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SPATIAL DIVERSIFICATION OF THE IMPLEMENTATION OF PLANNING AND INVESTMENT PROCESSES IN THE POZNAŃ METROPOLITAN AREA

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ABSTRACT: This paper aimed to access the changes that appeared between 2009 and 2018 in the context of progress in the spatial planning process at the local planning level. The study also attempts to classify communes in the metropolitan area due to the diversification of the degree of implementation in the spatial planning process. The research was conducted on the example of Poznań Metropolitan Area (PMA), which covers 45 communes. The analysis was based on data from the Local Data Bank of Statistics, Poland. The communes in PMA were classified into 12 groups. The most numerous group (almost half of the analysed units) are communes with small coverage of local spatial development plans and very low dynamics of issuing of decisions on building conditions. These are communes where the urbanisation pressure, due to the distance from Poznań, is lower than in the administrative units located near or in the immediate vicinity of Poznań.

KEYWORDS: spatial management, local spatial development plans, metropolitan area, commune, suburbanisation

Introduction

The greatest intensity of spatial changes in Poland is characteristic of metropolitan areas (Gałka and Warych-Jura, 2018), especially of rural communes directly adjacent to the largest urban centres (Mrozik et al., 2012; Idczak and Mrozik, 2018). The changes are the result of various types of suburbanisation (Zębik, 2011; Wolny et al., 2017; Tokarczyk-Dorociak et al., 2018).

One of the weak points of spatial planning in Poland is no binding features of the study on conditions and directions of spatial development (SUiKZP, i.e., an act of internal management that defines the spatial policy of the commune and local development rules) in the perspective of the spatial management system, weaknesses of local spatial development plans (MPZP – constituting local law) (e.g. small share of areas covered by MPZP, optional preparation of plans, lack of sufficient protection against urbanisation) and a wrong idea of decisions on building conditions (DoWZ), which in the absence of MPZP allows for the development of buildings based on the assessment of the situation in the immediate vicinity (Mrozik and Wiśniewska, 2013; Śleszyński et al., 2020).

For spatial development planning consistent with the principles of sustainable development and spatial order, local development plans are of particular importance. Compared to the decision on building conditions, they are positively distinguished by, among others, the obligation to conduct a strategic environmental assessment and ensure public participation. For this reason, it is so important to monitor the issuing of decisions on building conditions and the adoption of local development plans, especially in the context of intensively occurring suburbanisation (Mrozik, 2016).

Numerous authors have monitored progress in the planning process – both in rural and municipal districts – and published the results in articles or annual reports. The pace of change in MPZP coverage in Poland was assessed as slow, and the statistical values are regionally and functionally differentiated. Usually, the coverage is not sufficient from the point of view of investment plans and does not address the intensity of land-use (e.g., Feltynowski, 2013; Śleszyński et al., 2015; Podawca et al., 2019). Podawca and Mrozik (2019) attempted to classify communes on the example of the Warsaw Metropolitan Area (WMA). They distinguished 13 types of communes in terms of the degree of implementation of location decisions and in terms of coverage of local spatial development plans.

In the case of Poznań and its functional area, the majority of papers focused on the analysis of the city of Poznań and Poznań district or the Poznań Agglomeration covering the city of Poznań and 17 communes of Poznań

(Zydroń and Szczepański, 2012; Kaczmarek, 2017; Wdowicka and Mierzejewska, 2020). In turn, Mrozik et al. (2020) focused on functional urban areas (FUAs), where the so-called integrated territorial investments (ITI) are implemented. The discussed issue for Poznań Metropolitan Area (PMA), which was delimited by the WBPP, is less recognised.

This paper aimed to access the changes that appeared between 2009 and 2018 in the context of progress in the spatial planning process at the local (communal) planning level. In this case, the planning process is understood as actions concerning formulating and enacting local spatial development and issuing decisions on building conditions, which are documents allowing for obtaining a building permit. The study also attempts to classify communes in the metropolitan area due to the diversification of the degree of implementation of the spatial planning process.

Research methods

The research were conducted on example of Poznań Metropolitan Area, which covers 45 communes including 6 urban (Gniezno, Kościan, Luboń, Poznań, Puszczykowo, Wągrowiec), 21 urban-rural (Buk, Czempiń, Czerniejewo, Grodzisk Wielkopolski, Kostrzyn, Kórnik, Mosina, Murowana Goślina, Nekla, Nowy Tomyśl, Oborniki, Opalenica, Pobiedziska, Rogoźno, Skoki, Stęszew, Swarzędz, Szamotuły, Śrem, Środa Wielkopolska, Września) and 18 rural ones (Brodnica, Czerwonak, Dominowo, Dopiewo, Duszniki, Gniezno Granowo, Kaźmierz, Kiszkowo, Kleszczewo, Komorniki, Kościan, Łubowo, Rokietnica, Suchy Las, Tarnowo Podgórne, Wągrowiec, Zaniemyśl). It occupies an area of about 6.2 thousand km^2 and a population of approx. 1.4 million, which is, respectively, 21% of the area of Wielkopolska (Greater Poland) Region, and 41% of the region's population. Delimitation of the PMA was performed by regional planning office Wielkopolskie Biuro Planowania Przestrzennego (WBPP). It includes also 10 cities – centers of the district and 15 other small towns (Mrozik et al., 2015).

The analysis was based on data from the Local Data Bank of Statistics Poland collected in the section local government (subgroup spatial planning). The time range of the analysis was chosen on the basis of data availability.

To characterise the realisation of spatial planning tasks in a commune, the following features have been taken into account:

- the area of the commune covered by binding local development plans in 2018 – A_{MPZP} [ha],
- the total number of binding local development plans in 2018 – N_{MPZP} [pcs],

- the number of decisions on the localisation of public purpose investments issued between 2009 and 2018 – $\sum N_{DICP}$ [pcs],
- the number of decisions on building conditions issued between 2009 and 2018 – $\sum N_{DWZ}$ [pcs],
- the total area of the commune – A [ha].

For assessing the spatial scale of the planning process and comparing administrative units, the following indicators have been used:

1) the coverage with local development plans in 2018 expressed by the formula:

$$W_{MPZP} = (A_{MPZP} / A) *100\% \text{ [\%]}, \quad (1)$$

2) the density of MPZP (W_{D_MPZP}) in 2018 (the ratio of the number of MPZP to the area of the commune) expressed by the formula:

$$W_{D\_MPZP} = N_{MPZP} / (A / 100) \text{ [pcs/km}^2\text{]}, \quad (2)$$

3) the density of decisions on establishing the location of public purpose investment (W_{DICP}) between 2009 and 2018 (the ratio of the number of issued decisions to the commune area) expressed by the formula:

$$W_{DICP} = \sum N_{DICP} / (A / 100) \text{ [pcs/km}^2\text{]}, \quad (3)$$

4) the density of decisions on building conditions (W_{DWZ}) between 2009 and 2018 (the ratio of the number of issued decision to commune area): expressed by the formula:

$$W_{DWZ} = \sum N_{DWZ} / (A/100) \text{ [pcs/km}^2\text{]}. \quad (4)$$

The evaluation of the realization of the planning process and the investment interest in particular communes has been done using indicators in a period of 10 years:

1) the dynamics of change in the area of land covered by the local development plans between 2009 and 2018 (P_{A_MPZP}) expressed by the formula:

$$P_{A\_MPZP} = (A_{MPZP2018} - A_{MPZP2009}) /100 \text{ [\%]}, \quad (5)$$

2) the change in coverage with local development plans between 2009 and 2018 (PP_{A_MPZP}) expressed by the formula:

$$PP_{A\_MPZP} = (A_{MPZP2018} - A_{MPZP2009})/A *100 \text{ [p.p.]}, \quad (6)$$

3) the indicator of the intensity of issuing decisions on establishing the location of public purpose investments, given by the formula:

$$W_{I\_ICP} = (\sum N_{DICP2009\text{-}2018}/10) / [(A - A_{MPZP2018})/100] \text{ [pcs/km}^2\text{]}, \quad (7)$$

4) the indicator of the intensity of issuing decisions on buildings conditions, given by the formula:

$$W_{I\_WZ} = (\sum N_{DWZ2009\text{-}2018}/10) / [(A - A_{MPZP2018})/100] \text{ [pcs/km}^2\text{]}. \quad (8)$$

During analysing and interpreting the results of the research problem, the following steps have been taken:

1) filtering data gathered in the Local Data Bank, based on features from the category local government and subgroup spatial planning,
2) obtaining spatial data on the borders of administrative units from the Head Office of Geodesy and Cartography (GUGiK),
3) aggregation of data for particular subgroups together with determining indicators using the ArcGIS 10.5.1 and QGIS 2.12.1 based on a created spatial data set,
4) designation of types of communes in terms of the degree of implementation of the planning process.

Results of the research

The most important feature determining the level of realisation of documents on spatial planning is the percentage of the MPZP coverage in a commune. In PMA local spatial development plans cover only in one case (rural commune Kleszczewo) the whole commune. In two cases (urban commune Luboń and urban-rural commune Pobiedziska) the coverage is bigger than 80%.

A good situation (comparing to other communes in PMA) in terms of MPZP coverage was observed in another two rural communes (Suchy Las, Tarnowo Podgórne), where it is maintained at 50-80%. The moderate situation with coverage at 20-50% is present in 13 communes (Komorniki, urban commune Gniezno, Poznań, Kórnik, Czempiń, Puszczykowo, Swarzędz, Śrem, Czerwonak, Rokietnica, Łubowo, Mosina and urban commune Wągrowiec). Unsatisfactory level of coverage (below 20%) was shown in 27 administrative units. Additionally, in 11 of them, the level of coverage is below 5%). In the rural communes Brodnica and Dominowo, with the coverage below 1%, the situation was assessed as extremely bad (table 1, figure 2).

While analysing the gain in the area covered by MPZP, it can be assumed that the smaller the percentage of the commune was included in the 2009 plans, the greater should be the dynamics of its issuing. However, this is not confirmed in the results (figure 1).

While in three communes with substantial MPZP coverage in 2009 (Kleszczewo, Luboń, Suchy Las) the dynamics of developing a new MPZP

might be weak or non-existent, it can be significant in communes with little coverage.

The highest dynamics of changes were observed in urban-rural commune Pobiedziska (120%), and a high dynamic was found in urban-rural commune Kórnik (67%), urban commune Poznań (55%) and urban-rural commune Śrem (52%). Moreover, the biggest changes in the area covered with the local development plans are observed in Pobiedziska (63%). The new MPZP covered an additional 11956 ha of the commune's area within 10 years, which means an average annual increase of 1196 ha. Intensive work on subsequent local spatial development plans in the commune is also continued during the Covid-19 pandemic.

Out of 21 communes, which in 2009 had a share of the area covered with local spatial development plans below 5%, only 5 recorded dynamics of changes of over 10% in the next 10 years, and 5 – changes by more than 5%. The greatest dynamics of changes in this group of communes was observed in the urban-rural commune of Swarzędz (36%) and the rural commune of Duszniki (24%). In turn, the largest changes were also recorded in Swarzędz (35p.p.), Duszniki (15 p.p.), and Granowo (14 p.p.).

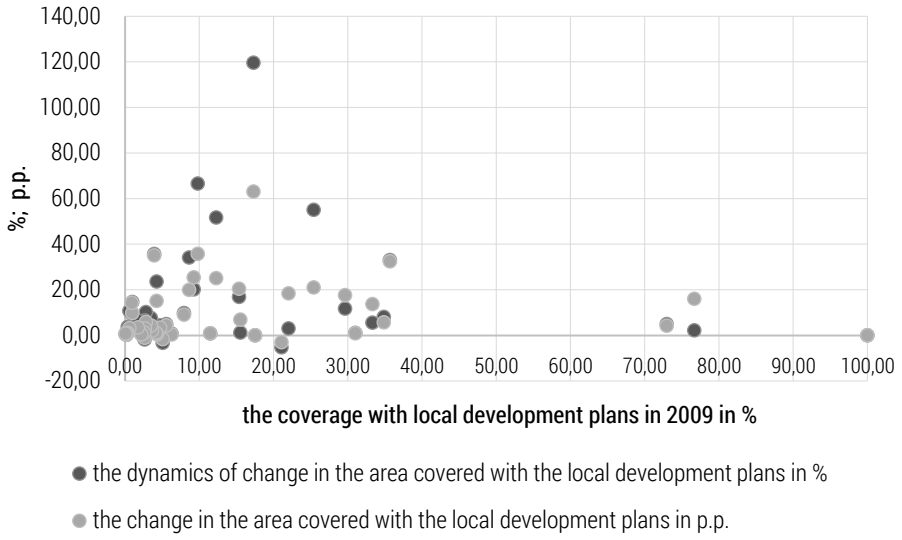

Figure 1. The change and dynamics of change in the area covered with the local development plans in communes in PMA in the years 2009-2018

Source: author's work.

Table 1. Features and indicators connected with local spatial development plans in municipalities of PMA

Community (Type: 1 – urban, 2 – rural, 3 – urban-rural)	No.	A* [ha]	A_{MPZP}		N_{MPZP}		W_{MPZP}	W_{D_MPZP}	P_{A_MPZP}	P_{PA_MPZP}
			[ha]		[pcs]		[%]	[pcs/km^2]	[%]	[p.p.]
			2009	2018	2009	2018	2018	2018	2018 to 2009	2018 to 2009
Gniezno (1)	1	4060.00	1 353	1 909	64	88	47.02	2.17	5.56	13.69
Gniezno (2)	2	17816.00	471	289	38	45	1.62	0.25	-1.82	-1.02
Czerniejewo (3)	3	11194.00	620	1 109	73	240	9.91	2.14	4.89	4.37
Kiszkowo (2)	4	11449.00	252	301	39	49	2.63	0.43	0.49	0.43
Łubowo (2)	5	11354.00	3 523	3 631	83	136	31.98	1.20	1.08	0.95
Granowo (2)	6	6687.00	61	1 015	29	53	15.18	0.79	9.54	14.27
Grodzisk Wlkp. (3)	7	13259.00	549	658	45	52	4.96	0.39	1.09	0.82
Kościan (1)	8	879.00	154	154	42	42	17.52	4.78	0.00	0.00
Kościan (2)	9	20272.00	66	250	11	20	1.23	0.10	1.84	0.91
Czempiń (3)	10	14219.00	4 958	5 763	32	40	40.53	0.28	8.05	5.66
Nowy Tomyśl (3)	11	18645.00	324	970	23	57	5.20	0.31	6.46	3.46
Opalenica (3)	12	14891.00	144	1 608	34	61	10.80	0.41	14.64	9.83
Oborniki (3)	13	34004.00	203	1 277	55	88	3.76	0.26	10.74	3.16
Rogoźno (3)	14	21624.00	579	1 230	58	75	5.69	0.35	6.51	3.01
Luboń(1)	15	1351.00	1 036	1 252	18	41	92.67	3.03	2.16	15.99
Puszczykowo (1)	16	1639.00	361	663	26	36	40.45	2.20	3.02	18.43
Buk (3)	17	9058.00	375	481	21	31	5.31	0.34	1.06	1.17
Czerwonak (2)	18	8248.00	1 267	2 950	42	54	35.77	0.65	16.83	20.40
Dopiewo (2)	19	10802.00	857	1 834	122	179	16.98	1.66	9.77	9.04
Kleszczewo (2)	20	7446.00	7 446	7 476	4	30	100.00	0.40	0.00	0.00
Komorniki (2)	21	6641.00	1 969	3 139	77	134	47.27	2.02	11.70	17.62
Kostrzyn (3)	22	15481.00	669	745	61	75	4.81	0.48	0.76	0.49
Kórnik (3)	23	18612.00	1 824	8 480	218	249	45.56	1.34	66.56	35.76
Mosina (3)	24	17143.00	1 481	4 895	125	115	28.55	0.67	34.14	19.91
Murowana Goślina (3)	25	17223.00	3 632	3 109	35	102	18.05	0.59	-5.23	-3.04
Pobiedziska (3)	26	18958.00	3 280	15 236	89	121	80.37	0.64	119.56	63.07
Rokietnica (2)	27	7930.00	734	2 749	73	123	34.67	1.55	20.15	25.41
Stęszew (3)	28	17502.00	611	1 367	26	51	7.81	0.29	7.56	4.32
Suchy Las (2)	29	11601.00	8 465	8 956	133	166	77.20	1.43	4.91	4.23
Swarzędz (3)	30	10178.00	401	3 970	129	117	39.01	1.15	35.69	35.07
Tarnowo Podgórne (2)	31	10175.00	3 631	6 933	111	244	68.14	2.40	33.02	32.45
Duszniki (2)	32	15630.00	664	3 024	76	109	19.35	0.70	23.60	15.10
Kaźmierz (2)	33	12790.00	605	1 040	35	78	8.13	0.61	4.35	3.40
Szamotuły (3)	34	17552.00	492	1 511	91	95	8.61	0.54	10.19	5.81
Dominowo (2)	35	7936.00	5	65	2	6	0.82	0.08	0.60	0.76

Środa Wielkopolska (3)	36	20716.00	1 300	1 371	71	88	6.62	0.42	0.71	0.34
Zaniemyśl (2)	37	10655.00	276	394	29	40	3.70	0.38	1.18	1.11
Brodnica (2)	38	9583.00	19	44	9	13	0.46	0.14	0.25	0.26
Śrem (3)	39	20587.00	2 527	7 695	74	128	37.38	0.62	51.68	25.10
Skoki (3)	40	19849.00	1 005	678	21	37	3.42	0.19	-3.27	-1.65
Wągrowiec (1)	41	1783.00	277	400	27	36	22.43	2.02	1.23	6.90
Wągrowiec (2)	42	34785.00	126	500	24	41	1.44	0.12	3.74	1.08
Nekla (3)	43	9586.00	1 100	1 186	43	62	12.37	0.65	0.86	0.90
Września (3)	44	22185.00	805	1 263	66	96	5.69	0.43	4.58	2.06
Poznań (1)	45	26191.00	6 656	12 160	111	241	46.43	0.92	55.04	21.01

* symbols as described in the research methodology

Source: author's work based on www.bdl.stat.gov.pl.

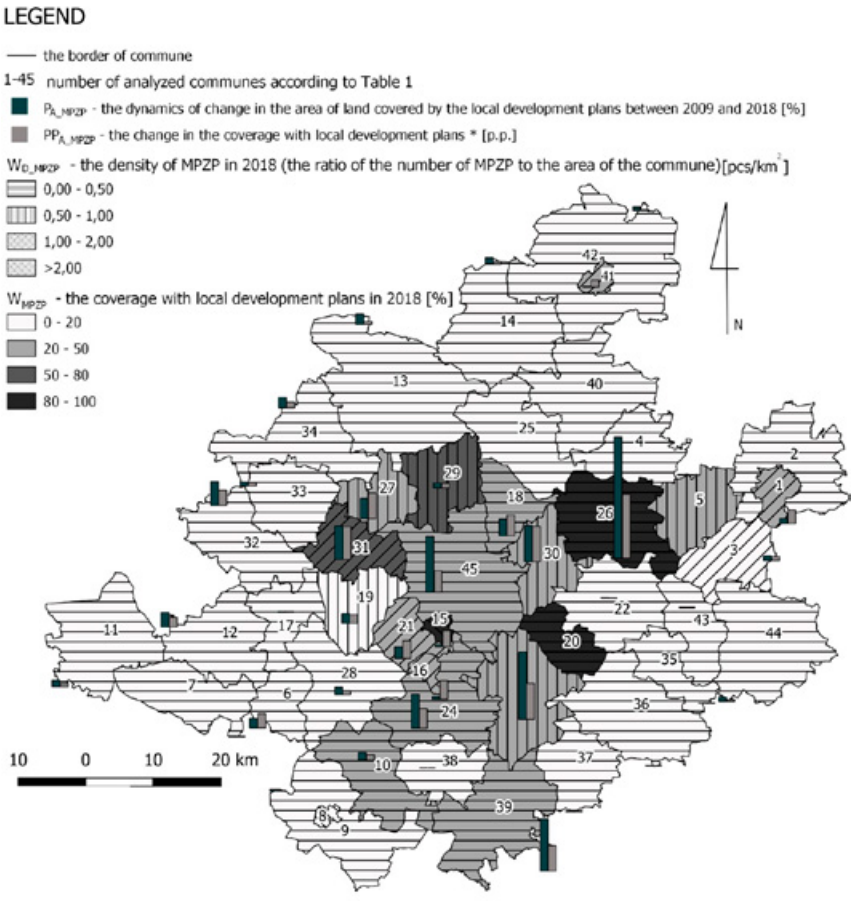

Figure 2. Spatial diversification of the planning process in relation to local spatial development plans in the communes of PMA

Source: author's work.

Analysing indicators concerning decisions on the localisation of public purpose investments (DICP) and on building conditions (DWZ) does not make sense in communes with a maximal coverage of local spatial development plans (Kleszczewo). On the other hand, in municipalities with very high coverage of the local development plan (Luboń, Pobiedziska), only careful conclusions must be drawn.

The lowest number of DWZ was issued in 2009-2018 in the urban commune Puszczykowo, where forests, forest land, wooded, and shrubby land cover approx. 49% of the city area. On the other hand, built-up areas constitute only slightly more than a quarter of the area of Puszczykowo. Overall, 55% of the city's area is covered by the national park, and another 43% is the park's buffer zone. For this reason, the investment activity in Puszczykowo is so limited. As indicated by Podawca et al. (2018), the Wielkopolska National Park is one of the two national parks in Poland located in close proximity to the urban agglomeration.

Within 10 years, almost 1,800 DWZ and ca. 360 DICP were issued on average in each PMA commune. Both Tarnowo Podgórne and Pobiedziska, despite the high share of the area covered by the local spatial development plan, exceeded this average.

The smallest number of decisions on building conditions per km^2 was observed in the Suchy Las commune. On the other hand, the highest values were achieved by urban communes (Kościan, Wągrowiec, Poznań, Luboń Gniezno) or in communes situated in the immediate vicinity of Poznań (urban-rural commune Kórnik, rural communes Rokietnica and Dopiewo). Moreover, the number of decisions on the localisation of public purpose investments per km^2 appears the most in the aforementioned municipalities as well as Rokietnica, Dopiewo, Kórnik, and in the urban-rural commune of Swarzędz (table 2, figure 3).

At the last stage of the work, the division of communes in PMA into groups was proposed. In terms of the degree of MPZP realisation, the following administrative units types were selected:

1) communes with very large MPZP coverage ($W_{MPZP} \geq 80\%$),
2) communes with large MPZP coverage ($50\% \leq W_{MPZP} < 80\%$),
3) communes with medium MPZP coverage ($20\% \leq W_{MPZP} < 50\%$),
4) communes with small MPZP coverage ($W_{MPZP} < 20\%$) (figure 2).

Table 2. Features and indicators connected with decisions on the localisation of public purpose investments (DICP) and on building conditions (DWZ) in municipalities of PMA

Community (Type: 1 – urban, 2 – rural, 3 – urban-rural)	No.	A* [ha]	N_{DICP} [pcs] 2009-2018	N_{DWZ} [pcs] 2009-2018	W_{DICP} pcs/km^2	W_{DWZ} pcs/km^2	$W_{I\text{-}ICP}$ pcs/km^2	$W_{I\text{-}WZ}$ pcs/km^2
Gniezno (1)	1	4060.00	282	1 196	6.95	29.46	1.31	5.56
Gniezno (2)	2	17816.00	295	2 244	1.66	12.60	0.17	1.28
Czerniejewo (3)	3	11194.00	92	449	0.82	4.01	0.09	0.45
Kiszkowo (2)	4	11449.00	66	667	0.58	5.83	0.06	0.60
Łubowo (2)	5	11354.00	92	662	0.81	5.83	0.12	0.86
Granowo (2)	6	6687.00	84	488	1.26	7.30	0.15	0.86
Grodzisk Wlkp. (3)	7	13259.00	441	2194	3.33	16.55	0.35	1.74
Kościan (1)	8	879.00	227	833	25.82	94.77	3.13	11.49
Kościan (2)	9	20272.00	187	1 617	0.92	7.98	0.09	0.81
Czempiń (3)	10	14219.00	131	907	0.92	6.38	0.15	1.07
Nowy Tomyśl (3)	11	18645.00	560	4001	3.00	21.46	0.32	2.26
Opalenica (3)	12	14891.00	156	1046	1.05	7.02	0.12	0.79
Oborniki (3)	13	34004.00	503	3139	1.48	9.23	0.15	0.96
Rogoźno (3)	14	21624.00	134	1202	0.62	5.56	0.07	0.59
Luboń(1)	15	1351.00	90	498	6.66	36.86	9.09	50.30
Puszczykowo (1)	16	1639.00	72	346	4.39	21.11	0.74	3.55
Buk (3)	17	9058.00	233	1169	2.57	12.91	0.27	1.36
Czerwonak (2)	18	8248.00	375	1045	4.55	12.67	0.71	1.97
Dopiewo (2)	19	10802.00	748	3103	6.92	28.73	0.83	3.46
Kleszczewo (2)	20	7446.00	bd.	bd.	bd.	bd.	bd.	bd.
Komorniki (2)	21	6641.00	140	463	2.11	6.97	0.40	1.32
Kostrzyn (3)	22	15481.00	489	1602	3.16	10.35	0.33	1.09
Kórnik (3)	23	18612.00	2234	6080	12.00	32.67	2.20	6.00
Mosina (3)	24	17143.00	484	2255	2.82	13.15	0.40	1.84
Murowana Goślina (3)	25	17223.00	211	1063	1.23	6.17	0.15	0.75
Pobiedziska (3)	26	18958.00	363	1918	1.91	10.12	0.98	5.15
Rokietnica (2)	27	7930.00	492	3008	6.20	37.93	0.95	5.81
Stęszew (3)	28	17502.00	233	1386	1.33	7.92	0.14	0.86
Suchy Las (2)	29	11601.00	173	363	1.49	3.13	0.65	1.37
Swarzędz (3)	30	10178.00	789	2379	7.75	23.37	1.27	3.83
Tarnowo Podgórne (2)	31	10175.00	320	1845	3.14	18.13	0.99	5.69

Duszniki (2)	32	15630.00	184	1878	1.18	12.02	0.15	1.49
Kaźmierz (2)	33	12790.00	90	1164	0.70	9.10	0.08	0.99
Szamotuły (3)	34	17552.00	445	3328	2.54	18.96	0.28	2.07
Dominowo (2)	35	7936.00	71	534	0.89	6.73	0.09	0.68
Środa Wielkopolska (3)	36	20716.00	443	2034	2.14	9.82	0.23	1.05
Zaniemyśl (2)	37	10655.00	124	671	1.16	6.30	0.12	0.65
Brodnica (2)	38	9583.00	65	727	0.68	7.59	0.07	0.76
Śrem (3)	39	20587.00	318	1688	1.54	8.20	0.25	1.31
Skoki (3)	40	19849.00	190	1 460	0.96	7.36	0.10	0.76
Wągrowiec (1)	41	1783.00	161	780	9.03	43.75	1.16	5.64
Wągrowiec (2)	42	34785.00	186	2 061	0.53	5.92	0.05	0.60
Nekla (3)	43	9586.00	123	923	1.28	9.63	0.15	1.10
Września (3)	44	22185.00	466	3 567	2.10	16.08	0.22	1.70
Poznań (1)	45	26191.00	2 530	10 920	9.66	41.69	1.80	7.78

* symbols as described in the research methodology

Source: author's work based on www.bdl.stat.gov.pl.

Regarding the issued location decisions, it is assumed that the degree of the planning process realisation will be determined according to the following division:

A) communes with very high dynamics of DWZ issuing, where the mean of W_{I_ICP} and W_{I_WZ} sum is greater than 3 – type A,
B) communes with high dynamics of DWZ issuing, where the mean of W_{I_ICP} and W_{I_WZ} sum is between 2 and 3 – type B,
C) communes with medium dynamics of DWZ issuing, where the mean of W_{I_ICP} and W_{I_WZ} sum is between 1 and 2 – type C,
D) communes with very low dynamics of DWZ issuing, where the mean of W_{I_ICP} and W_{I_WZ} sum is <1 – type D (figure 3).

On the basis of the isolated groups, 16 types of administrative units showing the diversity of the degree of implementation of the spatial planning process in PMA communes were created. The communes in PMA were classified into 12 types (table 3).

Summing up the commune typology in terms of the level of realisation of the planning process between 2009-2018, it should be concluded that the most numerous type is 4.D. It accounts for almost half of the analysed communes. Together with type 3.D, they constitute 58% of the examined communes.

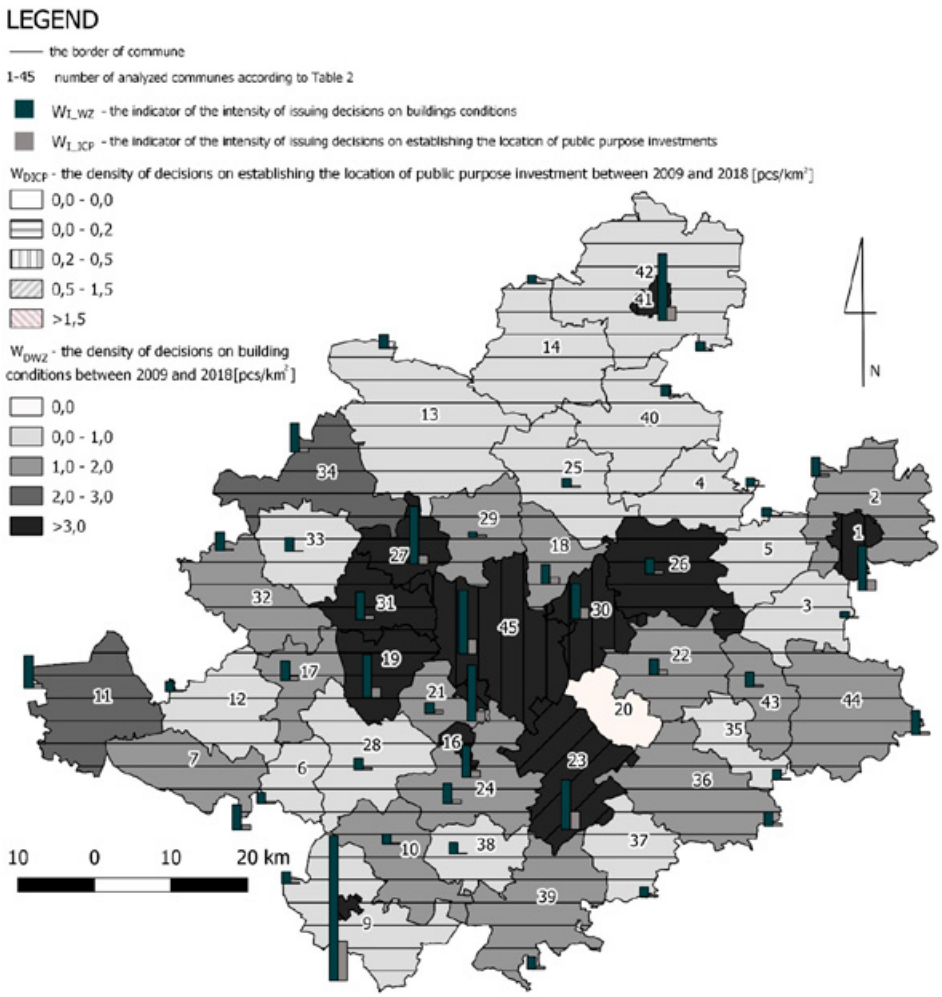

Figure 3. Spatial diversification of the planning process in relation to decisions on the localisation of public purpose investments (DICP) and on building conditions (DWZ) in the communes of PMA

Source: author's work.

These are units where small (even very small) or medium coverage of MPZP and very low dynamics of DWZ issuing can be observed. These are communes where the urbanisation pressure, due to the distance from Poznań, is lower than in the administrative units located near or in the immediate vicinity of Poznań. The highest dynamics of planning processes entailing investment realisation is present in the 1.A and 2.A communes. In these municipalities, in addition to the significant MPZP coverage, there is also a very intensive issuing of location decisions.

Table 3. Types of PMA communes in terms of the degree of implementation of the planning process

		Types of communes in terms of the degree of implementation of location decisions			
		A	B	C	D
Types of communes in terms of coverage of local spatial development plans	1	Pobiedziska, Luboń	-	-	Kleszczewo
	2	Tarnowo Podgórne	-	Suchy Las	-
	3	Rokietnica, Wągrowiec-miasto, Gniezno-miasto, Kórnik, Poznań	Puszczykowo, Swarzędz	Mosina, Czerwonak	Komorniki, Czempiń, Śrem, Łubowo
	4	Kościan-miasto	Dopiewo	Grodzisk Wlkp., Szamotuły, Nowy Tomyśl	Czerniejewo, Rogoźno, Wągrowiec-gmina, Kiszkowo, Dominowo, Zaniemyśl, Brodnica, Skoki, Kościan-gmina, Murowana Goślina, Opalenica, Stęszew, Granowo, Kaźmierz, Oborniki, Nekla, Środa Wlkp., Kostrzyn, Gniezno-gmina, Buk, Duszniki, Września

Source: author's work.

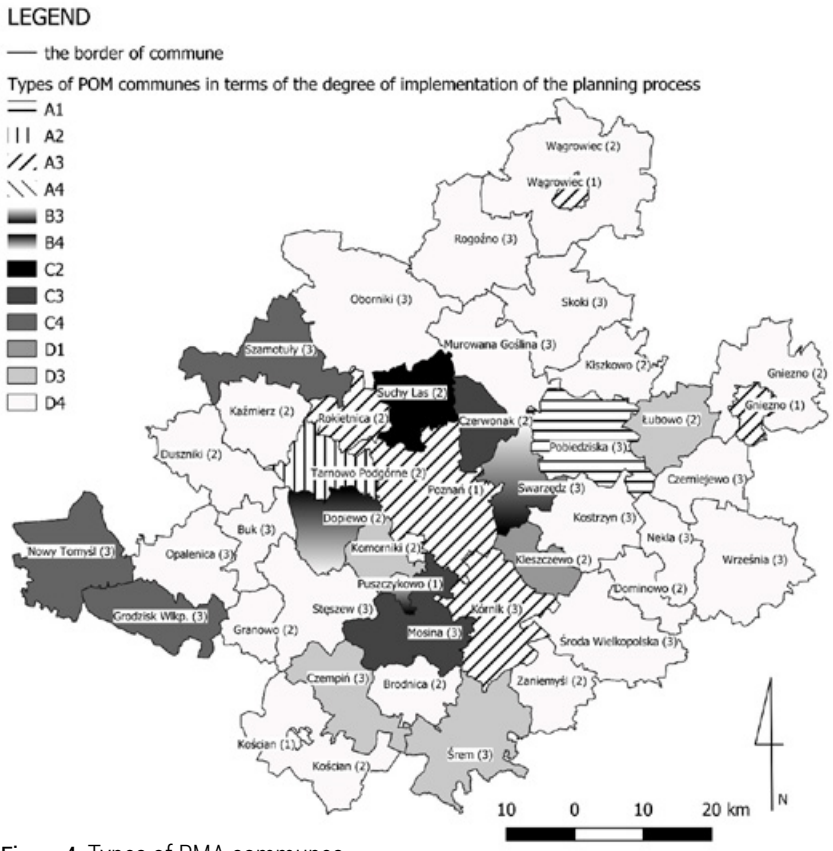

Figure 4. Types of PMA communes

Source: author's work.

Type A communes only include cities and communes in the immediate vicinity of Poznań, i.e., rural commune Tarnowo Podgórne and Rokietnica and urban-rural commune Kórnik (figure 4).

Group 4a is also distinguished. It brings together 3 urban-rural communes, seats of poviats (districts), which were also district towns in the former Poznań Province in the years 1975-1998. The population of these urban-rural communes ranges from 20,1 thousand. (acc. to Statistics Poland in 2019) in Grodzisk Wielkopolski to 30,3 thous. in Szamotuły. The population of the cities themselves (excluding rural areas) ranges only from 14,4 thous. (Nowy Tomyśl) to 18,9 thous. in Szamotuły. The population density of built-up and urbanised areas ranges from 2356 (Nowy Tomyśl) to 2628 pop./km^2 (Grodzisk Wielkopolski), and the total population density ranges from 145 (Nowy Tomyśl) to 172 (Szamotuły) pop./km2. The common feature is also the distance from Poznań (from 39 km – Szamotuły to 65 km – Nowy Tomyśl).

Among the communes belonging to PMA, the rural commune Suchy Las, apart from Kleszczewo, fared best in the assessment carried out in the study (both in the immediate vicinity of Poznań).

Similar studies carried out on the example of Warsaw Functional Area (WOF) gave different results (Podawca and Mrozik, 2019). The authors performed analyses for 39 communes in the WOF, based on statistical data from 2009-2016. They concluded that in WOF the most numerous type 1.D together with type 2.D constitute 30% of examined communes. On the other hand, comparing to Puszczykowo (group B3), the Izabelin commune, located in 90% of the protected areas, was included in group D4. In total, in group D4, the most numerous group in PMA, there are only 3 communes included in the group.

In previous research, the dependence of MPZP coverage on the number of issued decisions on building condition (on the example of communes and municipalities in the Bydgoszcz-Torun Metropolitan Area) was observed (Mrozik and Idczak, 2015). The authors also stated that in the Polish conditions, the dynamic development of rural communes in metropolitan areas is taking place without the use of appropriate (predicted) instruments, i.e., local plans since it is a development based on the issuance of administrative decisions, which due to their characteristics significantly limit the possibility of maintaining the basic principles of spatial planning, i.e. spatial order and sustainable development in the rural commune areas subject to suburbanisation (Mrozik and Noskowiak, 2018; Mrozik and Idczak, 2015).

Conclusions

The analysis conducted on the example of Poznań Metropolitan Area showed the possibility of classifying communes according to the degree of implementation of the planning process.

The analyses performed in this work showed that the distance from the regional capital city and the type of commune determine the degree of implementation of the planning process. The type of commune is significant in the case of urban communes and urban-rural communes, being the seat of poviats (districts). It should be emphasised, however, that the similarity of urban communes results mainly from the degree of implementation of location decisions.

The most numerous group in the proposed classification (almost half of the analysed administrative units) are communes with small coverage of MPZP and very low dynamics of DWZ issuing. These are communes where the urbanisation pressure, due to the distance from Poznań, is lower than in the administrative units located near or in the immediate vicinity of Poznań.

The limited planning coverage is a big challenge for most PMA communes. At the same time, the example of Swarzędz shows that with the high activity of local authorities, it is possible to make up for many years of delays quickly.

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The contribution of the authors

Karol Mrozik – 50% (concept of the paper, literature review, data collection, data analysis and interpretation, drafting the text).

Konrad Podawca – 25% (concept of the paper, literature review, data collection, data analysis, drafting the text).

Daria Drożyńska – 25% (concept of the paper, literature review, data interpretation, drafting the text).

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