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SUSTAINABLE MOBILITY PLANNING IN POLAND

Abstract

For some time, sustainable urban mobility planning has been in the centre of attention of various cities and municipalities in Poland. Its substance involves integrating the urban transport and spatial policy. While the transport policy is well established in the functioning of Polish cities, its impact on their spatial sphere regarding balancing the mobility is extremely insufficient. The situation is even more difficult in metropolitan areas combining various territorial, functional and spatial subsystems. The article presents the idea and scope of sustainable urban mobility planning, the process of making the mobility in the Polish cities more sustainable, review of strategic documents on the national level referring to the said issue and the process of space metropolization as a challenge for developing mobility in a sustainable manner.

Keywords: urban mobility, transport planning, public transport market

Introduction

Urban mobility is a complex issue comprising aspects of transport, spatial planning, real estate management, environmental protection, social and health policy, security and economic development (Wołek, Ed., 2016). Multifaceted nature of urban mobility can be observed in sustainable activities in economic, social and spatial area (Wallington et al., 2013). The model approach of sustainable mobility should comprise issues of widely understood development, quality of life, and economic effectiveness of mobility system operation. (Gillis et al., 2016). Such scope creates difficulties in the objective assessment of undertakings due to unclear and wide definition of the quality of life.

Taking account of the above, the sustainable urban mobility plan (SUMP) is a horizontal tool integrating the above mentioned aspects. The SUMP is recommended by the European Commission as an effective transport policy tool

(Okraszewska et al., 2018). The document referring to sustainable urban mobility should be based on existing planning practice and include the principles of integration and participation, and allow its evaluation (Böhler-Bedecker et al., 2014).

Planning should include public transport, non-motorized transport, intermodality, road transport, mobility management, use of intelligent transportation systems (ITS), urban logistics, safety of road traffic in cities, implementation of new usage models and promotion of ecologically clean and energy-saving vehicles (clean fuels and vehicles). Consequently, the sustainable urban mobility planning is a strategic activity which should be implemented to meet the mobility needs of the inhabitants, enterprises and other stakeholders – crucial for the city and its vicinity – taking account of improved quality of life. Therefore, it should refer to the functional urban area and constitute element of its development strategy (Dyr, 2015).

The main idea for planning the sustainable urban mobility is to seek to establish the sustainable transport system in the city – through achieving goals such as e.g.: improved safety of transport, limiting adverse impact on environment, improved efficiency and effectiveness of transportation of passengers and goods, improved attractiveness and quality of urban area, and improved availability of transport services for the inhabitants. Mobility planning covers all types and modes of transport in the city – public transport, private, passenger and freight transport, motorized and non-motorized transport.

People living in a city with transport system based on paradigm of sustainable mobility are more resistant to economic crisis since public and non-motorized transport can provide convenient access to public services in a situation when household income is limited and some people decide to give up driving (Papagiannakis et al., 2018).

The complexity of issues within the sustainable urban mobility planning process is reflected e.g. in difficulties related to precise quantification of achieved results. It means that the planning process monitoring system is complex and should be adjusted to the specificity of each city. An important question is whether the developed monitoring indicators facilitate the assessment of implementation scope of particular activities (Jain, Tiwari, 2017).

Process of Making Urban Mobility in the Polish Cities More Sustainable

The idea of sustainable urban mobility includes actions integrating the transport and spatial policy tools and use of sustainable set of instruments („soft" related to organizational and management nature and „hard" related to investments).

Already in the 1990s, many Polish cities tried to take numerous actions related to sustainable transport policy. They were reflected in local acts on urban transport policy. Their most important aim was to provide such division of tasks between the public and individual transport so that the level of car traffic would not exceed the system ecological capacity in any city (City Council of Cracow, 1993, City Council of Warsaw, 1995, City Council of Gdynia, 1998). The aim was to be achieved by influencing the transport market (limiting and controlling the transport needs, e.g.

through spatial, location-based policy and prioritizing the public transport). At that time, documents related to transport policy included for the first time demands for pedestrian traffic (e.g. in Warsaw).

The first documents on urban transport policy were drafted with only one level of local government, i.e. municipal level. Introduced at the beginning of 1999, administrative and local government reform established additional levels of local government in the form of county (for cities: township combing the competence of municipality and county within the city, 66 cities of such status in Poland) and provinces. Unfortunately, issues of metropolitan scope (i.e. „between" county and province) were not precisely defined in the new system of local government, in particular as regards urban and railway transport integration and coordination of spatial planning. One of the results of uncontrolled urban sprawl was the dynamic development of individual motorisation, especially after Polish accession to the EU (Wołek, 2017). The number of private cars in Poland increased from 11 248 million in 2003 to 21 675 million in 2016 (CSO, Local Data Bank, Warsaw, 2018). Other factors supporting mass motorisation development on transport market in Poland include:

– low parking fees,
– no charges for entering city centre by car,
– significant number of available parking places,
– no emission-free zones,
– investing EU resources firstly into developing infrastructure supporting private cars. (Wyszomirski, 2017).

The characteristic feature of urban transport market in the Polish cities involves still high share of public transport, although as a result of the above mentioned processes it is gradually decreasing. Its scope differs depending on the specificity of particular city transport market and the related functional area. In big cities it could be observed tendency to restore the urban public transport market position or at least, to slow down its decline. The share of travels by private cars is comparable to the cities in Western Europe; whereas the share of bicycle travels is lower (Table 1), although in many cities we can observe its significant growth rate.

For example, in Warsaw the share of urban public transport in modal split in 2015 amounted to ca. 47% (Table 1), and private car ca. 32% (Warsaw Traffic Survey, 2015). In the initial period after Polish accession to the EU, Polish cities decided to follow costly process of improving the quality of public transport services in order to counteract negative consequences of the development of individual motorisation. Investments in infrastructure, vehicle fleet and ITS were accompanied by actions aiming at establishing conditions for the development of non-motorized mobility. In recent years, Polish cities taken intensive actions to increase the role of cycling in transport services.

The current status of sustainable urban mobility planning in Poland is presented in a synthetic manner in the form of SWOT analysis (Table 2).

Important aspect of balancing the urban mobility involves social participation. Growing importance of non-governmental organizations is reflected in their involvement in preparing the sustainable urban mobility plans. Moreover, nowadays it is common to use other instruments activating the institutional and individual

stakeholders. On the local level they include civic/participatory budgets which refer to more and more important undertakings related to the sustainable urban mobility.

Table 1. Modal split of selected Polish cities

City	Year	Number of inhabitants [thou.]	Share of pedestrian travels	Share of cycling	Share of public transport	Share of car	Method of data collection
Warsaw	2015	1744.4	18	3	47	32	KBR
Gdynia	2015	247.5	11*	2	36	51	inhouse survey
Gdańsk	2016	462.2	21	6	32	41	KBR
Poznań	2013	542.3	13	4	43	40	KBR
Kielce	2015	198 .0	34	1	23	42	KBR
Kraków	2013	761.1	29	1	36	34	KBR
Katowice	2015	299.9	31	1.4	24.5	43	KBR
Wrocław	2011	635.8	19	4	35	42	
Szczecin	2010	405.7	19	1.4	36	43	KBR

Remarks: *only walking at a distance of over 500 meters. KBR – complex traffic research
Source: (own elaboration based on official publication of cities)

Table 2. SWOT analysis of sustainable urban mobility in Poland

Strengths	Weaknesses
– Market position of public transport in medium and big cities; – Shift towards quality of life in majority of strategic documents on local level; – Obligatory status of strategic documents related to sustainable mobility (i.e. plans of low emission economy); – Resources for sustainable urban mobility planning in big and mid-sized cities;	– Lack of coordination in spatial planning on metropolitan level; – Spatial layout of cities strongly affected by central economy; – Level of coordination between different strategic documents; – Status of measures curbing the individual motorisation; – Lack of freight and urban logistics in sustainable urban mobility planning;
Opportunities	**Threats**
– Growing activities of NGO-s, especially in case of cycling and quality of life (pedestrians); – Growing importance of non-motorised transport; – Integrated mobility and spatial planning; – Increased social participation during elaboration of strategic documents[1]; – Development of shared mobility; – International cooperation on sustainable urban mobility planning	– Lack of legal solutions towards integrated metropolitan areas (continuation of urban sprawl); – Maintaining a trend of growing motorisation; – Lack of proper resources for sustainable urban mobility planning among smaller cities and rural communes

Source: (own elaboration)

[1] The first complex guidance on social participation is Act on revitalisation passed by Polish Parliament in 2015.

Sustainable Mobility Planning in Strategic Documents of Polish Cities

The national dimension of sustainable urban mobility planning in Poland was formalized under act on collective public transport in 2010 which introduced e.g. obligation to pass the plan for sustainable development of public transport in municipalities of over 50 thousand inhabitants and for counties (including cities) of over 80 thousand inhabitants. Cities meeting the said demographic criterion developed and passed such plans which, however, in overwhelming majority, comprise urban transport issues, leaving other issues related to sustainable urban mobility to be included in other documents. For several years, Polish cities have been developing documents corresponding to urban mobility plans, in particular relative to their complexity, social participation and prioritization of means of transport alternative to private car. For example, the Warsaw Mobility Policy project has been the fourth document dealing with mobility issues on highly detailed level – comprising 59 tasks in 10 areas. The priority involves actions reducing the use of car in travels, especially in the central part of Warsaw. Mobility has been included in a broader perspective taking account of social, spatial and economic aspects (Project of Warsaw Policy of Mobility, 2017). Also, the Wroclaw Mobility Policy is a response to the question of how to optimally shape the mobility in the metropolitan area and how to solve existing transportation problems. The document is based on creating optimal conditions for efficient movement of people and goods in the city and the metropolitan area with focus on the reduction of negative influence on the environment. The main targets are i.e. improvement of transport accessibility, strengthening the role of public transport, integration of transportation systems, improved mobility safety (BSR Competence Centre).

The new strategic framework for planning the sustainable urban mobility in Poland has been defined by Partnership Agreement[2] providing directions of intervention within the Cohesion Policy, Common Agricultural Policy and Common Fisheries Policy between 2014 and 2020. One of the priorities of intervention indicated the development of low-emission public transport and other environmentally friendly forms of urban mobility (Programming financial perspective of 2014–2020 – the Partnership Agreement). The possibility to co-finance the investments from the European Regional Development Fund within the Regional Operational Programs was related to documents prepared by local governments (municipalities and cities), containing reference to balancing the transport systems in cities. Such documents should, in more comprehensive manner, include issues of public passenger transport, non-motorised transport, intermodality, road transport, mobility management, use of intelligent transport systems, urban logistics, safety of road traffic in cities, implementation of new usage patterns, promotion of ecologically clean and energy-efficient vehicles. Depending on the region, these documents may include plans for low-emission economy, strategies for integrated territorial investments, air protection programs, sustainable urban mobility plans, sustainable collective public transport development plans or other documents (Figure 1).

[2] One of the tools for implementing Partnership Agreements are Regional Operational Programs.

The most formalized structure refers to plans for low-emission economy and plans for sustainable development of collective public transport. The first of documents comprises issues regarding sustainable urban mobility presenting them against a background of other areas crucial from the perspective of low-emission economy (housing, industry, energy efficiency). The enactment of this document is indispensable for cities applying for resources from the Cohesion Fund e.g. regarding public transport.

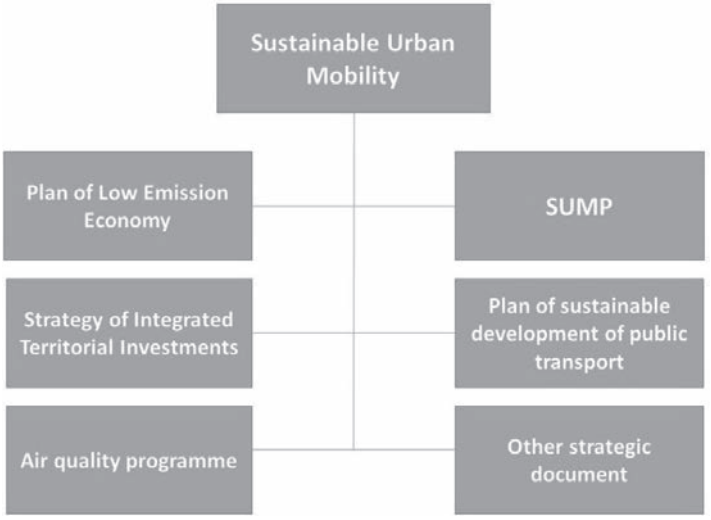

Figure 1. Documents related to sustainable urban mobility planning in Poland
Source: (own elaboration)

The plan for sustainable development of collective public transport comprises e.g.: issues related to public transport network, assessments and forecast on transport needs, service financing, preferences related to choosing a particular means of transport and principles on transport market organization. Such scope requires additional elements so that the content could reflect more closely the urban mobility plan.

Having the above mentioned documents does not exclude developing another document in the form of sustainable urban mobility plan.

We need to indicate that legislative and diagnostic grounds for planning the sustainable urban mobility in Poland are sufficient. Local governments have some discretion allowing them to choose a document including issues on sustainable urban mobility. The spatial scope of these documents may comprise a particular city, functional city area and metropolitan area.

Metropolization of Polish Spatial Area as a Challenge to Planning the Sustainable Urban Mobility

The complexity of urban mobility issue is confirmed by very close connection between strictly transport-related issues and spatial planning and impact

on the inhabitants and city visitors' travel behaviour. Urban mobility planning should include the city area and its suburban area (functional area). Therefore, the metropolitan dimension of sustainable mobility planning requires cooperation between various local governments which are characterized by diversified demographic, economic, administrative, financial and political potential.

The spatial distribution of social and economic development processes in Poland is not evenly spread. The economic growth concentrated mainly in larger cities where metropolization processes began on their own covering neighbouring municipalities of previously rural nature. Seven subregions with the highest GDP per capita in 2015 (Table 3) cumulated 27.6% of the total GDP in Poland.

Table 3. Subregions with the highest and the lowest GDP per capita in Poland in 2015

7 subregions with the highest GDP per capita in Poland in 2015	GDP per capita in 2015 [EUR]	7 subregions with the lowest GDP per capita in Poland in 2015	GDP per capita in 2015 [EUR]
Capital of Warsaw*	33 576	chełmsko-zamojski	6139
Poznań*	23 058	przemyski	6161
Wrocław*	19 244	nowotarski	6626
Kraków*	19 071	ełcki	6684
płocki	19 014	bialski	6862
legnicko-głogowski	16 964	krośnieński	6897
Tricity*	16 641	szczecinecko-pyrzycki	7038

Remarks: Cities marked with a star are the centres of metropolitan areas, 1 EUR = 4 PLN.
Source: (own elaboration based on data of Polish Statistical Office)

The criteria defining the metropolitan area in the Concept for National Spatial Development included the population in metropolitan area above 300 thousand people, employment in the market services sector (financial brokerage and real estate and company services) above 40 thousand, number of students learning in a particular city in academic year 2007/2008 above 60 thousand, cooperation of science and research institutions within the 5th and 6th EU Framework Program, location of airport rendering passenger traffic services, location of four- and five-star hotels, international exhibitions in exhibition halls between 2006 and 2008[3]. Such detailed criteria are fulfilled only by Warsaw, Upper Silesia and Zagłębie conurbation, Cracow, Łódź, Tricity, Poznań, Wrocław, bipolar system of Bydgoszcz and Toruń, and Szczecin. Moreover, the importance of Lublin was analysed, particularly in the context of its location (the largest city on the eastern part of Poland) and academic potential.

Legal regulations failed to follow the natural metropolization process. As a result, uncontrolled suburbanization became the prevailing trend defining the spatial and social development of metropolitan areas in Poland.

Cities in the centrally controlled system were characterised by dense urban housing and significant share of public transport in transport services [UN-Habitat, 2013]. The economic transformation in Poland and the first stage of local government

[3] RESOLUTION No. 239 OF THE COUNCIL OF MINISTERS of 13th December 2011 on adopting the Concept for National Spatial Development 2030. Warsaw, 27 April 2012, item 252.

reform which involved establishing ca. 2.5 thousand municipalities with no other levels of local governance with competence regarding planning powers, resulted in the lack of coordination as for spatial policy on metropolitan level. „The spatial and functional chaos observed in the Polish cities results from weak planning system and excessive liberalism in management" (Sepioł, Ed., 2014). Attractive cities with county rights are characterised by higher prices of real estates than neighbouring rural municipalities. Lack of coordination in the spatial policy in municipalities, dynamic situation on real estate market, decomposition of public transport system on regional level and changes in city inhabitants' lifestyle are the main reasons for strong competition for the inhabitants between cities and the surrounding municipalities. The said chaos in spatial policy of municipalities is reflected by e.g. situation where study of conditions and directions of spatial development in municipalities (obligatory document for each municipality) provides space for settlement of ca. 300 million people, whereas local spatial development plans – for 70 million people (Noworól, 2014). In many cases we can observe decrease in the number of inhabitants in the centre of metropolitan area and increase in the number of inhabitants in neighbouring municipalities within the metropolis. It leads to extension of origin and destination of travel. In this way, space generating high demand for transport is established, and the demand is satisfied by growing number of private cars, which generates secondary demand for road infrastructure. For years, the demands for construction and modernization of road infrastructure have constituted one of the main elements of local government political activities.

One of the main development-related challenges addressed on local level is to avoid dispersed settlements. The main corrective instruments in such case include energy generation systems, energy efficiency programs, effective implementation of spatial management and development of settlement structure (Olechnicka, Wojnar, Eds., n.d.).

The concentration of inhabitants in metropolitan areas with depopulation on a subregional and local level is one of the trends affecting the Polish spatial area. It creates multi-level challenges for the space within metropolitan areas as the main area with population concentration. In response to such situation we should establish proper management models for metropolitan areas and develop collective public transport (Council of Ministers, 2011). After many years of discussion, Poland passed the Metropolitan Union Act. The tasks of metropolitan unions included e.g. *developing spatial order* and public transport within the metropolitan union (metropolitan union establishes its integrated tariff and ticket system compulsory within its borders) (Metropolitan Union Act of 9 October, 2015). Unfortunately, the act was repealed. The only act on metropolisation so far has been applied only in Upper Silesia and Zagłębie metropolis. There is no logical explanation for the fact that it has been applied only in the above mentioned area, although, as previously indicated, in Poland there are at least seven metropolitan areas of formally and legally, operationally and economically complicated supply side of the public collective transport. Lack of common legal framework supporting integrated mobility in metropolitan areas is the biggest problem that self-governements are facing in Poland today. It directly impacts their financial ability to integrate different forms of public transport (municipal transport, railway transport).

Conclusions

1. The possibility to co-finance investments from the European Regional Development Fund within the Regional Operational Programs was related to documents prepared by local governments, containing reference to balancing the transport systems in cities.
2. Large and medium sized cities have significant human and material resources to plan and implement actions related to sustainable urban mobility. They have a number of documents which cover issues characteristic of SUMP.
3. The starting point for further balancing the urban mobility in Poland involves stable and strong market position of urban transport. However, support is required for non-motorised transport, mobility and urban logistics management and widely understood integration activities.
4. Important process integrating the above mentioned aspects involves the process of developing the sustainable urban mobility plans.
5. It is challenging to plan the sustainable mobility on metropolitan level.
6. Significant role in planning the sustainable urban mobility would involve applying the Metropolitan Union Act to other metropolitan areas in Poland defined in the Concept for National Spatial Development, and as a result, local governments could obtain additional financial resources for integrating public collective transport.

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