

Grażyna Korzeniak

Spatial structure transformations of the Niepołomicka Forest surroundings

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SPATIAL STRUCTURE TRANSFORMATIONS OF THE NIEPOŁOMICKA FOREST SURROUNDINGS

Abstrakt. *This paper presents results of our research on the process of building development intensification within the Niepołomicka Forest surroundings in 1978-2003, and spatial policies of communes in relation to those areas, as well as results of those policies. Our research demonstrated diversification in the types of spatial structure transformation processes occurring in various parts of the metropolitan area, a considerable influence of even small but ecologically susceptible areas on the natural spatial structure of development, as well as justifiability of determining natural functional areas for the coordination of spatial policy on a trans-local level, in particular within metropolitan areas subjected to strong investment pressures.*

Key Words: spatial planning, urbanization, metropolitan areas.

1. Introduction

Current development processes are indicated primarily by the spatial system and mutual relationships between natural elements and the habitat network. The degree and directions of the habitat network transformations are the objects of research and considerations relating to sustainable spatial development on various scales and with taking into account various aspects of the process. Those considerations include especially the analyses of urbanization processes (Rajman 1997, Sokołowski 1998, 2005, Liszewski, Maik 2001, Zborowski 2005, Parysek, Mierzejewska 2005), the relationships between the development of settlements and the natural environment, the role of spatial planning in shaping of such relationships (Bartkowski 1986, Lier 1994, Kleven 1996, Hollander, Taylor 2003), and, in recent years, also the transformation of settlement structures, in connection with the transformation processes (Degórska 2000), as well as the problem of metropolitan area planning (Zuziak 2005).

The discussion on the shaping of sustainable spatial structures is especially essential in reference to the areas displaying considerable environmental qualities where strong developmental processes occur. An example of such an area on which the preservation of the principles of sustainable development in spatial economy is especially important, and particularly difficult owing to the area's location, is the Niepołomicka Forest situated within the Kraków Metropolitan Area.

2. General Characteristics of the Niepołomicka Forest

Area Range and Location

The basis of the delineation of the range of the area covered by our research was our assumption that the Niepołomicka Forest, together with its foregrounds, constitutes

a spatial unit within which we should analyse and balance all the changes occurring there, which changes may be identified from the viewpoint of nature and landscape. Altogether, our research referred to 28 (administrative) villages, located in 4 Communes. That was the area

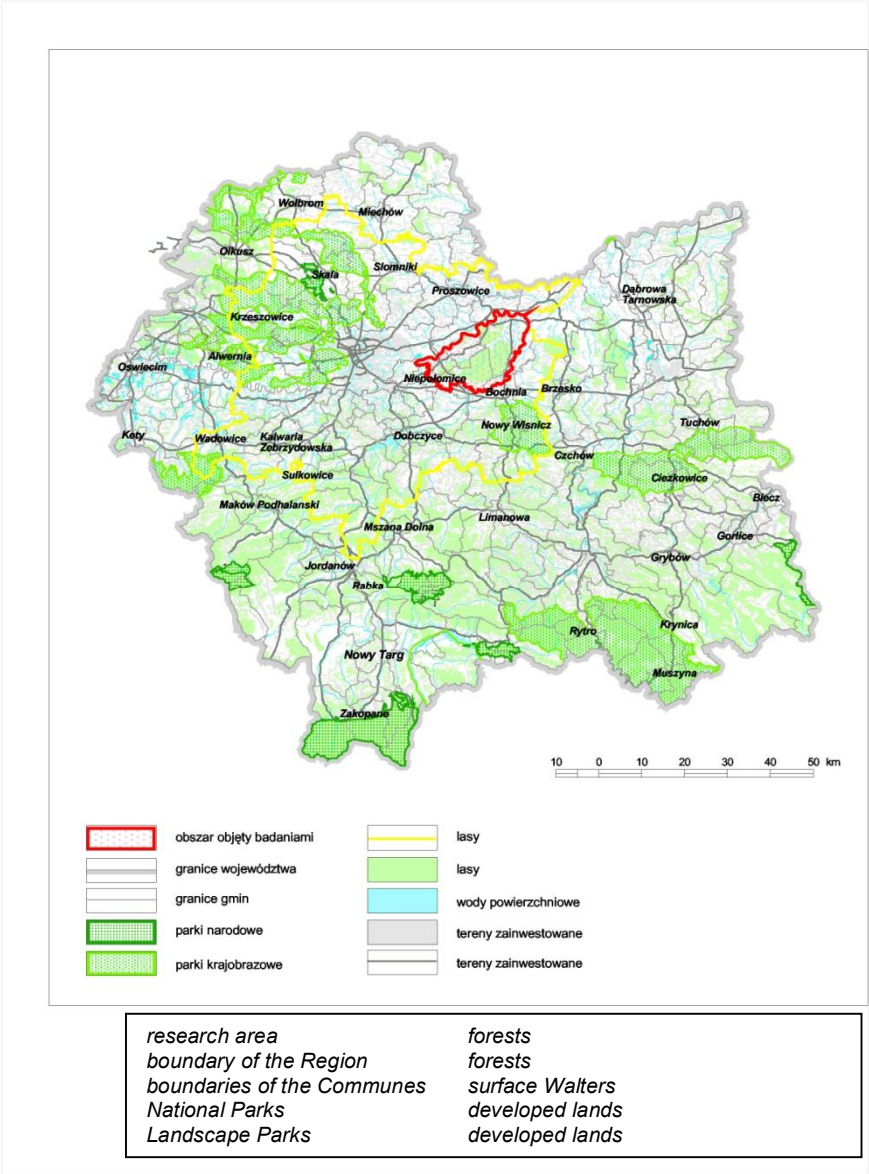


Fig. 1. Location of the area situated in the Małopolskie Region covered by our research
Source: own studies

of ca. 26 km², situated in the Małopolskie Region, Bochnia County (the Drwinia Commune and part of the Bochnia Commune) and Wieliczka County (part of the Niepołomice and Kłaj Communes), within the range of the Kraków Metropolitan Area¹. The location of the area covered by our research is presented in Fig. 1.

Natural, Cultural and Landscape Values

The Niepołomicka Forest area represents outstanding natural, cultural and landscape values. They include the values of the very Forest, as well as the qualities of the areas that surround

¹ Spatial Plan of the Małopolskie Region, 2003, Marshal's Office of the Małopolskie Region.

the forest complexes. The Niepołomice forests occur in four complexes, occupying ca. 110 km² in total. The Forest is composed of multi-species wet-ground, mixed and swamp forests (Myczkowski 1981, Bednarz 1981). The Forest is an important sanctuary of fauna, with relic species and primeval forest features (Głowaciński 1999). The wide foreground of the Forest, of which only part remains undeveloped, constitutes an ecotone zone and a landscape space which opens a vista of the forest complexes, deciding to a large extent of the natural and landscape character of that area. For that reason, our analysis of the changes in the development of the Forest's surroundings was the main object of our research.

Six Nature Reserved, with the total surface area of 99.60 ha were established on the lands covered by our research. Presently, the Niepołomicka Forest is included in the NATURA 2000 Network as a bird sanctuary, and the Koło Forest Complex as a habitat sanctuary. For the area covered by our research, a draft map of a new Landscape Park was prepared in the 1990's, but the project has not been implemented.

Cultural qualities are represented by the Niepołomicka Forest. It has been a protected royal property complex since the Middle Ages, and, owing to that, the range of the forests shaped in the 15th century has been preserved until today. The origin of the town of Niepołomice in the 13th century was associated with the Forest. Our analysis of the cultural resources of the examined area, conducted during the preparation of the documentation necessary for the establishment of the Niepołomicki Landscape Park, indicated the existence of still well preserved elements of the spatial structure shaped in the Middle Ages, as well as a number of precious landmarks which include primarily the Niepołomice Parish Church complex, erected by King Casimir the Great in 1350-1358, the Royal Castle of Niepołomice, erected by initiative of the same King in the 14th century, remodelled in the 16th century, the monastery complex in Staniątki, originating from the 13th century, historical landmarks in over villages, with their park complexes, churches, chapels and still preserved traditional village homestead settlements of the 19th century.

Population

In total, 33,459 residents lived on the area covered by our research in 2003, with the average population density of 124.9 persons/km² on the whole area and from 9.3 to 452.5 persons/km² in particular units.

In 1978-2003, the largest population increase concerned the town of Niepołomice, where the population increased by 51.9% in 2003 in comparison to 1978.

Economic Functions

Agricultural functions represent a decreasing significance on the area under discussion. Such functions are still fairly well preserved in the Communes of Drwinia and Bochnia, while smaller farming populations are found in the Communes of Niepołomice and Kłaj.

Our research area displays well-developed industrial functions. Niepołomice is characterized by the highest degree of industrialization. A strong development of industrial functions of that town was also observed in recent years.

In 1996-2003, we observed a gradual increase of the number of businesses registered in the REGON system on the territories of the Communes within which our research area is located, and in Niepołomice in particular.

3. Object and Method of Research

The process of the intensification of development on the areas situated around the Niepołomicka Forest was assumed to be the object of our research. We conducted an analysis of the share and distribution of developed lands, with particular account of the locations of such areas in respect of the Forest complexes. Administrative villages were assumed to be our basic spatial units. The following were determined:

- ranges of the lands developed in 1978, 1997 and 2003,
- scale and spatial differentiation of the changes occurring in the range of the lands developed within our research area in 1978-2003,
- spatial policies of the Communes, recorded in the Studies of Spatial Development Conditions and Directions of those Communes in 1999-2002,
- influence of the changes in land development on the spatial structure of the area.

In our research, we applied cartometric analyses of topographic maps and ortophotomaps, originating from various years. Based on such materials, we digitised the ranges of the developed lands during the research period, using the Arc View software. In the second part of our research, we analysed the Studies of Spatial Development Conditions and Directions of the Communes, prepared in 1999-2002. Based on those analyses, we determined the degree and directions of the existing and projected developmental transformations of the research area.

4. Characteristics of the Spatial Transformations Related to the Development in the Area of the Niepołomicka Forest in 1978-2003

Our research indicated progressive urbanization processes in the Niepołomicka Forest surroundings, from the viewpoint of space and settlements, which processes included the increase of developed areas, intensification of the existing developed complexes, changes of development functions, origin of new architectural forms, as well as the consequential transformations of the landscape appearance and of the area's spatial development structure. The process understood in that manner corresponds to the "spatial dimension of urbanization" discussed by Broll (2004). We found the following occurrences of the Niepołomicka Forest urbanization in our research:

- increased range of the developed lands,
- changes in the development intensity and settlement complex forms,
- changes in the settlement unit functions,
- changes in the architectural forms of newly erected facilities.

The total increase of the lands developed in 1978-2003 amounted to 1.4% of the whole areas, which corresponds to 2.9% of the unforested surface (Table 1).

Table 1. Surface areas and share of the developed lands on the research area

Surface Area and Share	1978	1997	2003
Surface area of the developed lands (ha)	807.3	1,198.7	1,281.3
Share of the developed lands in the total surface area (%)	3.0	4.5	4.8
Share of the developed lands in the unforested area (%)	5.0	7.4	8.0

Source: own studies, based on digital data

The increases of the developed lands were distributed unevenly. The town of Niepołomice remained the largest settlement complex in the spatial structure in the whole research period. Also the share of Niepołomice increased in the total developed land on our research area. The increase of development in 1978-2003 constituted 31% of the developed lands of the whole area, while more than 46% of new facilities were located in the town in 1997-2003. In addition, a considerable quantity of new developed lands appeared in close vicinity of Niepołomice, as well as in the southern and south-eastern portions of our research area, while the northern villages did not play any essential role in the Forest surroundings urbanization processes (Fig. 2).

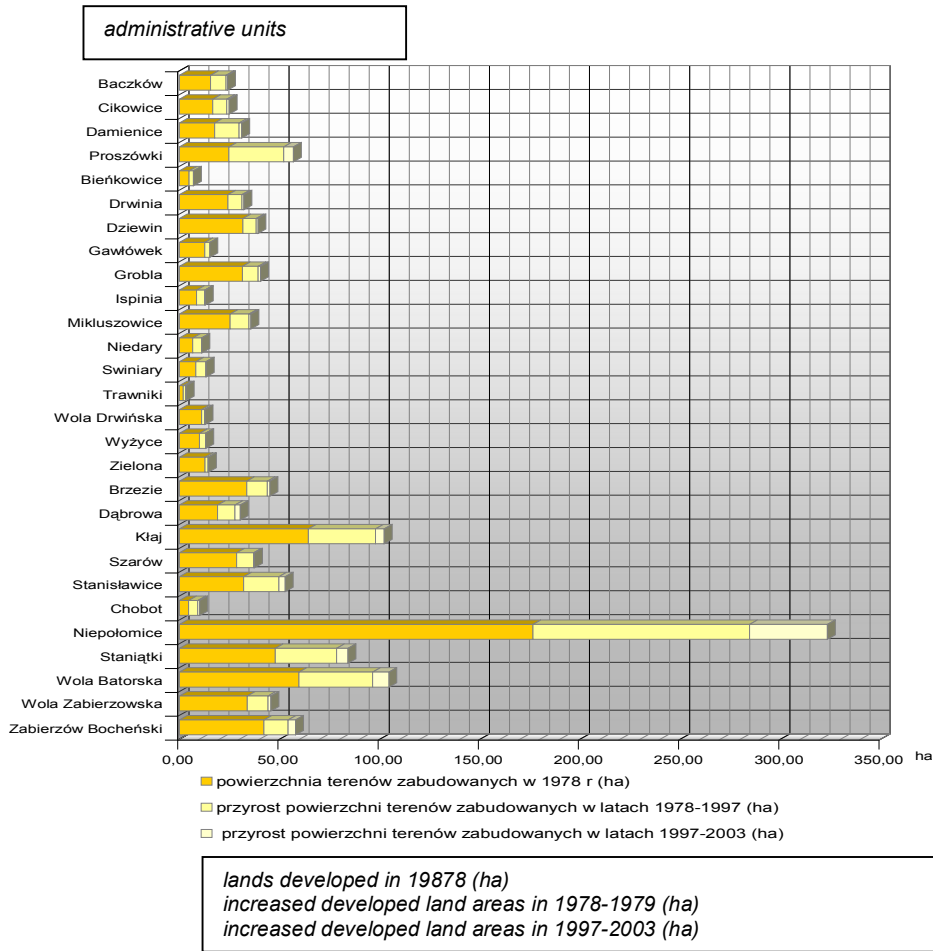


Fig. 2. Developed land surfaces in the studied villages

Source: own studies

The difference in the degree of taking over the unforested land for development purposes in particular villages was twelvefold. That type of development increase augmented the differences in the degree of urbanization of the southern and western parts of our research area in respect to the northern and north-western parts (Fig. 3).

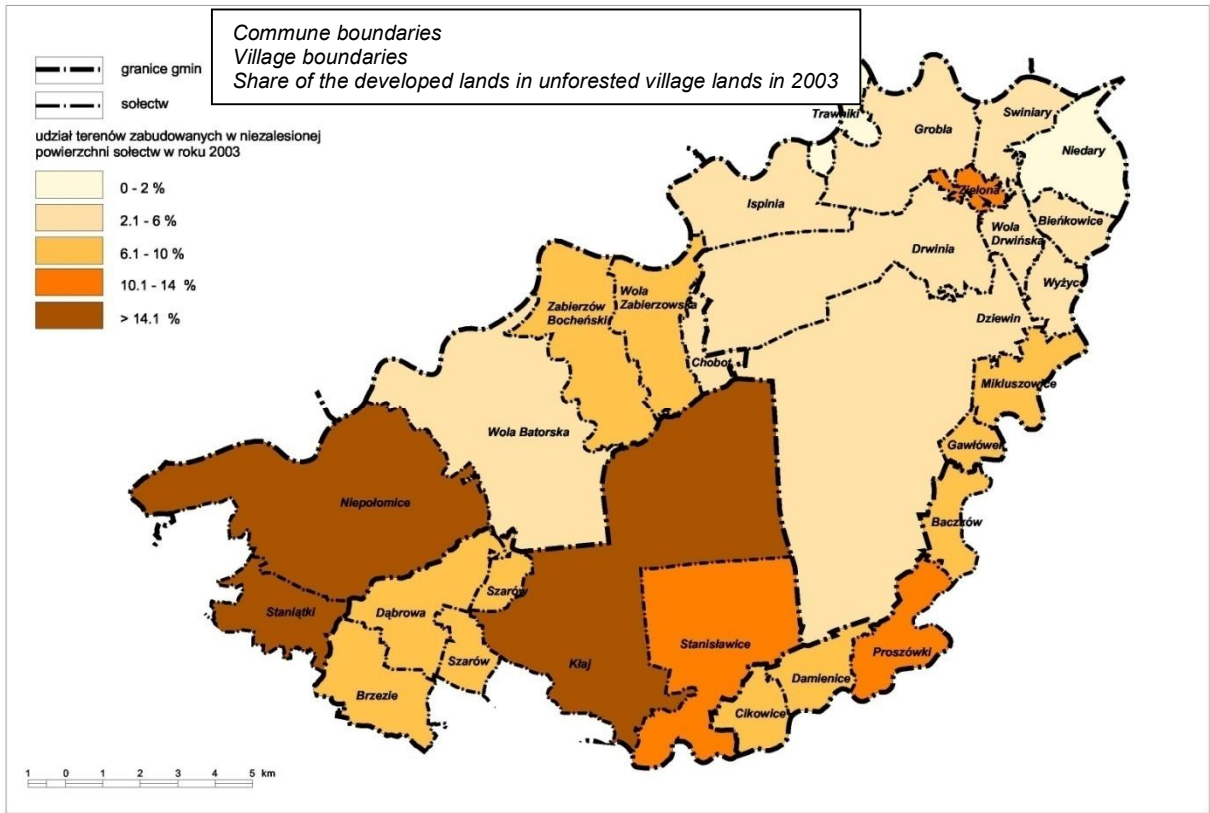


Fig. 3. Diversification of the area in respect of the share of the developed lands in unforested village lands in 2003
Source: own studies

The changes of the development functional structure were effected mainly by two basic processes: changes of the relationship between housing estate lands and farm homesteads and the increase of industrial and commercial development lands.

The increase of the developed lands concerned mainly new housing estates. Houses were constructed either as gap fillings or separate estates. Typical estates were located mainly in Niepołomice, also directly on the Forest foregrounds, and along the eastern Forest boundary. That indicated a considerable interest in obtaining flats constructed in direct vicinity of the forests.

During the studied twenty years, the total surface area of large and separated industrial complexes constantly increased. In 1978, industrial facilities occupied ca. 56 ha and the surface increased to ca. 101 ha by 2003. The share of industrial lands in the total developed land surface increased from 7% in 1978 to 8% in 2003 during the studied period. The concentration of industrial facilities in that period was associated mainly with the town of Niepołomice, while new facilities were also located mainly in the town and its neighbouring villages (Fig. 4).

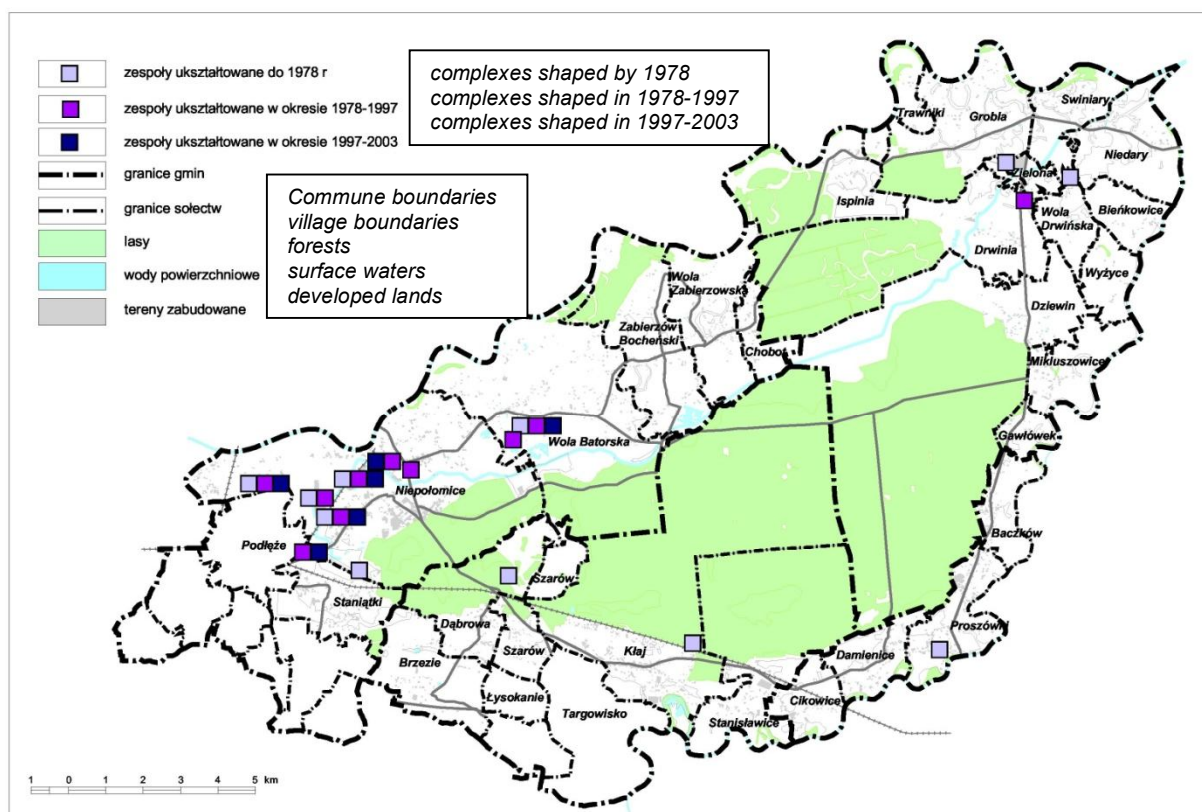


Fig. 4. Locations of large, separated industrial complexes

Source: own studies

Also the forms and sizes of new structures decided about the transformation processes affecting the settlement network and landscape. That concerned both the changes in the house structure forms and introduction of new industrial facilities, with uniform shapes complying with international standards.

5. Communes' Spatial Policies

Our analysis of the Communes' spatial policies was conducted on the basis of the Studies of Spatial Development Conditions and Directions prepared for particular Communes in 1999-2002².

Sizes and Locations of the Lands Designated for Development

The Studies of Spatial Development Conditions and Directions, prepared for particular Communes in 1999-2002, showed that 4,381 ha were designated for development on our research area, which was equivalent to ca. 16% of the whole area surface, or 27% of unforested lands. In addition to the concentration of development lands in Niepołomice, the newly designed motorway became an important element of the planned development that would shape the spatial structure of the Niepołomicka Forest's surroundings. Potential areas of commercial, housing and services areas were identified in reference to the motorway project. The smallest quantity of the developed lands was designated in the north-eastern

² Until now, Study documents have been amended.

part of the area. That would contribute to the strengthening of the differences in the Forest environs' urbanization (Fig. 5).

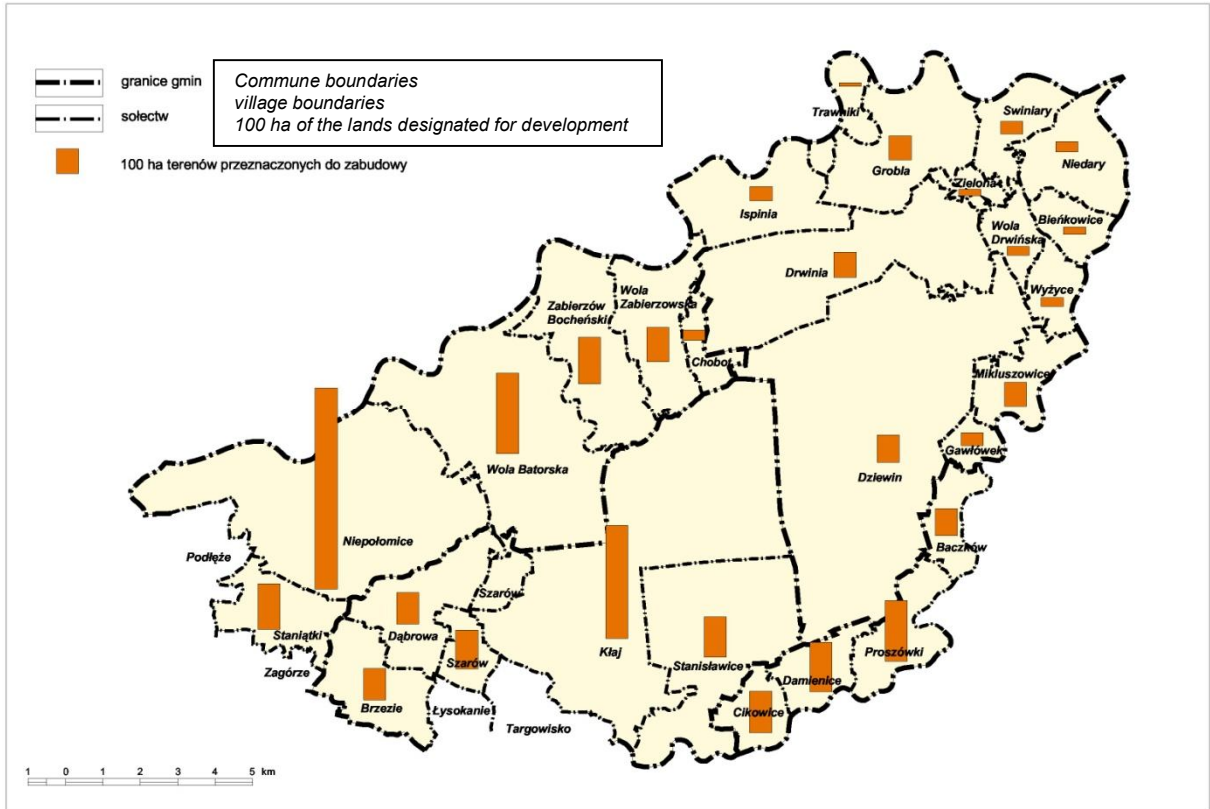


Fig. 5. The sizes of the lands designated for development

Sources: Own studies based on digitised data drawn from the *Studies of Spatial Development Conditions and Directions of the Communes of Bochnia 2002, Drwinia 2000, Niepołomice 2001 and Kłaj 1999*

Functional Structure of the Lands Designated for Development

The areas of mixed housing, farm homestead and service facility development dominated on the lands designated for development. Large, separated industrial complexes occupied ca. 311 ha, or ca. 7% of the building lands. The largest industrial lands were designated in Niepołomice where they occupied more than 180 ha, or 58% of all the lands belonging to that category, as well as in the nearby villages of Staniątki and Wola Batorska. The placement of other large complexes was associated mainly with the motorway project. The lands designated for sports and tourist facilities were located near the Niepołomicka Forest and close to water fronts (Fig. 5).

6. Transformations of the Natural Spatial Structure and the Spatial Transformation Zones in the Vicinity of the Niepołomicka Forest

The transformations of the natural spatial structure caused by development in 1978-2003 and later planned projects include the following:

- limitation of the range of the ecotone zone by the projects located close to the forests,
- elimination of connections between the Forest and the Raba River by a constantly filled course of development along the eastern Forest boundary,

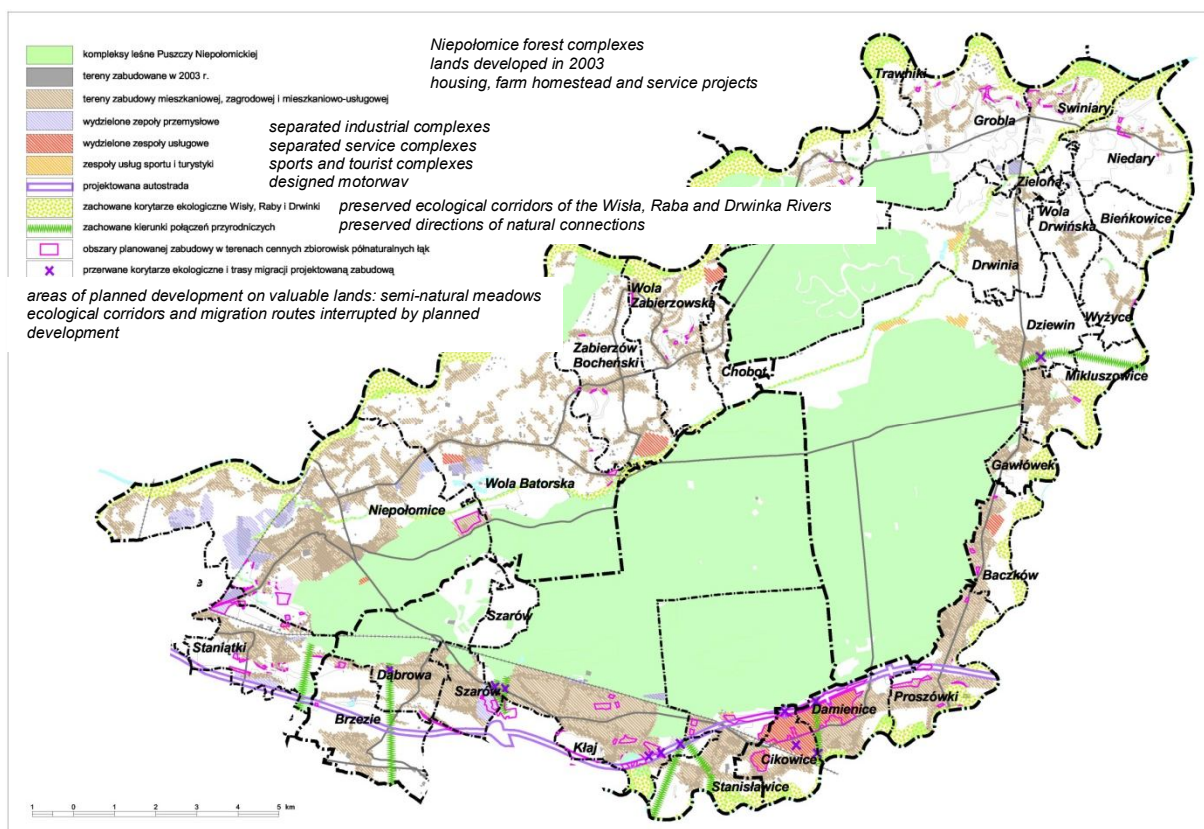


Fig. 6. Planned development according to the Studies of Spatial Development Conditions and Directions of the local Communes

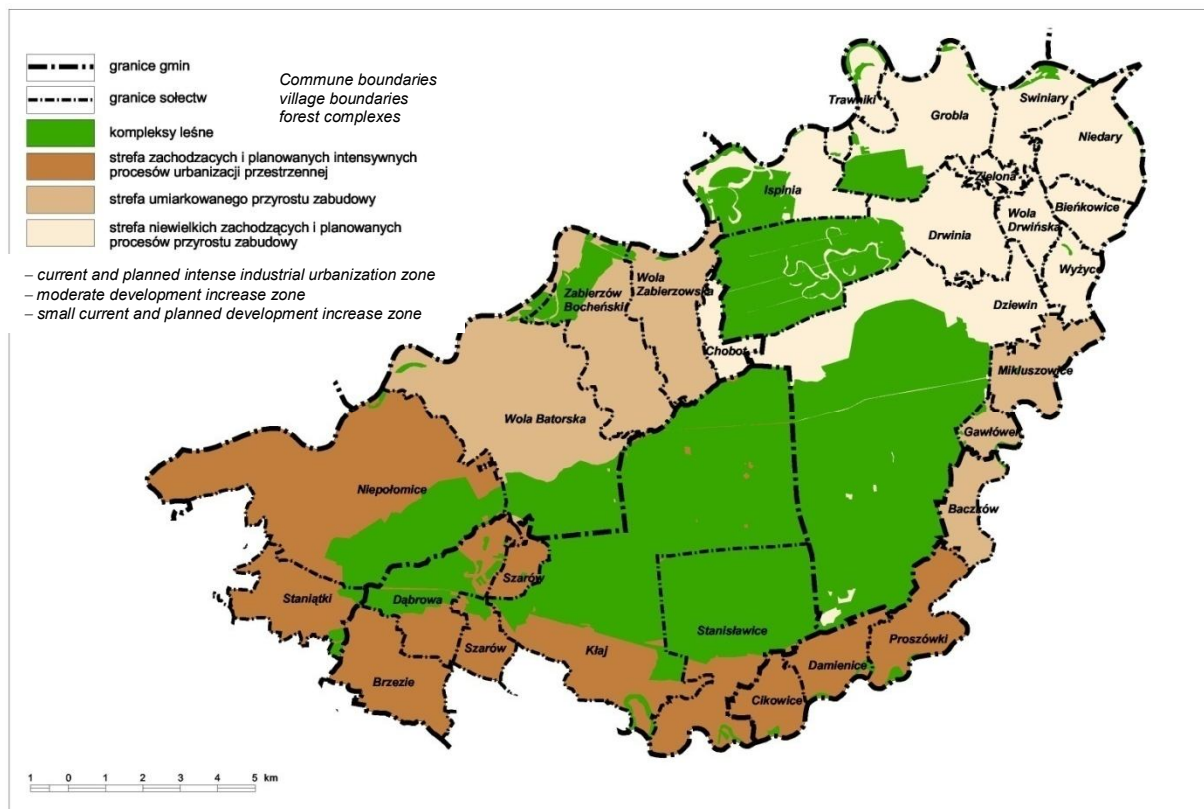


Fig. 7. Diversification of the Niepolomicka Forest surroundings in respect of the current and planned transformations of the spatial development structure

- occurrence of an ecological barrier in the form of the motorway which cuts through the regional ecological corridors running between the Niepołomicka Forest and the Gorce Mountains,
- limitation of the throughput of the regional ecological corridors between the Niepołomicka Forest and the Radłowskie Forests as a consequence of development,
- liquidation of the southern undeveloped foreground of the Niepołomicka Forest as a result of the motorway construction and the development of continuous development courses,
- limitation of regional ecological corridors by infilling of development courses along roads,
- development of the lands which are valuable for their meadow habitats on the Forest's foreground.

Based on our research on the directions and scale of development carried out in 1978-2003 and of the development planned by the Communes, we distinguished three zones in the Niepołomicka Forest's surroundings:

- I. Current and planned intense industrial urbanization zone.
- II. Moderate development increase zone.
- III. Small current and planned development increase zone.

7. Summary and Conclusions

The spatial structure of the Niepołomicka Forest's surroundings and the directions of the planned development of that area justify treating the Forest and its environs as a spatial unit of nature in which the transformations of local settlement systems should be analysed and planned on the basis of a comprehensive approach to the whole area. That statement may also be referred to other areas representing high natural qualities, surrounded by the lands on which intense developmental processes are carried out, primarily those situated in close vicinity of large cities. The example of the Niepołomicka Forest surrounding's development indicates that, in the case of natural functional areas, spatial planning at the commune level is not sufficient for such a control of developmental changes that protects basic features being essential for the area's operation as a whole.

With reference to the analysed area, we can observe a need to take into account the interdependence of spatial policy in the southern part of the Forest's surroundings and in other zones. The planned course of the motorway and the related development will cause isolation of the Forest from the southern side. That may be partly compensated by such development of the remaining areas surrounding the Forest that will allow to maintain natural connections between the Forest and the essential elements of the natural structure existing in other parts of the area. This example indicates the need to introduce such effective tools to the spatial planning system that will allow to determine non-local functional areas and conduct a cohesive spatial policy on them. A considerable role in that respect can be played by the planned metropolitan areas. Such areas are subject to particularly strong investment pressures and delineation of nature areas within metropolitan areas to obtain durable spatial structure elements would allow for comprehensive protection of the natural systems in urban regions.

Owing to the planned land development, as well as the establishment of the NATURA 2000 areas, the conception of a new Niepołomice Landscape Park requires revision. We need to remember that the implementation of the protected NATURA 2000 areas will depend on the scale of urbanization of the Forest's environs.

Our analysis of the transformations in the development structure around the Niepołomicka indicated that, on a relatively small surface located within a metropolitan area, there is a considerable diversification of the scale and directions of such spatial transformations and spatial-economic processes as:

- Development of a small town, with a complex structure and a downtown borough, identifying the town based on its cultural qualities, and with separated residential estates and industrial quarters,
- Development of modern industrial functions outside of the central city, based on the investment-oriented local spatial policy, which strengthens the international competitiveness of the whole Kraków Metropolitan Area,
- Designed intensive development of business complexes, in relation to the planned motorway route,
- Suburbanization processes at the level of a small town that are conducted for the purpose of connecting the town with the neighbouring rural administrative units through developing industrial quarters and developing housing and service complexes, while the small and medium-size town's influence is visible in the distance of ca. 5 km from its boundaries,
- Suburbanization processes considered on a metropolitan scale, comprising both small town development and developing parts of rural settlement districts; the following factors that affect those processes are observable on our research areas: accessibility by transportation systems, natural conditions and the manner of developing external areas of the central city; in respect of a portion of the north-eastern part of our research area, the intensity of those development processes decreases at the distance of ca. 10-15 km from the eastern boundaries of Kraków; that distance is shorter there than in the case of the western and south-western Kraków boundaries where we observe the continuity of large-range development courses; what may be significant here is low attractiveness of the development in the eastern part of Kraków; however, the location of intense development areas indicates the importance of capital investments in the very town of Niepołomice for the development considered on a metropolitan scale, which town is distinguished by a dynamic developmental policy,
- A tendency to shape the whole course of the development belt occurring in part of our research area (the Kraków-Niepołomice-Kłaj-Bochnia zone) in which we find multi-directional transport accessibility entailing road and railway connections; that tendency will be strengthened by the course of the motorway,
- Planned fundamental change of the transportation system and of the spatial connections between the settlement units owing to the course of the motorway,
- Disappearance of the forms of development related to farming functions on rural areas and the erection on new forms of rural settlements, with residential functions and large structural concentration, but without farm homestead forms and with the layout that

is characteristic for urban single-family home estates,

- Replacement of houses, with introduction of new architectural forms,
- Maintenance of the style of rural building, with small increase of intensity and range of building complexes, as well as preservation of basic features of rural estate layout and of farm homestead development,
- Introduction of protection measures under the implementation of the NATURA 2000 conception.

The analysed example of an area with precious natural qualities indicates that, in case of such areas that can be qualified as stagnating after Maik (Liszewski, Maik 2001), a limited rural development may be a desirable element of special policies in the contexts larger than local. The creation of modern foundations of economic development for such areas is a separate issue. Increase of the area's recreational significance may be one of such directions.

The studies of the development in 1978-2003 indicate that in those zones in which larger numbers of commuters travelled to work in the central city of the Kraków urban area (Zborowski 2005), that is in such Communes as Niepołomice, Kłaj and Bochnia, there was a larger increase of construction than in the Drwinia Commune, with a lower intensity of commuting. It would be interesting to obtain research results showing how further course of capital investments, based on the Communes' established spatial policies, including especially the development of industrial functions in Niepołomice, will influence the relationships between our research area and the central city.

The directions of the area's spatial development demonstrated that the Communes of Niepołomice and Kłaj, which are characterized by a higher degree of existing and primarily of planned spatial development, holding a large share of lands designated for commercial use, are also marked by a high evaluation of the capital investment climate (*Klimat...* 2006). That also confirms the dependence of the capital investment climate on transport accessibility.

In the light of the directions of the development of Niepołomice, verification is required in respect of its functions as a service and agricultural centre, with omission of its industrial functions, assigned to the town in the strategic regional documents. One of the expressions of spatial policy at the trans-local level consist in strengthening of transportation links between the town and the central city, as well as shaping of optimum connections with the newly designed motorway. At the same time, the growth of that centre should be accompanied by a spatial policy that precisely determines the conditions of the natural system protection.

The evaluation of the current development processes in the Niepołomicka Forest environs must be comprehensive and it has to take into account the characteristics of the area. We should consider a positive evaluation of the growth processes which are measured by development leading to the creation of conditions for the placement of non-farming jobs and the strengthening of poly-centricity of the Kraków Metropolitan Area's structure. At the same time, the development of economic functions becomes in fact competitive for protective functions. For that reason, planning regulations are essential as they allow to control current

spatial transformations. One of the basic elements of such regulations is the protection against capital investments on the lands that are of key importance for the preservation of main natural connections, biodiversity and landscape qualities.

In reference to starting urbanization *sensu stricto* and *sensu largo* (Sokołowski 2005), applied to the developing structure of the whole town of Niepołomice, with separated urban districts of various functions and developing job markets, as well as strengthening service functions, we can treat the current spatial transformations as urbanization processes *sensu stricto*. On the remaining lands, the degree of urbanization process intensity *sensu largo* is diverse.

The motorway route is an example of breaching the ecological barrier of spatial development, mentioned in the study on the "Model of Ecologically Conditioned Spatial Economy" (1991). Such a breach, in respect of socially and economically desirable development, is effected by infringement of natural qualities which have the form of natural interrelationships between the Forest and its environs in this case. A comprehensive evaluation of the costs and benefits of the planned project and of the correctness of the motorway route may be analysed only at the regional level and beyond.

An analysis of the level of new development may be one of the criteria of the evaluation of spatial structure of metropolitan areas, from morphological, functional and nature points of view, and, first of all, from the viewpoint of complementariness of such area development. Such analyses should be one of the basis of the preparation of developmental plans for metropolitan areas.

A more dynamic development was associated with a more intense provision of technical infrastructure on the studied lands. The latter aspect should also be taken into consideration in spatial economy as a measure of the degree of sustainable development. However, the use of the technical infrastructure indicator as a criterion of urban-rural aspect evaluation (Sokołowski 2005), in the context of the sustainable development principles, seems to be losing its validity.

Our analyses of the changes in the development of the Niepołomicka Forest environs indicated that also a small growth on the areas that are susceptible in respect of their nature may essentially influence the spatial structure of the area. For that reason, a fundamental role in the protection of local and regional nature systems should be played by spatial development plans that detail development prohibitions applicable to selected lands. That concerns in particular the areas on which spatial policy, generally determined in the Studies of Spatial Development Conditions and Directions, anticipates intensive increase of various types of developed lands.

Literature

1. Balon J., German K., 2001, *Przemiany a funkcjonowanie środowiska przyrodniczego jako interdyscyplinarny problem badawczy*, [w:] *Przemiany środowiska przyrodniczego Polski a jego funkcjonowanie, Problemy Ekologii Krajobrazu t. X*, Instytut Geografii i Gospodarki Przestrzennej UJ, Polska Asocjacja Ekologii Krajobrazu.
2. Bartkowski T., 1986, *Zastosowania geografii fizycznej*, PWN, Warszawa.
3. Bednarz Z., 1981, *Bory Puszczy Niepołomickiej*, Studia Ośrodka Dokumentacji Fizjograficznej, t. IX.

4. Broll R., 2004, *Ekonomika i zarządzanie miastem*, Wydawnictwo Akademii Ekonomicznej im. O. Langego we Wrocławiu.
5. Degórska B., 2000, *Szanse i zagrożenia dla zrównoważonego, wielofunkcyjnego rozwoju obszarów wiejskich w procesie integracji z Unią Europejską (podstawy ekologiczne)*, Studia KPZK PAN, t. CX.
6. Głowaciński Z., 1999, *Fauna*, [w:] *Niepołomicki Park Krajobrazowy, projekt utworzenia*, Instytut Gospodarki Przestrzennej i Komunalnej Oddział w Krakowie, *manuscript*.
7. Hollander J., Taylor R., 2003, *The New Environmentalism and the City-Region*, [w:] *Recent Advance in Urban and Regional Studies*, Polish Academy of Sciences, Committee for Space Economy and Regional Planning, Warszawa.
8. Kamiński Z. J., 1995, *Degradacja wartości kulturowych wsi na obrzeżach miejsko-wiejskich*, [w:] *Urbanizacja wsi w obrzeżach miejsko-wiejskich*, Konferencja naukowa, Katowice 19-20 X 1995, Politechnika Śląska w Gliwicach, Katedra Planowania Przestrzennego i Urbanistyki, Uniwersytet Śląski w Katowicach, Katedra Geografii Ekonomicznej.
9. Kleven T., 1996, *Environment and Planning – Norm and Realities*, Scandinavian Housing & Planning Research 13.
10. *Klimat inwestycyjny w województwie małopolskim*, 2006, red. B. Domański i W. Jarczewski, wyd.: Departament Gospodarki i Infrastruktury Urzędu Marszałkowskiego Województwa Małopolskiego, Kraków.
11. Korzeniak G., 1993, *Koncepcja utworzenia Niepołomickiego Parku Krajobrazowego*, Człowiek i Środowisko 17(4).
12. Lier H. N., 1994, *Land Use Planning in Perspective of Sustainability*, [w:] *Sustainable Land Use Planning*, Ed. by Lier Hubert N., Jaarsma Catherinus F., Buck Abco J. ELSEVIER Amsterdam-Lausanne-Oxford-New York-Shannon-Tokyo.
13. Liszewski S., Maik W., 2001, *Wielka encyklopedia geografii Świata*, t. XIX, *Osadnictwo*. Wydawnictwo Kurpisz, Poznań.
14. *Model gospodarki przestrzennej ekologicznie uwarunkowanej*, 1991, praca zbiorowa pod red. J. Kołodziejskiego, współpraca A. Tyszeckiego, Wyd. SGGW-AR Warszawa.
15. Myczkowski S., 1981, *Lasy grądowe Puszczy Niepołomickiej*, Studia Ośrodka Dokumentacji Fizjograficznej t. IX.
16. Parysek J. J., Mierzejewska L., 2005, *Między dezurbanizacją a reurbanizacją: nowe oblicze urbanizacji w Polsce*, XVIII Konwersatorium Wiedzy o Mieście, Łódź.
17. Rajman J., 1997, *Strefa podmiejska – mechanizm powstawania i przekształceń. Nowe problemy badawcze*, [w:] *Geografia, człowiek, gospodarka*, Instytut Geografii Uniwersytetu Jagiellońskiego, Kraków.
18. Sokołowski D., 1998, *Niektóre problemy definiowania pojęć geograficzno-osadniczych związanych z urbanizacją*, Czasopismo Geograficzne, t. XIX.
19. Sokołowski D., 2005, *Wybrane metody weryfikacji wskaźników urbanizacji i kryteriów miejskości*, Konwersatorium Wiedzy o Mieście XVIII.
20. Zborowski A., 2005, *Przemiany struktury społeczno-przestrzennej regionu miejskiego w okresie realnego socjalizmu i transformacji ustrojowej (na przykładzie Krakowa)*, Instytut Geografii i Gospodarki Przestrzennej UJ Kraków.
21. Zuziak Z. Z., 2005 *Podejście strukturalne w planowaniu obszarów metropolitalnych*, Biuletyn KPZK PAN z. 221, Warszawa.

Grażyna Korzeniak, Ph.D. in Earth Sciences – a researcher and a planner at the Institute of Urban Development in Kraków. Head of the Department of Methodology of Spatial Planning in the Institute. She conducts research in the field of spatial planning methodology. The author of a dozen or so planning documents and studies on local and regional spatial development.