

## **TERRITORIAL COHESION OF A METROPOLITAN AREA IN THE LIGHT OF IMPLEMENTATION OF SPATIAL POLICY – THE CASE OF LODZ METROPOLITAN AREA**

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### **Abstract**

In Polish legislation there are no relevant provisions allowing for institutionalisation of metropolitan areas. This means that the biggest cities and their directly surroundings, strongly related to each other and experiencing dynamic transformation of the socio-spatial structure, are deprived of joint coordination of spatial policy. According to the administrative division of the country, the main responsibilities for shaping and implementing the objectives of spatial policy are assigned to a municipality – a territorial unit of the lowest level. Municipalities are equipped with a local spatial development plan, which is the only instrument having the status of a local legal act. It only must be consistent with the provisions in regional and national plans, which are assumed as general documents, relating to the major development directions but not to the particular land use.

Metropolitan areas in Poland are mostly consisting of several dozen of municipalities. Unfortunately, each territorial unit usually implements its individual spatial policy, considered as the most profitable only by the local authorities. This situation is potentially most dangerous in the territories of strong internal linkages, such as metropolitan areas definitely are. It would be a truism to say that long-lasting effective functioning of the metropolitan area is not possible without the common spatial policy.

The authors' main objective is the analysis of relations determined by the local spatial policies in the metropolitan area. The analysis is conducted on the example of Lodz Metropolitan Area (LMA) – a territorial unit located in Central Poland, consisting of Lodz and its 27 neighbouring municipalities. Choosing LMA for analysis is not accidental. For two years the authors have been conducting a wide research project in this area, which should result in elaborating a method of measuring territorial cohesion of the metropolitan areas.

The analysis described in the article is based on the obligatory spatial planning documents and takes under consideration future land development along the municipal borders (directly neighbouring land use forms and subsequent ones, in case the first land use form was a linear object). The key element of the procedure is the identification of conflicts in the borderline zones. First, each

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place where any kind of discrepancy is observed is being marked on a map. The discrepancy means that the land use on the sides of the municipal border has a different form eg. agricultural and residential areas. Furthermore, more detailed discrepancy criteria are established (combinations of land use that may be classified as spatial conflicts), the length of the border with discrepancies is measured and its share in the total length of the border is calculated.

The final step of the analysis is supposed to reveal the impact of the identified conflicts on LMA's functioning, which is followed by formulating recommendations for unified spatial policy in the metropolitan area.

## **1. Introduction**

In common parlance, cohesion is mostly understood as a close contact or union, a result of separate elements forming a new whole. In academic research, the term applies to various domains – economy, social relations, ecology, and infrastructure – and especially to transportation, spatial planning, etc. The common point for all these is the territory which forms a reference point for their analysis. Therefore, when trying to present the internal integration of a territory in a holistic perspective, the term territorial cohesion should be used (Bartosiewicz, Pielesiak 2010b, 2011).

Territorial cohesion is a multidimensional, ambiguous and controversial term. In the past few years, it has frequently appeared in debates over the European Union's future development. The Polish government assumed in its proposal that territorial cohesion should be explained in both its static and dynamic aspect. In the first sense, it is presented as the optimal state, a result of efficient economic exchange and flow which ensure economically and socially effective resource allocation. This state, which assumes a certain minimal development level of selected domains (access to public services, accessibility by various transport modes, etc.) instead of their standardisation, is a consequence of an adequate spatial planning, which creates the optimal circumstances for the development of individual territories. It is emphasised that the process of reinforcing territorial cohesion is an extremely complex one, hence its implementation should take place not only on the EU level, but also on the national, regional and local one. In turn, the dynamic aspect of the term "territorial cohesion" places emphasis on the simultaneous stimulation of socio-economic cohesion (stimulating management efficiency and the effectiveness of addressing social disparities) in the framework of integrated management of EU development (Bartosiewicz, Pielesiak 2010b, 2011).

At present, research on territorial cohesion is focused on the macro scale (the national or international level). At this stage, there are a number of concepts and instruments which serve to measure territorial cohesion. (Dutkowski, 2009; Farugia, Gallina, 2008). This branch of research is an inherent part of the EU cohesion policy.

Research on territorial cohesion on the subregional stage is less common, although this dimension seems to be equally important. Creating cohesion policy on a national or international scale without including the lower levels poses significant difficulties. There have been several studies on subregional territorial

cohesion but it still remains a poorly researched area, especially where the methodological aspect is concerned. Researching territorial cohesion on the subregional level requires a wholly different approach.

The territorial unit analysed by the authors is a metropolitan area. It is understood as the area of a large city and its functionally related direct neighbourhood. In a number of international classifications, the terms “metropolis” and “metropolitan area” apply not only to large cities but also to urban settlements which contribute significantly to the economic structure of metropolitan functions, that is exogenic service and administrative functions on a global, continental or national scale. In Poland, the term is commonly applied to the largest cities and their neighbouring areas. As a result, not all metropolitan areas distinguished in Polish studies meet the international criteria. In any case, they are areas with strong internal linkages, which require particular attention and unified coordinated management.

In Poland, the subjects of metropolises and their surrounding areas is gaining the recognition of the academic world as well as local authorities of various tiers. Although legal acts regulating the functioning of metropolitan areas have not yet been passed, a few municipalities have already carried out detailed analyses of the current socioeconomic situation and have prepared and started to implement concepts for future development. However, in most cases, apart from a delimitation and a very general idea of the area’s future functioning included in provincial spatial development plans, no detailed, multifaceted analyses have been carried out. In particular, the municipalities’ territorial cohesion, which should form the basic standard for the possible creation of institutionalised municipal areas, has not been researched.

In case of a metropolitan area, it is impossible to apply most of the indices used in international and interregional comparisons. Notwithstanding the fact that assuming the municipality as the basic unit of research calculating some of them would be pointless, many data are aggregated at least on the regional level, and therefore the researchers may encounter a lack of input information.

In a situation like this, accepting various kinds of internal linkages within a metropolitan area as the benchmark for territorial cohesion seems to be the most reasonable solution. This approach is consistent with the authors’ theoretical framework. For two years, they have been implementing a large-scale research project under the title Territorial Cohesion of Lodz Metropolitan Area, which aims to develop a comprehensive and universal method of measuring territorial cohesion on the subregional level based on a number of internal linkages (cf. Fig. 1) (Bartosiewicz, Pielesiak, 2010b).

In this set of linkages shaping territorial cohesion, relations resulting from the implementation of spatial policy are of vital importance. When there is no common policy for a large city and its surrounding areas, and each municipality in fact implements its own one (for further details see subchapter 2), such relations may be investigated by analysing spatial planning documents valid in individual municipalities which specify the guidelines for spatial planning.

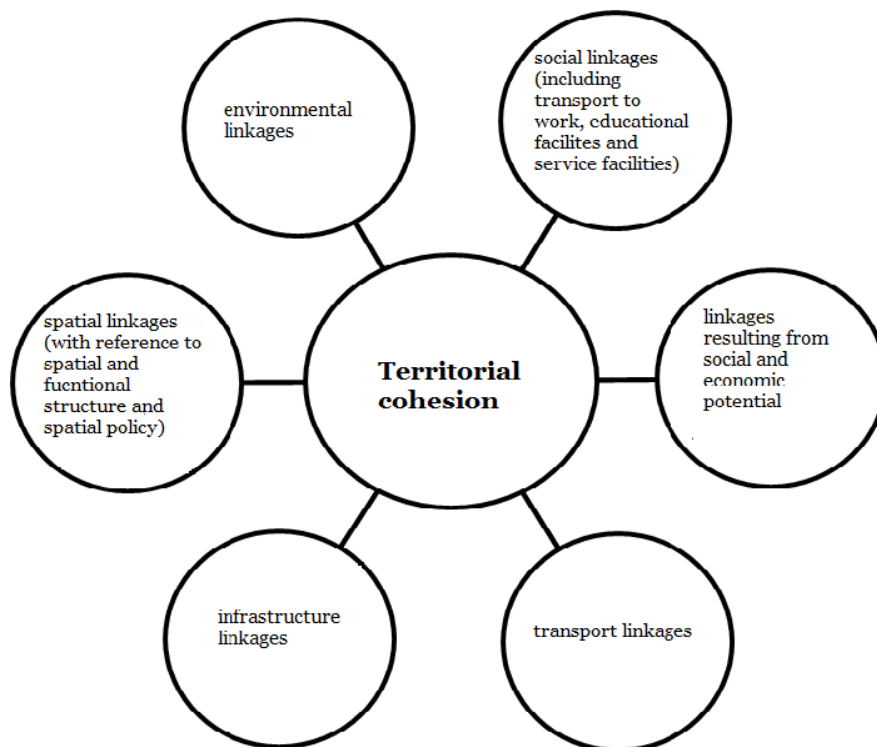


Figure 1. Linkages creating territorial cohesion

The authors' observations prior to the research suggest that the guidelines for spatial development of areas along municipality borders are often divergent and lead or may lead to functional and spatial conflicts. Such situations are particularly dangerous in metropolitan areas, which are subject to intensive urbanisation processes, and may result in irreversible negative alterations which disrupt the proper spatial development of the territory. This means that the borderline zones are crucial from the perspective of spatial policy cohesion of metropolitan areas. Therefore, it is these zones that should be selected for analysis when assessing spatial development policy, taking into account the intended use of the adjacent areas (for further reference see subchapter 3).

Based on these assumptions, the primary aim of this article is to develop a universal method of measuring the cohesion of metropolitan areas in light of spatial policy, based on the identification of spatial conflicts (according to the spatial planning documents in force), and to present the conclusions following its implementation in Lodz Metropolitan Area.

## 2. Spatial functional conflicts in Lodz Metropolitan Area

Spatial functional conflicts are analysed in Lodz Metropolitan Area – an urban region located in Central Poland. It consists of Lodz and its 27 adjacent municipalities (area of 2.5 thousand km<sup>2</sup>) and is populated by 1.1 million people. As far as the demographic potential is concerned, it is the fourth largest metropolitan area in Poland.

## **2. 1. Spatial policy and the metropolitan areas in Poland**

The Polish three-tier spatial planning system is regulated by the 2003 Spatial Planning and Land Development Act. According to its provisions, the individual levels – the national, regional, and local one – should complement one another, forming together a consistent spatial policy system. The first two tiers aim to specify the main guidelines for spatial development throughout the country and in individual regions. Documents passed on these levels do not constitute law; they are instructions designed to broadly name the guidelines for development and secure the implementation of national or regional sector policies (e.g. transportation policy or public security policy).

On the national scale/nationwide, these functions are fulfilled by *The National Spatial Development Concept*. Legislated at the national level, it is a binding legal document, whose provisions should be taken into consideration when preparing sector policies and documents specifying the guidelines for spatial policy on a regional or local level. It is an obligatory document whose primary aim is to identify the main guidelines for regional spatial development, while taking into consideration supralocal needs.

The lowest but most important from the standpoint of spatial planning is the local tier. Municipalities, which are the basic administrative units in Poland, have the widest possibilities to influence spatial development. It is a consequence of their legal character. In light of existing regulations, municipalities are autonomous and independent units. Municipal authorities are responsible for providing the residents with conditions necessary for their proper functioning and for the management of the municipality's development. Municipalities have their own financial resources and may undertake independent actions.

In light of the 2003 act mentioned above, Polish municipalities have at their disposal two basic instruments of spatial development. The superior one is the *local spatial development plan*. Of the two documents, it is the only local legal act, which means that its provisions are legally binding and determine the intended use of a particular area. It may encompass the municipality as a whole, but due to its detailed nature it is usually designed only for its particular areas. The spatial development plan specifies the details of the intended use of the land, takes into consideration the existing and planned infrastructure and transportation facilities, and specifies the regulations for land development.

The other obligatory document for every municipality is a *study of conditions and directions of spatial development*. It encompasses the whole local administrative unit. It does not constitute local law but its provisions must be taken into consideration when preparing local spatial development plans.

Although the aim of this article is not to assess the spatial planning system in Poland, it should be emphasised that it does not function properly, especially at the local level. Local spatial development plans are not obligatory for municipalities and although the act has been in force for almost ten years, they encompass only somewhat less than 50% of the area of Poland. Unfortunately, in

the case of the largest cities and their surrounding areas, this number is even smaller. This is not only the result of high costs of preparing spatial development documents but also, and especially, the consequence of a very complicated and lengthy procedure. Decisions based on purely political motives hamper the process to a considerable extent and also contribute to the problem. Lack of binding local spatial development plans results in inconsistent spatial development, spatial chaos, mixture of conflicting forms of spatial development. These problems are particularly common in metropolitan areas, which are the most attractive lands for investors. The situation is exacerbated by municipalities which compete with one another to attract as many investors as possible, often disregarding the individual residents' interests.

The best solution seems to be the introduction of legal provisions which would oblige the authorities to pass common regulations specifying the spatial policy in a metropolitan area. Unfortunately, although there have been many debates in Poland about the need to institutionalise metropolitan areas, little has been done in this respect. Current legislation imposes only the obligation to delimitate the metropolitan areas in provincial spatial development plans, but it does not oblige the authorities to take any specific actions to coordinate the development.

While the legislators notice the problem of metropolitan areas, they have not yet stipulated any instruments for implementing a common spatial policy. In 2008, a government initiative emerged, proposing passing legal provisions leading to coordinated management of metropolitan areas. The need for a common/unified spatial policy, as well as transportation or housing policy, was strongly emphasised. However, no consequences followed; the issue of so-called metropolitan act has been suspended and has not been discussed for a long time. Meanwhile, many studies conclude that the changes to public space are irreversible, especially the ones conducted in Warsaw Metropolitan Area, where the problem is at its most extreme (Jakóbczyk-Gryszkiewicz, 1998, Lisowski, 2010).

In this situation, seeing the need for cooperation, local governments in large cities and surrounding municipalities started a grassroots movement of forming associations for cooperation in the development of metropolitan areas. In a few regions of Poland such associations have been functioning for years, sometimes with moderate successes (mainly with respect to the common organisation of public transportation), but the lack of necessary legal provisions significantly hampers the effective functioning of these authorities. Sometimes not all municipalities are interested in joining metropolitan associations, which also limits their efficiency.

To sum up, the Polish spatial planning system is not ready for the processes which take place in metropolitan areas, and independent initiatives of individual municipalities increase significantly the risk of spatial conflicts. The problem is exacerbated by the procedure of enacting spatial planning documents. If the documents are obligatorily consulted with the governments of adjacent municipalities, their comments do not need to be taken into consideration. This means that there in fact no legal obstacles to pass documents which allow for potentially conflicting provisions.

## **2. 2. Identification of spatial functional conflicts in a metropolitan area**

Spatial conflicts take on/appear under various names – land-use conflict, locational conflict, environmental conflict, prohibited location, nuisance property, LULU – Locally Unwanted Land Use, NIMBY – Not In My Back Yard, etc. Their appearance is related to various combinations of social and economic factors, such as the increase in environmentally damaging activities, the growing range of public and private investment projects, increasing ecological and social awareness in society, the improvement in the residents' education and living conditions, the decline of public trust in authorities and social institutions as well as greater mobility (Meyer, 1995). The locations which prompt objections are commercial facilities perceived as a nuisance (industrial sites, certain service facilities such as petrol stations, large animal-raising farms) or a threat to local businesses (shopping malls), construction and development of existing technical infrastructure facilities (motorways, sewage treatment and solid waste utilisation facilities, power plants), but also objects which were designed to serve the community (council housing, alcohol and drug rehabilitation centres, youth correctional facilities, and even hospitals).

Identifying and defining the conflict from the standpoint of spatial planning is not an easy task. One viable solution would be to assume that the conflict stems from the incompatible intended use of adjacent lands, which is related to negative external effects (environmental degradation, nuisance affecting neighbours due to noise, electromagnetic radiation and odour pollution, landscape defacement, etc.), and results in a decrease in their effective functioning. Spatial conflicts may take on different forms, depending on the local socioeconomic and environmental circumstances. In tourist resort, they manifest through an expansion of hotel, boarding and recreational facilities, which often damages the neighbouring lands of natural value. The development of natural resources extraction projects may lead similar consequences, together with an extreme environmental degradation and a considerable nuisance to the neighbours. Actions considered conflict-provoking include planning economic centres without taking into consideration the existing buildings (frequent in case of greenfield projects), locating nuisance manufacturing and service facilities in the immediate vicinity of residential areas, introducing multi-family housing into single-family or homestead housing areas, dividing green corridors (river valleys, forest areas) with anthropogenic development. Spatial conflicts are triggered by the presence of relatively environmentally non-degraded areas, legally protected to secure the local ecosystems from increasing human pressure. These areas, which should be left undeveloped, are gradually surrounded by residential areas and subject to a wide range of negative phenomena, such as land enclosing, increased tourist traffic, lack of sewerage and solid waste treatment policy, etc. An extensive set of legal provisions for environment protection tends to be perceived as a source of conflict by the local authorities and investors, who prioritise the economic and social sphere instead of environmental protection. The local governments' negative attitude is exacerbated by a lack of financial compensations for lost growth potential (Gołąb-Korzeniowska, 2008).

Spatial conflicts arise very often in suburban zones of major cities, which are at risk of intensive suburbanisation processes. Unwanted alterations to the suburban zones in Poland are possible partly due to their insufficient coverage by spatial development plans, which paves way for accidental development. This allows for placing typically urban or residential single-family houses among homestead housing. Spatial chaos is becoming more intense in suburban areas, the more so because according to the public opinion lotting and selling the existing agricultural areas is a very lucrative business. In that case, landowners and investors have more say in the matter of long-term permanent spatial planning than spatial management authorities. On the other hand, often the local authorities themselves are interested in attracting new residents, considering them a positive influence which increases the municipality's income. This results in numerous problems, among them environmental degradation, poorly developed infrastructure, increased costs of its development and maintenance, conflicts between the local agricultural producers and the newcomers from highly urbanised areas (Henderson, 2003; Lisowski, Grochowski, 2008; Tokajuk, 2011). The last situation is particularly problematic when the area in question is incorporated into the sprawling city. In these circumstances it is advised to avoid ostensibly reconciling the conflicting functions in local spatial development plans by specifying mixed-use locations. A plan should explicitly determine the intended use of the land. Where a conflict of functions appears, a transition period should be introduced to gradually eliminate the unwanted ones.

The starting point for the authors' methodology of investigating spatial conflicts in metropolitan areas is the assumption that they tend to arise in the borderline zones along municipality borders. This assumption is a consequence of the Polish spatial planning system described above, where municipal authorities establish spatial policy guidelines on their territory and are not obliged to take into account the situation in the neighbouring areas. Such a system may trigger spatial conflicts.

The basis for the identification of spatial conflicts is a planning document obligatory for every Polish municipality, that is the *study of conditions and directions of spatial development*. It specifies the target model of the administrative unit's spatial and functional structure, which is the basic spatial planning document.

The first step in the analysis is the identification of the existing forms of intended land use along every municipality border within the metropolitan area (see Fig. 2). The scope of the analysis depends on the type and area of the land in question. If it is of a small size or linear character (e.g. a road), an adjacent area is included in the analysis.

The next step is to determine the compatibilities or discrepancies in the intended land use on each side of a municipality border. Discrepancy is described as every situation when the intended land uses differ, even if it does not create a conflict (e.g. a forest and a meadow). This step requires to specify the length of the border where the discrepancies occur (in proportion to the overall border length) and analyse their type, that is characterise each pair of discrepancies



order to exclude areas where the conflicts are a result of permanent development and the potential to change the situation within the existing spatial policy is limited.

The spatial conflicts identified in this way are then characterised in detail and form a basis for guidelines for local governments which outline the ways to eliminate the conflicts.

## **2. 3. Results**

In the area of the authors' research, the subjects of analysis was the intended land use of 62 borderline zones of total length of over 600 km. Out of these, 52 types of sections characterised by discrepancies in the intended land use on either side of the border were identified. Their total length amounts to almost 330 km, which is 54% of the total length of municipality borders. Out of the 52 sections, 25 ones (total length of 165 km) which could cause potential conflicts were subject to a detailed analysis. These were adjacent residential areas and forest areas; residential areas and industrial, commercial and storage areas; multifunctional areas and open spaces; recreational areas and industrial, commercial and storage areas; residential areas and resource exploitation areas. Land uses identified as not being potential sources of conflicts were adjacent additional afforestation and forest areas, forest areas and open areas, residential areas and cultivated green areas, industrial, commercial and storage areas and commercial areas.

In case of 14 borders, conflicting types of land use appear along over 70% of their length. Spatial correlations among the analysed conflicts are difficult to observe. They appear both in close vicinity to the central city, influenced by intensive urbanisation processes, and in rural areas, located in peripheries and consisting mostly of open spaces. However, it should be emphasised that most conflicts appear in borderline zones, where urbanisation processes are at their most dynamic (cf. Fig. 3 and Fig. 4).

During the course of a further detailed analysis, nine of the original 25 potentially conflict-provoking relations were identified as non-conflicting. These were holiday housing areas – sport, tourism and leisure (recreation) areas; single-family housing areas – multifunctional areas; open spaces – industrial and residential areas; open spaces – agricultural areas; open spaces – multifunctional areas, multi-family housing areas – commercial areas, holiday housing – industrial, commercial and storage areas, commercial areas – recreation areas, open spaces – special use areas.

Currently and, according to spatial planning documents, in the long-term perspective, spatial conflicts in Lodz Metropolitan Area appear along 44 km of municipal borders (almost 14% of the total analysed border length). Most of the identified 16 types of conflicts are connected to residential areas adjacent to forest areas or open space which are legally protected or planned to be placed under such protection. They make up respectively 28% and 15% of the length of potentially conflict-provoking borderline zones. These observations confirm the paradoxical effects of legal protection for areas of high natural value, which attract residential and holiday housing.

Along 10 km of borders, residential areas are located adjacent to industrial, commercial and storage areas (most of them are located in the borderline zones of municipalities situated the immediate vicinity of the central city). Borderline zones where residential areas are located adjacent to commercial areas, or holiday housing is situated next to forest areas, are scarce.



Figure 3. Potential land use conflicts concerning legally protected forests and open areas in Lodz Metropolitan Area

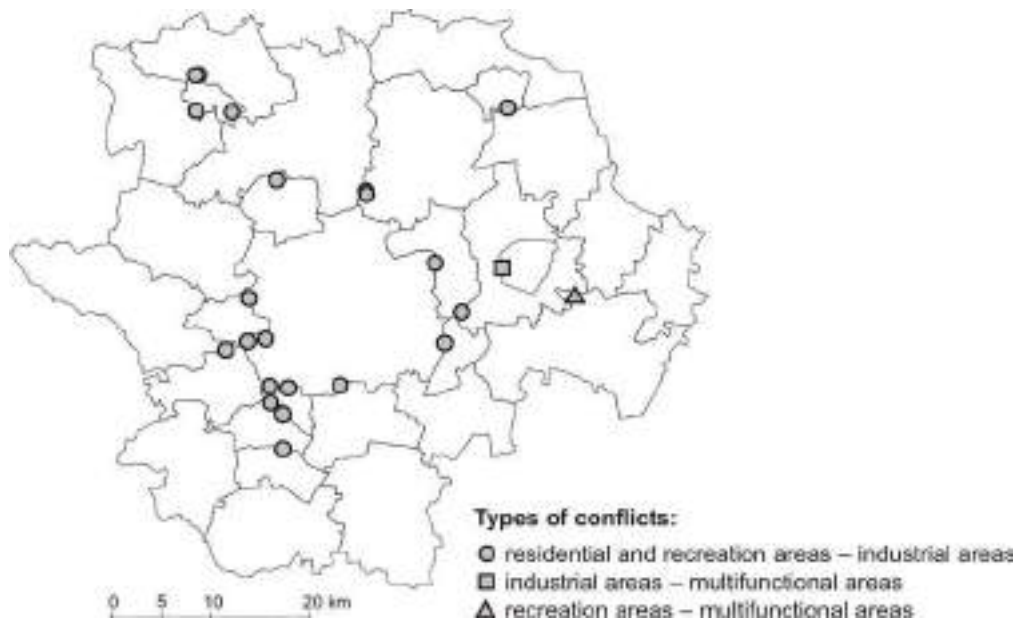


Figure 4. Potential land use conflicts concerning industrial and multifunctional areas in Lodz Metropolitan Area

Apart from the areas mentioned above, multifunctional areas located adjacent to residential areas, recreation areas, and industrial, commercial and storage areas were identified as potential sources of spatial conflicts. This results from the fact that multi-purpose designation is very imprecise and in fact does not specify the intended land use. Therefore, residential areas adjacent to industrial, commercial and storage areas, as well as commercial areas, were also described as potential sources of conflicts.

### **3. Conclusions and guidelines for spatial policy coordination in Lodz Metropolitan Area**

Based on the analysis of locations which may create potential spatial conflicts, the following general directions for the municipalities included in Lodz Metropolitan Area could be proposed to eliminate problematic issues:

- Developing a local spatial development plan for borderline zones should be preceded by an in-depth analysis of the state of and guidelines for spatial development of the adjacent land. The decision-making authorities (resolution-passing and executive organs) should be made aware of the potential consequences of negligence in this field. Simultaneously, implementing legal instruments with more power over local governments is a solution worth considering, since the current legislation does not oblige local authorities to take into consideration motions pertaining to the *Study of conditions and directions of spatial development* or the opinion of neighbouring municipalities on the solutions accepted in the draft of the study.
- For selected sections of municipalities, specified in the *Study*, where the intended land use is a source of spatial conflict, the *Study* should be changed or provided with more details in the local spatial development plans, in a way which would decrease the negative impact on adjacent areas. A positive change would be introducing buffer zones (e.g. green belts) separating residential areas from industrial, commercial and storage ones. A model for a detailed spatial development plan is the local spatial development plan for a part of Koluszki municipality, where forest areas were delimited to separate recreation areas from multifunctional areas on the other side of the municipality border, which formed a part of a legally protected area.
- Ambiguous land designation, that is ‘multifunctional areas’, should be eliminated from spatial development documents due to its imprecision and the fact that it allows to introduce unwanted functions, which increase the municipalities’ profits but contribute to a permanent destruction of spatial order.

To sum up, in light of the research method used by the authors, territorial cohesion in Lodz Metropolitan Area was evaluated positively. The number and severity of identified spatial conflicts are low, making the spatial policy of the municipalities relatively easily tolerable for the adjacent ones. It should be appreciated that when providing additional details to the *Studies* in local spatial development plans, solutions compatible with the generally accepted rules of

spatial planning are used when conflicts arise. However, it is to be noted that Lodz and adjacent areas, contrary to Warsaw or Poznan metropolises, are not marked by dynamic socio-economic development when compared to other regions. Therefore, it may be assumed that the positive conclusions are a result of relatively little investor pressure instead of adequate planning tools and awareness on the part of decision-making authorities.

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