

SPATIAL INFORMATION SYSTEMS – A TOOL SUPPORTING GOOD GOVERNANCE IN SPATIAL PLANNING PROCESSES OF GREEN AREAS

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Abstract: The article presents issues connected with the use of GIS for planning processes of green areas within the city. The main theoretical background of the article is the good governance concept which can be used in planning works with cooperation of local actors. The article shows how the local government can use the geo-survey in the participation processes. The green areas are only the example of the use of this tool in spatial planning processes. The aim of the article is to show how useful can be spatial information systems in the decision-making on the local level and how it supports public participation. Additionally, it has to be indicated that this type of tool can contribute to an increase in the effectiveness of local authorities' activities in the spatial planning field. The use of these tools contributes to an increase of the level of public participation and to the clarity of the planning process.

Key Words: *spatial planning, good governance concept, GIS, green areas*

Introduction

Participation in spatial planning and the good governance concept

An important element in the spatial planning processes is public participation, due to which it is possible to apply solutions which cause fewer conflicts. The fact of the participation of local actors in the spatial planning process allows using their knowledge and taking into consideration positions which could be omitted in case of lack of public participation. Local community participation in spatial planning may be related directly to the good governance concept. Each government and institution tries to create a definition of good governance. But it is known that there is no generally accepted definition of the concept. The lack of definition is compensated by the identification of its characteristic principles. This concept concerns the democratic countries and it is based on the principles of: transparency, accountability, participation, social inclusion, and effectiveness and efficiency (Ministry of Regional Development 2008, Wilkin et al. 2008, Amosa 2010, Demmke and Moilanen 2011, Kakai 2013, Wilkin 2013, Miłaszewicz 2014). A well-governed commune should use the good governance principles while fulfilling their activities, due to which the concept has grounds to be used within the local communities in all fields of local government activities including spatial planning (Munshi and Abraham 2004, Munshi et al. 2009). From the perspective of a commune, it has to be acknowledged that all good governance principles should be observed in a local environment. Transparency of spatial policy results from the fact that local authorities on the basis of local law of making decisions, which influence spatial planning and at the same time space users. Appropriate local law enforcement is made easier due to the clarity and accessibility of documents for all the local actors. In terms of overall understanding and international consensus, good governance is an overriding concept from which it can be inferred a number of fundamental principles of democratic society. The particular value of good governance can be seen by the fact that the concept has proved to be practical and expedient in relation to the functioning of society and its political system on the local level.

The local development policy is composed from many sectoral policies which can be provided as an element of good government concept in the local level. One of the local policies is spatial planning policy which must be provided in accordance with the good governance concept. The principle characteristics of good governance can be useful in providing the spatial planning policy in the communes. Transparency in spatial planning is based on the possibility of familiarizing oneself with the documents in the scope of spatial planning already at the moment of their compilation. Thus, local actors have the possibility to familiarize themselves with a land use plan project while it is laid out. Another element of the transparency is the necessity of making public the local law after its approval. Local authorities are obliged to present land use plans on the websites. Similarly, it is indicated in the Spatial Planning and Land Development Act that the accessibility to land use plans and their study is open for everybody and every citizen has the right to get a local plan extract.

Due to the accomplishment of the transparency principle, it is possible to fulfill the accountability principle, because the articles comprised in the local law can be controlled by the local community provided that they are understandable. Accountability is of a particular importance for local authorities because of the election cycle, which in case of self-government units in Poland lasts 4 years. Transparency and accountability are connected with the access to spatial planning information. A support for the accomplishment of these principles are represented by geoportals, which are set up by local authorities in order to present the graphic design of the possessed land use plans and other spatial information connected with the functioning of a basic administrative division unit. Due to geoportals, apart from the text and graphic design of a land use plan, it is possible to indicate precise geolocation data.

The basis for the accomplishment of the public participation principle is the Spatial Planning and Land Development Act, which enables participation of a natural person and institutions in the document compilation process concerning spatial planning in a commune. It is also connected with social inclusion, because it is assumed that commitment in the planning procedure belongs to all local actors. Inside the planning procedures it is possible to use the potential of a local community, due to which the prepared document concepts have features of co-governance. A support for spatial planning is represented by the inhabitants, who, due to the structure of the legal articles, have a possibility to participate in the spatial planning procedure. Standardization of Polish spatial planning law in 2003 led also to the fact that the study of land use conditions and directions and land use plans has identical compilation procedures. Due to such formulated records of the act, every participant connected with the plan can: submit proposals to these documents; make oneself familiar with the presented project; participate in a public discussion over the project; submit remarks to the project's documents.

The established laws enable to claim that in spatial planning a ladder of participation may be applied (Arnstein 1969, Wiedemann and Femers 1993, Maier 2001, Andrzejewska et al. 2007, Sartorius et al. 2009, Stout 2010, Bizjak 2012), which in Polish conditions enables to claim that in spatial planning processes we are on a consultation level, and sometimes there is a possibility to achieve a higher level that enables to build consultation teams. However, in the present shape of law and activities of local authorities, the higher levels of the participation ladder are difficult to obtain (Fig. 1).

Effectiveness and efficiency in spatial planning should be estimated by the availability of land use plans within the territorial unit area that means the effectiveness of local authorities in the usage of instruments shaping land management. On the other hand, there is efficiency that means the development of areas indicated in land use plans with specific functions with no need to change them. This will be also connected with the consistent accomplishment of the assumed planning solutions, which will be socially accepted and will not enforce on the local authority the security of the financial means for changes in the existing planning documents. It

will enable to assess the local authorities in the long term, on the basis of the intensity of land use plans changes which will indicate the change of local authorities' attitude to strategic assumptions, or their incompatibility with the local community preferences.

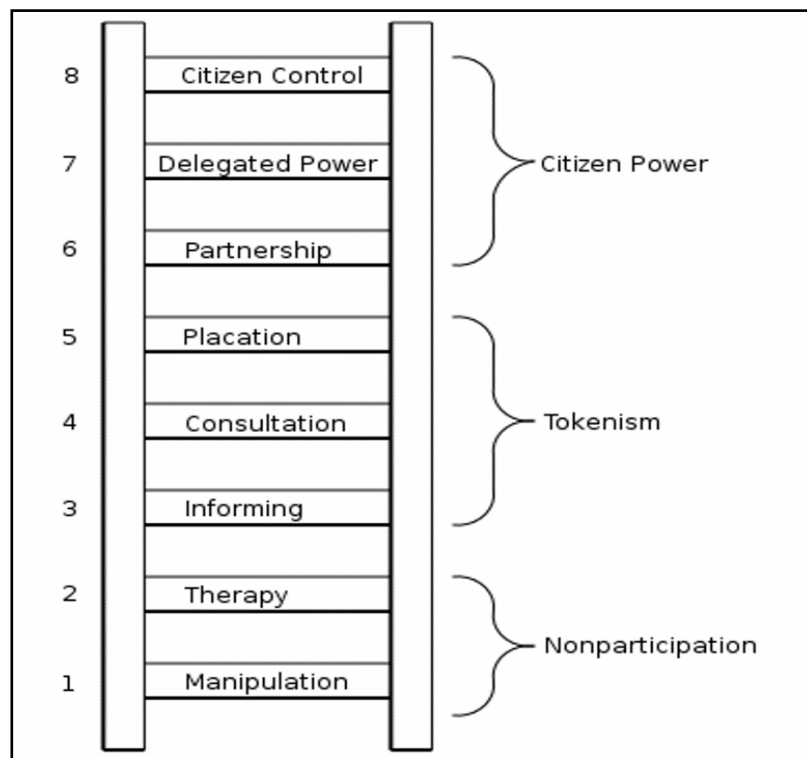


Fig. 1 – Ladder of citizen participation
Source: Arnstein 1969

The need of public participation in the local authorities' activities can be seen in the whole European Union (Aitken 2010, Bäcklund and Mäntysalo 2010). An instrument used in this scope is undoubtedly represented by the new technologies, which can be implemented in the process of public consultation. This kind of approach to the development of the consultation sphere is very rare in the Polish reality, however, due to the appearing projects, such as for example "Count on green", one has to see in these instruments the opportunities of development, even in the civic budget sphere, which are promoted by the local authorities in many cities and communes.

The spatial planning policy is connected with green areas in each spatial policy carried out in the European countries. In case of urban areas it has to be related to urban green areas, urban forests and agricultural areas, which constitute an element of urban environmental system within the city's area (Giecewicz 2005). Urban green areas become an important element of the city's activity; very often they constitute public space, where there is an interaction between the human relations. The local community uses the urban green areas for recreation, sports or meetings. Regardless of these elements, it is important to indicate which urban green areas are used intensely, and which part of the city lacks green areas. The subjects that are jointly

responsible for green areas in the city are the local authorities, which, by creating spatial policy, have the possibility to influence the shape and location of these areas. The planning documents that are drawn up by the local authorities should have indications for the care of urban green areas and to determine the development perspectives of this function in the city. Frequently, it is indicated that green infrastructure is not an element limiting the development opportunities of individual city's areas or of an unit as a whole; it concerns also urban green areas which aim at providing benefits both for nature as well as for the local community (Kowalski 2011).

Urban green areas do not come down only as the most easily noticed in the urban space parks, but they are also connected with (Czarnecki 1968, Davies et al. 2006): public green areas (among others: parks, green squares, yards, boulevards, promenades); green areas for a specific purpose (among others: screening green strips, green areas accompanying communication, gardens, cemeteries); accompanying green areas (among others: in the scope of industrial areas and warehouses, cultural-social services, technical-economic services and housing estates); agricultural and forestry areas (e.g. horticultural and production farms); sight-seeing-recreation areas (among others: public forests, historical parks and various forms of nature conservation).

An element that supports the development of green areas is public consultation. It has to be indicated that active public participation in spatial planning is supposed to serve making appropriate strategic decisions by the local authorities, and it allows for the transparency and clarity of the decisions that are made. Such an approach has an impact on building trust towards local authorities and it is one of the purposes of its functioning from the perspective of a cyclical nature of elections, which is often indicated in the literature on this topic (Andrzejewska et al. 2007, Siemiński 2007, Mergler et al. 2013).

Particularly in the case of cities, green areas are an element of public space, and thus they become an area that allows for meeting the needs of the residents, improving the quality of life and establishing social contacts, which result from their functional-spatial features. In the literature, it is indicated that green areas should be treated not only as an element of environmental system of a city, but also as cultural space (Sutkowska 2006), which also undergoes the legal discipline resulting from the articles concerning spatial planning. In this regard, one can speak of ecosystem services in urban areas through a properly conducted spatial policy.

In the case of local community participation in the spatial planning sphere, one of the elements of accomplishment of this principle may be the use of methods based on spatial information systems. That is about creating interactive portals that will allow the local community to express their opinions connected with a particular topic concerning the spatial planning sphere. This element can be used by the local authority permanently or incidentally. The approach to this issue consists of promoting and implementing public participation in every stage of the spatial planning. It is particularly visible in the spatial planning theory, where the idea of public participation is present for many years (Johnson 1984, Carver et al. 2001, Conroy and Evans-Cowley 2006). It brings to the decrease of conflicts coming from the established decisions of land use plans (Taylor 1998). An additional support for this kind of activities is the possibility to use new technologies by public administration. This creates a bridge in building the knowledge resource and the learning society (Friedmann 1997, Ranson 1998) that consciously supports the spatial planning processes.

Spatial planning has an impact on ecosystem services through changes in spatial development areas. According to the definition, ecosystem services are benefits coming from ecosystems in order to improve the living conditions of the community (Millennium Ecosystem Assessment 2003). Cooperation of local authorities and the community during the works on spatial development plans is directly related to ecosystem services, since at the local level challenges

in this scope can be accomplished most successfully (Gunderson and Holling 2002). This is particularly important in case of public ecosystem services, where changes are easily identified by the local community (Ostrom 1990). Local authorities have to take into account the needs of local communities and to respect their needs in the scope of ecosystem services development. One of the ways to meet these assumptions can be the use of the SoftGIS method in spatial planning.

In the article there are used materials coming from the research carried out in the scope of "Count on green" project, whose leader was the Sendzimir Foundation (2014). This kind of activities are supposed to contribute to building relations between the local authorities and the community which can continuously express their opinions concerning the needs connected with land management changes. The project was carried out in Lodz, Cracow, Poznan and Warsaw, and its purpose was to implement the innovative nature management methods on the basis of intersectoral collaboration and citizens' participation.

A solution used in the "Count on green" project was a softGIS method used in Finland, which is about expanding spatial data of geosurveys that allow for obtaining information from the inhabitants concerning their needs in the scope of spatial planning and other self-government activity areas. Such constructed tool allows to collect data that creates abundant databases used by the authorities to make different strategic decisions (Rantanen and Kahila 2009, Kahila and Kytta 2010, Czepkiewicz 2013).

The geoportal that was developed in the project allowed for collecting spatial data from the local actors who are the users of the urban space. The collected data can be a material that allows for their use in the decision-making process connected with the changes undergoing the land management field. The SoftGIS method implementation based on the spatial information systems allows confirming the thesis that spatial information systems become a powerful tool supporting the process of making decisions on various levels of self-governments as well as on the government level. It is also indicated by the INSPIRE Directive, which emphasizes the necessity of collecting and making public data concerning the environment. This results from the need of the accomplishment of the Treaty Establishing the European Community assumptions where in Article 6 the need of taking care of the environment was indicated. The INSPIRE Directive indicates that spatial information is an element that allows for activities connected with environmental protection and a common access to them influences a better coordination of the decisions made. Similarly, it has to be indicated that the INSPIRE Directive, in the third attachment, enumerates the necessity of collecting spatial data connected with the land management field, which is directly related to spatial planning.

As a part of the activities undertaken in the project, a geoportal using the softGIS method was created, which enables to indicate locations connected with the green areas in the city important for the inhabitants. Such organized spatial data collection, apart from indicating particular places in the city, allows also carrying out research and to express the participants' opinions. Participation is voluntary and it depends on the access to the Internet, which allows claiming that the recipients of this tool in Lodz are represented by 59.2% of households that have a personal computer with an Internet access (Central Statistical Office data from the year 2012). It is particularly important since the quantity analysis of the remarks made by the inhabitants to the land use plans in Lodz after 2006 showed that their number is most frequently included in the range from 1 to 10 remarks for one land use plan. This result is not satisfactory taking into consideration a low rate of the local actors' activity in the spatial planning sphere.

Materials and Methods

In the analysis carried out for the purpose of the article, there was used data concerning Lodz, collected between 6th March and 6th May 2014. The discussed part of the data concerns places of spending free time by the inhabitants, and indications where the area of the city should be enriched with green areas. With reference to the areas, where the local community spends their free time, it has to be indicated that this type of data should encourage green areas administrators to take care of them especially as for the retaining and increasing the quality of these areas. Significant is also the issue connected with the respondents' indications concerning the lack of green areas. This kind of information should be used by the local authorities in the spatial planning process. They can also be used for the needs of activities connected with the public roads management in a city through the appropriate planning of by-road space management that may become an element enriching a city area in new green areas.

The respondents were invited to the study via the internet. Many answers were collected thanks to the help of the volunteers who used tablets to collect data. The study was promoted via the website of the Foundation, the profile of the project on Facebook, a contest for schools on the greening of backyards, city games, the information in the local media and meetings promoting the project (Sendzimir Foundation 2014). The green areas were treated very widely in the study. Apart from places indicated in the statistics, it also included lawns, green yard, plantings and bushes in the city. The respondents had full flexibility to indicate places for spending time surrounded by greenery and places which lack greenery. They had full administrative area of Lodz to use in the study.

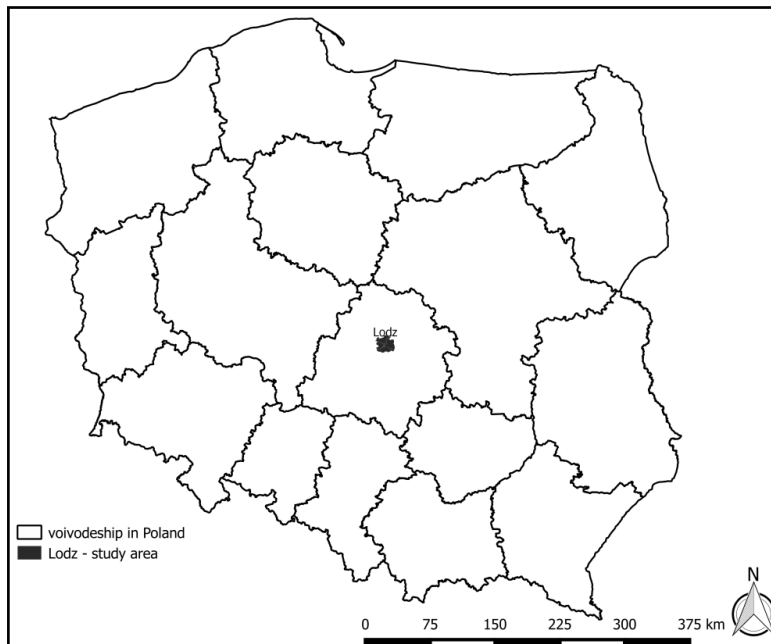


Fig. 2 – Localization of the study area in Poland

Lodz is the third largest Polish city in terms of population (Fig. 2). It is inhabited by over 711 thousands of people. From the statistical point of view, parks, green squares, community green areas, green belts and forests are considered as green areas. According to the Central Statistical Office data, parks, green squares and community green areas take up 1601.4 ha, green belts occupy 456 ha and forest lands occupy 2801.7 ha. In total, it gives 4858.8 ha, which is 16.6% of the city. However, it has to be stated that in majority these areas are situated on the outskirts of the city.

Significant is the fact that Lodz has got land use plans only for 6.2% of the total area of the city. According to the City Hall Urban Office data, in the coming years it is planned to draw up land use plans for the next 80% of the city, which will be related to the necessity of taking into consideration the votes of the inhabitants concerning green areas in land use plans and thus in spatial policy.

At the beginning of May, in the research there were indicated 853 places of spending free time inside the green areas. With reference to the areas that lack urban greenery there were recorded 337 indications. The preliminary analysis of the respondents' indications is based on the analysis of statements with reference to the district division. In order to carry out more detailed analyses, the division into housing estates in Lodz was used. In 2014 in Lodz, there is a division into 36 city support units, which cooperate directly with the municipal government. This cooperation concerns also the support of activities for the sake of the environment protection, nature, urban greenery and spatial planning. Such a division of duties results into the fact that the opinions expressed by the participants of the research may be used also by the community council as a consulting material related to green areas and spatial planning.

The analyses were supposed to indicate the spatial distribution of the answers given by the respondents. This was possible due to the use of open source QGIS software which served to indicate the housing estates that are popular in terms of spending free time in the surrounding of green areas. The other aspect of the research was to indicate the areas within the city that require the intervention of the local authorities and to supplement the urban fabric with green areas. The analyses were carried out at two aggregation levels: districts and housing estates.

Results and Discussion

“Count on Green” Project as a support method for spatial planning

The carried out research showed that the respondents in majority spend their free time in the urban green areas; only 7.2% of the participants' indications concerned the green areas which were outside the biologically active areas in Lodz appointed in 2009, when the Urban Atlas was being drawn up by the European Environment Agency (EEA). To the biologically active areas belong: urban agricultural areas, screening green strips, wetlands, urban green areas, sports and recreation areas, forests and surface water areas. Such inference allows claiming that the local community spends its free time in the arranged urban green areas and a very rare phenomenon is spending free time in an area directly adjacent to the city's green areas. In case of the indicated by the respondents necessity of the complementation of green areas, it has to be assumed that only 9.2% of the indications concerned places that are in a direct neighborhood of vast biologically active surfaces.

The districts of the city of Lodz are not homogenous; their borders result from historical conditions. This leads to such a situation that the units differ from one another both as for the number of the inhabitants as well as for the surface. Despite such conditions, the division of the city into five districts allows to carrying out analyses that enable the assessment of the potential of these parts of the city in the scope of the possessed green areas. The collected data enabled also to indicate places of the greatest usage intensity in individual city's areas. The

layout of the indications in individual districts of the city allows to claim that most often the citizens of Lodz spend their free time in the surrounding greenery of the Polesie district (30.1% of the indications), which is connected with the botanic garden and the urban ZOO that are situated within this district. An additional potential constitutes the urban park which is one of the biggest park complexes in Lodz. A high activity in the scope of leisure and recreation has also been noted in Bałuty district, where 26.8% of the indications concerning the way of spending free time were recorded. Such a situation results mainly from the fact that in this district there is the Łagiewnicki forest, which is one of the biggest forest complexes within the borders of a city in Europe. It covers the area of over 1200 hectares, which makes it the biggest recreation-leisure complex within the city of Lodz. An important district on the leisure map in Lodz is also Widzew district which concerned 19.7% of the indications. In case of the other two districts, the indications of the respondents were divided evenly because in Górna district there were 11.7% of the indications identified and in Śródmieście 11.6%. Despite the large surface, Górna district does not have many arranged leisure and recreation areas, whereas Śródmieście as the smallest district is not associated with leisure because of its big-city character. (Fig. 3)

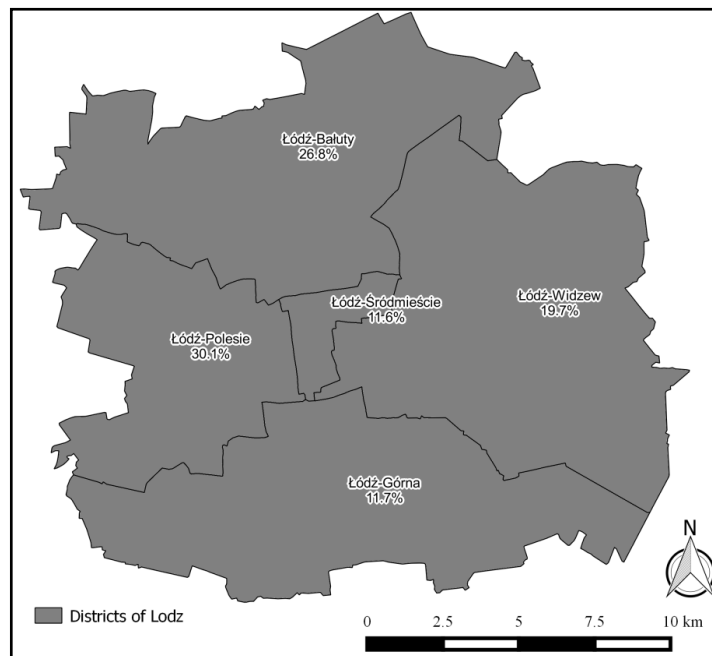


Fig. 3 – Districts of Lodz and the percent of spending free time indicated in each district

A supplement for this type of analysis is the second part of the research referring to the indication of the respondents concerning the part of Lodz that requires finding new green areas. Despite a small number of green areas and a low activity of the local community in the scope of leisure in the green areas of Górna district, there is not an equally high number of indications of the local community in the scope of the necessity for creating new green areas in this part of the city (only 6.2% indications). The situation looks similar in case of Widzew district where green areas are supposed to satisfy the inhabitants, that is why only 7.7% of all the indications concerned the need for planning new green area in this part of the city.

In the districts that have the biggest potential in the scope of green areas and their biggest use, the respondents indicated the necessity of enriching the offer of green areas within the city's surface. In Bałuty district, there were located 13.4% of the indications, and in Polesie district 17.2%. According to the expectations, according to the respondents, the area requiring the biggest number of investment in green areas is Śródmieście district. It was indicated by 55.5% points placed by the respondents on the map. This shows that the city centre in the economic, social, cultural and spatial dimension overlaps with Śródmieście, however, the local authorities have to take care of the urban green areas that create an integral element of this landscape (Fig. 4).

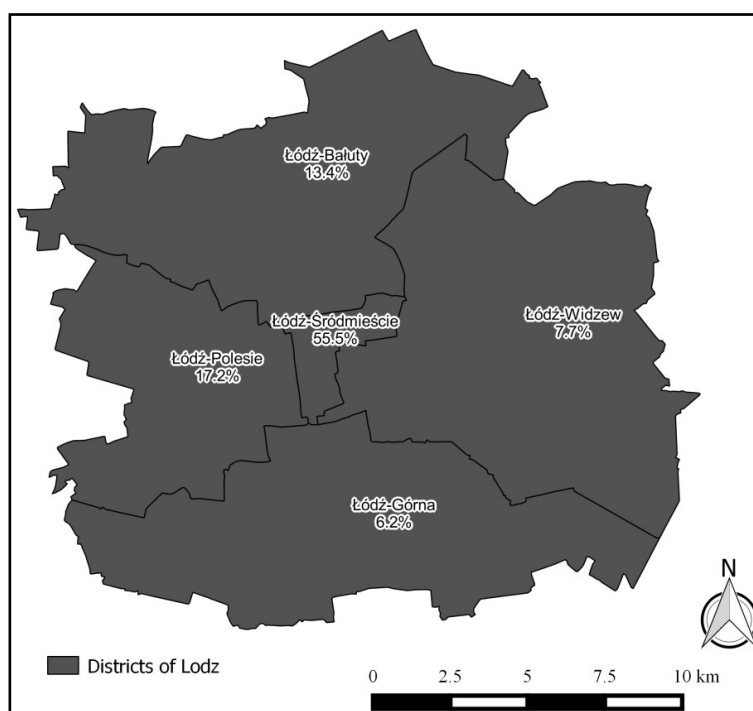


Fig. 4 – Districts of Lodz and the percent of needs of new green areas indicated in each district

The obtained results allowed entering a higher level of the detailed analysis. Due to the division of Lodz into 36 support units of the city it is possible to indicate in which parts of Lodz, the inhabitants most often spend their free time surrounded by green areas and where, according to them, there is a lack of these green areas. Among all Lodz housing estates, eight of them are characterized by the use of green areas to spend free time, and to them belong: Zdrowie-Mania, StaryWidzew, Bałuty-Doły, Stare Polesie, Łagiewniki, ŚródmieścieWschód, Julianów-Marysin-Rogi and Katedralna (Fig. 5). In these estates there were 72.6% of all the indications. The other city estates were characterized by a number of indications that was smaller than 30, that is less than 3.5% of all the data. The biggest number of the indications had Zdrowie-Mania estate which gathered 15.7% of the spatial data concerning spending free time in the green area. This results from the fact that in this area there is one of the biggest urban parks – Józef Piłsudski park (commonly known as Park naZdrowiu), which is connected with the urban zoo and the botanical garden in Lodz. In the case of Stary Widzew estate, its popularity as for its possibility of leisure in the surrounding of green areas should be seen in the fact that it is a big

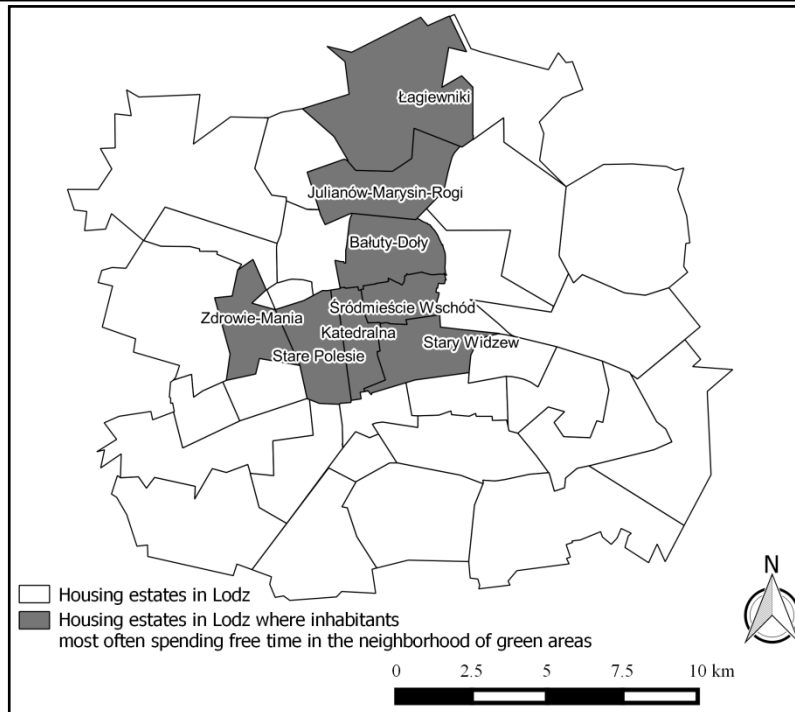


Fig. 5 – Housing estates in Lodz with the highest number of indications of spending free time in the neighborhood of green areas

housing estate and within its area there are attended urban parks such as: 3rd May Park, Nad Jasieniem Park, Źródlińska Park and Widzewski Park. This estate was indicated as a place of spending free time in the neighbourhood of green areas by 12.2% of the collected data. The last estate that is characterized by a high level of the given votes was Bałuty-Doły district, where there were located 11.5% of the data. This housing estate is characterized by a high level of post-war building development and developing modern buildings. In its area there are: Staromiejski Park, Helenów Park, Ocalałych Park and Szarych Szeregów Park. Additionally, these areas are supplemented by green squares and green areas connected with the river Łódka flowing through the estate. The green areas in this city area include also cemetery complexes.

In five Lodz housing estates, the respondents did not indicate any place where they spend time in the surrounding of green areas. While in case of Karolew-Retkinia Wschód estate the ensuing situation is not surprising, in case of the following housing estates: Wzniesienia Łódzkie, Mieszki, Andrzejów and Wiskitno it is very interesting because of the fact that these estates are on the suburbs of Lodz, and despite the lack of the arranged urban greenery it forms there is a lot of biologically active space which creates a natural climate both for leisure as well as for recreation.

The second stage of the research shows these districts in which, according to the indications, the local authorities should take care of introducing new green areas; these are the following housing estates: Śródmieście-Wschód, Katedralna and Stare Polesie (Fig. 6). All the estates were located in the central part of the city. It should be emphasized that Śródmieście Wschód

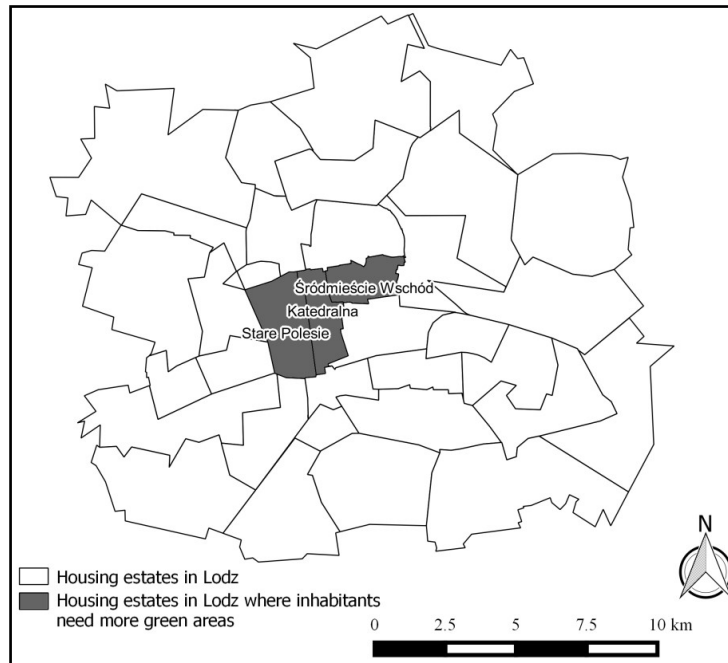


Fig. 6 – Housing estates in Lodz with the highest number of indications of lack of green areas

and Katedralna estate are a part of Śródmieście district. Stare Polesie is a district that is directly adjacent to Śródmieście on the western side.

In the estates that belong to Śródmieście district, the local community indicated the need for developing green areas. The necessity of new green areas in Katedralna district was indicated by 43.3% of spatial data. As for Śródmieście Wschód estate, it was 8%. In the only estate that was outside Śródmieście district appointed 14.8% of data, which emphasized the necessity of increasing the greenery source in this area. Interestingly, in the same area a significant number of indications with reference to the issues connected with spending free time in the green areas were recorded. This shows that the local community has a need to increase the number of new greenery in this area.

In the other housing estates in the city of Lodz, the number of indications did not exceed 5%, where in the case of nine estates there was no indication. This shows that in these particular areas there is no lack of green areas or they are not considered to be leisure-recreation areas. The conclusion from this analysis is also the fact that the local community focused 66.2% of the indications in the areas of three Lodz housing estates. This brings also the conclusion that a big-city character of these estates should enforce on the local authority care for introducing green squares or green elements in these areas in order to provide the development of these areas in accordance with the sustainable development principle. Significant is also the fact that the public space of the city centre should become an inhabitant-friendly area.

Conclusion

The carried out research indicated explicitly the areas in which the local community enforces the need for care and development of green areas. Regardless of this fact, the tools used in the research are a basis for the discussion between the local community and the authorities of the city. In the Polish context, almost 65% of the households have Internet access, which allows for using this resource and the softGIS software in the process of public consultation in the scope of spatial planning. This type of tool becomes an element that enables to collect a rich material that supports making decisions in the scope of spatial planning.

Carrying out this kind of consultations is coherent with the assumptions of the good governance concept, since through the public participation in spatial planning with the usage of new information tools, transparency of these processes can be achieved in an easy way. These results from the fact that all the data is available on the Internet website and every inhabitant that has an Internet access can become familiar with them. Verifiability of the data is about analyzing their spatial location and the content of the commentaries posted in the portal by the users.

With reference to accountability, important is the fact that the local community, through the analysis of the surrounding and strategic documents, will be able to verify which of the demands made by the means of GIS technology were accomplished by the local authorities. This leads to making public both positive and negative assessments in the scope of the inhabitants' applications accomplishment. Similarly, with reference to the social inclusion principle, there is an expansion in the group of recipients of the local authorities' activities, which is a constantly growing number of Internet users who often want to influence the local authorities' decisions actively. Additionally, the portal allows for expressing one's opinion about the future shape of the public space, the only limitation being the possibility of the Internet use.

As the research showed, softGIS tools increase the effectiveness and efficiency of the local authorities activities, since the decisions made by the subjects managing the territorial units may be focused on the local actors' needs. Consultations made in this way may refer to particular activities made by the local authorities but they may also be made permanently due to which the local authorities will be able to estimate the inhabitants' needs. An additional element increasing the effectiveness is the fact that the local law formulated in the land use plans enables the control of the investors' behaviors and care about the spatial order and sustainable development. Obviously, the higher the efficiency of the local government, the higher is the indicator of the commune's cover with land use plans. This results from the fact that these are strategic documents that allow for estimating a long-term spatial policy of a commune. Information tools enable, on the other hand, to obtain information from the local community faster, and thus react faster to the changing inhabitants' needs. According to the partial results of the research, efficiency can be also noticed in the number of the obtained spatial data.

Referring to efficiency, it has to be emphasized that land use plans compilation is an expensive enterprise that burdens the territorial unit budget. The efficiency criterion will be then connected with lowering the costs concerning spatial planning. Thus, softGIS tools allowing for their unlimited use become an element of this criterion due to the fact that information-communication technologies (ICT) are a promoted instrument as an element that enables to decrease the costs of public administration activities, including the local administration level.

The research showed that within four months, it was possible to collect a rich database concerning green areas in Lodz. It also proved the involvement of the local community in the activities for the sake of the city. The indicated research is only an element of the full research,

which, however, shows an interest in the urban green areas. Ultimately, the website with the geosurvey is supposed to be available for an indefinite period of time and the data can be used by the academic environment, the public administration and the inhabitants.

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