

TYOLOGY OF INDIVIDUAL AGRICULTURE IN THE SUBURBAN ZONE OF WARSAW

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Literature destined to comparative spatial studies in agriculture is already relatively rich. Its discussion was carried out in one of his recent works by J. Kostrowicki /1988/. In addition, numerous authors initially concentrated around the Commission on Agricultural Typology of the International Geographical Union where they utilized the Polish method of typological studies of agriculture in different countries and regions of the world, as well as in Poland /compare J. Kostrowicki 1988, pp. 535 — 541/. Most probably interest with this method will increase in the near future. This is connected with the publishing of its detailed description in many languages, which also contained examples of the agricultural typization in countries with a limited and differentiated accessibility of statistical data /see J. Kostrowicki, J. Szyrmer, 1988/.

Up to now this method has been used most frequently for the determination of agricultural types on the basis of data aggregated for units of larger areas — the equivalent of the Polish voivovship /see J. Kostrowicki, editor, 1984, Types of Agriculture Map of Europe/. It was also applied for single but large scale socialized farms /B. Gałczyńska 1982/. Until now however, it has not been used for studies of agricultural types in the scale of single individual farms in Poland. What is more, it has not been used either in the presently recommended set of typological values, for comparative studies of agriculture in Poland in the scale of communes**.

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** With the improvement of the method and its development, which is a result of wide international cooperation /see J. Kostrowicki 1979/ the number of values, which were a basis for the determination of types, changed — from several or more than a dozen in the works of W. Biegajło /1973/ and W. Stola /1970/ up to 28 at present. Also the proportion of values in different groups have undergone changes.

Apart from cognitive aspects, an important objective of this elaboration is therefore the methodological aim based on checking up the suitability of the Polish method of agricultural typology for comparative studies on the level of the smallest reference units, and namely single individual small scale farms. Another element of certain significance to this elaboration will be the effort at comparing agricultural types determined on the basis of data in the scale of communes with types determined for various farms in the same area.

The determination of types of individual agriculture for communes was conducted on the basis of estimations concerning the structure and size of global and goods produce of agriculture elaborated by the Department of Agriculture and Feeding Economy of the Chief Central Statistical Office and data concerning the remaining typological values of agriculture for all communes in the country, for the year 1978 prepared by R. Szcześny. The statistical basis concerning the typology of individual holdings was prepared during field studies conducted in the suburban zone of Warsaw in the years 1986 — 1987. A total of 35 holdings were polled, for which then values for typological attributes were determined.

The studies area embraces 116 communes situated in the Warsaw Municipality Voivodship and in six other voivodships adjoining it, and covers a priori the defined territorial range of the agricultural suburban zone of the Warsaw Agglomeration. A characteristic feature of agriculture in this area remains the fact of its strong market ties with the center of the agglomeration, which may be expressed as an effect by increased inputs for production and specialization — mainly in the production of goods not suitable for long and distant transport /vegetables, fruit, flowers/.

Another characteristic trait of agriculture in the suburban zone of Warsaw is also a high level of received production calculated into units of arable land area and a high level and degree of commercialization. The agricultural suburban zone of Warsaw is thus a more narrow idea in relation to the feeding zone, which in the case of the Warsaw agglomeration also has a considerable larger territorial range than that which has been assumed in this paper.*

On the whole, the studied area is dominated by individual agriculture, which embraces over 80 % of the area of arable lands. A characteristic trait of the size structure of individual holdings in the studied area is a decided prevalence of small holdings, with an area below 5 hectares, and in its central part a domination of very small holdings below 3 hectares. A slightly larger area of holdings, namely 5 — 7

* An interesting effort at determining the territorial range of feeding zone of Warsaw, conducted on the basis of his own studies of market of agricultural produce, was presented by W. Zgliński /1989/

hectares, is characteristic for areas situated to the east of Warsaw /in the Siedlce Voivodship/ and the orchard region in the Radom Voivodship, and the largest holdings are in the area of the Ciechanów and Ostrołęka voivodships. The studied example of 35 individual holdings indicated a big differentiation — from 0.4 hectares in the case of a holding specialized in the production of champignons, up to the largest of the studied holdings, 32 hectares, specializing in orchards.

Apart from significant differentiation of physical sizes of holdings, the studied area is additionally characterized by their large differentiation from the point of view received economic effects. Holdings with small areas, especially those specialized in market production, were characterized by high productional effects, both when calculated per person employed in agriculture, and into 1 hectare of arable lands /see R. Kulikowski, B. Galczynska 1989, Fig. 10/. They were also characterized by a considerably high level of commercialization. In the whole Warsaw Municipality Voivodship for example, the value of buying the purchasing of agricultural produce in 1986 was the highest from among all voivodships in the country and amounted to 131.5 thous. zloties per hectare of arable land, compared to the average national value of 80.4 thous. zloties.

In the studied example of individual holdings, the level of productional agricultural values was also high, or very high, and showed a very significant differentiation, depending on the type of production and degree of specialization. The lowest land productivity /calculated in conventional units per 1 hectare of arable land/ amounting to 31.5 units was characteristic of a peasant-labourer holding /No. 20/ situated in the Mińsk Mazowiecki commune. The lowest in the scale of the world ranges was also the labour productivity in the same holding /49 units per one person employed in agriculture/. This unit belonged to holdings characterized by a very low degree of commercialization /38.6 %/.

Small scale mixed multidirectional agriculture was represented by holding nos. 18 in the area of the Czosnów commune, no. 21 /Mińsk Mazowiecki commune/ and no. 22 and 23 /Kołbiel commune./ nos. 30 and 31 /Brwinów commune/.

In the scale of world ranges, the level of productional attributes of agriculture in those holdings belonged to a high one and amounted to 55 — 80 units per hectare of arable land. However in comparison with the remaining studies holdings, it still belonged to the lowest.

A group of holdings specialized in the breeding of pigs was represented by holdings: no. 32 /Brwinów commune/, no 19 /Czosnów commune/. Land productivity in the first of those holdings amounted to 108.6 units, and in the second one — 153 units, and the share of animal production in goods production in those holdings amounted to 86 % and 98 % respectively.

A large group of the studied units constituted holdings specialized in horticultural production, or holdings with a considerable share of that production.

Mixed holdings, characterized by a significant share of berry fruit, particularly in the goods production of agriculture, embraced holdings nos. 13, 14 and 15 representing an area specialized in the production of raspberries, situated near Czerwińsk on the Vistula river, as well as holding no. 34, specialized in the production of strawberries, situated in the Pomiechówek rural commune. Land productivity in those holdings belonged to very high ones /130 units in holding no. 34, and respectively: 95 units in holding no. 16, and 130 in the remaining ones.

Agriculture with a field cultivation of vegetables is represented by holdings nos. 1 and 2 situated in Pyry /Warsaw, Mokótów District/, and nos. 4, 6, 9. Those holdings were characterized by a very high level of land productivity /120 to 250 units per hectare of arable lands/, high level of labour productivity /250 to 350 units per one employee in agriculture/, and a very high level agricultural /from 75 to 95 %/ of commercialization.

Holdings with a field cultivation of vegetables in connection with glasshouse flower production, or flower production in plastic sheet tunnels are represented by holdings nos. 5, 11, 12, of which the first one is situated in the Reguły village /Michałowice rural commune/, and two remaining ones on the area of Powsin, as well as holding no. 16, situated in the area of Zakroczym. Land productivity in those holdings, depending on the size of glasshouse production changes considerably and ranges from over 400 units per hectare of arable land in holdings nos. 5 and 16 to 1280 units in holding no. 11. The level of the remaining productional attributes of agriculture in those holdings belongs to very high ones and only the level of labour productivity in accordance with world ranges of that attribute, belong to high ones.

Holdings no. 10 /Michałowice rural commune/ and 16, 17 /Zakroczym rural commune/ are units specialized in the field cultivation of vegetables, with grain cultivation as a necessary element on crop rotation and the initial processing of the produced vegetables on site — in the first case with cabbage pickling, and the second — of cucumbers.

Areas specialized in the glasshouse production of flowers are represented by holdings no. 3 /Michałowice rural commune/ and no. 33 /Jablonna rural commune/. Due to a relatively small productional area and very high productional effects in those holdings they belong to the highest in all the studied holdings, apart from labour productivity, which was higher in the orchard holdings.

Fruit-growing holdings from the area of Belsk Duży are represented by holdings nos. 24, 25, 26 and 27, 28 and 29 from the Coniew village near Góra Kalwaria.

Holding no. 27 represents a mixed type, as over a half of its goods produce /63 %/ originates from a large hen house — laying hens.

Something in the sort of a peasant-labourer holding is also holding no. 29 with an area of 1.2 hectare /the whole holding is a fruit-growing productional farm/. In addition to working from agriculture and commuting to Warsaw, its owner also conducts tomato production in plastic sheet tunnels.

In typically fruit-growing holdings from the area of Mała Wieś and Belsk Duży, the productional effects usually belong to very high ones, and the share of orchards in the total area of those holdings exceeds 80 %.

The above mentioned very high or high productional effects in a studied holdings were obtained thanks to high inputs for production, from both manpower and mechanization, from fertilization and chemical plant protection. Inputs of manpower in the studied holdings, despite a very high mechanization level, belonged to average ones or high ones, and only in holdings specialized in flowers glasshouse production were very high, in the light of world ranges of that attribute.

The level of mineral fertilization ranged from 80 — 90 kg per hectare of arable land in the peasant-labourer holding from the Mińsk Mazowiecki rural commune and in the holding with a distinctly multidirectional production from the Kolbiel rural commune to 150 — 200 kg in holdings specialized in livestock breeding, and over 200 kg in the remaining ones.

In the studied area inputs for productional investments in agriculture also belonged to the highest in the scale of the country and in 1986 they amounted in the Warsaw Municipality Voivodship to 22.2 thous. zloties per 1 hectare of arable land the national average amounted to 14.7 thous. zloties at the same time/.

The above mentioned study of 35 holdings, for which a set of typological attributes was prepared /see figure 1/, is most probably insufficient, however, the authors of this paper consider that it relatively well represents the spatial differentiation and specialization of suburban agriculture in the surroundings of Warsaw, where the agricultural suburban zone of Warsaw is organized in a form of blocks rather than Thünen circles.

The production and cultivation of vegetables concentrate in the central part of the studied area, and especially in the fertile soils belt — black turf soils situated in the belt from Warsaw to Błonie. Vegetable cultivation in the suburban zone of Warsaw is of great national importance. The Warsaw Municipality Voivodship, having at its disposal only 1.1 % of the national area of arable lands, provides about 8.5 % of the national vegetable produce. Apart from the Warsaw market, where a considerable part of the vegetables produced in this area find an easy market, they are also



Fig. 1. Administrative division of the investigated area 1986
 Slika 1. Administrativna členitev proučevanega območja v letu 1986

transported out of this area — mainly to the agglomerations of the Upper Silesia and to Gdańsk, Gdynia and Sopot. Part of the vegetables, particularly onions and cucumbers, are also exported.

The spatial distribution of vegetable cultivation in the suburban zone of Warsaw is illustrated by Fig. 2.

To a large extent vegetables are cultivated in that area by individual farmers /about 98 % of area and harvest of 1986/.

A significant supplement to the production of field vegetables, particularly early ones, is the production of vegetables under cover. The central part of the studied area /The Warsaw Municipality Voivodship/, where this production is concentrated, participates in the national area under cover, respectively: glasshouses 13.8 %, hotbeds 23.7 % and plastic sheet tunnels /high ones/ 9.1 %.

In the area of the Warsaw Municipality Voivodship there were 15.6 sq. m of glasshouses in 1983. In 60 % of their area vegetables were produced, including first of all tomatoes /25 %/ and cucumbers /12.3 %/.

The area of plastic sheet tunnels in the Warsaw Municipality Voivodship increased from 453 thous. sq.m. in 1977 to 1141 thous. sq.m. in 1983. 90 % of area under plastic sheets were occupied by vegetables.

The production of fruit, beside vegetable production, is one of the most important branches of agricultural production in the studied area. This area supplied in 1987 about 33 % of the national fruit produce. Their production was concentrated in individual holdings /94.5 % of fruits from trees and 99 % of harvests of berry fruits/. Due to the fact that the production of fruit from trees in the area of Grójec, Belsk Duży, Błędów and Warka concentrated decidedly in well run large commercial orchards /e.g. studied holdings nos. 24, 25, 26/, the obtained outputs and the production from one tree, as well as fruit produce per hectare of arable land, belongs here to the highest in the country. In rural communes best specialized in fruit-growing produce, situated in the southern part of the studied area /see Fig. 3/, in 1973 3 — 5, and even above 5 thous. kg fruit per one hectare of arable land were obtained, with an average national value that year amounting to only 114 kg. The spatial picture of fruit production from trees in kg per hectare of arable land in the studied area is illustrated by Fig. 4.

The studied area is also very important from the point of view of berry fruit produce. The total berry fruit produce in the studied area is illustrated by Fig. 5. Approximately 30 years ago it was concentrated in the more direct vicinity of Warsaw. Due to its very high labour consumption and large competition on the labour market, the cultivation of berry fruit in the surroundings of Warsaw was shifted from the

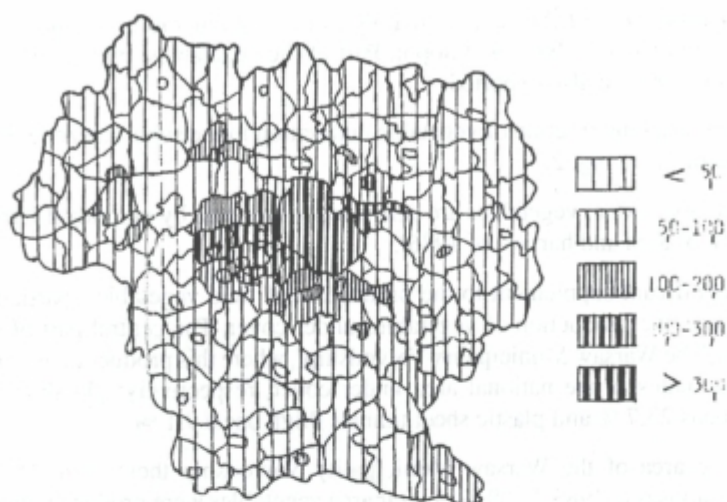


Fig.2. Vegetables as a percentage of cropland. Private agriculture 1987.
Karta 2. Delež zelenjave v strukturi poljščin. Zasebno kmetijstvo 1987.

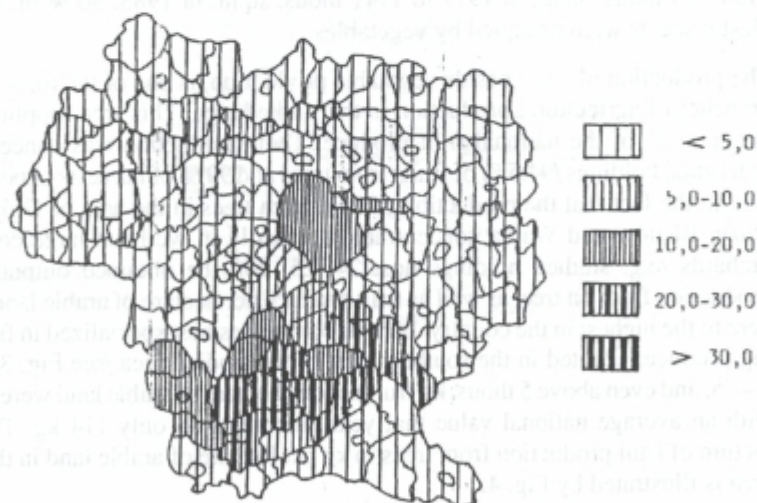


Fig. 3. Orchards as a percentage of agricultural land. Private agriculture 1985.
Karta 3. Delež sadovnjakov v strukturi poljedelskih zemljišč. Zasebno kmetijstvo 1985.

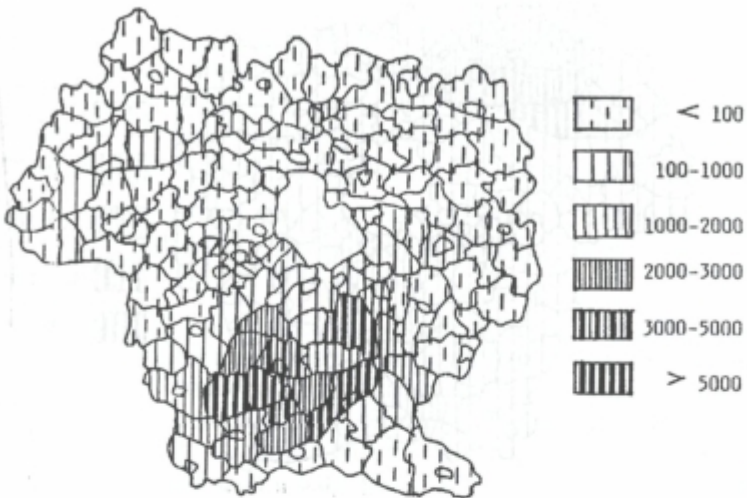


Fig. 4. Gross output of fruits in kgs per 1 hectare of agricultural land. Private agriculture 1985.

Karta 4. Bruto pridelok sadjarstva v kg/ha poljedelskih zemljišč. Zasebno kmetijstvo leta 1985.

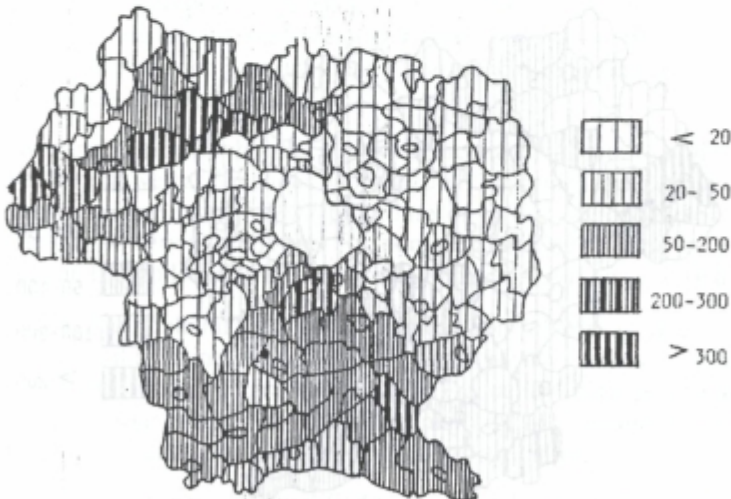


Fig. 5. Berry fruits. Gross output of fruits in kgs per 1 hectare of agricultural land. Privat agriculture 1985.

Karta 5. Bruto pridelok jagodičevja v kg/ha poljedelskih zemljišč. Zasebno kmetijstvo 1985.

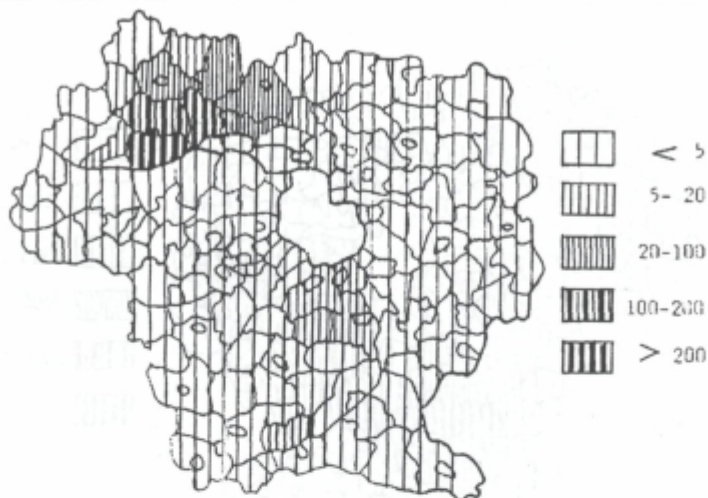


Fig. 6. Raspberry. Gross output in kgs per 1 hectare of agricultural land. Private agriculture 1985.

Karta 6. Bruto pridelek malin v kg/ha poljedelskih zemljišč. Zasebno kmetijstvo leta 1985.

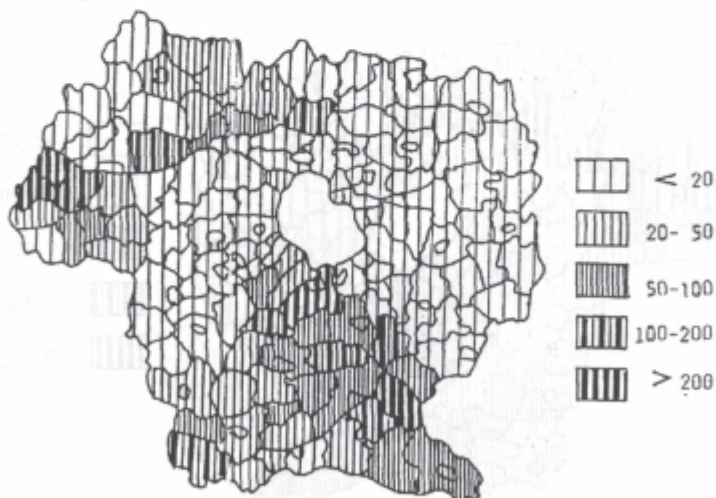


Fig. 7. Strawberry. Gross output in kgs per 1 hectare of agricultural land. Private agriculture 1985.

Karta 7. Bruto pridelek jagod v kg/ha poljedelskih zemljišč. Zasebno kmetijstvo leta 1985.

agglomeration center along the Vistula river in the following directions: to the north-west and to the south. In the cultivation structure of the polled holdings /holdings nos. 13, 14, 15 and 34/ did not occupy large areas, but thanks to their high productivity, berry fruits constituted the most important item in the structure of agricultural goods produce in those holdings

The spatial distribution of raspberry production, in individual agriculture in the suburban zone of Warsaw, in 1983, is illustrated by Fig. 6, and strawberry production — Fig. 7.

The studied area is also one of the largest regions in Europe containing cut flower production. This production constitutes an important agricultural production branch for the whole Warsaw Municipality Voivodship /6.5 %/*. Its largest concentration is in the Jabłonna rural commune and in communes neighbouring Warsaw from the west and from the south. A considerable production of flowers also takes place in state owned holdings, and mainly in the Mysiadło Horticultural Holdings Combine situated near Piaseczno.

Flower production in the suburban zone of Warsaw fully covers the needs of that agglomeration and is also exported to the USSR.

A significant concentration of glasshouses, particularly in the Jabłonna rural commune, causes a considerable increase of environment pollution, the scale of which is already serious to such an extent that it commences to endanger the health of flower producers themselves.

Agriculture in the suburban zone is highly differentiated — both from the point of view of effects, as well as directions of production. Applying the already mentioned /J. Kostrowicki, J. Szyrmer 1988/ procedure of typization, conducted was the determination of agricultural types for non-socialized agriculture in 116 rural communes and 35 polled individual holdings, situated in various parts of this zone.

The analysis of agricultural types in the suburban zone of Warsaw /Fig. 1/ showed that agriculture of a distinct majority of communes is characterized by a similarity to more than one model of agricultural types. Frequently this was a similarity to three and even four models of types. The majority of communes /66 %/ was characterized by a similarity to the type of market agriculture.

Only 23 rural communes were qualified to one model type. They were similar to types Tmk, Mmf, Mmc and Mmv. Among those agricultural types the most frequent

* Acc. to B. Gałczyńska, R. Kulikowski, 1982, p. 64.

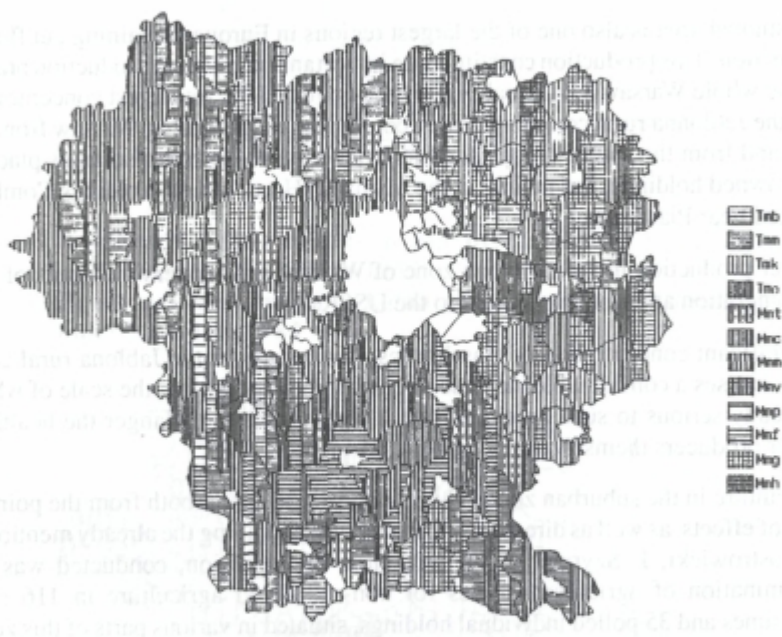


Fig. 8. Types of agriculture. Private agriculture 1978.
Slika 8. Tipi kmetovanja. Zasebno kmetijstvo 1978.

one, i.e. in 16 communes, represented was the Mm agriculture type. The remaining ones occurred less frequently — types Tmk, Mmf and Mmv in two communes, and Mmc in one commune.

Also characteristic is the fact that in the whole studied area of the suburban zone of Warsaw market agriculture dominated. As many as 66 % of communes were represented by this type of agriculture, although in clear form — only in 21 communes. The majority of the studied units created combinations of market oriented agriculture types.

Traditional agriculture — was represented by 4 types, and only in two units ascertained was the occurrence of that type in a clear form of Tmk₄, and in the remaining cases in the form of combinations with the share of other types of traditional agriculture, namely Tmb and Tmo.

Traditional agriculture was above all characteristic for the eastern areas of the suburban zone of Warsaw, as well as for the southern ones, considerably more distant from Warsaw.

The Tmk₄ agriculture type in a clear form was ascertained in the Osieck and Pilawa rural communes. This is traditional, intensive, labour consuming agriculture with high inputs of draught power and mechanical power, average inputs of manpower, high land productivity, medium labour productivity, semi-commercial with a dominance of animal production /medium share of animal production in the global production, and high commercial production/.

In combinations with other types of traditional agriculture occurred the Tmk type in 7 communes: Parysów, Strachówka, Głowaczów, Wyśmierzyce, Stanisławów, Dąbrówka, Mińsk Mazowiecki. The agriculture of those areas was small scale, low or medium labour intensive with low land and labour productivity, subsistent or semi-subsistent.

In the suburban zone of Warsaw rather popular are combinations of the Tm traditional agriculture and Mm market oriented agriculture. Combinations of those agriculture types were ascertained in 42 units, which constituted 36 % of the studied communes. Most frequent were combinations with the type of traditional agriculture included the following types of market oriented agriculture: Mmm, Mmg, Mmt, and more seldom — Mmc and Mmf.

The Mmf agriculture type is a medium labour intensive agriculture, with high capital inputs, productive, mixed; Mmt — semicommercial agriculture with a domination of plant cultivation, and the Mmg type — represented low intensive agriculture, medium productive, medium commercial with a dominance of animal production.

Seldom were, on the other hand, combinations of types of traditional agriculture with market oriented, intensive, productive agriculture with the dominance of plant produce /Mmc/ and medium intensive agriculture with high capital inputs with prevailing plant production and a considerable share of perennial crops Mmf.

While combinations of types of traditional and market oriented agriculture /Mmm, Mmg, Mmt/ occur rather universally but do not constitute dense areas, combinations of types of traditional and commercial agriculture Mmf, which is characterized by an increased share of perennial and semiperennial crops /berry cultivation, as well as orchards/ constitute larger complexes in the southern part of the suburban zone of Warsaw and along the Vistula river valley in the south-eastern part of the zone /see Fig. 1/.

Such a significant number of units showing a similarity to several agriculture types and constituting combinations of types of traditional agriculture with market oriented agriculture is a proof of the favourable transformations taking place in agriculture, and aimed at vanishing types of traditional agriculture to be replaced by market oriented agriculture.

Market oriented agriculture, which dominates in the suburban zone of Warsaw, is represented by 8 types of agriculture: Mmt, Mmc, Mmm, Mmv, Mmp, Mmf, Mmg and Mmh and by their numerous combinations.

Market oriented agriculture is characteristic for areas situated in the most direct vicinity of Warsaw from the west, north and south, as well as for areas which are relatively distant from Warsaw in the southern and western part of the zone.

In the Western part of the zone, in the direct vicinity of Warsaw, in the communes: Ożarów Mazowiecki, Błonie and Michaiłowice, occurs a type of market oriented agriculture, with high capital inputs and a domination of plant production — Mmv, in a clear form or in combinations with the Mmm and Mmc types.

In the southern part of the zone, in communes adjoining Warsaw, as well as in the south-western parts, ascertained were agricultural type Mmf or combinations of that type with the Mmc type. The Mmf type of agriculture — representing medium intensive agriculture, with high capital inputs, with a dominance of plant production and a considerable share of perennial crops, occurs in the communes of Grójec and Belsk Duży in a clear form. Those are fruit-growing areas, highly specialized in fruit production for many years running. This type widens its range entering into combinations with the types: Mmt, Mmc and Mmn also in the south-eastern part of the zone — in areas along the Vistula river valley to the south.

Mmn is a medium labour intensive agriculture with high capital inputs, productive, mixed. This type of agriculture is characteristic for areas situated in the western and

northern part of the zone in the direct and indirect vicinity of Warsaw. It occurs both in a clear form, as well as in the combinations with other types.

The received picture of agriculture types in the suburban zone of Warsaw in the scale of rural communes constitutes proof of the hitherto knowledge of the agricultural problems. A significant mosaic of agriculture types determined in this area indicates its high differentiation, as well as its high specialization.

A similar procedure for the determination of agriculture types was applied to the selected 35 individual holdings situated in various communes of the suburban zone of Warsaw. After having compared codes for various studied holdings with codes of models it turned out that a large part of the holdings do not satisfy the criterion, which enables their qualification to any of the existing models of world agricultural types. Those were holdings highly specialized in the glasshouse production of flowers and vegetables. On the basis of an analysis of codes for holdings not qualified to any of the existing models, a new model code was determined which is an equivalent to the new type of third order and it was referred to by the symbol Mmk.

1151212 — 4125341 — 5544454 — 113111

The determined new type of agriculture of the third order represents agriculture with high inputs of labour, but low inputs of mechanical and draught power. Fertilization is high, irrigation medium. Intensity of utilization of arable land is high. Low is the stock of animals per 100 hectare of arable land. Very high is land productivity, very high is productivity and commercialization of work, and also high is the degree and level of commercialization, as well as the degree of specialization. This agriculture is characterized by a very low percentage of perennial crops and glasslands in the structure of arable lands. Medium is the share of feeding crops. Very low is the share of animal produce in the global and commercial produce, and moreover very low is the share of industrial plants in global produce.

The new type of agriculture represents agriculture of high intensity — with high inputs of live labour, directed at highly specialized plant production — of vegetables or flowers.

The introduction of this type into the existing set of types of models enabled the classification of all the studied holdings.

As a result of the conducted comparisons with the full set of model codes, ascertained was a similarity of the polled holdings to 10 types of world agriculture, and namely: Mmk, Mmm, Mmc, Mmv, Mma, Mmh, Tmk and Tmb.

Special attention ought to be paid to the fact that in the majority of holdings they indicated similarities to one of the model types, and only in 4 holdings there was a combination of 2 types, e.g. Mmk₂/Mmv₂ and Mmf₂/Mmv₂.

The largest number of holdings indicated a similarity to the new Mmk type. Those were holdings situated in the town of Warsaw and in the communes of Michałowice and Jabłonna.

Also well represented was the Mmm agriculture type — which corresponds with market oriented agriculture, medium labour consuming, with high inputs of capital, productive, mixed. This type included holdings situated in the following communes: Czerwińsk, Czersów, Mińsk Mazowiecki, Kołbel, Brwinów. The situation of those holdings, either in the valley of the Vistula river, or on the edges of the Kampinos Forest, created appropriate conditions for the development of animal breeding on the basis of large areas of meadows and pastures. On the other hand, the area of Brinów constitutes a traditional breeding region, the development of which is connected with the activity of the Main School of Farming in this area.

Well represented was the Mif agriculture type. It was represented by holdings situated in the communes of Belsk Duży, coniew in the southern part of the suburban zone of Warsaw at a considerable distance from the town, as well as by holdings in direct vicinity of the town — in the Michałowice rural commune.

The remaining agricultural types were represented by small numbers, by one or two holdings. Those were types of market oriented agriculture, with high capital inputs, highly productive with the dominance of plant production — Mmv /in the Zakroczyń commune 2 holdings/, a type of agriculture which is intensive, with a dominance of animal production Mmh /holding in the Kołbiel commune/, and the Mmi and Mma types — both representing market oriented, intensive agriculture with high capital inputs with prevailing animal production.

The conducted typology of holdings in the suburban zone of Warsaw and the obtained results confirmed the usefulness of this method for a typological study at the level of individual holdings, and what is more, they confirmed the assumption that on the level of holdings it provides better results. The typology of holdings provides a picture of existing types of agriculture, while determined agriculture types for administrative units only have a resultant as they are a conglomerate of various types of agriculture.

Tipologija zasebnega kmetijstva na primestnem območju Varšave

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Povzetek

Poljsko metodo tipoloških raziskav kmetijstva so uporabljali že številni raziskovalci v različnih deželah in področjih sveta (prim. J. Kostrowicki, 1988, str. 535 — 541), vendar doslej ni bila uporabljena v proučevanjih zasebnega kmetijstva.

Takšna raziskava ima torej poleg spoznavnega tudi metodološki pomen. Namen pričujoče študije je primerjava tipov kmetijstva, za katere so podatke dale občine, s tipi kmetijstva, za katere so podatke zbrali avtorji s terenskim delom v primestnem območju Varšave v letih 1986 in 1987. Področje raziskave zajema 116 občin, ki predstavljajo t. im. primestni kmetijski pas varšavske aglomeracije. Značilnost kmetijstva tega območja so močne tržne vezi s centrom aglomeracije, intenzivno investiranje ter pridelava pridelkov, ki ne prenašajo dolgega transporta (zelenjava, sadje, cvetlice). Kmetijstvo na tem območju je raznovrstno z ozirom na organizacijsko tehnične, družbeno lastniške ter proizvodne lastnosti. Glavnino predstavlja zasebno kmetijstvo, ki izrablja 80 % kmetijskih površin. Dominirajo majhne kmetije z manj kot 5 ha zemljišč. V centralnem delu tega območja so kmetije zelo majhne (manj kot 3 ha). 35 vzorčnih kmetij je zelo različnih; od obrata, kjer se na 0,4 ha pridelujejo šampinjoni, pa do kmetije s površino 32 ha, ki je specializirana v sadjarstvo.

Razen razlik v velikosti, se kmetije razlikujejo po različnih ekonomskih učinskih. Specializirane, vendar majhne kmetije, dosegajo visoko proizvodnjo na enoto površine ter na delovno moč v kmetijstvu. V celem varšavskem vojvodstvu je bila na primer vrednost odkupa pridelkov v l. 1986 najvišja med vsemi vojvodstvi v državi in je znašala 131,5 tisoč zlotov na hektar kmetijskih površin, povprečen znesek za celo državo pa je bil v tem letu 80,4 tisoč zlotov. Med proučevanimi zasebnimi kmetijami so najnižjo produktivnost v dogovornih enotah na 1 hektar kmetijskih površin (31,5 enot) izkazovale kmetije v vzhodnem delu omenjenega območja, katerih lastniki so bili obenem industrijski delavci. Nizka (glede na

svetovne standarde) je bila tudi storilnost (49 enot na kmetijskega delavca), kakor odstotek pridelkov prodanih na tržišču (38,6 %).

Mešan tip kmetijske proizvodnje na manjših površinah je prisoten na nekaterih kmetijah v severnem in vzhodnem delu raziskovalnega območja. Produktivnost na hektar je bila v primerjavi s svetovnimi standardi povprečna ali visoka (55 — 80 enot), vendar konkretno na proučevanih kmetijah nekaj nižja.

Skupina kmetij v zahodnem delu območja, usmerjenih v proizvodnjo mesa dosega visoke ali zelo visoke stopnje produktivnosti na hektar (109 — 153 enot) ter zelo visok delež pridelkov prodanih na tržišču (86 — 98 %).

Veliko skupino raziskovanih kmetij predstavljajo kmetije v večji ali manjši meri specializirane v pridelovanje občutljivega sadja, cvetlic in zgodnje zelenjave. Ta tip kmetij se nahaja v severnem delu proučevanega območja. Pri njem je bila površinska produktivnost v mejah 95 — 130 enot, s tem da sadje (maline, jagode), ki se predeluje na 5 — 10 % obdelovalnih površin, predstavlja glavni delež pridelka.

Zelo visoka stopnja produktivnosti na hektar (120 — 250 enot na 1 ha obdelovalnih površin) ter zelo velika storilnost (250 — 350 enot na 1 delavca) je značilna za kmetije usmerjene v pridelovanje zelenjave. Takšne kmetije se nahajajo zahodno od Varšave, v pasu rodovitne črne prsti. Na teh kmetijah prevladuje pridelava za trg (75 — 90 %). Značilna je prevlada rastlinske proizvodnje nad pridelovanjem mleka in mesa.

Zelo veliko produktivnost, z ozirom na enoto kmetijske površine kot tudi na enoto dela, izkazujejo kmetije usmerjene v pridelovanje zelenjave in cvetnic v rastlinjakih ali pa plastičnih tunelih (več kot 400 enot na 1 ha kmetijskih površin).

V sadovnjakih, ki zajemajo 80 % kmetijskih površin južno od Varšave, je pridelek načeloma zelo visok. Visok učinek na takšnih kmetijah je bil dosežen z vloženim fizičnim delom delavcev, z uporabo mehanizacije in z uporabo gnojil ter kemičnih zaščitnih sredstev.

Vzorec 35 kmetij, za katere je bila izdelana tipologija, verjetno ni popolnoma zadovoljiv, vendar avtorji pričujoče študije smatrajo, da izbor dobro odraža prostorsko raznolikost ter tipologijo usmerjenosti primestnega kmetijstva v bližini Varšave. Analiza tipov kmetijstva, izdelana na podlagi podatkov zbranih na nivoju občin je pokazala, da ima večina izmed 116 kmetij na obravnavanem območju tržno proizvodnjo, podobno kot tipi Mmk, Mmc, Mmf, Mmv. V vzhodnem delu območja pa je v manjšem obsegu zastopano tudi tradicionalno kmetijstvo, posebej pa tipi: Tmk, Tmb, Tmo. Pogosta je tudi kombinacija tržnega in tradicionalnega kmetijstva.

Bolj enostransko usmerjene kmetije so zastopane v raziskovalnem vzorcu 35 privatnih kmetij. Anketirane kmetije so izkazovale analogije z 10. tipi modelov svetovnega kmetijstva, od tega večina s tipi modelov tržnega kmetijstva. Komaj 4 kmetije so izkazovale analogijo z več kot enim tipom modela. Kot rezultat uporabe tipologije pri proučevanju privatnih kmetij v obmestnem pasu Varšave,

je bil predlagan nov model tipa kmetije III vrste, ki je dobil simbol Mmk. Ta tip predstavlja kmetijstvo, ki zahteva veliko fizičnega dela delavcev; kjer je stalež živine nizek, produktivnost visoka in se velik delež proizvodnje proda na tržišču.

Uporaba tipološke metode pri proučevanju prostorske strukture kmetijstva v primestnem področju Varšave je potrdila njegovo veliko razčlenjenost na relativno majhnem področju. Potrdila se je tudi uporabnost metode za agrarnogeografske raziskave najmanjših enot — kmetij.