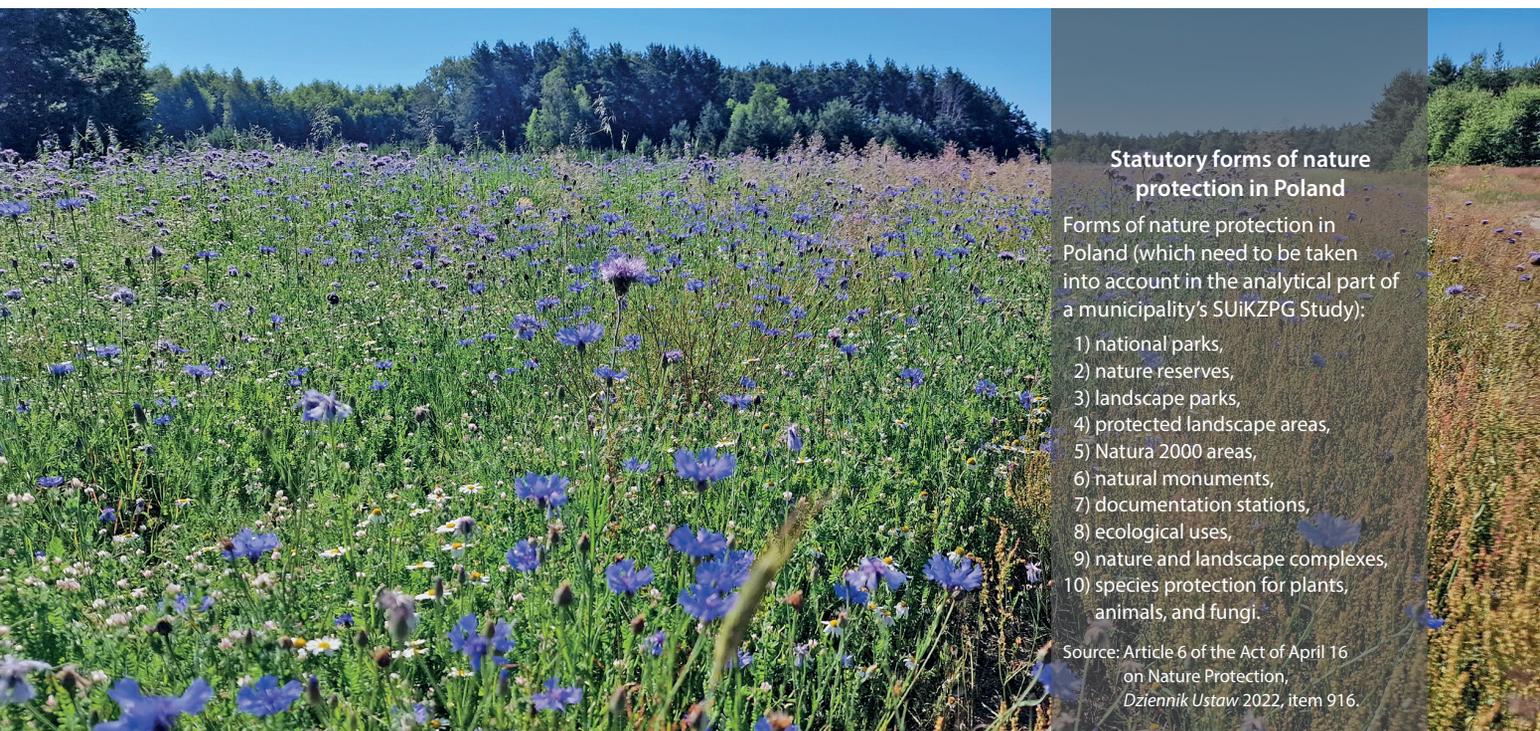


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Table 1
Nature’s contributions to people

Category of contribution to people’s lives	Brief description
Regulating	Regulating ecosystem services involve the preservation of habitats and species (maintaining conditions in which species can live, feed, and reproduce), and also benefits related to ensuring air quality and influencing the climate (e.g. by capturing and storing carbon from greenhouse gases). This category also includes benefits related to soil protection and purification (such as influencing the nutrient cycles, accumulating organic material, or preventing erosion) and water resource protection and purification (water filtration and retention at various scales). Another type of ecosystem service in this category involves protection against hazards and extreme events (currently gaining importance, especially in the context of climate change adaptation).
Material	These are primarily benefits related to the provision of food for humans and animals, as well as raw materials for biomass-based energy production. This category also includes ecosystem services related to the provision of materials for production (e.g. wood, fiber, water) and also ensuring jobs. Moreover, the provision of medicinal resources (e.g. mushrooms and plants, used as traditional medicines or raw materials for production in the pharmaceutical industry) is also gaining importance.
Non material	These are benefits related to cultural and spiritual values, education, tourism, and recreation. Within this group, it is worth mentioning not only those related to mental and physical experiences (inspiration for spiritual and religious experiences, activities in the field of art), but also those that involve the enjoyment of communing with wild nature during recreation or sports. These ecosystem services also emphasize the creation of conditions for a high quality of life, understood as human well-being.



Statutory forms of nature protection in Poland

Forms of nature protection in Poland (which need to be taken into account in the analytical part of a municipality's SUIKZPG Study):

- 1) national parks,
- 2) nature reserves,
- 3) landscape parks,
- 4) protected landscape areas,
- 5) Natura 2000 areas,
- 6) natural monuments,
- 7) documentation stations,
- 8) ecological uses,
- 9) nature and landscape complexes,
- 10) species protection for plants, animals, and fungi.

Source: Article 6 of the Act of April 16 on Nature Protection, *Dziennik Ustaw* 2022, item 916.

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A rural landscape in Poland's Mazowsze region

on Biodiversity and Ecosystem Services), recognizes that nature's contribution to human life encompasses all elements of the natural world that affect people's quality of life, including the diversity of organisms, ecosystems, and related ecological and evolutionary processes. (See the classification of ecosystem services in Table 1).

Spatial planning in municipalities

The environment has a significant impact on the goals that can be set for socioeconomic development. It can be both an accelerator of development processes and a barrier to them, and the better the condition of the environment, the higher the quality of life. Changes in the natural environment are caused, among other factors, by progressive urbanization (including uncontrolled suburbanization). Thus, there is a need for principled efforts to appropriately shape the natural

environment (including protection of its elements) as an environment for human life. This process can take place within the framework of spatial planning, consistent with the principles of sustainable development, as well as by identifying opportunities for the use and regeneration of the environment. Local regulations imposed on the possibilities and directions of spatial development also refer to the possibility of harnessing all environmental resources. In what follows, we will cite examples of local spatial planning efforts that illustrate the place and role of the natural environment in spatial planning.

The basic document shaping the goals and directions of spatial policy at the local level is in Poland known as a "Study of the Conditions and Directions for Spatial Development in the Municipality" (known by the Polish abbreviation SUIKZPG), which each Polish municipality (*gmina*) is obliged by the Act on Spatial Planning and Development to compile for

Table 2
The environment vs. documents related to municipal spatial planning

Ecophysiological study 	Study of the Conditions and Directions for Spatial Development in the Municipality (SUIKZPG)	Environmental impact assessment for the draft SUIKZPG 
Determination of natural conditions for various forms of development and use	Diagnosis of the environment and indication of the conditions and guidelines for the desired direction of spatial development of the municipality in the future, taking into account the natural conditions	Analysis and evaluation of the impact of spatial development on the various elements of the environment and the changes to the environment that the planned development may cause



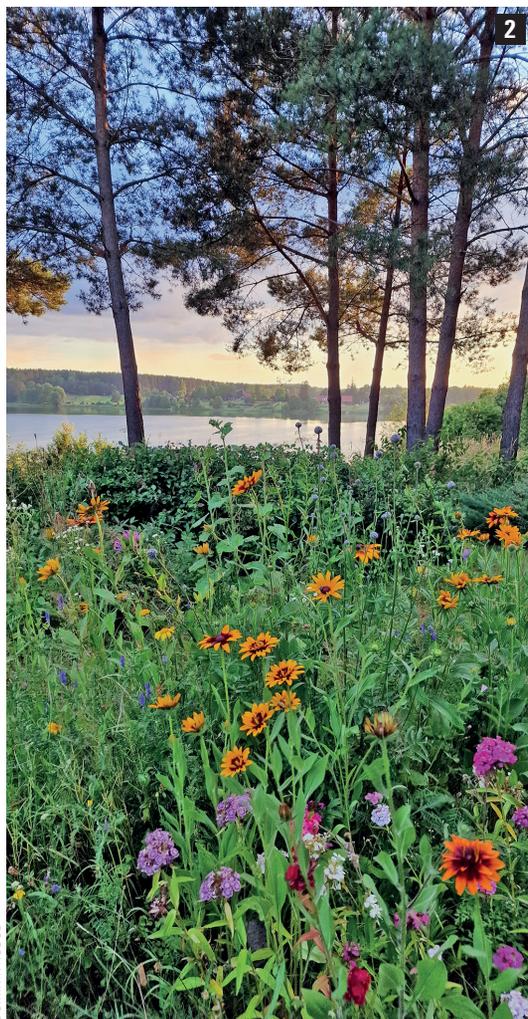
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Fig. 1

The Świder River within
a nature reserve

Fig. 2

Near the lake Zyzdrój Wielki



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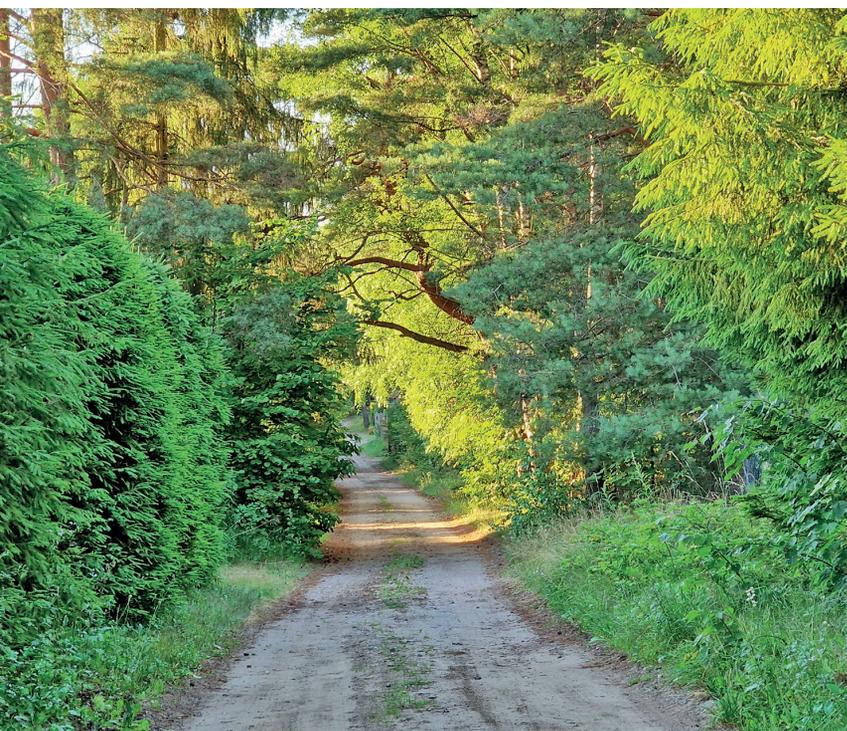
Example of the environmentally-related scope included in the diagnostic part of the SUIKZPG Study for the Capital City of Warsaw

Study of the Conditions and Directions for Spatial Development
in the Municipality of the Capital City of Warsaw, as amended
(Resolution of Warsaw City Council No. LIII/1611/2021 of 26-08-2021)

Part V. The condition and functioning of the environment include the following
issues:

1. Natural Structure:
 - structure of green areas,
 - characteristics of green areas (forests, landscaped areas, parks, teaching gardens, squares, street greenery, neighborhood greenery, allotment gardens, cemetery greenery, greenery accompanying historic fortifications, other areas in the natural structure),
 - climate conditions,
 - geological structure and relief,
 - areas of natural geological hazards,
 - documented mineral deposits,
 - the Nature System of Warsaw.
2. Water Resources:
 - surface water,
 - groundwater.
3. Environmental Status:
 - water quality,
 - air quality,
 - electromagnetic radiation,
 - noise.
4. Nature Conservation:
 - Areas covered by forms of legal protection and their buffer zones on the territory of Warsaw.

Each issue (denoted by an Arabic numeral) was evaluated in terms of weaknesses and threats, strengths and opportunities, and conclusions were indicated.



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A rural lane in the Mazowsze region

the entire area of the municipality. A second document, known as a “Local Spatial Development Plan,” is optional and can be drawn up for all or part of the municipality.

It is worth mentioning that at the local (municipal) level, before a SUiKZPG Study or Local Spatial Development Plan are drawn up, ecophysiological studies are prepared to determine the actual natural conditions for various forms of development and use, and to identify areas predisposed to the development of various functions. The purpose of an ecophysiological study is to ensure the sustainability of basic natural processes in the area covered by the planning document (including ensuring conditions for the renewability of environmental resources), to adapt the function, structure, and intensity of spatial development to the natural conditions, to eliminate or reduce hazards and negative environmental impacts, and – if degraded areas are identified – to determine the directions for their rehabilitation. The quality and accuracy of an ecophysiological study are crucial for the correct incorporation of environmental aspects into land use planning documents and processes.

A study of a municipality’s spatial development conditions and directions (SUiKZPG) includes both a descriptive and a graphic portion. It has two main components: the analytical (diagnostic) and design (direction) parts. The analytical part consists of a diagnosis of existing conditions, including environmental conditions, and conclusions on the possibilities for development and the occurrence of potential conflicts (which often arise in connection with the natural envi-

ronment). By law, this analysis should include, among other factors, a stock-taking of the environmental resources, the state of the environment, the properties of objects and areas under legal protection, and natural hazards. The directional part, in turn, formulates the principles of land use and directions of development, including, among other things, the directions of harnessing and utilization of resources and restrictions arising from the presence of certain hazards.

Each Polish municipality (*gmina*), which acts as an autonomous planning authority, develops its local documents while taking into account findings from higher-level documents and concepts (e.g. those related to international nature conservation, such as the Natura 2000 program) and sector programs (e.g. those related to environmental protection).

Legal regulations define a minimum scope of the environmental aspects that should be taken into account in the preparation of a SUiKZPG Study. Given the existing legal procedures and preparation methodology, we can conclude that in theory, at least, such a study allows for adequate consideration of environmental considerations in local spatial policy. In practice, on the other hand, much depends on the awareness of local authorities and the availability of local environmental information (including that provided by an ecophysiological study).

As for the procedure of drawing up these spatial planning documents (both the Study and a Local Plan), it is worth noting that a strategic environmental impact assessment has to be prepared for both documents while they are still in the draft stage.

Quality of human life vs. the environment

The environment is undeniably of crucial (and, under conditions requiring climate change adaptation, also critical) importance for socioeconomic development and for maintaining the quality of people’s lives. However, it is not always sufficiently taken into account in planning procedures. The challenge is, first of all, to properly factor in the various ecosystem services and their economic valuation, and to make land-use decisions based on them. For the environment to be adequately factored into in the spatial planning process, an integrated approach needs to be taken to development planning (which is currently more of a premise than an actual fact). The environment is gaining importance in terms of people’s quality of life. The experience of the pandemic has clearly shown how important the environment and contact with nature are for people’s health, including their mental health. Therefore, spatial planning also needs to also take into account the intangible contribution of the natural environment to people’s lives and well-being. ■

Further reading:

Miasto wobec wyzwań [City Facing Challenges], collective work, Gdynia 2021, <https://urbanlab.gdynia.pl/artykuly/miasto-wobec-wyzwan-o-adaptacji-do-zmian-klimatu-i-zycia-w-czasach-pandemii/>.

Lorek A., *Ecosystem services in sustainable development of municipalities of a highly urbanized region*, 2019.

Bernheimer L., *The power of the space around us. How the everyday environment shapes our lives, behavior, and well-being, and what it says about us*, 2018.