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POLICIES OF FARMLAND USE IN THE AGGLOMERATION OF POZNAŃ

Abstract: Since the 1990s a characteristic feature of the land-use pattern in Polish agglomerations has been a systematic shrinkage in the area of farmland. In the first years of the socio-economic transformation it was still generally associated almost exclusively with the agricultural function, but the intensive process of urban sprawl caused agriculture in those areas to become limited or even marginalised. In consequence, farmland in agglomerations soon started to be treated as a reserve of land for investment. It was often poorly managed, and with time rash decisions proved unfavourable for communes and their inhabitants. The irreversible loss of urban farmland, also the best plots of a high capability class, invites an increasingly important question: What policy should be conducted towards agricultural land situated within Polish agglomerations? This article seeks to identify and assess policies of farmland use in such areas. The analysis involved changes in the land-use pattern, farmland transactions, and the conversion of agricultural land to other uses. A detailed quantitative and qualitative research was made taking the Poznań agglomeration as an example, i.e. the city of Poznań and the 17 communes of Poznań powiat.

Key words: agricultural land, land-use change, farmland conversion, Poznań agglomeration

JEL codes: O13, Q15

1. Introduction

Since the 1990s a characteristic feature of the land-use pattern in Polish agglomerations has been a systematic shrinkage in the area of farmland. In the first years of Poland's socio-economic transformation it was still generally associated almost exclusively with the agricultural function, but the intensive process of urban sprawl caused agriculture in those areas to become limited or even marginalised. It should be stressed that this great intensity of urban sprawl would not be possible without favourable legislative solutions concerning the division of agricultural real estate,

farmland transactions, protection of farmland and woodland, as well as spatial planning and development. In consequence, agricultural land in agglomerations soon started to be treated as a reserve of land for investment. It was often poorly managed, and with time rash decisions proved unfavourable for communes and their inhabitants. The irreversible loss of urban farmland invites an increasingly important question: What policy should be conducted towards agricultural land situated within agglomerations?

2. Differences in the perception of farmland in agglomerations

In the Polish literature on the subject, the management of farmland situated within urban agglomerations is discussed very rarely. Among the few authors taking up this problem is Krzyk (2013), who claims that the need to work out and implement a balanced urban agricultural policy based on a long-term development strategy and integrated with the natural system of a city and its region is completely ignored in Poland. The interest of politicians and mainstream media in this field narrows down largely to populist statements concerning changes in rules of farmland and woodland protection. Those are mostly biased comments in which the function of farmland in urbanised areas is identified with such 'backwardness' as tilling the land and an opposite of development understood as the construction of houses and other facilities (cf. *e.g.* Wielgo, 2014). This approach is in stark contrast to how farmland situated within agglomerations is perceived in the modern world today. Both agricultural production in cities and the possible use of farmland in the natural revitalisation of urbanised areas have been gaining in importance recently (Giecewicz, 2005, Palej, 2010, Sroka, 2014). This upsurge of interest in urban farming observed in both advanced and developing countries follows, on the one hand, from the ever-greater threat to the food safety of large human communities caused, among other things, by the anticipated further dynamic population growth, rapid urbanisation, the dependence of cities on far-away sources of food, and the economic crisis, and on the other hand, from the growing ecological awareness of society as manifested in the wish to produce and consume high-quality organic food (Purnomohadi, 2000, Mougeot, 2005, Palej, 2010, Colasanti *et al.*, 2013, Sousa Matos, Sales Batista, 2013, Orsini *et al.*, 2013, Sroka, 2013, 2014). It is also emphasised that farmland in agglomerations performs many other highly significant functions apart from the productive one, *e.g.* aesthetic, ecological, cultural, social, or recreational leisure-related, thus being an integral element of their green infrastructure (Sousa Matos, Sales Batista, 2013, Sroka, 2014, Kołodziejczak, Kacprzak 2015). That is why urban agriculture and farmland located in urban and suburban areas is thought to be of key significance in restoring and ensuring future balanced development of agglomerations (Soler Moniel, Renting, 2013). Many cities, *e.g.* Vienna, Stuttgart, Lyon, Seville or Lisbon, have already taken several measures to protect or reintroduce agriculture (Jędraszko, 1998, Giecewicz, 2005, Krzyk *et al.*, 2013, Soler Moniel, Renting 2013, Sousa Matos, Sales Batista 2013, Sroka 2014).

3. The temporal and spatial range of research, source materials and methods employed

A detailed research embraced the Poznań agglomeration, an area of 2,161.8 km² consisting of the city of Poznań and 17 communes of Poznań powiat: 2 urban communes of Luboń and Puszczykowo, 8 rural-urban communes of Buk, Kostrzyn, Kórnik, Mosina, Murowana Goślina, Pobiedziska, Stęszew and Swarzędz, and 7 rural communes of Czerwonak, Dopiewo, Kleszczewo, Komorniki, Rokietnica, Suchy Las and Tarnowo Podgórne. The analysis covered the period 2000–2013. The chief sources of data were materials and documents of the Voivodeship Geodetic and Farmland Bureau in Poznań, the Powiat Centre for Geodetic and Cartographic Documentation in Poznań, the GEOPOZ Department of Geodesy and City Cadastre in Poznań, and communes making up the Poznań agglomeration. Use was made of planning documents at the local and supra-local levels, information about farmland transactions, and data from land and building records concerning kinds of land use. Also a field study was made and expert interviews conducted with local government authorities and officials, including Jerzy Wiktorko, director of the Powiat Centre for Geodetic and Cartographic Documentation in Poznań; Paweł Wielgosz, head of the Farmland Protection Section of the Department for the Protection of Environment, Agriculture and Forestry of the Powiat Office in Poznań; Bartosz Derech, head of the Rokietnica Commune Council; Janusz Andrzejewski, deputy head of the Czerwonak Commune Council; and Edyta Musiał, head of the Economic Development Section of Rokietnica Commune. This allowed an assessment of their policies on the use of agricultural land. A survey research was also conducted among a random, representative sample of Poznań residents about their perception of the functions of agricultural land in urban space. They were asked about the observed changes in the area of farmland, the proportion of farmland in the total area of the city, its distribution in space, and functions performed, as well as what functions farmland should perform in the future. 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.

4. Changes in the area of farmland

As a result of an uncontrolled expansion of cities in Poland into adjacent rural areas, there have appeared fairly large enclaves of farmland within their administrative limits (Szymańska *et al.*, 2007, Sroka, 2014). Agricultural land accounts for an estimated 44% of the area of Polish cities. Also in the largest ones this proportion is high, at 22.5% in Warsaw, 27.4% in Cracow, and 38.5% in Łódź. It should be noted that arable land makes up the largest part of farmland in Polish cities and their functional areas (Krzyk, 2013, Sroka, 2013, Kołodziejczak, Kacprzak, 2015). Similarly, in the city of Poznań and its surrounding powiat, the proportion of agricultural land in

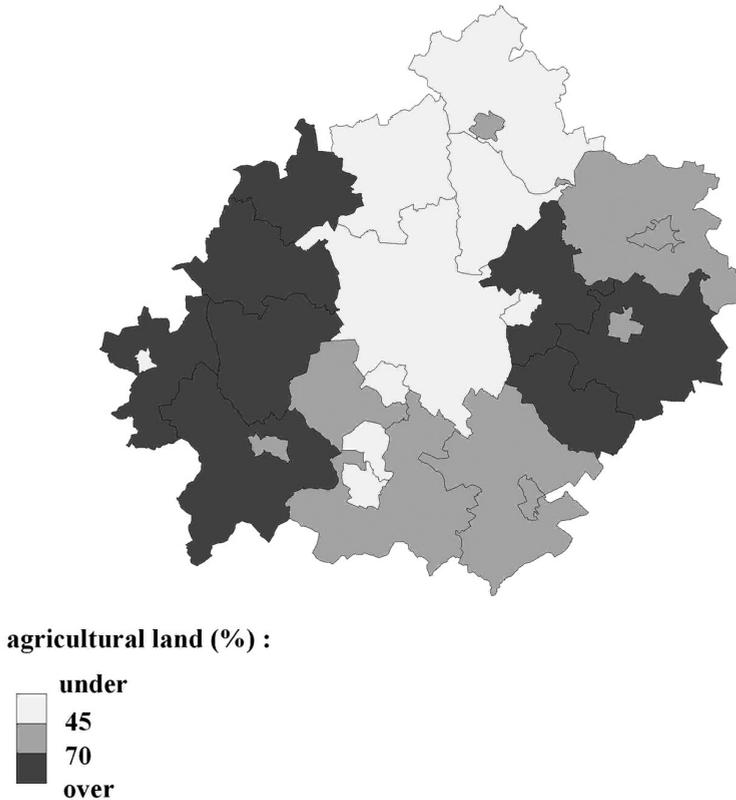


Fig. 1. Land in agricultural use in the Poznań agglomeration in 2013
 Source: prepared on the basis of materials supplied by the Poviata Centre for Geodetic and Cartographic Documentation in Poznań and the GEOPOZ Department of Geodesy and City Cadastre.

the total area is considerable: in 2013 it equalled 31.5% in the city, 60.7% in Poznań poviata, and jointly 57.0% in the Poznań agglomeration (Fig. 1, Fig. 2).

However, the research demonstrated that both in the city and the poviata the area of agricultural land kept declining systematically. In the years 2001–2013 the dynamics of change in the area of agricultural land in the poviata, the city and the agglomeration as a whole was 96.6%, 89.2% and 97.2%, respectively.

5. Farmland conversion and turnover

As in all big cities and their surroundings, agricultural land in the Poznań agglomeration is exposed to a very strong investment pressure resulting in the dwindling of its area and changes in the land-use pattern. The exclusion of farmland from agricultural production, commonly called farmland conversion, makes it possible to put a piece of farmland to a different use, e.g. housing, industrial, or service-related (Maćkiewicz, Kacprzak, 2011, Kacprzak, Maćkiewicz, 2013, Kołodziejczak, Kacprzak, 2015).

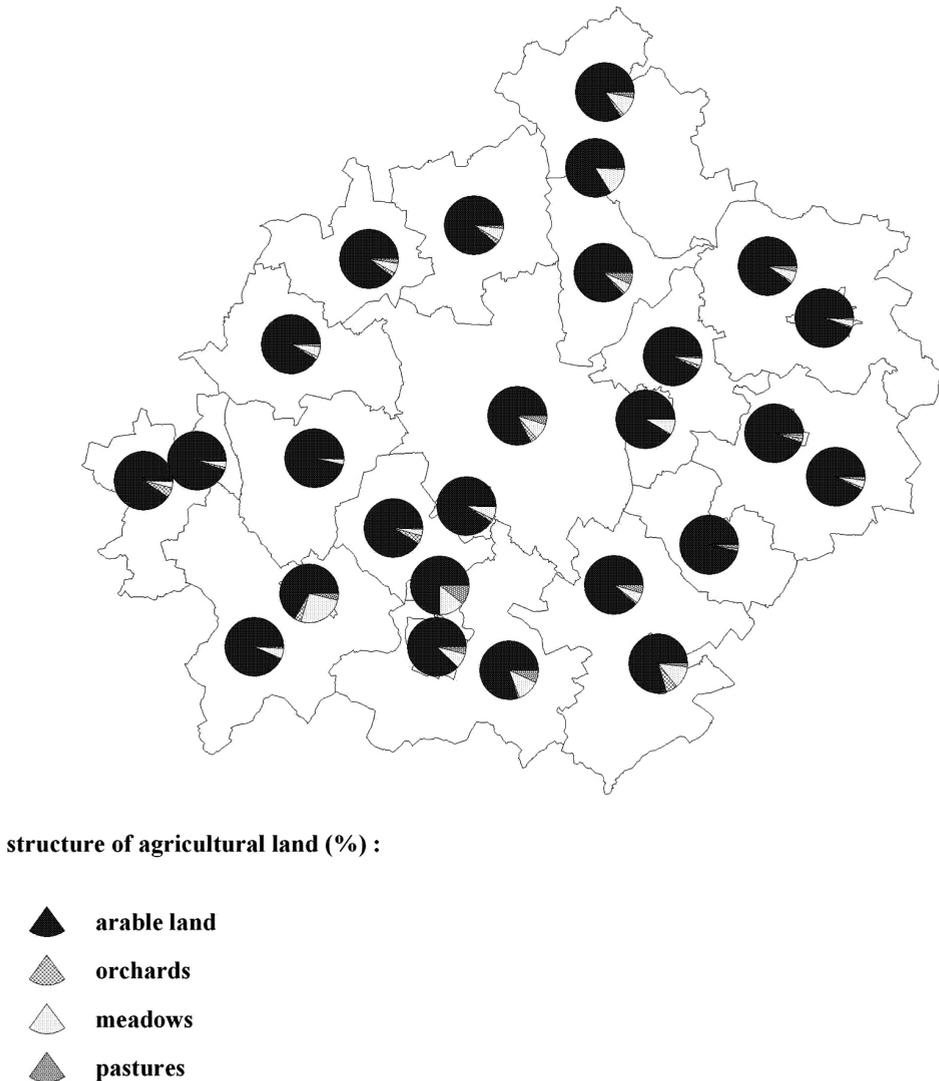


Fig. 2. Structure of agricultural land in the Poznań agglomeration in 2013

Source: prepared on the basis of materials supplied by the Poviata Centre for Geodetic and Cartographic Documentation in Poznań and the GEOPOZ Department of Geodesy and City Cadastre.

Over the years 2000–2013, more than 430 ha 434.73 ha of legally protected land was converted to non-agricultural uses. This process was most advanced in the western and north-western parts of the agglomeration, i.e. the communes of Tarnowo Podgórne (78.21 ha), Komorniki (53.24 ha), Rokietnica (39.55 ha), Buk (38.76 ha), Dopiewo (37.30 ha), and in Poznań city (59.15 ha; Fig. 3, Fig. 4).

This followed directly from the advancement of and trends in urbanisation processes in the Poznań agglomeration. The land was used for industrial or service-related purposes (50.9%), housing (43.9%), and roads (5.2%). It should be empha-

sised at this point that under the law regulating the designation of farmland for non-agricultural purposes a decided majority of such land included soils belonging to land-capability class III. This means that they were soils which, apart from those of class II that appear in the Poznań agglomeration in trace quantities (0.4%), are the best and rarest type of land here (Fig. 5).

The actual loss of good land may have been even greater because between January 2009 and September 2014 the conversion of even the best farmland located within city limits did not require a separate decision owing to a change in the Farmland and Woodland Protection Act. That is why this land, although actually excluded from agricultural production at that time, was ignored in the above statistics. What is more, as the research revealed, it is a common practice to convert only a part of farmland to non-agricultural uses (Maćkiewicz, Motek, 2014). Applications for conversion usually do not concern an entire plot of land, but only those parts of it where a building investment is made (Fig. 6). As a result, more good-quality farmland is being converted from agricultural use due to investment pressure in Polish agglomerations than the statistics indicate (Kacprzak, Maćkiewicz, 2011, Krasowicz *et al.*, 2011, Prus, 2012, Krzyk, 2013, Maćkiewicz, 2015).

However, turning soils of good and very good quality to non-agricultural uses is not the only problem in the management of farmland in Polish cities and their functional areas. The common perception of farmland in agglomerations as a reserve of building land makes people convinced about almost certain benefits deriving from

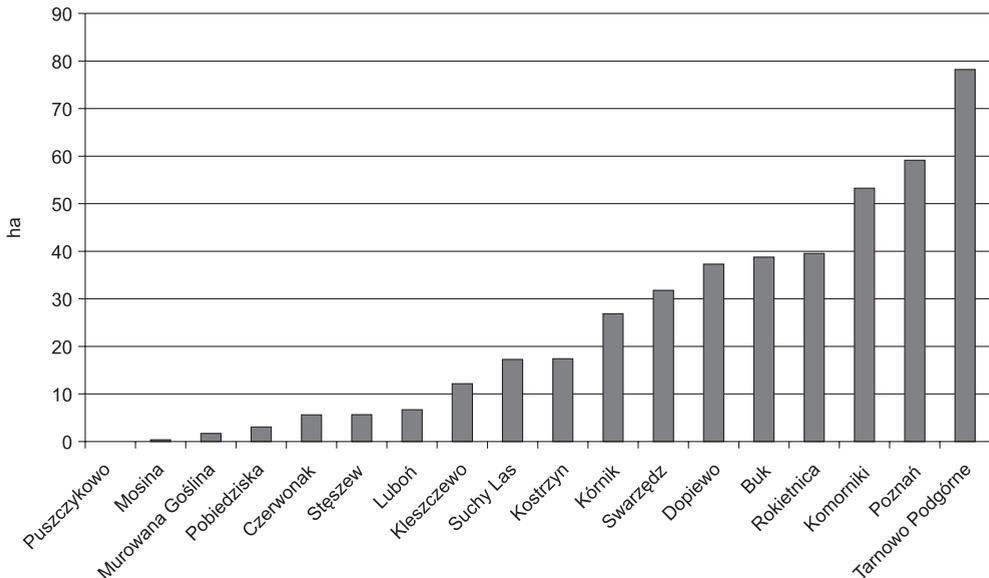


Fig. 3. Farmland taken out of production in the communes of the Poznań agglomeration in the years 2000–2013

Source: prepared on the basis of data of the Department for Environmental Protection, Agriculture and Forestry of the Powiat Office in Poznań, and the GEOPOZ Department of Geodesy and City Cadastre in Poznań.

the purchase of this kind of land because they assume that sooner or later it is going to be converted from agricultural use. In consequence, farmland transactions in metropolitan areas often tend to be speculative operations (Maćkiewicz, 2015). A great number of geodetic divisions, the sale of farmland and building on it on the strength of decisions about building conditions, lead to the fragmentation of the agricultural landscape and an advancing degradation of space (Krzyk, 2013, Koło-

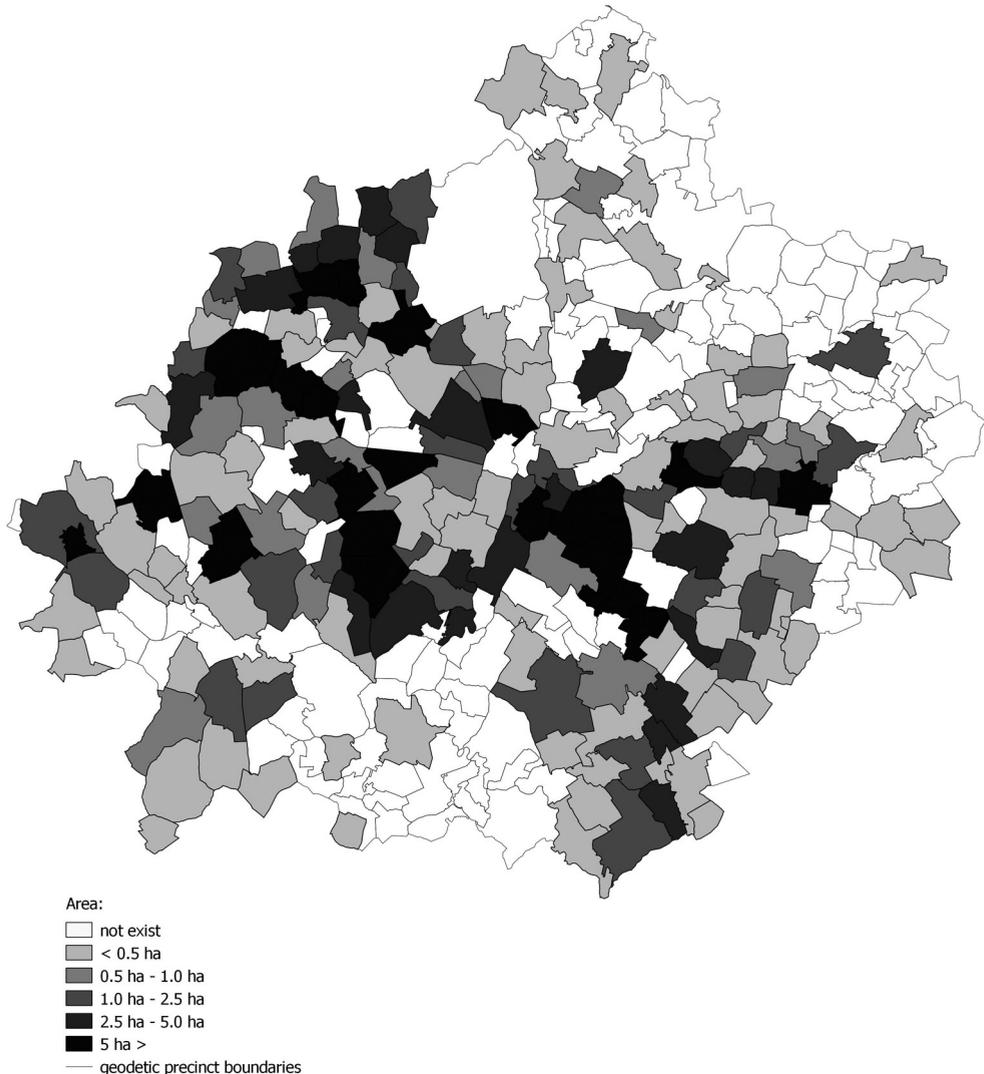


Fig. 4. Farmland taken out of production in geodetic precincts of the Poznań agglomeration in the years 2000–2013

Source: prepared on the basis of data of the Department for Environmental Protection, Agriculture and Forestry of the Poviata Office in Poznań, and the GEOPOZ Department of Geodesy and City Cadastre in Poznań.

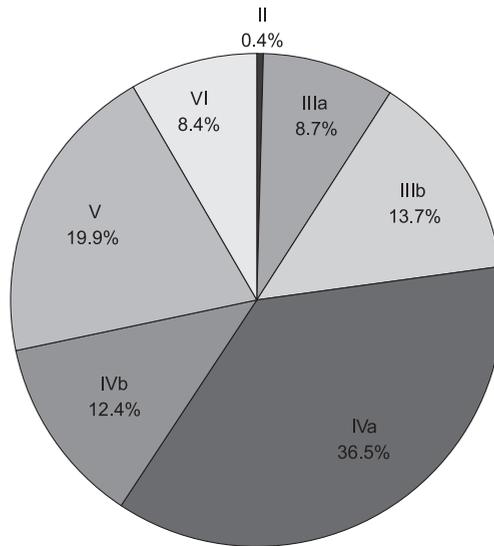


Fig. 5. Quality of arable land by land-capability class in the Poznań agglomeration
Source: prepared on the basis of *Valuation of the agricultural production space by commune*, IUNG, Puławy 2000.

dziejczak, Kacprzak 2015, Maćkiewicz 2015). An analysis of transactions in unbuilt lots in the Poznań agglomeration in 2013 showed that only 10% of farmland sold exceeded 1 ha in area. It was also more high-priced than the farmland situated outside the agglomeration, i.e. farther from the city of Poznań.

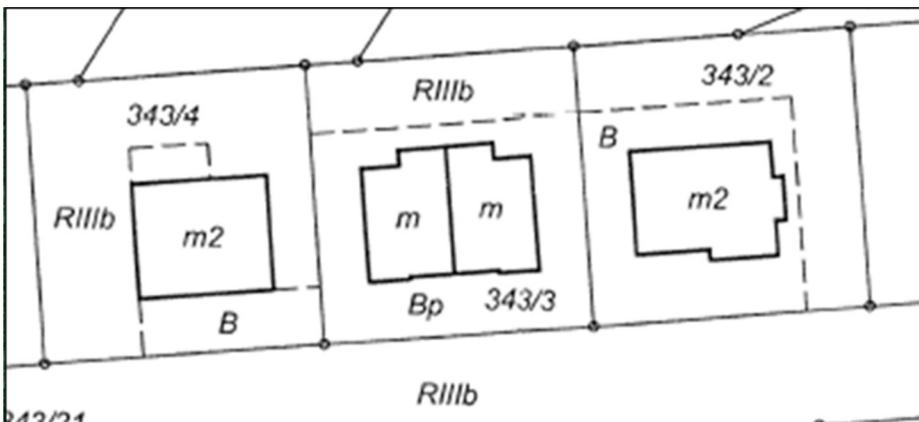


Fig. 6. Partial change in the use of farmland for non-agricultural purposes
Source: Maćkiewicz and Motek (2014).

6. Perception of farmland by representatives of self-government authorities and Poznań residents

The expert interviews conducted with representatives of local authorities and an examination of planning documents confirmed that they could see the problem of the fragmentation of the agricultural landscape and a deterioration in the quality of space in the Poznań agglomeration. The representatives and officials stated that one of the reasons for this state of affairs was the absence of earlier policies of farmland management in the agglomeration. They also claimed that the treatment of farmland as potential investment land had brought about many adverse consequences. That is why some communes, *e.g.* Rokietnica, have already adopted preliminary remedial measures in this respect by making suitable records in their Studies of the Conditions and Directions of Spatial Development and development strategies or, even more effectively, by passing preventive local spatial development plans which forbid building on farmland (Fig. 7). It also turned out that the present local authorities could see the need for farmland to be developed in a way that would enhance the quality of the natural environment. For example, communes with a low woodiness index plan the purchase of farmland from the Agricultural Real Estate Agency and its afforestation in order to boost their investment attractiveness and the quality of life in their area.

Poznań residents are aware of changes occurring in the development of farmland within the city. The results of a survey research about their perception of the functions of farmland in urban space showed most of them (65.9%) to be aware of its steady shrinkage in the city. In their opinion, the chief functions of farmland in Poznań today were investment, productive and recreational ones; it also played a protective role, although to a decidedly lesser degree (Fig. 8).

However, in answering the question about how they thought farmland should be treated in Poznań, nearly one-third (30.9%) of the respondents decided that only good-quality farmland should be protected as essential for food production. A further 28.9% were of the opinion that all farmland should be protected since it was used for a variety of purposes: food production, recreation, and other. Only slightly more than 20% believed that owners were entitled to use their land freely, while 9.2% thought that all farmland should be protected since it was used for food production. Thus, the results of the survey research show that most respondents see the need to protect the farmland located within city limits, even if not solely because of its productive function, but also because of its other uses, *e.g.* recreational, protective, educational, or environmental. Only one in five respondents was of the opinion that the owner of farmland located in the city's administrative limits could use it in whatever way he or she liked.

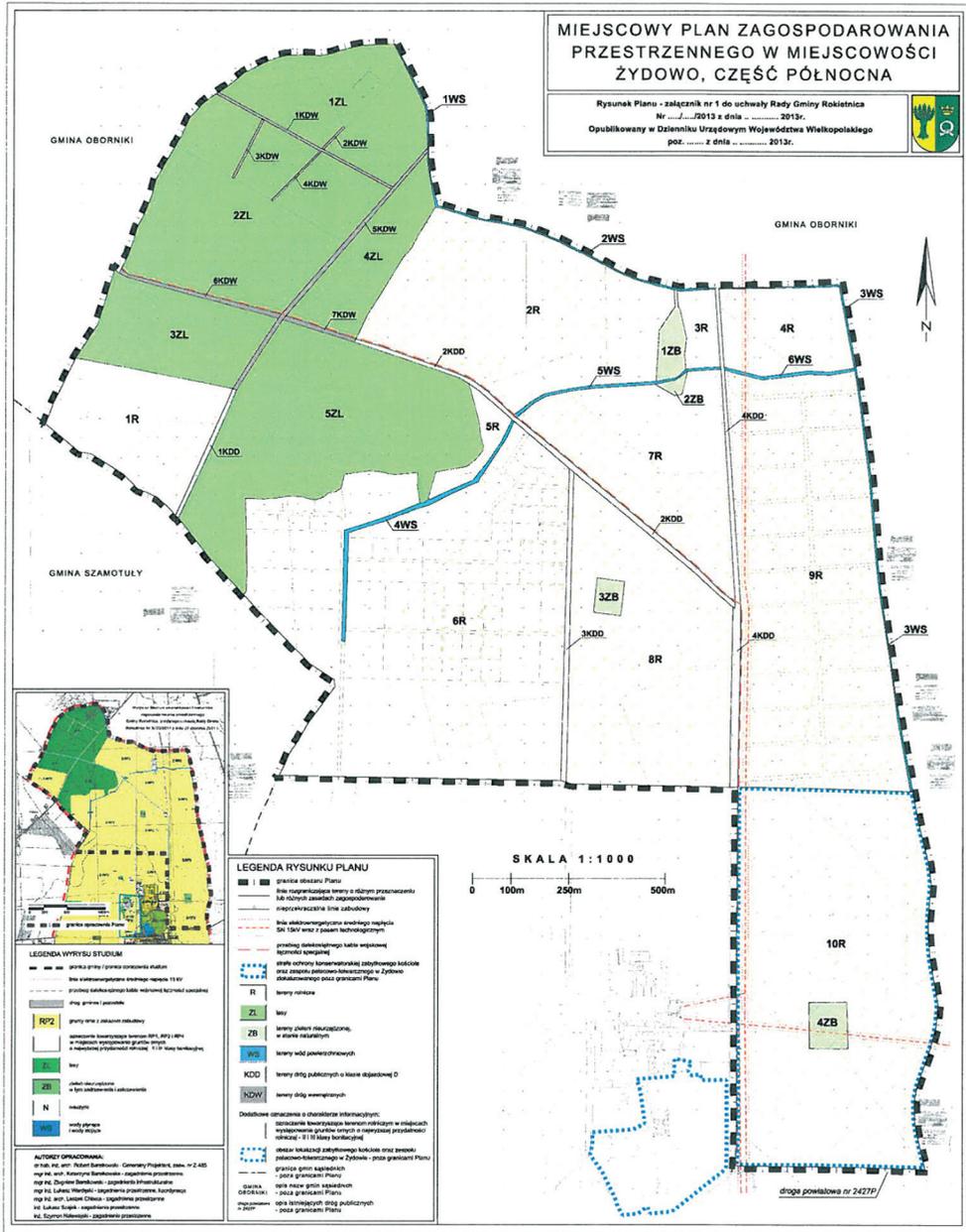


Fig. 7. 'Preventive' local spatial development plan at Żydowo, a locality in the northern part of Rokiętница commune
Source: Rokiętница Commune Office.

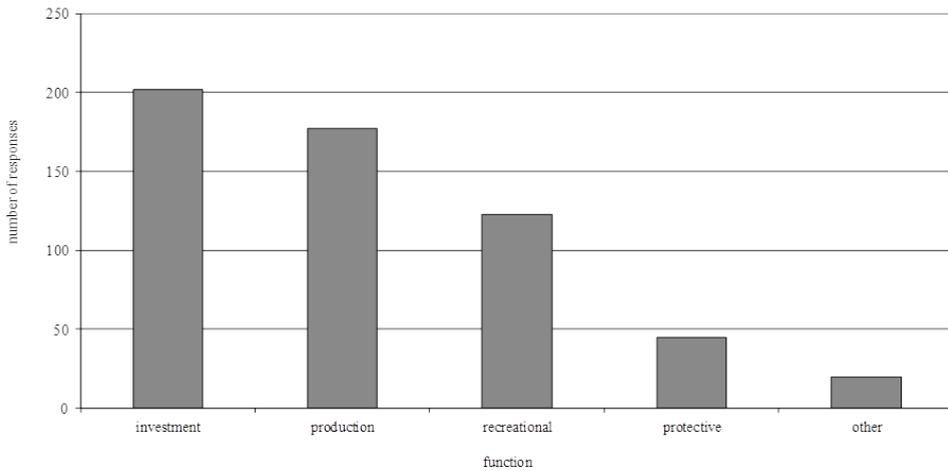


Fig. 8. Poznań residents' perception of current functions of farmland in the city
Source: own compilation on the basis of the results of a survey research.

7. Conclusions

Although agricultural land still accounts for a relatively high proportion of land in Polish cities and their functional areas, for years it has been dwindling systematically. This farmland shrinkage in urban agglomerations is a normal development that does not threaten their food safety, but on condition that its progress is planned and only the poorest land – of IVb-VIRz capability classes – is used for building. Regrettably, in Polish agglomerations also good-quality farmland suffers investment pressure and goes out of agricultural use in an irreversible way. Their another serious problem is the advancing fragmentation of the agricultural landscape and a constant deterioration in the quality of space. This is a consequence of the absence of a planned urban agricultural policy, wrong legal regulations conducive to a dispersed building pattern and a waste of space, and leaving the building of farmland to the fancy of developers. However, as the present research has shown, the approach to farmland has started to change, especially at the local level. Local governments are increasingly interested in working out well-thought-out, long-term policies towards farmland. Some communes of the Poznań agglomeration can already see the urgent need for its protection against an unjustified conversion from agricultural production. This shows in the passing of planning documents of a preventive nature (local plans of spatial development) in which building on agricultural land is prohibited. Local authorities change their approach to functions performed by this type of land. They do not identify it exclusively with agricultural production, and do not treat it only as areas that, sooner or later, are going to be converted to non-agricultural

purposes. Also the inhabitants are increasingly aware of the multifunctionality of farmland and its potential, like ensuring the production of food and reinforcing an area's green infrastructure by offering recreation grounds, performing a protective function, or raising the level of its woodiness. In addition to those favourable tendencies occurring at the local level, it is also necessary to work out an agglomeration-scale policy concerning the use of farmland.

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