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AGRICULTURAL SUBURBAN ZONE OF WARSAW IN THE LIGHT OF STUDIES  
ON THE SPATIAL DIFFERENTIATION OF AGRICULTURE IN THE WARSAW  
VOIVODSHIP

Development of a town is largely interrelated with the development of its immediate surroundings. The appearance of these interrelations and their development entails changes in the here character and functions of areas surrounding the town<sup>1)</sup>.

In case of agriculture the areas surrounding the town supply its inhabitants with food products. The areas performing such functions are usually called agricultural suburban zones.

Not all of the larger agglomerations of non-agricultural population have their own agricultural subsidiary areas; in majority of cases, however suburban agriculture is characterized by several specific features differentiating it from agriculture in areas situated further away from towns.

The aim of the present paper is to describe (on the example of agriculture in the present Warsaw Voivodship) the specificity and spatial differentiation of the agricultural suburban zone of Warsaw. The authors do not attempt at defining its territorial range, notwithstanding the practical and scientific importance of that problem.

The research covered the areas lying within administrative boundaries of the present Warsaw Voivodship. The work was based on data supplied by Central Statistical Office (GUS) and Voivodship Statistical Office of the City of Warsaw<sup>2)</sup>, as well as on materials and papers concerning the present spatial differentiation and prospective development of agriculture in the Warsaw Voivodship, completed in the Office for Warsaw Development Planning<sup>3)</sup>. The use has been also made of materials concerning agriculture completed during field research on land utilization carried out by the Department of Agricultural Geography in the Warsaw suburban zone.

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According to the present administrative division the Warsaw voivodship includes 28 towns and 32 communes, constituting 1.2 % of the total territory of Poland (1.1 % of total agricultural land). In 1976 the area covered by the research was inhabited by 2 millions people (6.3 % of total national population) of whom rural population constituted only 12.1 %, and agricultural population - 6.2 %) national average 29.8 %.

Private land ownership clearly prevails in the area under study. In 1976 individual holdings covered 88.8 % of agricultural land. State farms dominate in socialized agriculture (9.4 % of total agricultural land) while collective farms and farmers' cooperatives are rather scarce (1.2 % and 0.6 %, respectively).

Among individual holdings very small farms (below 2 ha) prevailed, amounting to 57.6 % of the total. They were owned mostly by part-time farmers<sup>4)</sup>. In terms of area, however, holdings having 5 - 10 ha in size were prevalent; the proportion of holdings of over 10 ha, which constituted only 3.6 % the total number of individual holdings, was also higher than that of numerous small holdings, and equalled 17.5 %.

The field research<sup>5)</sup> has proved, however, that the actual acreage of land cultivated within one holding is often larger (particularly in the above-mentioned vegetable growing areas) due to frequent occurrence of long-term tenancy of land from owners who are not farmers and often both work and live in Warsaw.

State farms in the investigated area are much diversified in size. They are mostly not very large (100-300 ha) experimental farms or seed breeding stations. There are only a few state farms exceeding the size of 1 000 ha.

The average size of the collective farm in Warsaw Voivodship amounted to 130 ha.

In spite of fairly high degree of urbanization the Warsaw Voivodship is characterized by considerable percentage share of agricultural land (55.4 %) in total land area. Forests cover 22 %, and the remaining area is occupied by settlements, transport, facilities, water reservoirs, waste land, and others.

Studies on the orientations of land utilization in the Warsaw suburban zone, carried out by means of the method of successive quotients<sup>6)</sup> have shown high degree of its spatial differentiation (cf. Fig. 1).

The areas west and south-west of Warsaw, having mostly good and very good soils (black earths) are characterized by predominantly farming, field orientations ( $R_6p_6$ )<sup>7)</sup> or predominantly farming, field orientations with a share of settlements and forests ( $R_5p_5 + 0_1$  or  $R_5p_5 + L_1$ ). In the areas south of Warsaw field orientations with orchards and forests or orchards, grassland and forests ( $R_5p_4s_1 + L_1$  and  $R_5p_3s_1z_1 + L_1$ ) predominate.

North-western, northern and partly eastern areas, having large proportion of poor soils, include farming-forest orientations, field with grassland, settlements or waters ( $R_3p_2z_1 + L_3$  and  $R_3p_2z_1 + L_2 + W_1$ ) as well as farming, field grassland orientations with forests ( $R_4p_2z_2 + L_2$ ).

As regards agricultural land, arable land definitely prevails, covering 73.5 % of the total, while in the areas west of Warsaw, characterized by very good soils, their percentage share increases up to 85 - 90 % or even 93.6 %. (commune of Ożarów).

In crops structure cereals prevail (ca 50 %) although their percentage share is considerably lower than the national average (ca 54 %). Only in areas specialized in vegetable growing, which include relatively narrow belt of very fertile soils (black earths) west of Warsaw, cereals give way to vegetables and among them wheat and barley dominate over rye. In the remaining areas, having mostly medium or poor soil (class IV, V and VI), which cover 84 % of agricultural land in the voivodship, rye is prevailing cereal crop followed by large proportion of oats.

Characteristic feature of suburban agriculture is high percentage share of potatoes and vegetables. In the area under study it amounted to 24.2 % for potatoes (national average 16.6 %) and 10 % for vegetables (national average 1.5%).

The largest areas covered by potatoes occurred in northeastern and southeastern parts of the voivodship. They were mostly early varieties raised for alimentary purposes.

Field vegetables growing concentrates in western part of the Warsaw suburban zone (cf. Fig. 2). In the belt of very fertile black earths it covers about 50 % of the area under crops. In some communes situated west and south-west of Warsaw where the above mentioned fertile soils cover only part of the area the percentage share of vegetables is lower (ca 20 % of the crops). In the northern part of the voivodship there is a small but highly specialized (onions and cucumbers) region of field vegetables growing, which includes fertile soils near Zakroczym and Nowy Dwór Mazowiecki. In the immediate northern neighbourhood of Warsaw the intensity of vegetable growing considerably decreases (5.5 % of crops).

The following vegetables dominate: cabbage (18.6 % of the total vegetable growing area), onions (17.1 %), and carrots (16.0 %). Tomatoes cover 10.3 %. Considerable area is taken by cucumbers, cauliflowers and red beets. Other vegetables (parsley, leeks, celery, radish, lettuce, rhubarb, horse-radish, chive, dill, etc), cover jointly 13.4 % of the total area under vegetables.

Altogether in the area under study in 1976 vegetables covered 13 000 ha of arable land, 97.2 % of which were owned by individual farmers.

In addition to field vegetables growing, cultivation of vegetables under plays

an important role in vegetable production. In the investigated area greenhouse, hotbeds and foil tunnels covered 2788191 sq. metres of which greenhouses constituted 40.4 %, hotbeds - 27.0 %, and foil tunnels - 32.6 %.

The most intensive production of early vegetables and flowers takes place in greenhouses. In the investigated area there are 528 sq. m of greenhouses per 100 ha of agricultural land (national average 45 sq.m). They are situated mainly in the northern and southern parts of the suburban zone (cf. Fig. 3). In greenhouses situated south of Warsaw production of flowers plays an important role together with vegetable growing. The largest greenhouse enterprise in Poland is located there, that is Horticultural Combine Mysiadło in which greenhouses cover 36 ha, of which 9 ha are occupied by flowers (mainly carnations, gerberas and roses); the remaining area is used chiefly for cucumber and tomato cultivation.

The third area with large number of greenhouses, which has been quickly developing in recent years, lies west of Warsaw.

Hotbeds are concentrated in the northern part of the Warsaw suburban agricultural zone, in the vicinity of Jabłonna and Legionowo (cf. Fig. 4).

Foil tunnels are grouped further north of Warsaw

Vegetable output in 1976 in Warsaw Voivodship amounted to 313 000 tons, that is 8.3 % of the total national output. Purchase of vegetables per 1 ha agricultural land came in Warsaw Voivodship to 946 kg (national average 45 kg). Vegetables and fruit were also clearly prevalent in gross agricultural production (34.1 % in 1976)<sup>8</sup>.

Well-organized and fairly numerous centres of purchasing of vegetables buy up about 80 % of vegetables while direct delivery by producers to Warsaw-market is relatively small.

Vegetables produced in the Warsaw agricultural suburban zone which exceeds the administrative boundaries of the Warsaw Voivodship are also transported to other parts of Poland, mainly to Upper Silesia and to the port agglomeration Gdynia-Gdańsk.

The ration of industrial crops to total crops area in Warsaw Voivodship is lower than the national average and amounts to 2.5 %. Prevailing among them is sugar beet which is raised mainly in the western part of the voivodship. Fodder crops are relatively scarce and amount to 9.6 % of total crops.

Orientations of arable land utilization create a synthetic picture of the structure of crops(cf. Fig. 5)<sup>9</sup>. In the area under study one can observe a high degree of their spatial differentiation. In the central part of the voivodship the orientations are predominantly vegetable ( $v_6$ )<sup>10</sup> and predominantly vegetable with potatoes ( $v_5 + p_1$ ) as well as vegetable-potatoes and potato-vegetables with

cereals ( $v_3 + p_3$ ;  $v_3 + p_2 + r_1$  and  $p_3 + v_2 + r_1$ ;  $v_2 + p_2 + w_1 + r_1$ ). The same orientations occur also in town areas even at considerable distance from Warsaw. In areas situated near Warsaw but having poorer soils -rye-potato orientations occurred ( $r_3 + p_3$ ). In areas situated further away from Warsaw and having large proportion of less fertile soils the orientations were towards rye and potato growing with oats ( $r_3 + p_2 + o_1$ ). Other orientations appeared only occasionally.

High ration of perennial crops in the total area of agricultural land is another characteristic feature of agriculture of the Warsaw suburban zone.

Orchards are most important of the perennial crops both in terms of area (5.2 % of agricultural land) and significance for crop production. The largest commercial orchards of the agricultural suburban zone are situated south in Warsaw (near Belsk, Błędów, and in the Vistula vallery from Czersk to War-ka); they constitute one of the biggest and most specialized fruit-growing areas in Poland. In some village of that region orchards cover over 80 % of agricultural land. They are most frequently apple orchards in pure culture <sup>11)</sup>, with lowered heads or, in case of more recent orchards, low-headed wall trees. Orchards in that region are characterized by a very high quality of cultivation <sup>12)</sup> which allowed recently to reduce to a large extent the annual changes in their yields. This, in turn, resulted in considerable lessening of differences in the size of output in favourable and unfavourable years (up to 30 %).

The Warsaw Voivodship includes only norther part of the abovementioned fruit growing region; nevertheless in the two southernmost communes orchards cover over 15.6 % and 21.0 % of agricultural land (cf. Fig. 6). Considerable area is also occupied by orchards in the remaining territories of the southern part of the voivodship as well as in one of the northern communes (Serock - 7.5 %).

Although the main fruit growing centres of the Warsaw suburban zone lie beyond the administrative boundaries of the voivodship, yet the fruit production in this area is quite large. For example, the purchase of fruit in the Warsaw Voivodship amounts to 192 kg per 1 ha of agricultural land the national average being 32 kg.

In gross output (in terms of weight) of fruit produced in the Warsaw Voivodship there is a definite prevalence of apples (83.3 %), considerable proportion of pears (7 %) and plums (6.1 %), while the share of cherries (2.3 %) , sour cherries (0.5 %) and others is small.

Besides fruit raised in orchards production of berry fruit is of importance. In 1976 berries constituted 22 % of gross fruit output in the voivodship.

Berry growing concentrated south and north of Warsaw along the Vistula valley. The cultures require great labour input, hence growing tendency to develop berry cultivation further away from Warsaw.



In 1977 in the Warsaw Voivodship the largest areas were occupied by strawberries - jointly 1600 ha, situated mainly near Piaseczno and Tarczyn in the south and in the vicinity of Serock and Zakroczym in the north.

Raspberry cultivation covered largest areas in the northwestern part of the voivodship (cf. Fig. 7) as well as in the territory of Warsaw in the agricultural areas of the districts Mokotów and Praga South.

Currant cultivation within the voivodship boundaries concentrated in its southern part and also in the Lomianki commune in the north (mainly red currants).

Gooseberry cultivation occupied largest areas within the territory of Warsaw, especially Mokotów and Ochota districts, and also in communes lying in the immediate neighbourhood of Warsaw to the south and north-west.

In gross output of berry fruits produced in the Warsaw Voivodship strawberries dominated (44.4 %), with considerable share of raspberries (29.2 %) and currants 22.8 %. Gooseberries constituted merely 3.6 %.

Animal production in well-developed agricultural suburban zones is usually of secondary importance as animal products are better preserved and easier to transport than fruit and vegetables, and therefore can be produced in further distance from the market.

In the area of Warsaw Voivodship animal products constituted in 1976 32.2 % of gross agricultural production. Two orientations of livestock breeding prevail here (cf. Fig. 8). In communes lying in the immediate neighbourhood of Warsaw to the north and south and in the eastern part of the investigated area as well as in a few communes westernmost of Warsaw the orientation is toward cattle breeding with a share of pigs ( $B_4 + T_2$ )<sup>13</sup>. In majority of the remaining communes mixed cattle and pigs orientation occurs ( $B_3 + T_3$ ); only in the communes of Raszyn and Lomianki orientation is predominantly toward pigs breeding with cattle as a secondary element ( $T_5 + B_1$ ) due to large pig breeding farms located there. In agricultural areas of towns orientations of livestock breeding are more differentiated due to higher role of poultry breeding.

The density of particular species of farm animals in Warsaw Voivodship in 1976 was considerably lower than the national average: for cattle the ratio is 47 heads per 100 ha of agricultural land (national average 67 heads), for pigs - 91 heads (national average 98.4), for sheep 4.3 heads (17.9 national average).

Distribution of cattle was characterized by great spatial differentiation - from 20-25 heads per 100 ha agricultural land in vegetable growing area to 40-45 heads in fruit growing region, and 60-70 heads in the areas north and north-east of Warsaw which have large percentage share of meadows and pastures.

State farms - generally less involved in vegetable and fruit growing - had higher ratio of cattle to agricultural land (84 heads per 100 ha agricultural land).

High spatial differentiation was also characteristic of the ratio of pigs - from 50-55 heads per 100 ha in vegetable and fruit growing areas west and south of Warsaw up to above 200 or even 300 heads in a few communes where pigs breeding farms are located.

Altogether, the number of livestock measured in the number of conventional (large) animal units per 100 ha of agricultural land in the Warsaw Voivodship is not high and shows great spatial differentiation - from 30-50 units in agricultural areas of most towns and in vegetable and fruit growing regions to 60-70 animal units in communes lying north-east and north-west of Warsaw, and over 80 in communes where large pigs breeding farms are located.

In the structure of gross agricultural production<sup>14/</sup> in the Warsaw Voivodship crop production clearly prevails (67.7 %) over animal production (32.3 %). Gross crop production was characterized by high ratio of vegetables and fruit (34.1 %), considerable share of potatoes (12.8 %), and relatively small proportion of cereals (8.3 %). In gross output of animal produce there was a large share of meat (21.5 %) and considerably lower percentage of milk (8.5 %).

Suburban agriculture of the Warsaw Voivodship, and especially areas specialized in market-gardening have also a very high level of commercial production per 1 ha of agricultural land. For example in 1970 in the former powiat of Pruszków the commercial production was highest of all the 317 powiats of Poland and amounted to 18000 zloty (national average in that year - 7900 zl). The area had also the highest degree of commercialization which in 1970 amounted to 70 % of gross output while the national average was 45 %<sup>15/</sup>.

Orientations of commercial production also show clearly distinctive characteristics. Research on this problem carried out by J.Szyrmer<sup>16/</sup> (by powiats for the whole country) proved that in 1970 in the former powiat of Pruszków commercial production was orientated mainly toward market-gardening with a share of milk, and in the fruit growing region (more or less equal to the territory of the former powiat of Grójec) orientation was toward fruit production and pig breeding with milk.

Problems concerning characteristics of production in the Warsaw suburban zone in the new administrative division (communes) have not been explored so far; however, such studies are being planned in relation to the present Warsaw Voivodship.

Agriculture of the Warsaw suburban zone is faced with a problem of labour deficiency. It is particularly serious in areas highly specialized in market-gardening and fruit growing. For example, in the fruit growing region near

Czersk a day's wages for cutting fruit trees or picking fruit amount to 400-500 zł. Due to absorptiveness of Warsaw labour market, vegetable and fruit growers frequently employ seasonal workers from regions situated further away from Warsaw.

Growing specialization and intensification of production in the Warsaw agricultural suburban zone causes important changes not only in level and orientations of agricultural production but also in the character of rural settlements. In areas specialized in market gardening traditional farm buildings with the dwellinghouse, cow-shed, pigsty and barn, give way to a high standard dwelling-houses and vegetable storehouses. In fruit growing regions cold stores and garages for farm machinery appear alongside of the dwelling-houses the size of which often exceeds actual family needs. If the above-mentioned changes can be considered favourable, the steady decrease of the acreage of agricultural land in the neighbourhood of the quickly developing Warsaw agglomeration must arouse anxiety. As can be seen from the paper by S. Misztal<sup>17/</sup>, nearly three-thirds of the industrial of the Warsaw suburban zone are located west of the city at least in part in the area of most fertile soils; for example, development of the Ursus tractor factory shows how easily we give up those very best soils which become irretrievably lost for agriculture.

Due to the steady increase of population in Warsaw and its vicinity and changes in the consumption pattern, plans for prospective agricultural development<sup>18/</sup> anticipate that individual land ownership will remain the prevailing form of land ownership in the suburban zone, with decreased number of holdings and larger average size of a holding.

Owing to the steady outflow of population from agriculture, especially in the less specialized areas, the percentage share of socialized sector in agriculture will increase. It is anticipated that further increase of area covered by vegetables cultivation will be accompanied by increase of the area occupied by greenhouses, and that mainly in socialized sector.

It is assumed that fruit production will increase, particularly as regards soft fruits the supply of which is still insufficient on Warsaw market. For that reason new large orchards are to be founded which will ensure high commodity production and good quality of fruit.

As concerns livestock breeding, the increase of cattle stock is planned, especially of dairy cattle. Several large farms for dairy cattle breeding are to be built as well as poultry breeding farms based on industrial technologies.



1. Problems concerning geography of suburban zones and relevant literature are extensively discussed and quoted in paper by Lech Zawadzki.
2. Wyniki Spisu Rolniczego 1977. Statystyka Polski (Results of agricultural census 1971, Statistics of Poland). GUS, Warsaw 1977; Rocznik statystyczny województwa stołecznego warszawskiego. (Statistical yearbook of the Warsaw Voivodship), WUS, Warsaw 1977; Plony i zbiory głównych ziemio-  
plodów rolnych i ogrodnich w 1977r. (Yields and crops of major agri-  
cultural and horticultural products in 1977) WUS, Warsaw 1978; Wyniki  
spisu rolniczego w zakresie użytkowania ziemi, powierzchni zasiewów oraz  
zwierząt gospodarskich (Results of agricultural census for land utilization,  
crops area and farm animals) WUS, Warsaw 1978.
3. A. L. Bienczyk, H. Piotrowska, Z. Majewska, M. Brzostek.  
Charakterystyka rolnictwa na obszarze stołecznego województwa warszaw-  
skiego ( Characterization of agriculture in the Warsaw Voivodship) Warsaw  
1975; Podstawowe kierunki rozwoju produkcji rolnej w województwie st. war-  
szawskim (Basic orientations of agricultural production development in the  
Warsaw voivodship), Warsaw 1977; Program zaopatrzenia aglomeracji war-  
szawskiej w podstawowe artykuły spożywcze w latach 1976-1990 (Programme  
for provisioning of basic foodstuffs for the Warsaw agglomeration in 1976-  
-1990), Urząd Miasta Stołecznego Warszawy, Warsaw 1977.
4. According to estimations of the Office for Warsaw Development Planning  
the ratio of part-time farmers in the Warsaw Voivodship in 1976 amount-  
ed to 52.4 % (national average 35.1 %).
5. Cf. W. Gadomski. Rolnicza strefa podmiejska Warszawy w świetle przezę-  
ladowego zdjecia użytkowania ziemi (Agricultural suburban zone of Warsaw  
in the light of land use investigations). Dokumentacja Geograficzna z. 4, 1968,  
pp. 93-105.
6. J. Kosirowicki. Some methods of determining land use and agricultural  
"orientations" as used in the Polish land utilization and typological studies.  
Geographia Polonica 18, 1970, pp. 93-120; R. Kulikowski, J. Szyrmer.  
Changements recents de l'utilisation du sol en Pologne, Geographia Polo-  
nica 29, 1974, pp. 205-217.
7. Orientations of land utilization were defined by means of the method of su-  
ccessive quotients; particular categories of land utilization are indicated  
by the following symbols; R - agricultural land, L - forests, O - settle-  
ments, W - waters, p - arable land, z - grassland, s - orchards.
8. According to gross output structure at fixed prices.

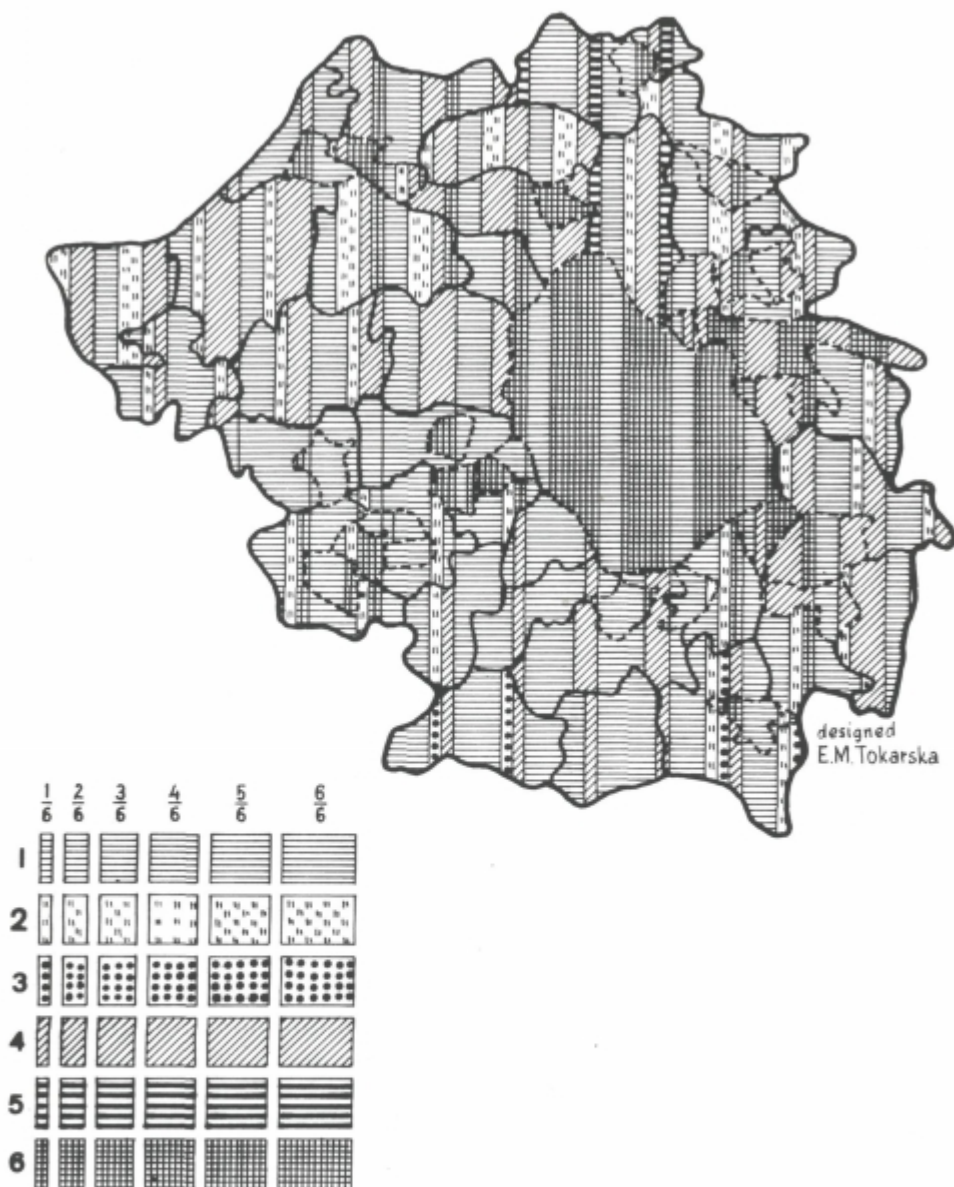


Fig. 1. Land use orientations

$\frac{1}{6}, \frac{2}{6}, \dots, \frac{6}{6}$  part of total area; 1. Arable land;  
2. Grassland; 3. Orchards; 4. Forests; 5. Waters;  
6. Built up areas.

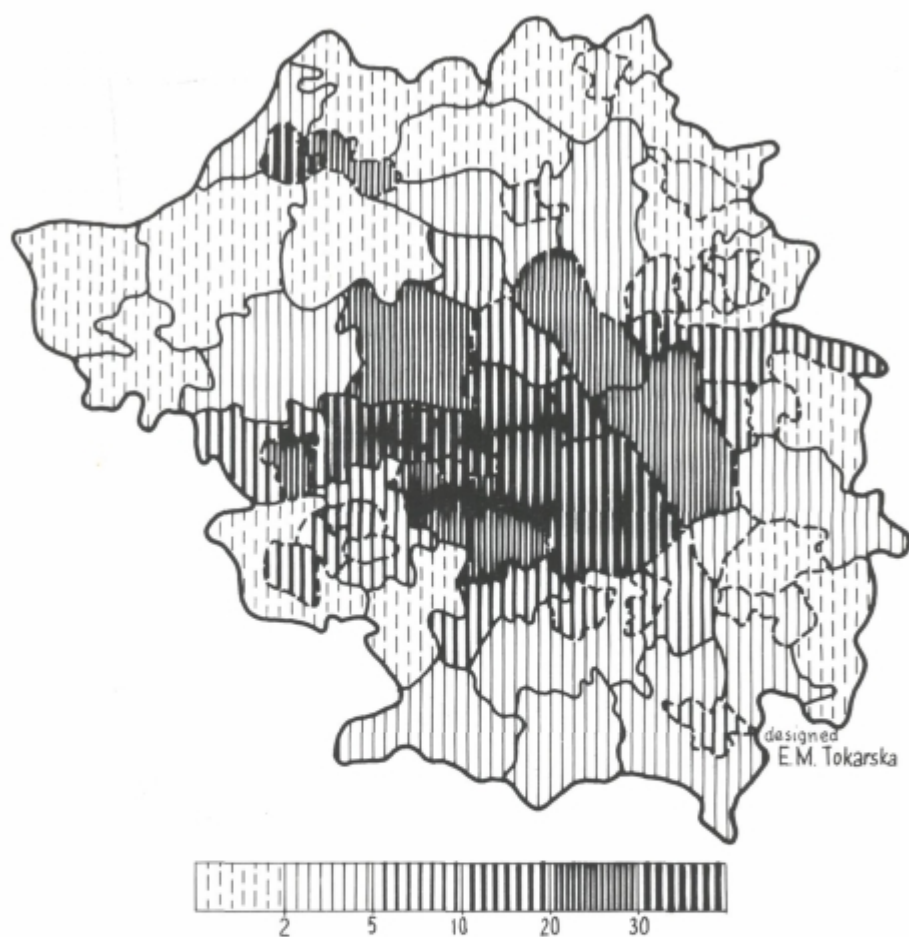


Fig. 2. Vegetables as a percentage of arable land.

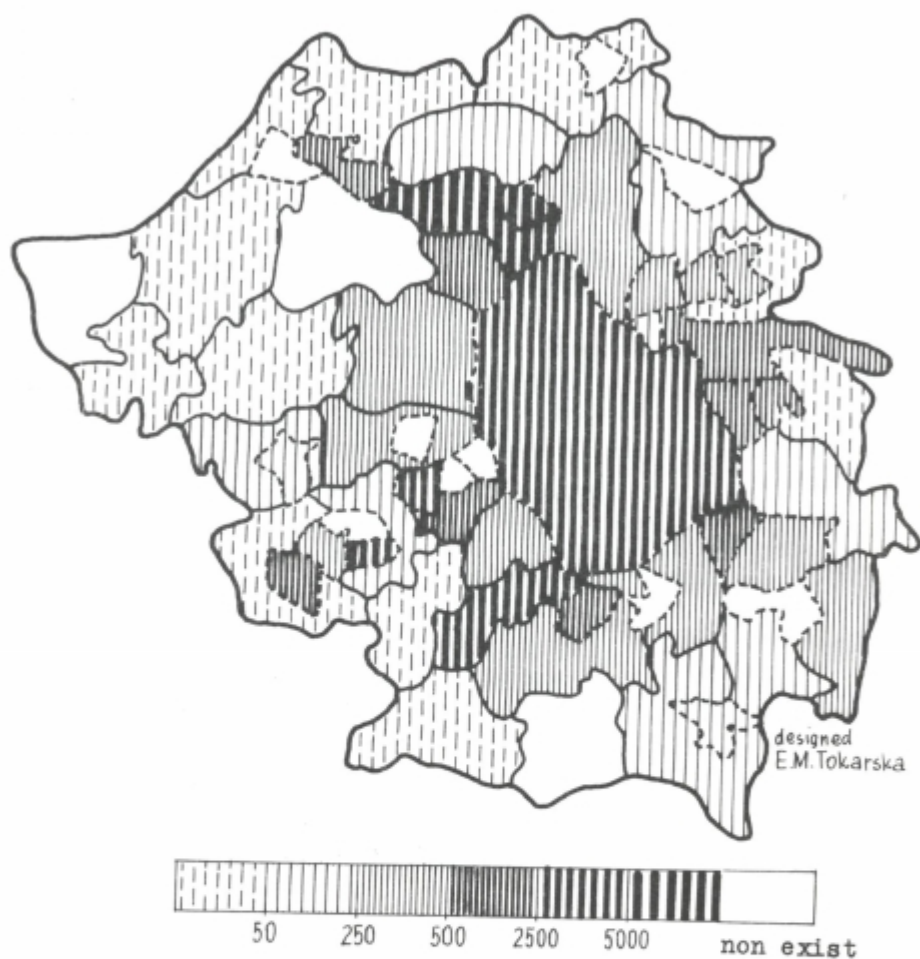


Fig. 3. Green houses in square metres per 100 hectares of agricultural land



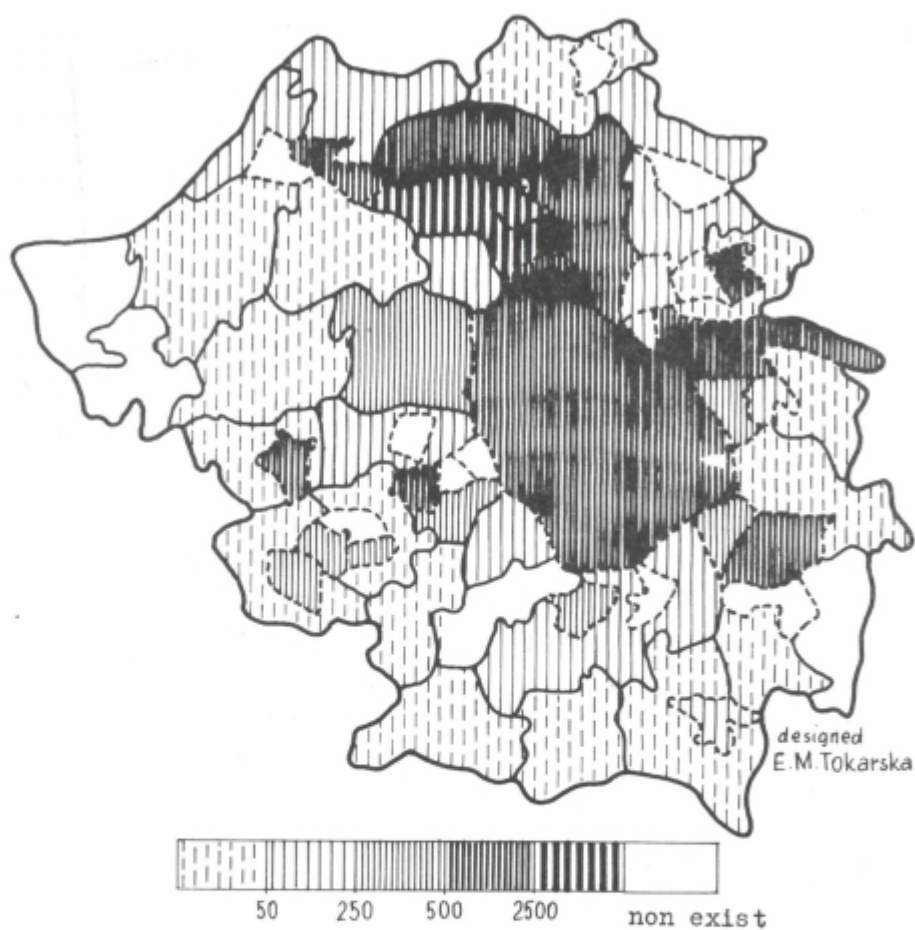


Fig. 4. Hotbeds in square metres per 100 hectares of agricultural land

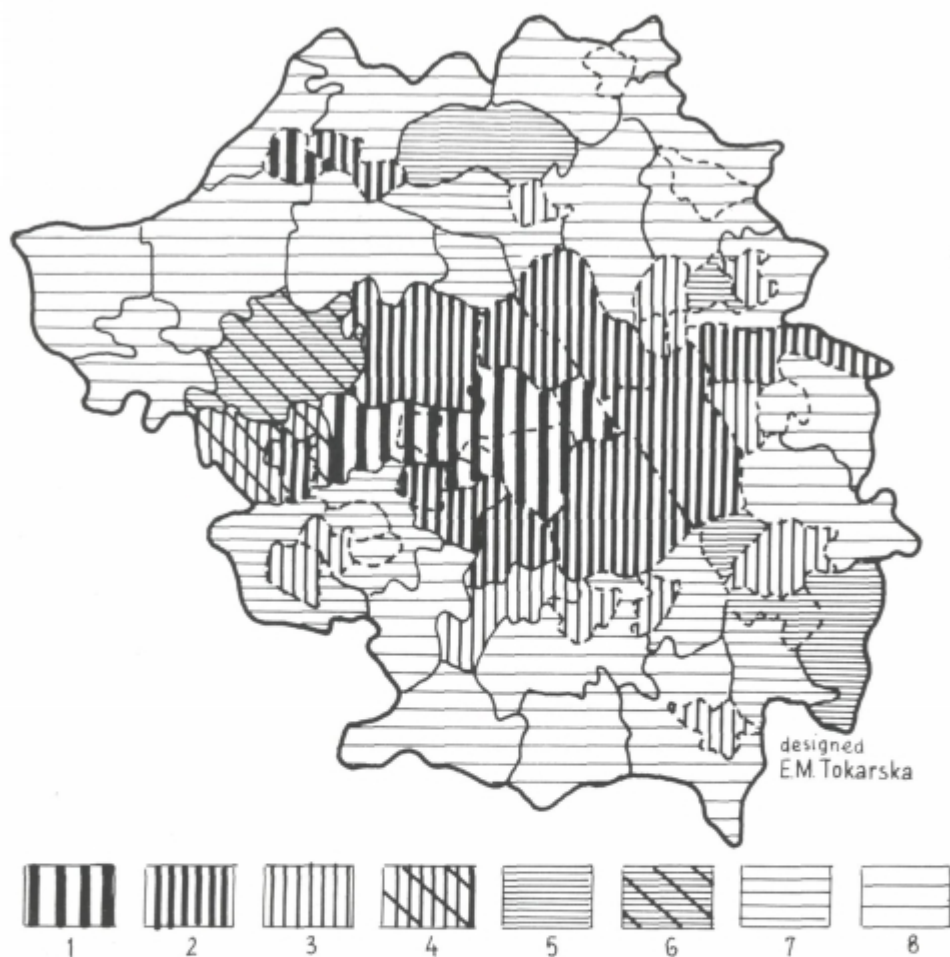


Fig. 5. Orientations of arable land utilization.

1. Highly vegetable and highly vegetable with potatoes;
2. Vegetable-potatoes and potato-vegetables with cereals;
3. Potato-rye with vegetables;
4. Wheat with barley, potatoe, sugar beets and vegetables;
5. Potato-rye;
6. Potato-rye with wheat and sugar beets;
7. Potato-rye with wheat and barley or rye-wheat with potatoes and barley;
8. Rye-potatoes with oats.

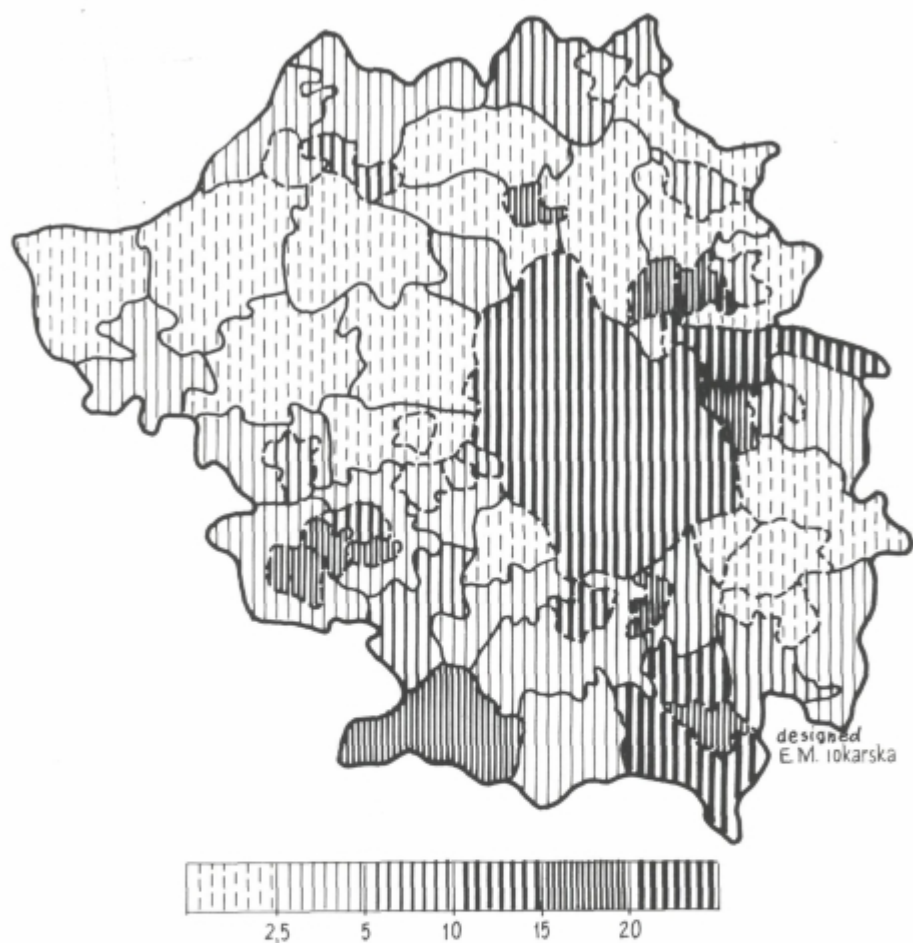


Fig. 6. Orchards as a percentage of agricultural land

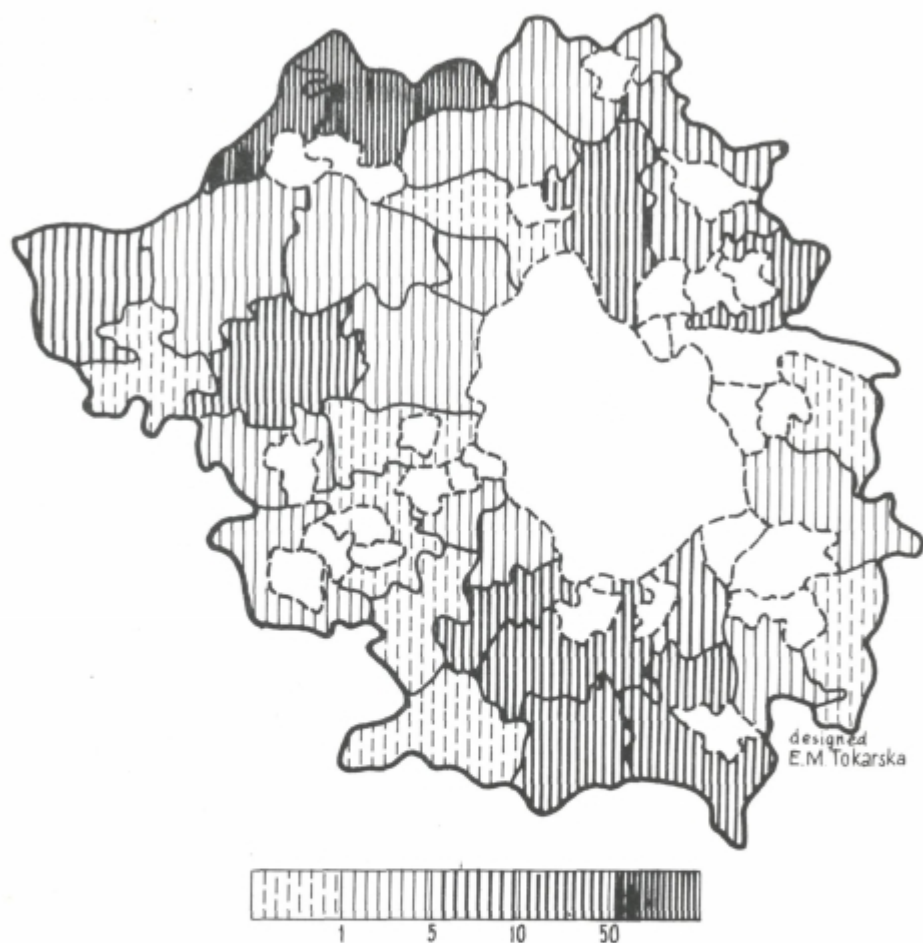


Fig. 7. Raspberries in areas per 100 hectares of agricultural land



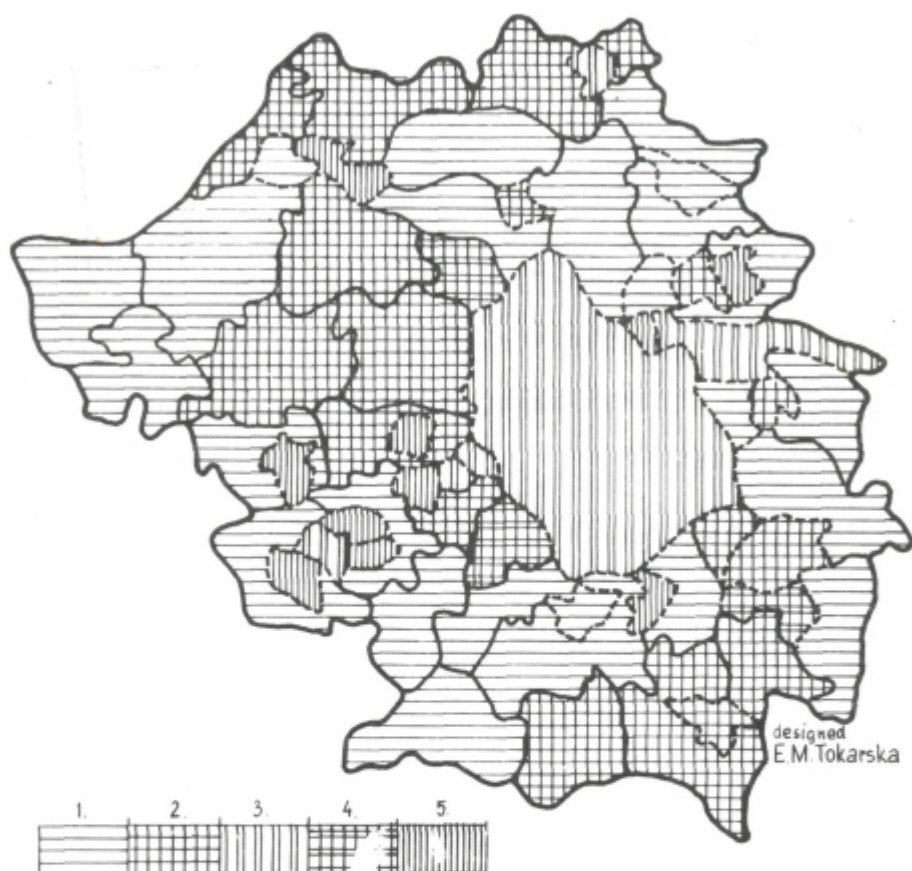


Fig. 8. Orientations of livestock breeding.

1. Cattle with share of pigs  $/B_4 + T_2/$ ;
2. Cattle-pigs  $/B_3 + T_3/$ ;
3. Pigs with share of cattle  $/B_2 + T_4/$ ;
4. Highly pigs with cattle  $/B_1 + T_5/$ ;
5. Other orientations.

9. Orientations of arable land utilization are defined on the basis of crops structure by means of the method of successive quotients (cf. note 6).
10. In the orientations patterns the following symbols are used: v - vegetables, p - potatoes, bs - sugar beet, r - rye, w - wheat, b - barley o - oats.
11. Studies on land utilization in that area, carried out by W. Stola (cf. The commune of Czersk in the Warsaw Suburban Zone, *Geographia Polonica* 5, 1965, pp. 87-123) have shown that several years ago orchards with intercultivation prevailed in this region.
12. Fruit - growers of this region maintain close contact with the Institute of Horticulture in Skierniewice.
13. For explanation of symbols see Fig. 12.
14. Calculated according to constant prices.
15. After J. Szyrmer. *Przemiany w strukturze produkcji towarowej rolnictwa indywidualnego w Polsce w latach 1960-1970* (Changes in the spatial structure of commercial production of individual agriculture in Poland in 1960 - 1970), Warsaw 1976, p. 100 (typescript in the Institute of Agricultural Geography).
16. Cf. J Szyrmer op. cit. pp. 179-180.
17. Cf. S. Misztal. *Rozwój przemysłu w strefie podmiejskiej Warszawy* (Industrial development in the suburban zone of Warsaw) 2nd Polish-Yugoslav Geographical Seminar, Warsaw, 29 May - 3 June, p. 21.
18. Worked out mainly in the Office for Warsaw Development Planning by order of the City of Warsaw Municipal Office.

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#### KMETIJSKO OBMEŠTJE VARŠAVE V LUČI ŠTUDIJ O PROSTORSKI DIFERENCIACIJI KMETIJSTVA VARŠAVSKEGA VOJVODSTVA

Za obmeštno kmetijstvo je značilnih več potez, ki so različne od tistih, ki veljajo za kmetijstvo v klasični agrarni pokrajini. V raziskavo je bilo vključeno ozemlje znotraj administrativnih meja sedanjega varšavskega vojvodstva. Analiza sloni na podatkih osrednjega statističnega urada, statističnega urada varšavskega vojvodstva in na gradivu, ki obravnava sedanjo prostorsko diferenciacijo in bodoči razvoj kmetijstva v varšavskem vojvodstvu. Uporabljeni so bili tudi podatki, dobljeni s terenskim kartiranjem kmetijske izrabe zemlje.

Na obravnavanem območju prevladuje privatno lastništvo kmetijske zemlje; 1. 1976 je bilo v rokah kmetij 88,8 % kmetijske zemlje. Med njimi prevladujejo zelo majhne kmetije (manj kot 2 ha), saj jih je 57,6 % in so večinoma v lasti polkmetov.

Na območju zahodno in jugozahodno od Varšave, ki ga odlikuje pretežno dobra prst, v izrabi zemlje prevladuje poljedelstvo. Južno od Varšave prevladuje poljedelstvo s sadjarstvom in gozdovi, ali pa sadovnjaki, travniki in gozdovi. Na severozahodnih, severnih in deloma vzhodnih območjih, kjer je velik delež slabo rodovitnih prsti, je osnovna izraba zemlje usmerjena v kmetijstvo in gozdarstvo; menjavajo se polja s travniki, naselji ali mokrotnimi površinami, pa tudi travniki z gozdovi. Značilna poteza obmestnega kmetijstva je visok delež krompirja in zelenjave. Druga značilnost je zasteklitev velikih površin (kar 528 m<sup>2</sup> na 100 ha kmetijskih površin), predvsem na severnem in južnem delu obmestja.

Zelenjava, ki se pridelava v varšavskem kmetijskem obmestju, nekoliko širšem od administrativnih meja varšavskega vojvodstva, se odvaža tudi v druge poljske pokrajine, predvsem v spodnjo Šlezijo in v pristaniško aglomeracijo Gdynia-Gdansk,

V srednjem delu vojvodstva je kmetijstvo usmerjeno predvsem v pridelavo zelenjave in krompirja, zelenjave s krompirjem in krompirja z zelenjavo ter žitaric. Enaka usmeritev se pojavlja tudi na predelih, ko so precej oddaljeni od Varšave. Na revnejših prsteh v bližini Varšave prevladuje pridelava rži in krompirja. Podobna usmeritev, le z dodatkom ovsa, je na območjih s prevlado slabših prsti, ki so že v večji oddaljenosti od Varšave.

Na območju varšavskega vojvodstva je 1. 1976 obsegala živalska proizvodnja 32,2 % skupne kmetijske proizvodnje. Prevladujeta dve obliki živinoreje. V občinah, ki ležijo v neposredni bližini Varšave, prevladuje govedoreja in deloma svinjereja. V ostalih občinah se pojavlja prepletanje govedoreje s svinjerejo.

V strukturi celokupne kmetijske proizvodnje v varšavskem vojvodstvu prevladuje rastlinska proizvodnja (67,7 %) nad živalsko. Za rastlinsko proizvodnjo je značilen visok delež zelenjave in sadja (34,1 %), velik delež krompirja (12,8 %) in sorazmerno majhna vloga žitaric (8,3 %). Pri živinorejski proizvodnji zavzema pomemben delež meso (21,5 %) in znatno manjši delež mleko (8,5 %).

Velika ovira za ugodnejši razvoj kmetijstva v varšavskem obmestju predstavlja pomanjkanje delovne sile. Ta problem je zelo pereč predvsem na območjih z visoko specializiranim kmetijstvom in sadjarstvom. Zaradi močnega porasta števila prebivalstva v Varšavi, sprememb v načinu prehrane in bližine mesta razvojni načrt kmetijstva v obmestju Varšave predvideva, da bo privatno lastništvo kmetijske zemlje še naprej ostalo osnovna oblika lastništva ter da se bo z zmanjševanjem števila kmetij povečala njihova povprečna velikost. Socialistični sektor bo povečal fond kmetijskih površin s prevzemanjem opuščene zemlje. Načrt prav tako predvideva močnejši razvoj sadjarstva in mlečne govedoreje.