FARMLAND CONVERSION AND CHANGES IN THE LAND-USE PATTERN IN THE POZNAŃ AGGLOMERATION OVER THE YEARS 2000–2009

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Abstract: The pressure exerted by a large city determines non-agricultural forms of land use in areas situated in its neighbourhood. Among the most alarming consequences of urban sprawl onto the surrounding areas are a steady and irreversible shrinkage of farmland and conflicts resulting from a mix of functions performed by the areas. This article describes the dynamics, scale and spatial differences of the process of taking agricultural land out of production in the Poznań agglomeration in the 21st century in terms of changes in the land-use pattern. In characterising the converted land, it also presents chief directions of its transformation, the regulations in force, and the resultant lack of full information about factual, and not only partial, conversions.

Key words: agricultural land, land-use change, urban sprawl, urban impact, farmland conversion

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1. Introduction

Since the start of the systemic transformation in Poland, the country has seen dynamic changes in the functional-spatial structure of its largest urban agglomerations. Plainly visible is the process of pushing agriculture out of areas neighbouring with cities. One of the manifestations of the marginalisation of the agricultural function in the suburban zones of big cities is a drop in the proportion of farmland in their land-use patterns. An especially alarming development has been the earmarking of land of high and very high quality for non-agricultural purposes (cf. e.g. Kacprzak, Maćkiewicz 2011; Krasowicz *et al.* 2011; Prus 2012). This is what makes the conversion of farmland into housing, industrial and transport lots so important. The pressure exerted by the city forces non-agricultural forms of land development in the surrounding area. Other features characterising the suburban zone, apart from putting farmland to non-agricultural use, are especially wide differences in land management and the co-occurrence of various economic functions. Among the most alarming consequences of urban sprawl onto the surrounding areas are a steady and irreversible shrinkage of farmland and conflicts resulting from a mix of functions performed by the individual areas (Bański 1998, 2008; Barnard 2000; Bródka, Markuszewska 2008; Domagalski *et al.* 2008; Falkowski 2009; Głębocki 2008; Gon-

da-Soroczyńska 2009; Jankowiak 2005; Kacprzak, Maćkiewicz 2011; Kacprzak, Staszewska 2008, 2009, 2011; Krasowicz *et al.* 2011; Lisowski, Grochowski 2007; Maćkiewicz, Świderski 2004; Parysek 2008; Stuczyński, Łopatka 2009; Świderski 2007; Wasilewski 2007; Wesołowska 2005). The rapid shrinkage of farmland 'requisitioned' by sprawling cities that can be observed throughout the world clearly shows that without suitable protection agricultural areas are not able to compete with functions typical of expanding agglomerations. Even so, there are many examples of ignoring the fact that farmland is the basic and irreplaceable means of production in agriculture, and that its uncontrolled shrinkage results in the fragmentation of the natural environment and ever more intensive man-environment conflicts (cf. Alig *et al.* 2004; Daniels, Bowers 1997; Ho, Lin 2003; Lapping, Leutwiler 1987; Tan *et al.* 2011).

In accordance with the definition given in Article 46 of the Polish Civil Code (2010), agricultural property can be used to conduct both, crop and animal types of production. Farmland is under legal protection, with suitable provisions supplied in the Farmland and Woodland Protection Act of 3 February 1995 (Official Gazette no. 121, 2004, position 1266, with later amendments). The Act restricts its use for non-agricultural purposes, obliges the owners to take measures against land degradation processes, and regulates issues of reclamation of degraded land. The law provides that, to be taken out of agricultural use and turned to non-agricultural purposes, land should have low suitability for farming (Prus 2012; Radecki 2009; Siuta, Żukowski 2010; Suchoń 2008). Decisions about a change in the destination of farmland, depending on its quality, are the responsibility of the appropriate rungs of executive authority. The process of converting farmland into non-agricultural land involves a change in the destination of the land for non-agricultural and non-woodland purposes in a local spatial development plan, and an administrative procedure of taking the land out of agricultural production.

It should be mentioned that since 2009 farmland located within cities has not been under protection (Kacprzak, Maćkiewicz 2011; Kwartnik-Pruc *et al.* 2011; Prus 2012). As a result of an amendment of the Farmland and Woodland Protection Act, all types of farmland situated within city limits can be put to non-agricultural uses on the basis of a local spatial development plan or a decision concerning construction conditions. In rural areas, a change in the use of agricultural land still depends on its quality and kind. It is necessary to obtain a decision allowing the conversion of best-quality land, i.e. soils of classes I, II, IIIa and IIIb, but also soils of organic origin included in classes IVa, IVb, V and VI. In the case of those four organic types, the conversion procedure is necessary and an appropriate application should be submitted, but the organ taking the decision cannot refuse the conversion. In turn, in accordance with the provisions of the Act, the conversion procedure is not required for poor soils belonging to classes IVa, IVb, V and VI, but of mineral origin. In the study period, turning pieces of very good and good farmland (classes I, II, IIIa, IIIb) to non-agricultural purposes also depended on their size: the Act was in force for the conversion of lots of more than 0.5 ha in area.

The goal of this article is to present and assess the process of taking agricultural land out of production in the Poznań agglomeration in the context of the intensive process of urban sprawl transforming its land-use pattern. It seeks to verify the hypothesis that farmland conversion is an indicator useful in determining the advancement of the sprawl of big cities.

2. Materials and methods

The analysis of farmland conversion in Poznań city and Poznań poviat presented in the article embraces the first decade of the 21st century. It was based on data from the Department for Environmental Protection, Agriculture and Forestry of the Poviat Office in Poznań and from the GEOPOZ Department of Geodesy and City Cadastre in Poznań. However, while the materials contain data covering the entire Poznań agglomeration, the study carried out for the poviat is more profound than that for the city owing to differences in the level of detail of the information. This concerns not only the size and distribution of lots of agricultural land converted, but also their kind, quality and conversion purposes. The statistical data employed in the analysis of changes in the land-use pattern in the Poznań agglomeration

were obtained from the Wielkopolska Bureau of Geodesy and Agricultural Areas in Poznań, the Poviat Centre for Geodetic and Cartographic Documentation in Poznań, and the GEOPOZ Department of Geodesy and City Cadastre in Poznań.

A significant element in the assessment of the process of farmland conversion was interviews conducted with representatives of the local authorities. They allowed identifying weak points of the legal regulations and the most important consequences (especially for physical planning) of carrying them into effect.

In assessing the quality of farmland, use was made of the method of evaluation of agricultural production space worked out by the Puławy Institute of Crops, Fertilisation and Soil Science (*Waloryzacja* ... 1981).

3. Agricultural land in the Poznań agglomeration

A characteristic feature of changes taking place in the land-use pattern in the Poznań agglomeration in the early 2000s has been a systematic shrinkage of agricultural land. In 2001 it embraced 126.9 thous. ha, or 58.7% of the total area. Nine years later a drop by 1.7% (2,141 ha) was recorded, and farmland dwindled to 124.8 thous. ha. This reduced the proportion of agricultural land in the land-use pattern to 57.7%. It should be emphasised that the shrinkage was observed in both, the city and the remaining areas of the agglomeration (Fig. 1). In Poznań, farmland shrank from 9.1 thous. ha (34.9% of the city's total area) in 2001 to 8.6 thous. ha (32.8%) in 2010. In the rest of the area the figure fell from 117.8 thous. ha (63.1% of the total area) to 116.2 thous. ha (61.2%). This tendency occurred in both, rural areas (a drop from 63.1% to 62.3%), and urban ones (a drop from 41% to 38.4%).

In the context of conversion, the quality of land and its suitability for agriculture is of great importance. Within the Poznań agglomeration, soil cover is diversified in terms of genetic types and their use for farming. Brown and podzolic soils of medium and low quality predominate. Very good soil is of marginal importance – none of it qualifies as class I. In the agglomeration the best-quality arable land can be found in the communes of Kleszczewo, Kostrzyn, Rokietnica and Stęszew, in which more than 80% of land belongs to classes IIIa and IIIb as well as IVa and IVb (Fig. 2). The situation is unfavourable in Puszczykowo, Mosina, Skoki and Czerwonak, where more than half of arable land is poor and unfertile soil (classes V and VI).

There are wide differences in the index of the quality and agricultural suitability of soils in the Poznań agglomeration: it ranges from 28.1 points in Puszczykowo to 62.1 in Kleszczewo (Fig. 3). Only in eight communes is it higher than the national average of 49.5 points.

The analysis of the structure of land-capability classes of arable land and the index of the quality and agricultural suitability of soils shows the farmland found in the Poznań agglomeration to be of medium quality. Changes in the land-use pattern are unavoidable, and areas occupied by housing, transport and woodland are likely to go on expanding at the cost of agricultural land.

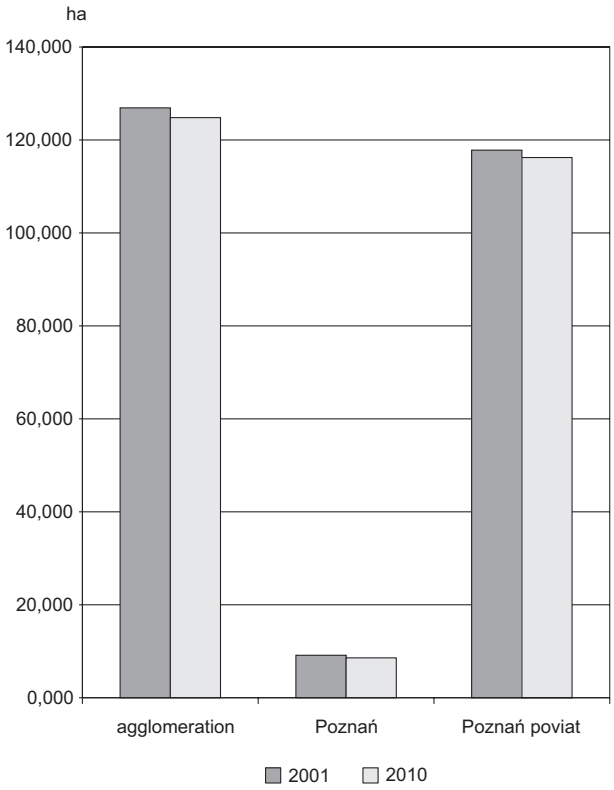

Fig. 1. Agricultural land in the Poznań agglomeration in 2001 and 2010.
Source: prepared on the basis of materials supplied by the Wielkopolska Bureau of Geodesy and Agricultural Areas in Poznań, the Poviat Centre for Geodetic and Cartographic Documentation in Poznań, and the GEOPOZ Department of Geodesy and City Cadastre in Poznań.

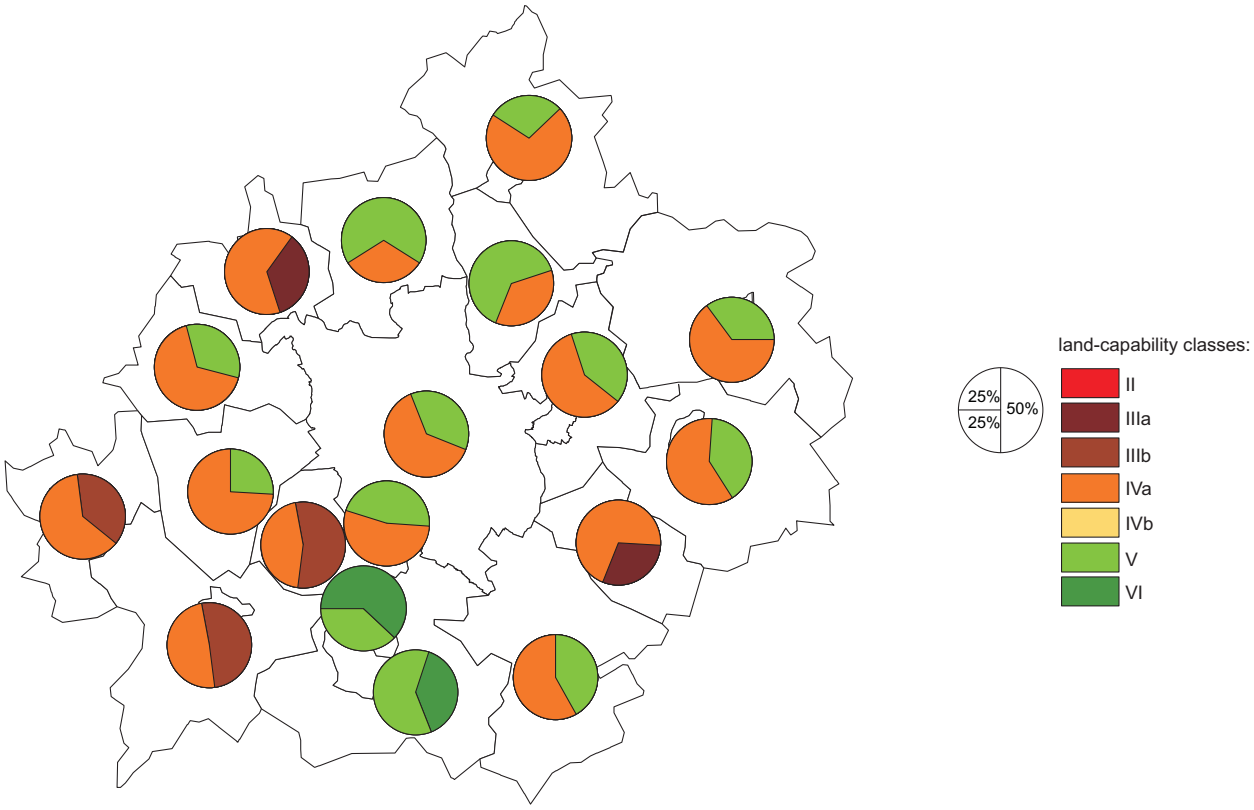

Fig. 2. Quality of arable land (by land-capability class) in the Poznań agglomeration.
Source: prepared on the basis of *Waloryzacja* ... (2000).

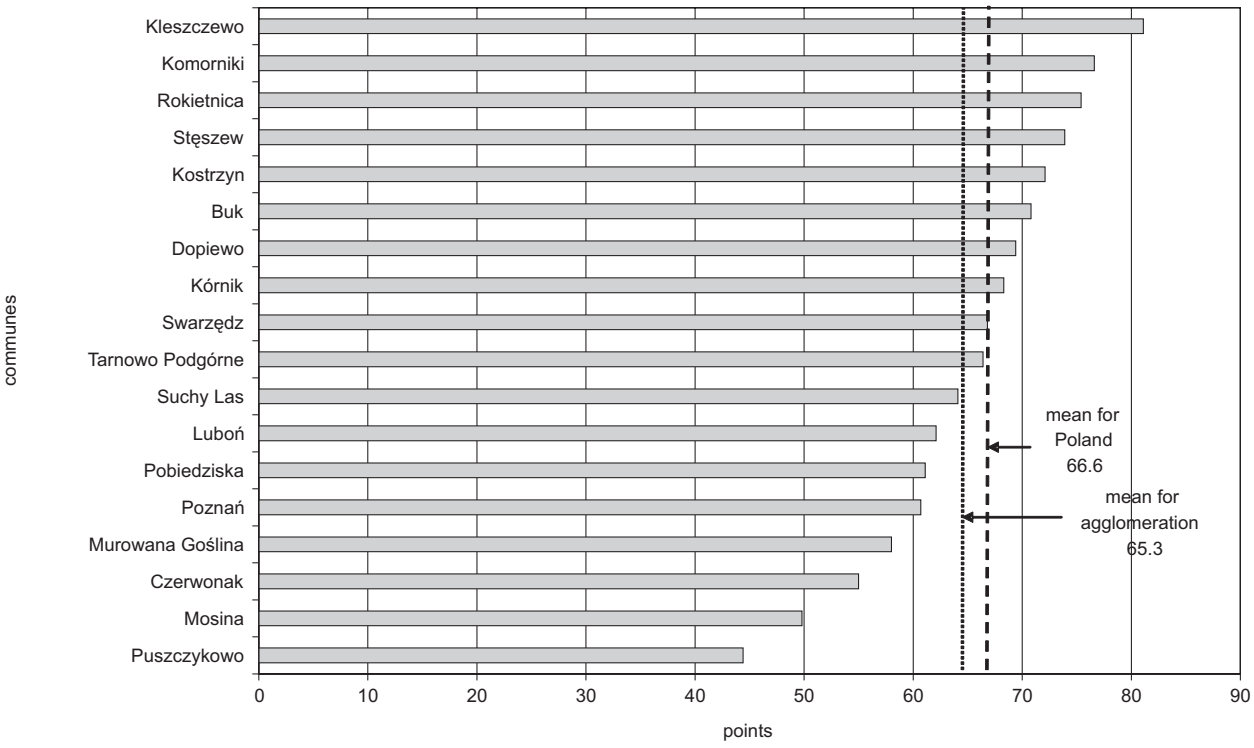

Fig. 3. Index of the quality and agricultural suitability of soils in the Poznań agglomeration.
Source: prepared on the basis of *Waloryzacja* ... (2000).

However, best-quality farmland should be protected by rational space management, and only areas least suitable for farming should be converted to non-agricultural uses.

4. Farmland conversion in the Poznań agglomeration in the early 2000s

In the years 2000–2009 more than 316 hectares of agricultural land were taken out of production in the Poznań agglomeration. The largest area, over 62 ha, was taken out of agricultural use in 2007 (Table 1).

Farmland conversion differed sharply in spatial terms. Poznań city alone accounted for the largest proportion of converted land: nearly one-fifth. Half of all land taken out of production was situated in five out of the seventeen communes of the poviat, viz. Komorniki (12.6%), Tarnowo Podgórne (10.6%), Buk (9.3%), Rokietnica (9.0%), and Swarzędz (8.4%). In Puszczykowo there was no farmland conversion at all in the study period, while in Mosina the converted land was a mere 0.23 ha. The scale of conversion was small (not more than 1.5%) also in the communes of Murowana Goślina (0.4% of total farmland converted), Pobiedziska (0.8%), Stęszew (1.2%), and Czerwonak (1.4%). An analysis of farmland conversion by geodetic precincts showed the process of suburbanisation to advance with greater intensity towards the west and north-west of the agglomeration core (Fig. 4). Another direction of expansion, though distinctly less significant, was that towards the east and south-east, while there was almost no farmland conversion in areas south and north-east of the agglomeration core. Worth noting is the acreage of land taken out of agricultural production. In Poznań the largest areas were converted in the precincts of Ławica (13.20 ha), Spławie (9.49 ha), Kobylepole (5.23 ha), and Żegrze (6.01 ha), or 2%, 1%, 1% and 1%, respectively, of the total area of those precincts. In the poviat, the leaders in terms of the acreage of land taken out of production were the precincts: Plewiska (21.07 ha), Jasin (19.02 ha), Niepruszewo (18.63 ha), Rokietnica (15.86 ha), Skórzewo (14.60 ha), Komorniki (13.83 ha) and Tarnowo Podgórne (10.93 ha). Sometimes the converted land constituted several per cent of the area of the precincts, e.g. Plewiska (2.08%), Jasin (3.27%), Niepruszewo (1.89%), Rokietnica (2.35%), and Skórzewo (2.06%).

In Poznań poviat, arable land predominated overwhelmingly in the structure of converted farmland, at more than 96% (Table 2). It constituted the largest proportion of the conversion each year in all the decade under analysis. The remaining uses, i.e. grassland, accounted for 4% of the converted land (meadows, 3.38% and pastures, 0.25%).

There was no surprise about the capability structure of the land taken out of production, since it is regulated in the legal acts controlling the conversion process in Poland. The land most often converted in the study area was that of class III – 95.7% of the entire agricultural land transformed (Fig. 5).

In the structure of purposes of farmland conversion in Poznań poviat, the most important were industry, services and housing (Fig. 6). Nearly half (127.3 ha) of the area taken out of agricultural use was transformed to perform industrial or service functions. Usually those were various halls and office buildings. Nearly three-fourths of this type of land was located in four communes: Tarnowo Podgórne (25.7 ha), Komorniki (25.7 ha), Swarzędz (25.7 ha), and Buk (25.7 ha). More than 45% (116.51 ha) of the converted farmland was used for housing; this purpose was recorded in all the communes of the poviat except Puszczykowo, where no such conversion took place. Most cases of conversion for housing purposes (58%) were registered in the communes of Dopiewo (21.27 ha), Rokietnica (21.11 ha), Komorniki (14.9 ha), and Suchy Las (10.01 ha). In turn, for transport purposes, primarily for the construction of roads, just over 13 ha (5.2%) of agricultural land was taken out of production, most of it in the communes of Buk (over 5 ha), Kórnik (3.4 ha), and Komorniki (about 2 ha).

It should be emphasised that the uses of land taken out of agricultural production differed greatly in the individual administrative units of Poznań poviat (Fig. 7). The largest proportion (over 70%) of farmland converted to industrial and service use was found in the communes of Swarzędz (81.4%), Tarnowo Podgórne (76.9%) and Buk (70.9%). This type of conversion was also popular in Kórnik and Komorniki, at 58.1% and 57.9%, respectively. The

Table 1. Changes in agricultural land taken out of production in the Poznań agglomeration in the years 2000–2009.

Commune	2000–2009		Year																			
			2000		2001		2002		2003		2004		2005		2006		2007		2008		2009	
	ha	%	ha	%	ha	%	ha	%	ha	%	ha	%	ha	%	ha	%	ha	%	ha	%	ha	%
Buk	29.30	9.3	0.57	2.8	0.42	1.6	2.69	16.6	0.76	3.1	3.65	16.3	5.66	15.8	1.10	3.2	3.64	5.8	3.30	8.7	7.51	20.6
Czerwonak	4.36	1.4	0.64	3.2	0.13	0.5	0.13	0.8	0.53	2.2	0.37	1.7	0.49	1.4	0.54	1.6	0.88	1.4	0.43	1.1	0.22	0.6
Dopiewo	24.16	7.6	1.04	5.2	2.07	8.0	1.05	6.5	1.72	7.1	2.21	9.9	1.54	4.3	3.55	10.3	5.31	8.5	3.00	7.9	2.67	7.3
Kleszczewo	8.20	2.6	0.17	0.8	0.29	1.1	0.11	0.7	0.21	0.9	0.07	0.3	0.50	1.4	1.40	4.1	0.81	1.3	3.77	9.9	0.87	2.4
Komorniki	39.82	12.6	0.85	4.2	1.95	7.5	1.99	12.3	1.92	7.9	1.33	5.9	4.08	11.4	6.62	19.2	15.71	25.1	3.79	10.0	1.58	4.3
Kostrzyn	11.48	3.6	1.33	6.6	1.66	6.4	0.82	5.1	0.78	3.2	0.78	3.5	0.96	2.7	2.40	7.0	0.93	1.5	1.35	3.5	0.47	1.3
Kórnik	22.10	7.0	1.82	9.1	0.39	1.5	0.21	1.3	1.39	5.7	2.12	9.5	3.97	11.1	0.65	1.9	6.06	9.7	4.63	12.2	0.86	2.4
Luboń	6.67	2.1	0.33	1.6	0.22	0.8	0.00	0.0	1.15	4.7	0.76	3.4	0.97	2.7	2.65	7.7	0.59	0.9	0.00	0.0	0.00	0.0
Mosina	0.23	0.1	0.09	0.4	0.04	0.2	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.06	0.2	0.04	0.1
Murowana Goślina	1.42	0.4	0.23	1.1	0.20	0.8	0.17	1.0	0.09	0.4	0.22	1.0	0.11	0.3	0.10	0.3	0.14	0.2	0.12	0.3	0.04	0.1
Pobiedziska	2.56	0.8	0.40	2.0	0.29	1.1	0.13	0.8	0.16	0.7	0.43	1.9	0.16	0.4	0.36	1.0	0.42	0.7	0.21	0.6	0.00	0.0
Poznań	59.16	18.7	0.00	0.0	7.97	30.8	5.27	32.5	11.57	47.7	3.71	16.5	10.60	29.6	6.29	18.2	8.49	13.6	5.26	13.8	0.00	0.0
Puszczykowo	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0
Rokietnica	28.41	9.0	2.21	11.0	3.53	13.6	1.29	8.0	1.74	7.2	3.36	15.0	1.19	3.3	3.20	9.3	3.58	5.7	2.92	7.7	5.39	14.8
Stęszew	3.78	1.2	0.95	4.7	0.24	0.9	0.14	0.9	0.10	0.4	0.12	0.5	0.13	0.4	0.83	2.4	0.23	0.4	0.65	1.7	0.39	1.1
Suchy Las	14.42	4.6	4.04	20.1	0.82	3.2	0.59	3.6	0.85	3.5	0.59	2.6	0.87	2.4	1.70	4.9	1.15	1.8	3.44	9.0	0.37	1.0
Swarzędz	26.70	8.4	1.22	6.1	0.81	3.1	0.40	2.5	0.95	3.9	1.44	6.4	4.42	12.3	0.80	2.3	10.04	16.1	1.28	3.4	5.34	14.6
Tarnowo Podgórne	33.46	10.6	4.16	20.7	4.85	18.7	1.23	7.6	0.32	1.3	1.25	5.6	0.16	0.4	2.34	6.8	4.53	7.2	3.87	10.2	10.75	29.5
Total	316.23	100.0	20.05	100.0	25.88	100.0	16.22	100.0	24.24	100.0	22.41	100.0	35.81	100.0	34.53	100.0	62.51	100.0	38.08	100.0	36.5	100.0

Source: own compilation on the basis of data from the Department for Environmental Protection, Agriculture and Forestry of the Poviat Office in Poznań, and the GEOPOZ Department of Geodesy and City Cadastre in Poznań.

asset of all those communes is their highly advantageous location in terms of transport, which has always been a strong point with investors. Worth noting is the nearly identical structure of uses for agricultural land taken out of production in the communes of Swarzędz and Tarnowo Podgórne. In both cases about 80% of farmland was converted to serve industrial and service purposes, and the remaining areas were given to housing. In turn, in the communes of Czerwonak, Dopiewo, Mosina, Murowana Goślina and Pobiedziska the predominant type of farmland conversion (over 80%) involved turning it into housing lots. A special situation was found in Czerwonak and Murowana Goślina, where housing dominated so overwhelmingly that it accounted for 97.9% and 95.8%, respectively, of conversions, while conversion for transport-related purposes was only of marginal significance, as already mentioned. It was only in the communes of Buk, Kórnik and Mosina that this use figured significantly, at more than 10%, in the structure of converted land (Kacprzak, Maćkiewicz 2011).

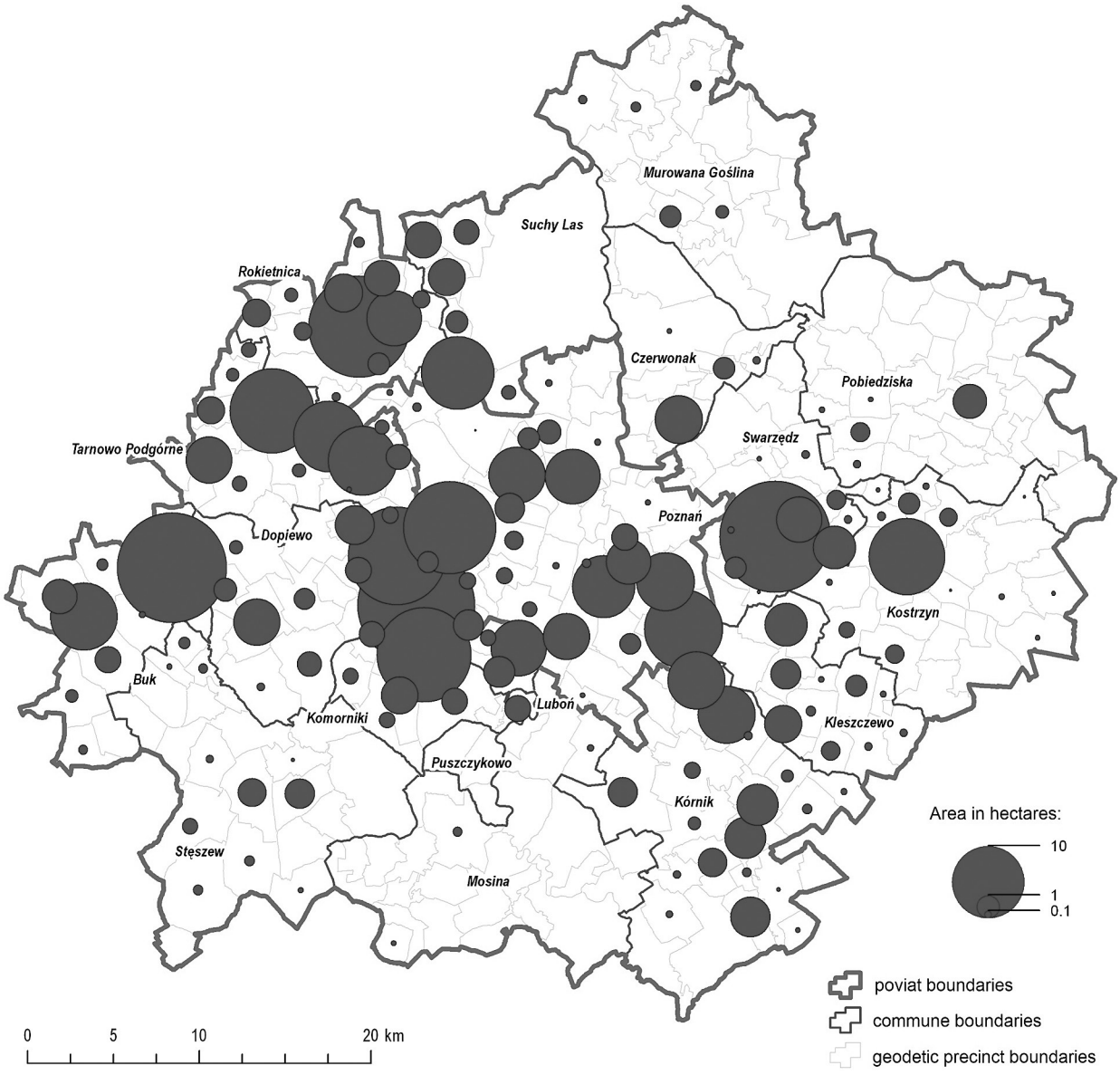

Fig. 4. Agricultural land taken out of production in the years 2000–2009.
Source: own presentation on the basis of data of the Department for Environmental Protection, Agriculture and Forestry of the Poviat Office in Poznań, and the GEOPOZ Department of Geodesy and City Cadastre in Poznań.

Table 2. Structure of agricultural land taken out of production in Poznań poviat in the years 2000–2009.

Years	Agricultural land									
	total		of which							
			arable land		meadows		pastures		other	
	ha	%	ha	%	ha	%	ha	%	ha	%
2000	20.05	100.0	19.15	95.51	0.69	3.44	0.00	0.00	0.21	1.05
2001	17.90	100.0	17.75	99.16	0.10	0.56	0.00	0.00	0.05	0.28
2002	10.93	100.0	9.43	86.28	1.45	13.27	0.05	0.46	0.00	0.00
2003	12.67	100.0	12.16	95.97	0.33	2.60	0.05	0.39	0.13	1.03
2004	18.68	100.0	17.95	96.09	0.70	3.75	0.03	0.16	0.00	0.00
2005	25.21	100.0	23.85	94.61	1.20	4.76	0.07	0.28	0.09	0.36
2006	28.24	100.0	27.07	95.86	1.09	3.86	0.08	0.28	0.00	0.00
2007	54.02	100.0	53.06	98.22	0.81	1.50	0.15	0.28	0.00	0.00
2008	32.80	100.0	30.71	93.63	1.88	5.73	0.16	0.49	0.05	0.15
2009	36.50	100.0	36.02	98.68	0.43	1.18	0.05	0.14	0.00	0.00
2000–2009	257.00	100.0	247.15	96.17	8.68	3.38	0.64	0.25	0.53	0.21

Source: prepared on the basis of data from the Department for Environmental Protection, Agriculture and Forestry of the Poviat Office in Poznań.

The factors determining a growing interest in converting farmland to non-agricultural purposes in the Poznań agglomeration were both social and economic in nature. With an increase in the prices of flats and construction lots in Poznań, some city residents decided to move to the neighbouring communes. They were drawn by property prices more attractive than in the city, and by better living conditions. Such moves were facilitated by the population's growing incomes and the availability of credit. Another aspect of the matter is that local authorities must prepare the land on which investors are supposed to carry out their activity if they want to attract them. Local authorities are interested in obtaining land for investment because this means creating new jobs. Farmland conversion is also often necessary because of the extension of social or physical infrastructure. Over the study period, what was highly significant for all kinds of investors was a typically economic factor – an increase in the value of the converted farmland. Investments in farmland taken out of production that had an

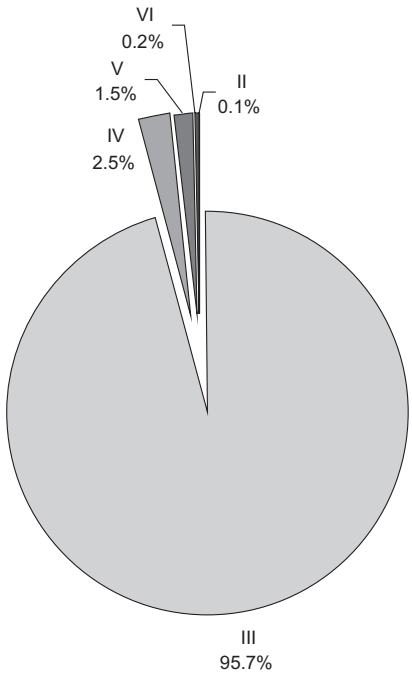

Fig. 5. Qualitative structure of agricultural land (by land-capability class) taken out of production in Poznań poviat in the years 2000–2009.
Source: Kacprzak, Maćkiewicz (2011: 65).

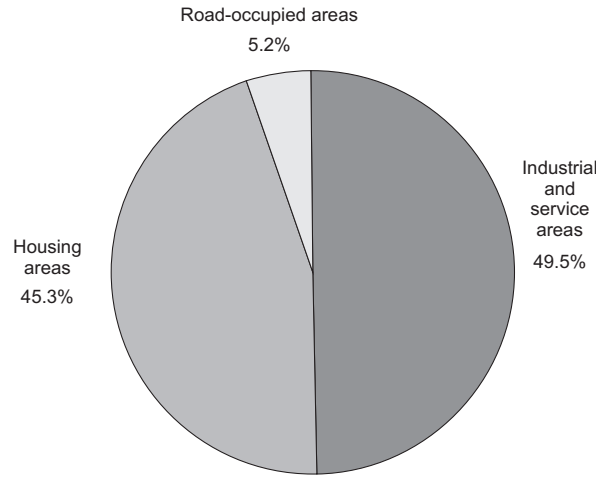

Fig. 6. Structure of the intended use of agricultural land taken out of production in Poznań poviat in the years 2000–2009.
Source: Kacprzak, Maćkiewicz (2011: 65).

attractive transport location yielded very high profits. Information acquired in the course of interviews with decision-makers in the individual communes shows clearly that for financial reasons many farmers were eager to convert even a part of their farmland to non-agricultural purposes and lobbied hard for it.

It should be kept in mind, however, that the effects of taking farmland out of production are hard to assess unequivocally. Investors who have converted the agricultural land acquired and then sold it at a profit are certainly in favour of this measure. But for the communes farmland conversion has both, beneficial and adverse effects. According to Suchoń (2008: 124), advantages include "higher receipts to the budget from the betterment levy. Besides, land conversion stimulates construction and an increase in the population. If the converted land is used for industrial purposes, economic activity develops, there appear new jobs, one can observe a drop in unemployment. However, one should also mention deleterious effects of the conversion for agriculture, such as the resultant agrarian structure, or for environmental protection". One should not forget that the development of housing areas and an increase in the population also generate 'costs', e.g. the need to expand infrastructure, both physical (roads, sewage systems, water-supply systems, refuse tips) and social (extension or construction of sports and educational facilities), as well as an increase in road traffic and environmental pollution. Especially costly is the scatter of building as a result of uncoordinated decisions about building conditions. Unplanned encroachment of building onto an agricultural area generates not only high costs of extension of physical infrastructure, but also an irreversible transformation of the landscape and a fragmentation of agricultural space. What makes this development even more unfavourable is the fact that, as the interviews with decision-makers showed, the communes can take effective countermeasures only when they have local spatial development plans. Regrettably, such plans cover too small an area to prevent uncontrolled building on agricultural land.

The advancement of the process of farmland conversion in the Poznań agglomeration seems

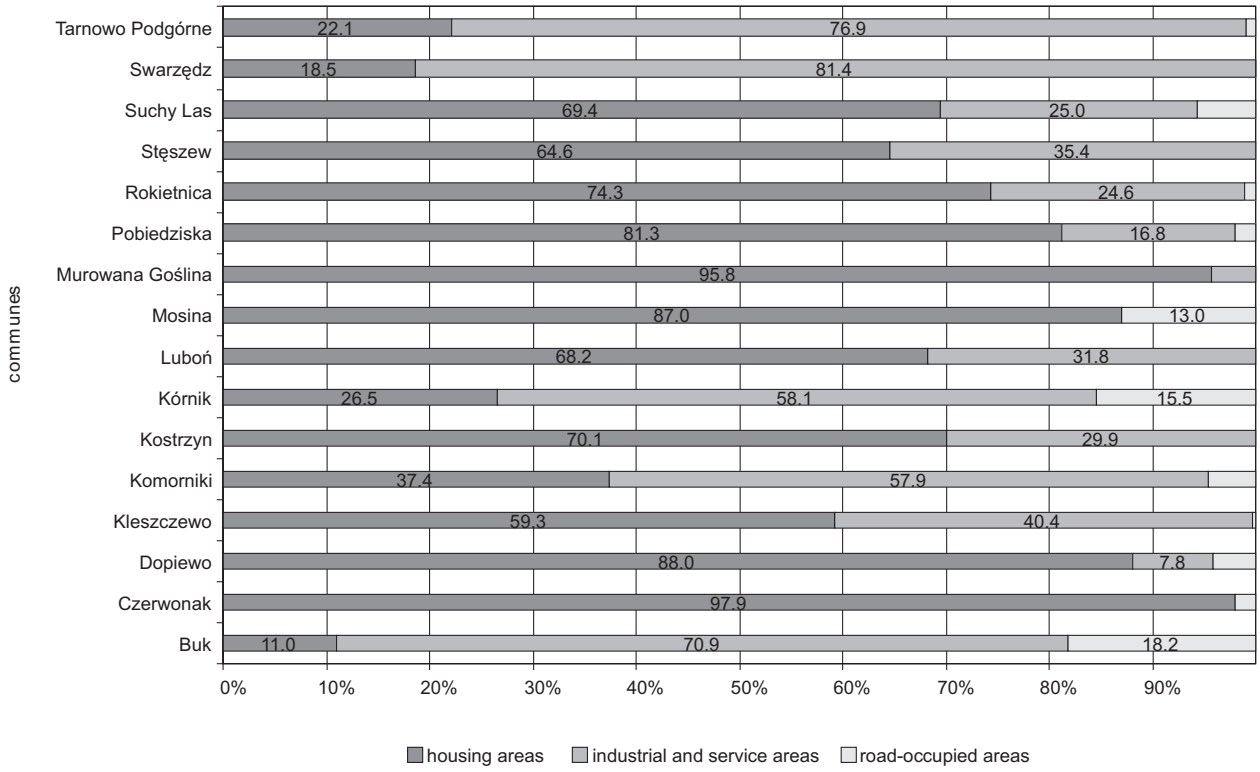

Fig. 7. Structure of the intended use of agricultural land taken out of production in the communes of Poznań poviat in the years 2000–2009.

Source: prepared on the basis of data from the Department for Environmental Protection, Agriculture and Forestry of the Poviat Office in Poznań.

to be unavoidable in the nearest years, but one should not forget that this is not good for the development of agriculture, especially if it is high-quality land which is taken out of production. What makes it even more alarming is the fact that there are resources of low-quality agricultural land which can be used for investment. Besides, apart from a productive function, farmland also performs other functions. One cannot but agree with the opinion by Krasowicz *et al.* (2011: 44) that "Too great losses of agricultural land and forests may disturb the balance of ecosystems. Changes in the land-use pattern are largely unavoidable, forced by the development of urbanisation and transport necessary for the economy. Still, their dynamics and spatial pattern should be monitored on a regular basis. This is a condition of rational space management based on a quantitative assessment of the quality of the landscape and the state of the existing natural resources."

The available data on farmland conversion give only a fragmentary picture of the area of land taken out of agricultural use because, in agreement with the legal provisions, they do not embrace that part of the conversion which involves low-quality farmland (soils of classes IVa, IVb, V and VI of mineral origin). Besides, the conversion sometimes only involves a fragment of a lot earmarked in a local spatial development plan for housing or economic activation. This is an effect of differences existing in tax rates: the tax on property other than agricultural is higher than the agricultural tax. This leads to situations when, for example, on a lot intended for single-family housing only the piece of land directly under the building and the access path to it are taken out of agricultural production, while the land that is not 'converted' usually does not perform agricultural functions any more, but is an area typically used for recreational purposes (Kacprzak, Maćkiewicz 2011). The information obtained from the interviews with decision-makers confirms that there are also problems with the provision given in Art. 7, Sec. 1, Cl. 1 of the Farmland and Woodland Protection Act. It states that it is necessary to gain acceptance of the Minister of Agriculture and Rural Development for converting best-class farmland (I, II, III) to non-agricultural and non-woodland uses if its compact area exceeds 0.5 ha. In practice, this provision was circumvented by dividing larger property into smaller lots of less than 0.5 ha in area.

5. Summing up

In the Poznań agglomeration, farmland is under great pressure, and its effect is changes in the land-use pattern. Taking farmland out of production makes it possible to locate more costly functions on it, like housing, industry or recreation. That is why between 2000 and 2009 an upsurge of interest in farmland conversion and its transformation into non-agricultural uses could be observed. However, the research showed that the area of farmland taken out of production in the city and the poviat on the basis of provisions of the Farmland and Woodland Protection Act was relatively small. The converted land accounted for 0.23% of the total area in the city and a mere 0.14% in the poviat. Conversions differed widely in spatial terms. The process was most advanced in the western and north-western parts of the agglomeration. The farmland taken out of production was usually intended for industrial purposes and services, or for construction.

The imperfect legal regulations make it difficult to establish the real scale of farmland conversion, thus limiting an assessment of all the effects of this process. Even so, what the analysis of conversions revealed was a rapidly advancing process of suburbanisation.

Farmland conversion generates both advantageous and adverse effects. But it seems that many of the advantageous effects of taking agricultural land out of production bring only temporary and, from the point of view of society, illusive benefits. One should not forget that in agriculture land has no substitute, it cannot be replaced by any other means of production. There is no doubt, therefore, that special protection should be given to best-quality land, which is especially suitable for farming. At the same time one should not downplay the non-productive significance of agricultural land. In order to manage this type of land rationally, also its conversion to non-agricultural uses, it is necessary to have full information about factual, and not only partial, conversions. It seems, therefore, that the question in urgent need of a solution is the weakness of the regulations

obtaining in Poland and the faulty public reporting which is their outcome.

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