REGIONS OF RED PAPRIKA PRODUCTION AND CURRENT PROBLEMS OF REGIONALIZATION

by

DR. ISTVÁN PÉNZES — DR. GYULA KRAJKÓ

The decree passed by the Ministry of Agriculture in 1934, which regulated the raising of red paprika and the development of its crop areas, aimed *first of all* to avoid crises of overproduction. However, it did not reach its proper goal. The establishment of a monopoly for the marketing of red paprika in 1936—37 resulted in the final demarcation of the regions and zones which had earlier been designated and were already active. The decree of 1934 marked out so-called inner and outer zones in the Szeged and Kalocsa regions. These zones were based upon the plantations developed between 1926 and 1933. All the villages which had been practising red paprika production for 3 years before 1934, were included into the *outer zones,* independently of the area of their paprika plantations. The *inner zones,* however, included only the localities which had also earlier been big producers of red paprika, though exceptions did not fail here either. For instance, in the case of Szeged it was taken into consideration that the Felsőtanyák (Upper Detached Farmsteads) belonged to the town. For this reason, these areas were included into the inner zone, in spite of the fact that red paprika was being raised there over a few cadastral yokes only.

On the whole, *the demarcated zones* reflected the objective reality. At present, however, they do not fully correspond to it.

After Liberation the acreages devoted to the individual crops were redistributed. At the same time, in the red paprika zones this development permitted to size up the possibilities offered by the physico-geographical environment and to trace the zone boundaries more accurately. The re-demarcation of the paprika producing zones is so much more reasonable as the dispersion of the plantations is rather a handicap to the raising and processing of paprika, the advantages being less important. The processing plants were also involved in tracing the boundaries of the zones, chiefly in order to preclude the remote areas from production. In the middle of the 1950's even a governmental order regulating the geographical distribution of production was enacted. Unfortunately, neit-

her this order, nor the ideas of the processing plants have been realized, but just the opposite is observed. The plantations are being scattered over wider and wider areas in the regions of both Szeged and Kalocsa, while in the former inner zones they are shrinking.

These two parallel processes are due to the same tendency of reacting higher profitability. In the new areas red paprika provides more profit than did the field crops which were raised previously, yet in the area of the former inner zone it is the horticultural crops that gain ground. This is partly due to the presence of a big city, Szeged, which requires more and more horticultural product, i. e. which urges and promotes the development of the so-called green belt.

By the way, it is interesting to note that a higher percentage of the irrigation capacities is used for the irrigation of red paprika in the new plantation areas (Békés County) than in Csongrád County where the bulk of the water is expended on irrigating horticultural crops. Of peculiar interest is the fact that, if expertly irrigated, red paprika pays so much as e. g. sweet paprika or tomato. However, the producers do not afford this, because the technology of irrigation of the latter has already been developed, while that of red paprika has not yet.

In the red paprika region of Kalocsa the situation is a little more favourable. However, some trouble results there from the fact that the irrigation technology applied is far from being adequate. so that irrigation water is not always made use af suitably by the plant.

In demarcating the red paprika zones the above factors must certainly be taken into account, but this can by no means induce us to transfer the red paprika plantations to other areas. The cares and troubles in the domain of red paprika production are though comparatively important, but not unsolvable. For the moment the chief problem is the changebility of weather, the influences of which can only be eliminated, when an up-to-date irrigation technology is developed.

At the end of the 1950's red paprika was a well-paying crop. At present, in lack of irrigation, it does not every year pay more than does maize, for example. However, irrigation allows to increase yields from 24—30 quintals per cadastral yoke up to 60—80 quintals, which *corresponds,* considering the current prices, *to an income of 15 000 to 20 000 Forints. At current prices, dry farming of red paprika does not pay more than* 5000 to 8000 Forints per cadastral yoke.

Consequently, one of the most important factors in demarcating the production zones is the presence of *favourable conditions for irrigation,* the second factor being represented by *favourable soil properties,* the third one by *special skill. The latter finds its expression in the proper handling of nurseries, perfect care of plant, appropriate use of fertilizers and planting in best time, etc.*

Accordingly, while establishing the boundaries of the regions and zones the following factors had to be considered:

1. Hydrographic, ground-water and artesian water regime of the areas i. e. *conditions for their irrigation* (Figs 1—2).

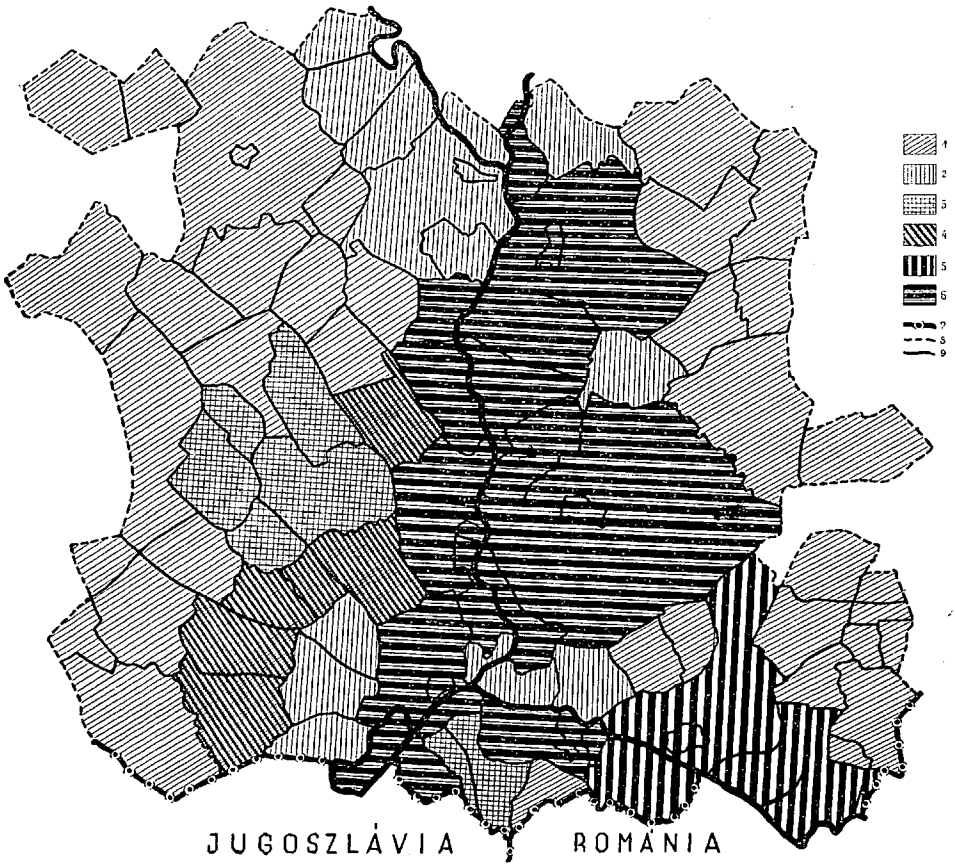

Fig. 1. Distribution of the conditions for irrigation in the red paprika region of Szeged.
Legend: 1. Poor conditions for irrigation; 2. Fair conditions for irrigation, restricted red paprika production; 3. Irrigation is feasible by means of tube-wells only; 4. Irrigation is feasible only in the long run, partly with water diverted from the Tisza, partly by tube-wells; 5. Good conditions for irrigation, scant red paprika plantations; 6. The conditions for irrigating red paprika are excellent, irrigation can be realized by 1965.

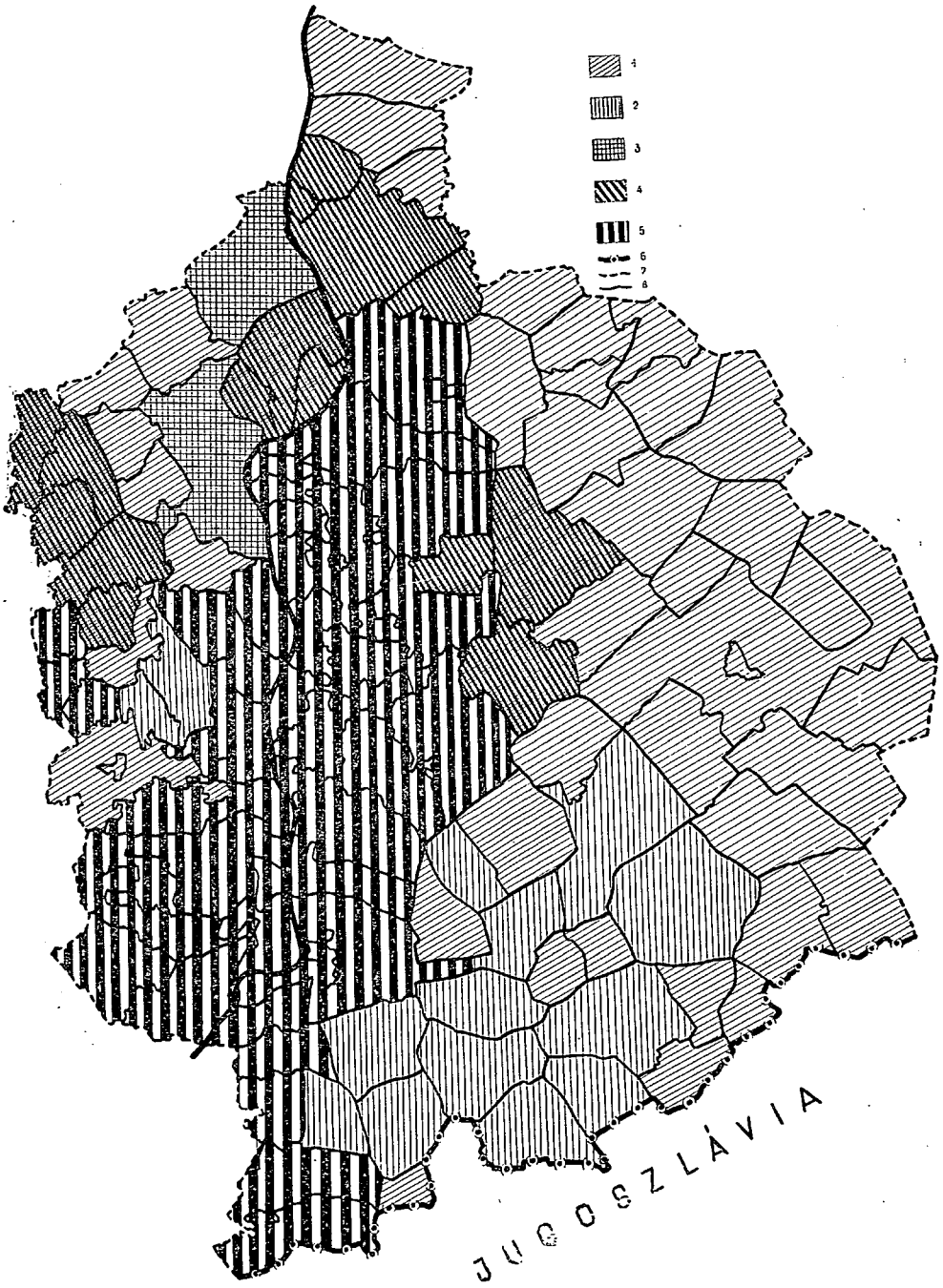
1
2
3
4
5
6
7
8
JUGOSZLÁVIA

Fig. 2. Distribution of the conditions for irrigation in the red paprika region of Kalocsa.
Legend: 1. The irrigation possibilities will be only fair even as late as in 20 years; 2. Rather poor conditions for irrigation, restricted red paprika production; 3. Good conditions for irrigation, restricted red paprika production; 4. The conditions for irrigating red paprika are favourable, irrigation is mostly feasible by 1965; 5. The conditions for irrigating red paprika are excellent.

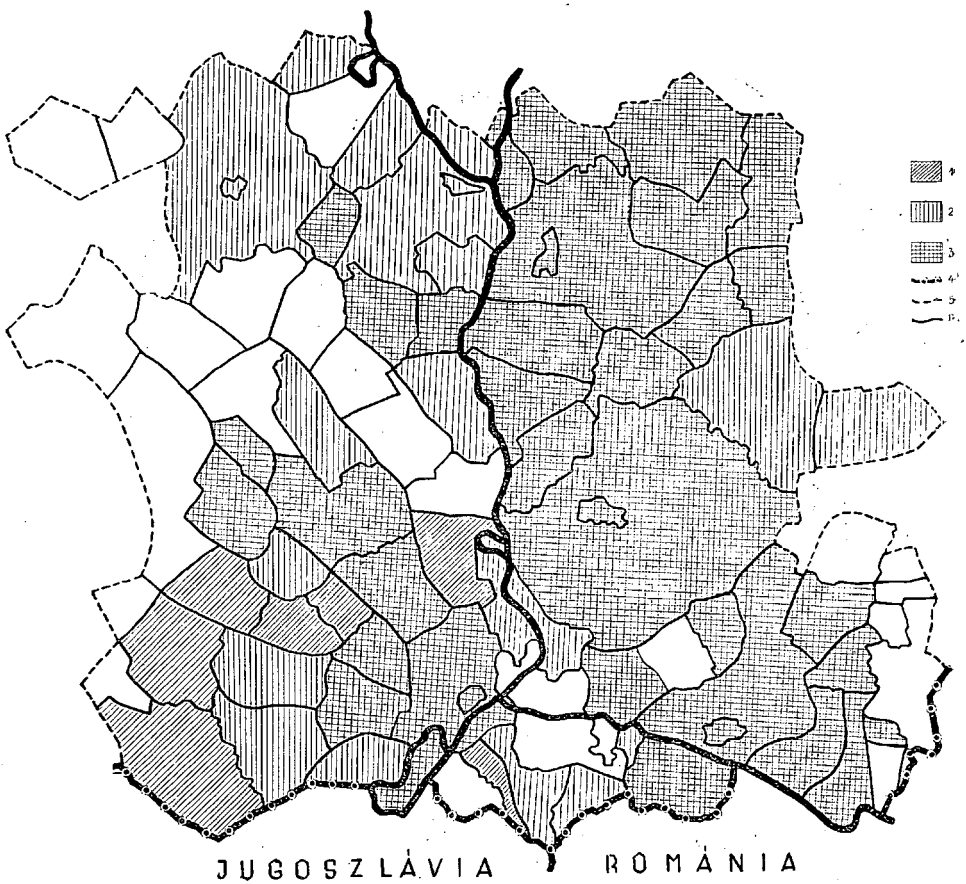

Fig. 3. Distribution of soils suitable for red paprika production by localities in the red paprika region of Szeged.
Legend: 1. The soils are in general fairly suitable for red paprika production; 2. 50 to 80 per cent of the soil areas is excellent for raising red paprika; 3. More than 80 per cent of the soil areas is excellent for raising red paprika.

2. *Lithology of the surface and soil conditions.* Having considered chiefly the soil requirements of red paprika, we had to measure the pH values, the humus content, the thickness of the humus layer, the degree of its consolidation and its hygroscopicity for 5 and 100 hours, and the availability of nutrients (nitrogen, phosphorus and potassium) *(Figs 3—4).*

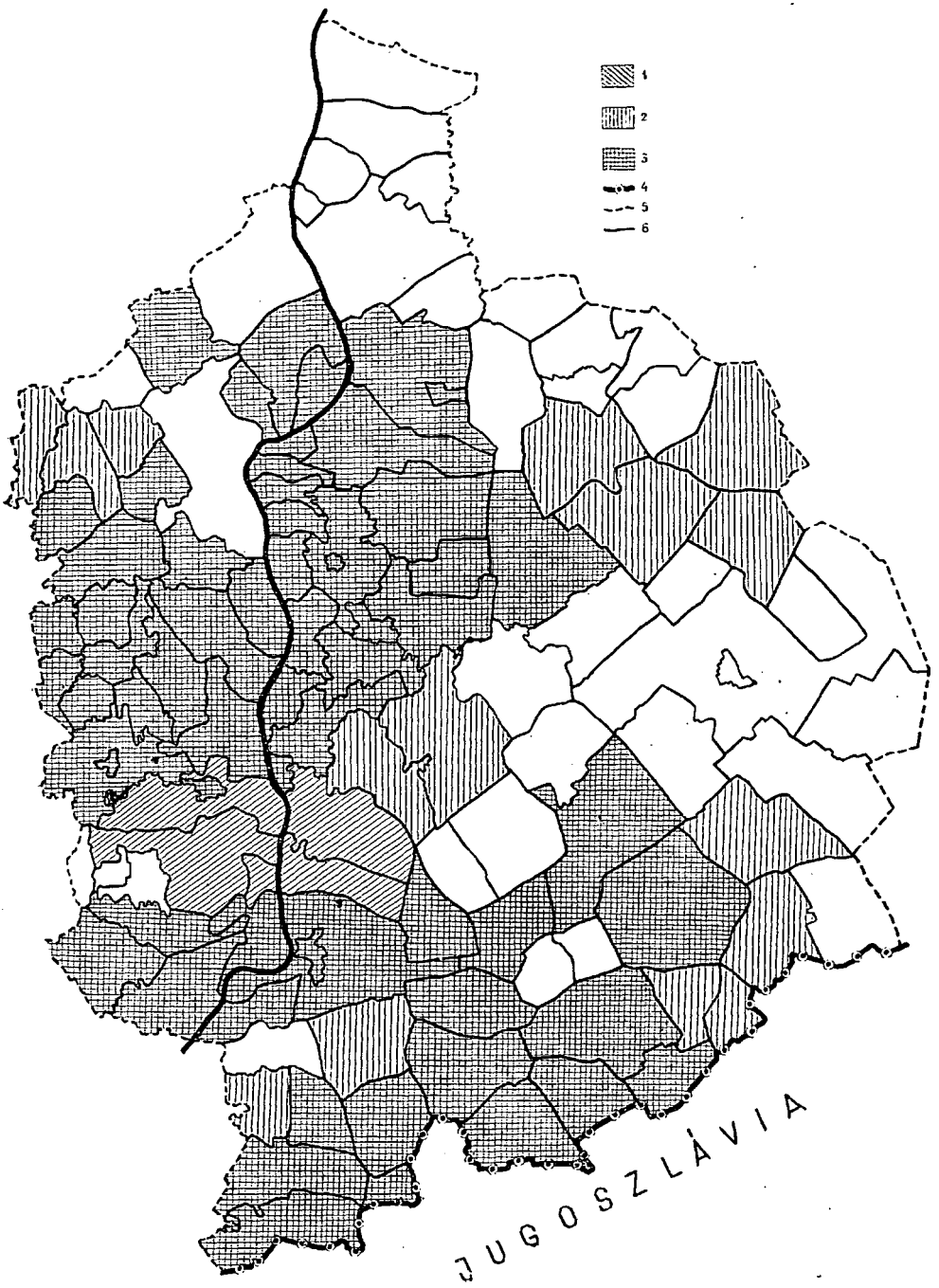
1
2
3
4
5
6
JUGOSZLÁVIA

Fig. 4. Distribution of soil suitable for red paprika production by localities in the red paprika region of Szeged.
Legend: 1. More than 80 per cent of the soil areas offer excellent possibilities for red paprika production; 3. A considerable part of the soil areas offers fair possibilities for red paprika production.

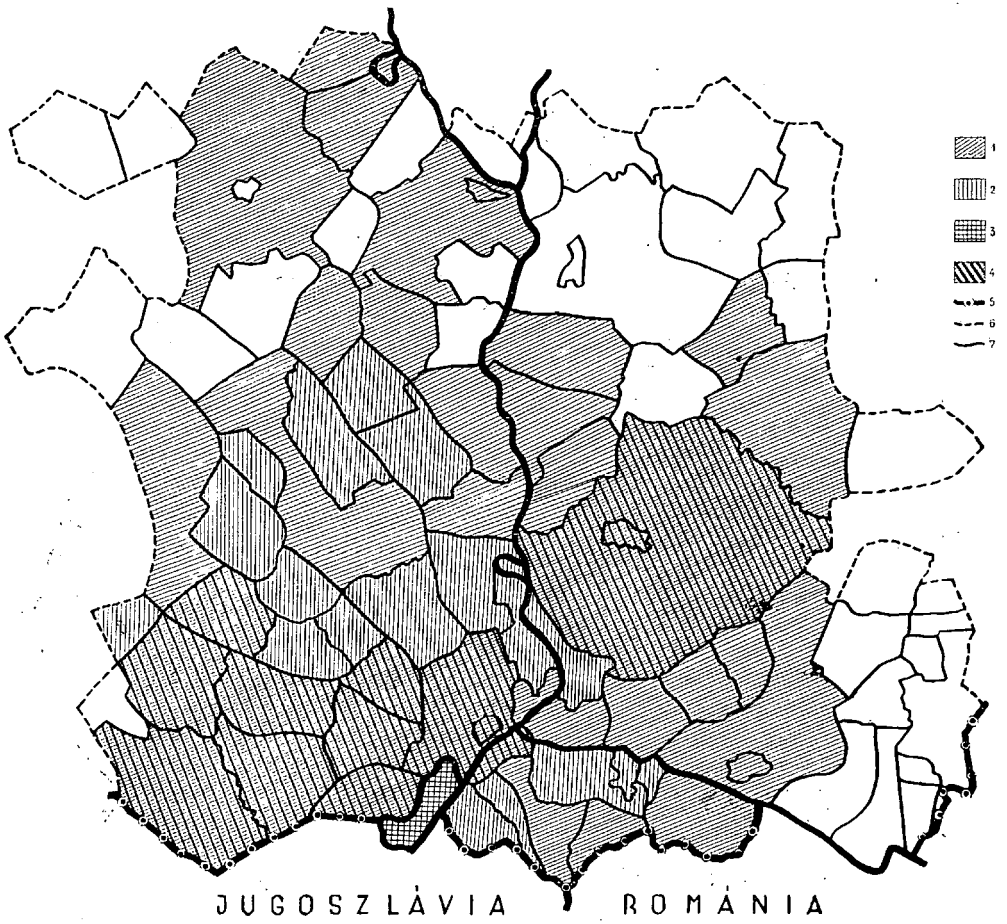

Fig. 5. The number of red-paprika farmers and of persons involved in raising red paprika by localities in the red paprika region of Szeged (based on data for the years 1949—57).
Legend: 1. The number of persons involved in red paprika production is insignificant; 2. The number of persons involved in red paprika production is from 60 to 150 (20 to 50 farmers); 3. The number of persons involved in red paprika production is from 150 to 300 (50 to 100 farmers); 4. The number of persons involved in red paprika production is greater than (more than 100 farmers).

3. *Labour conditions of production.* The problem could be tackled by examining the changes in the number of paprika farmer between 1949 and 1957, assuming the employment of two members of family for each farmer *(Figs 5—6).*

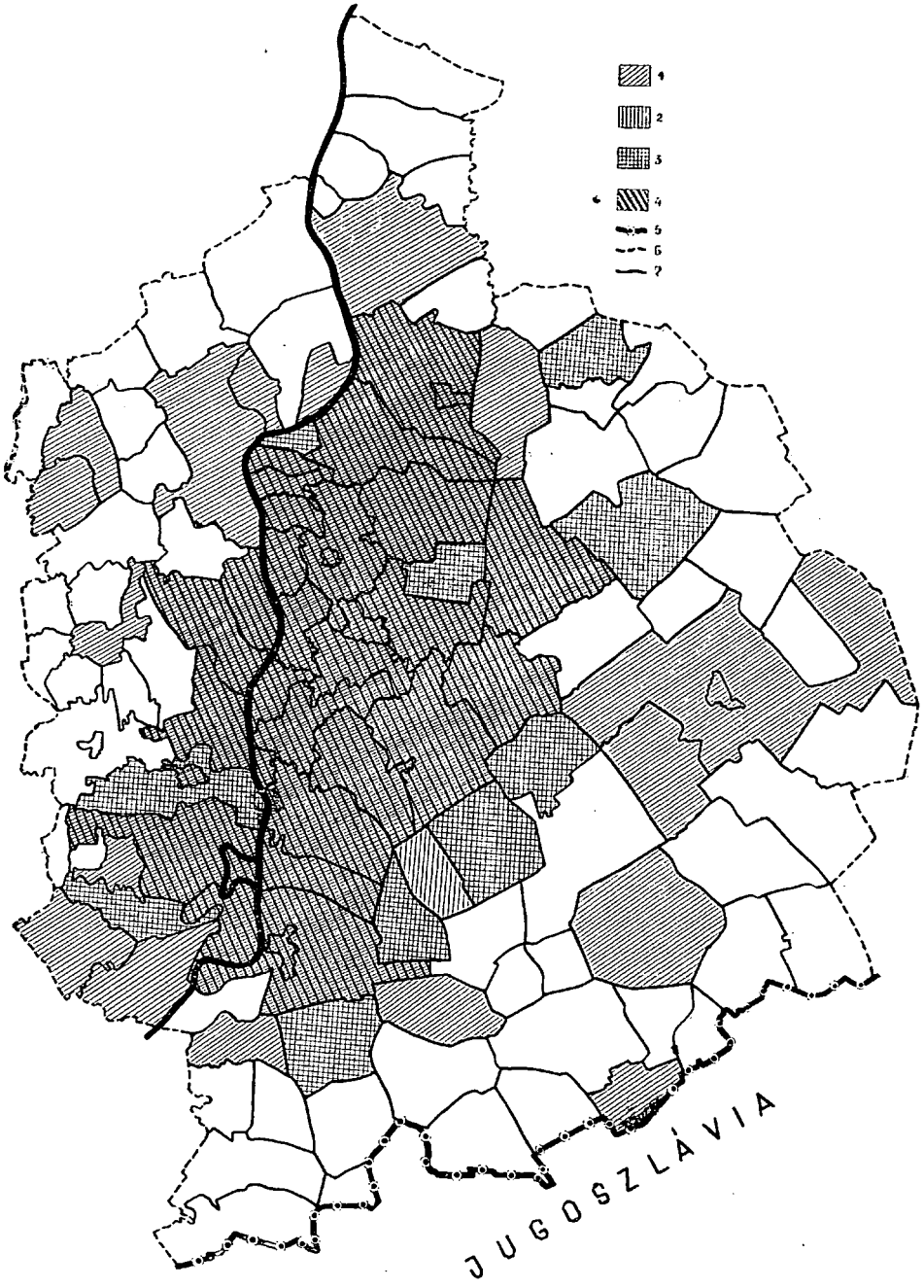
1
2
3
4
5
6
7
JUGOSZLÁVIA

Fig. 6. The number of red paprika farmers and of persons involved in raising red paprika localities in the red paprika region of Kalocsa (based on data for the years 1949—57).
Legend: 1. The number of persons involved in red paprika production is insignificant; 2. The number of persons involved in red paprika production is from 60 to 150 (20 to 50 farmers); 3. The number of persons involved in red paprika production is from 150 to 300 (50 to 100 farmers); 4. The number of persons involved in red paprika production is more than 300 (more than 100 farmers).

4. *Variation of the average yields of the paprika-producing localities over an 8-year period (1954—1961).* The average yields are very important factors for regionalization. Only those localities were included into the red paprika zones, the 8-year average yield of which reached or exceeded the average of the zone *(Figs 7—8).*

5. *Distribution of the areas with red paprika plantations larger than 50 cadastral yokes by localities and their percentage ratio to the total arable area.* Those localities were included into the red paprika zones, in which the ratio af the red paprika plantations to the total arable land was larger than 4 p. c. *(Figs 9—10).*

6. *Possibilities for raising red paprika on the large scale.* Physico-geographical and engineering conditions for developing larger red paprika plots.

Beside the above-mentioned factors, we have to take into consideration the customs, the traditions, the ups and downs in the average yields, etc. With regard to the numerous factors cited, the following areas of the paprika-producing region of Szeged have been distinguished:

Inner Zone

Area I: The situation is favourable here for all factors cited.

Localities of this area: Szeged, Kiskundorozsma and Domaszék.

Area II: Most of the factors look promising, but in some places the special skill of the farmers is still rather feeble and the ratio of the red paprika plantations to the total arable land is low, hardly reaching 1 p. c. *Localities:* Hódmezővásárhely, Algyő, Maroslele, Öföldeák, Földeák, Mártély, Mindszent, Szegvár, Baks, Szentes and Csanytelek.

Area III: The majority of the factors cited proves to be favourable in this area, too, but the development of irrigation faces more difficulties. The soil varieties prominently suitable for the growth of red paprika account for about 50 p. c. of the total, yet they are disintegrated into small, isolated patches. *Localities:* Röszke, Mórahalom, Zákányszék, Zsombó, Forráskút, Gyálarét (at Gyálarét the soil is rather poor, but the conditions for irrigation are more advantageous).

Area IV: The conditions for raising red paprika (soils and irrigation to some extent) are favourable, yet the plantations are extremely limit-

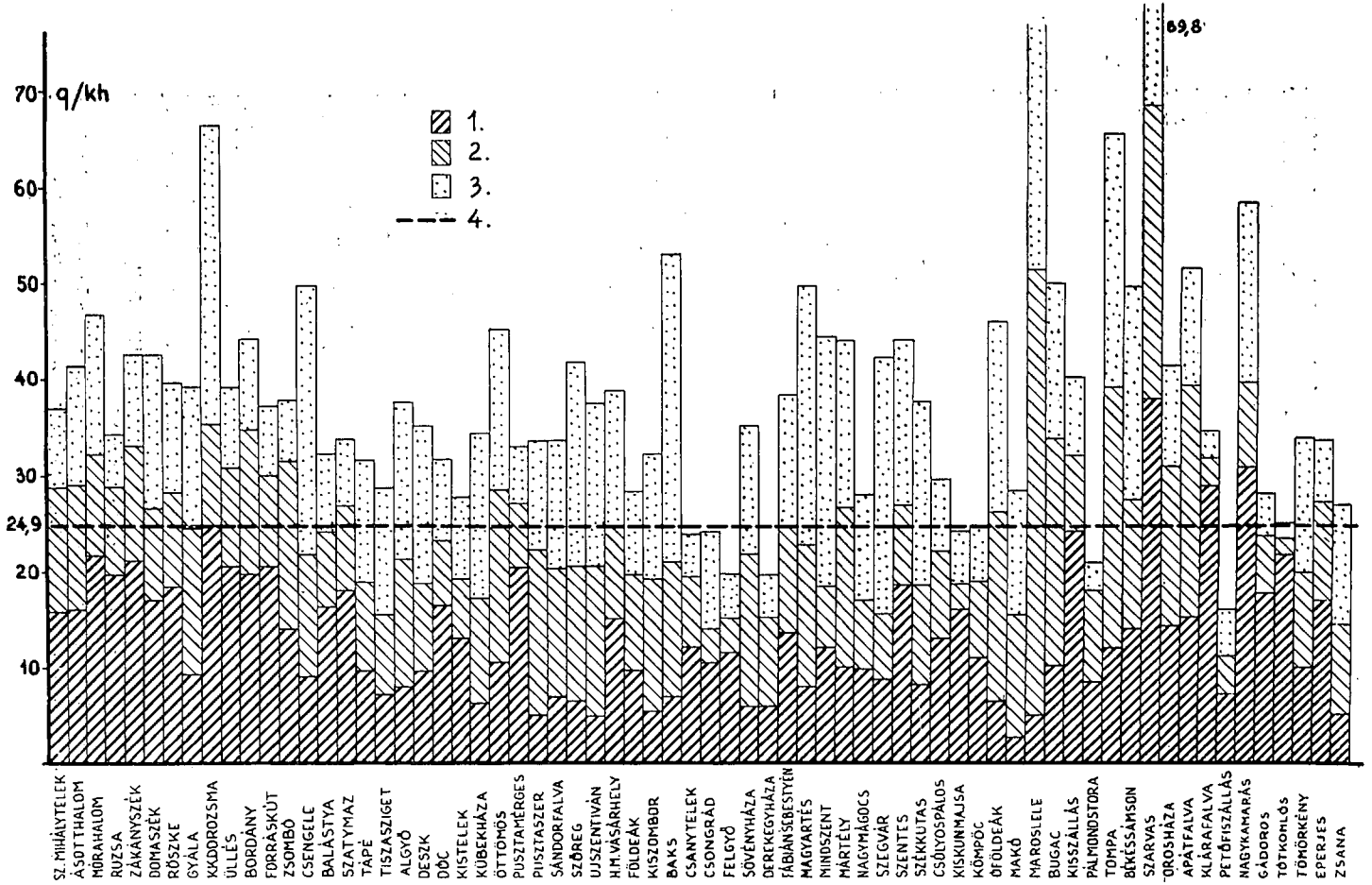

Fig. 7. Distribution of average yields by localities in the red paprika region of Szeged, quintal per cadastral yoke.
Legend: 1. Lowest yield in years 1954—61; 2. Average yield for 8 years; 3. Highest yield in years 1954—61; 4. Average yield for 8 years on the regional scale.

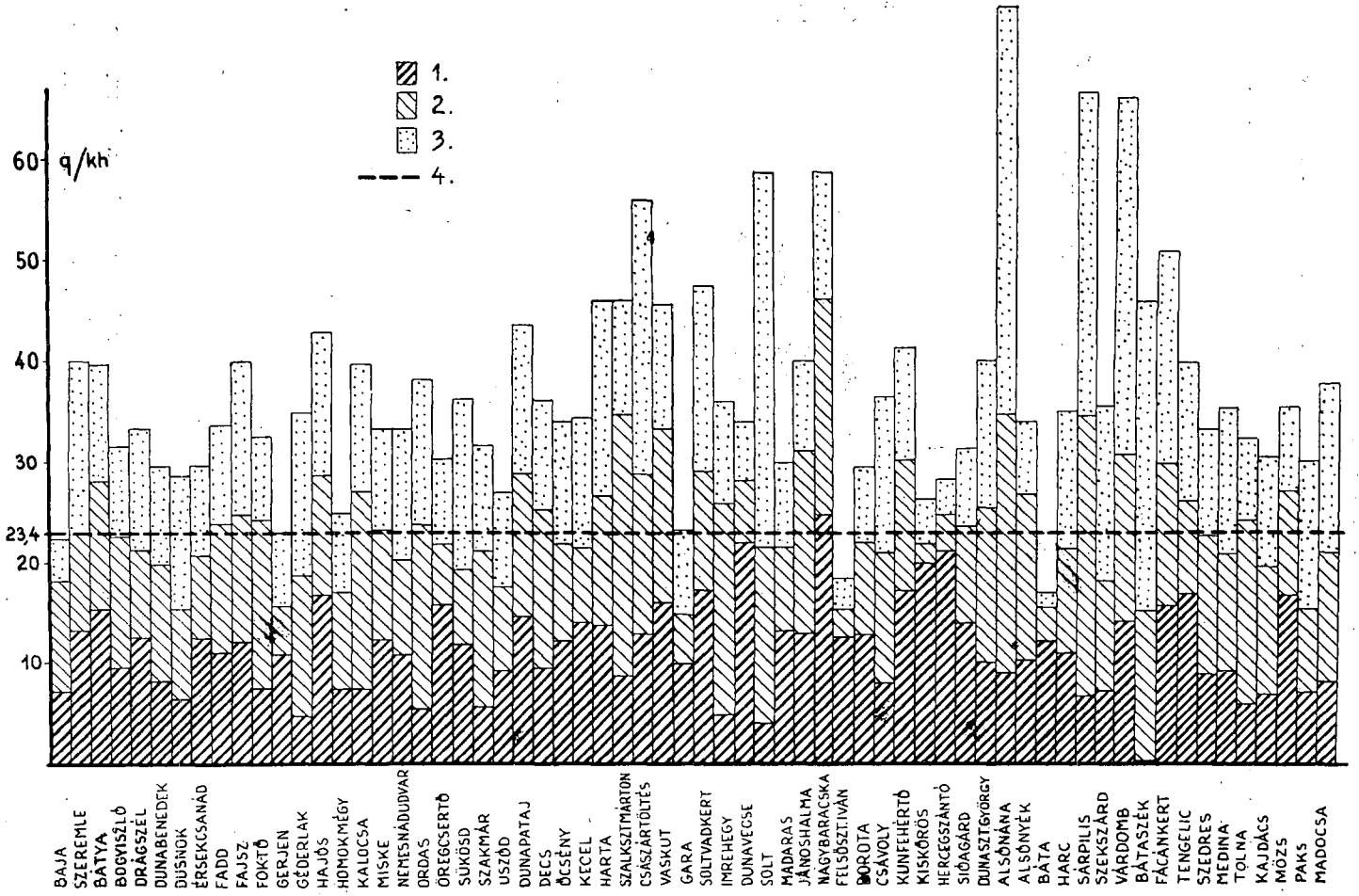

Fig. 8. Distribution of average yields by localities in the red paprika region af Kalocsa, quintal per cadastral yoke.
Legend: 1. Lowest yield in years 1954—61; 2. Average yield for 8 years; 3. Highest yield in years 1954—61; 4. Average yield for 8 years on the regional scale.

ed. As a result of this, the special skill of the farmers is feeble. In addition, the distances of transport are comparatively greater.

Localities: Magyartés, Nagytőke, Cserebökény, Apátfalva, Magyarcsanád, Bokros, Tiszaújfalu, Eperjes, Fábiánsebestyén.

Transition Zone

Area V: The conditions for red paprika production are commonly fair: farming under irrigation can be realized in the long run only. The

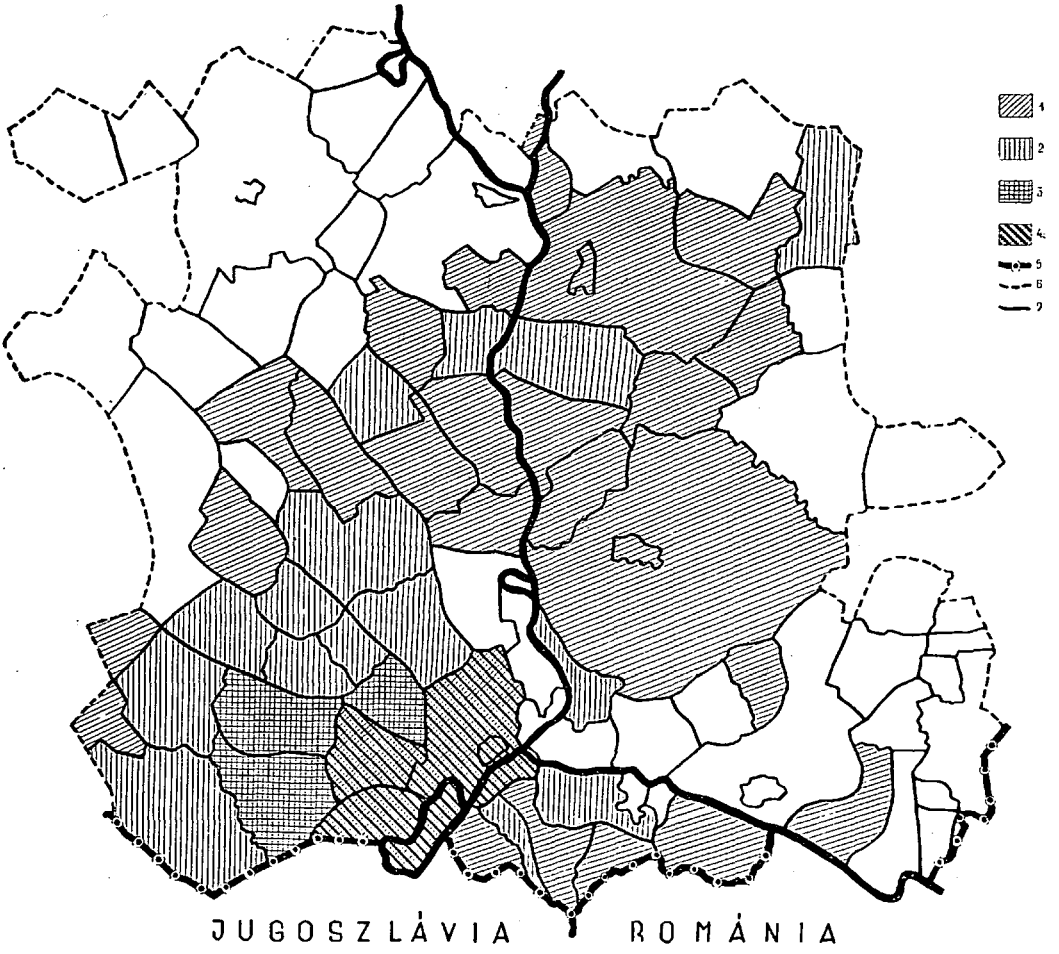

Fig. 9. Percentage ratio of the red paprika plantations to the total arable area in 1958 in the red paprika region of Szeged.
Legend: 1. Below 1 per cent; 2. Between 1—4 per cent; 3. Between 4—10 per cent; 4. Between 10—25 per cent.

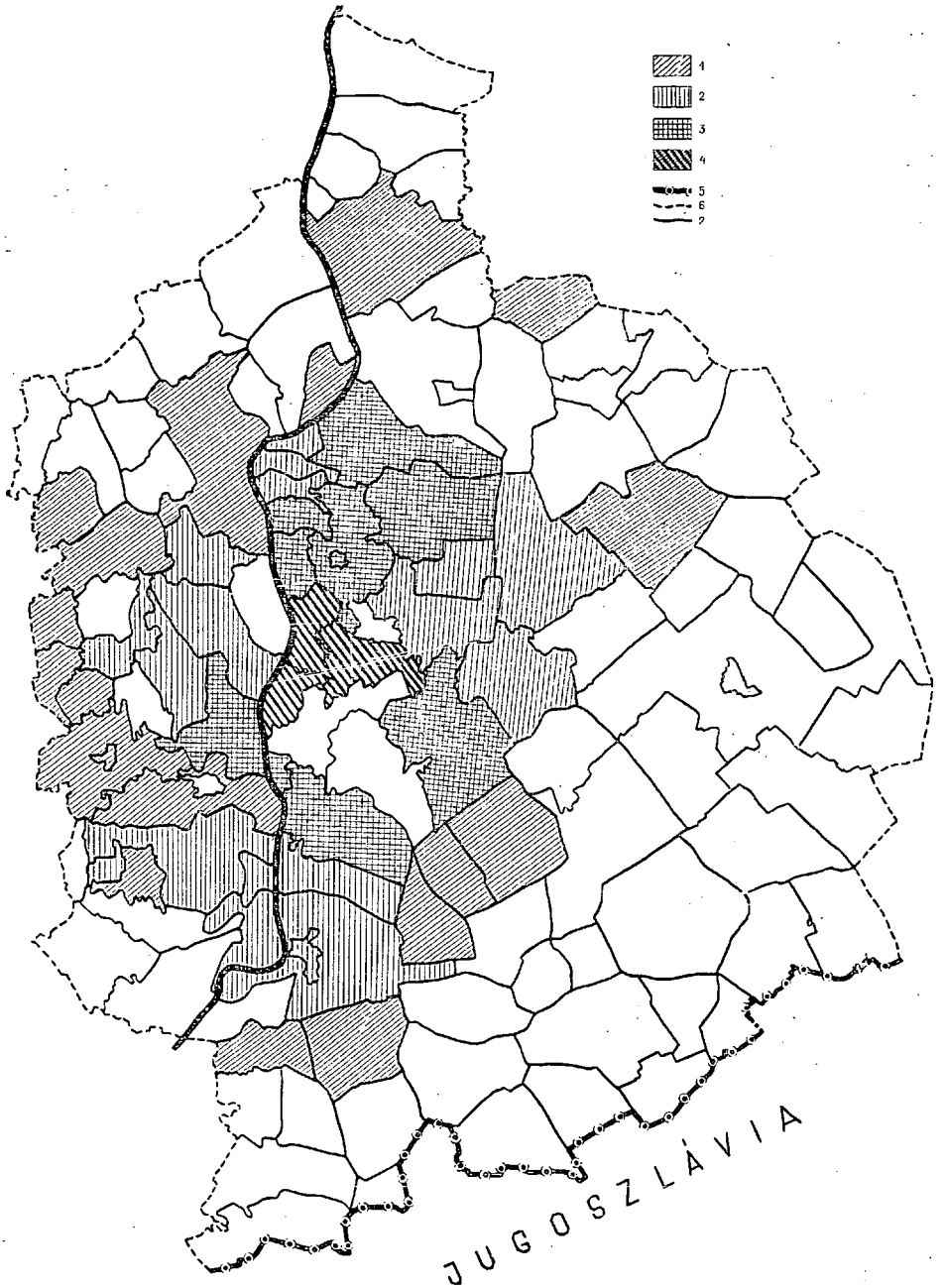

Fig. 10. Percentage ratio of the red paprika plantations to the total arable area in 1958 in the red paprika region of Kalocsa.
Legend: 1. Below 1 per cent; 2. Between 1—4 per cent; 3. Between 4—15 per cent; 4. Between 15—25 per cent.

soils which are highly appropriate to the purpose form small, markedly scattered patches.

Localities: Ásotthalom, Rúzsa, Üllés, Bordány, Csolyóspálos, Kömpöc, Balástya, Sövényháza, and Kistelek.

Area VI: The conditions for raising red paprika are good her, too; especially as far as irrigation is concerned. However, the soils which are suitable for the growth of red paprika occupy small areas and the special skill required for the cultivation of this crop is still very limited.

Localities: Tiszasziget, Újszentiván, Szőreg, Deszk, Klárafalva, Ferencszállás, Kiszombor, Sándorfalva, Dóc, and Felgyő.

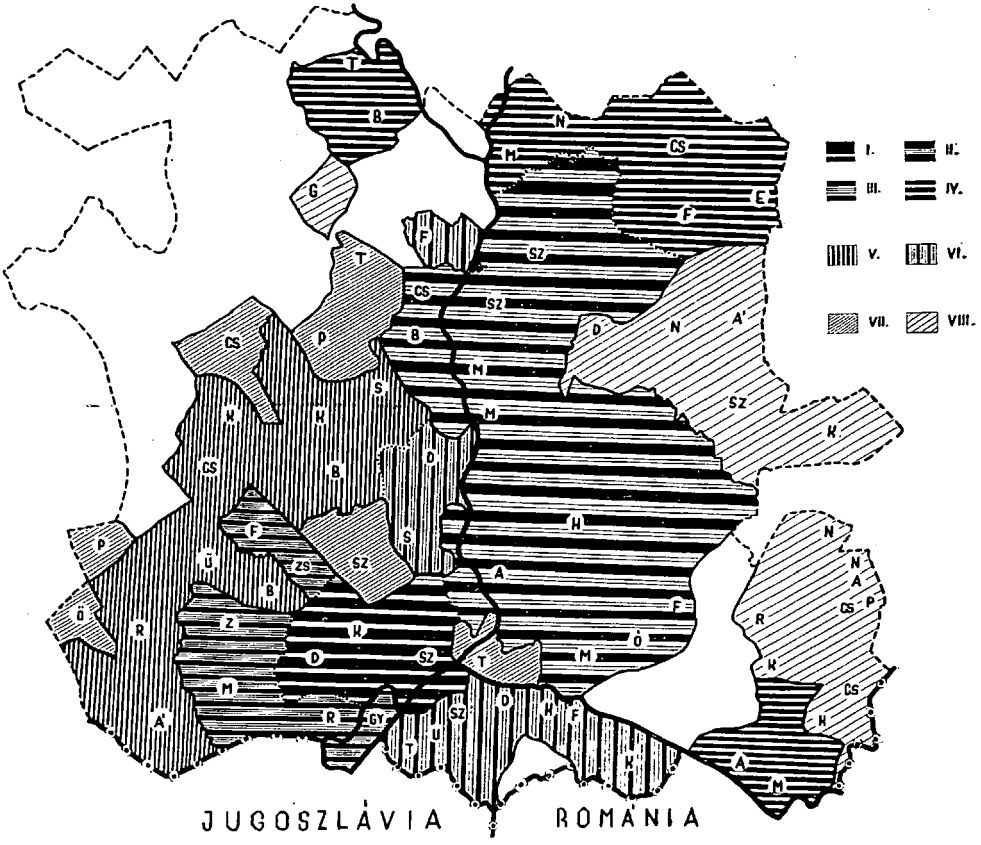

Fig. 11. The cultivation districts of red paprika of Szeged.
Signed: X.
Inner districts I., II., III., IV. Transitional districts V., VI. Outskirts VII., VIII.

Outer Zone

Area VII: In this area it is the soil properties that prove to be particularly advantageous for red paprika production. Nevertheless this crop has an insignificant part here, the conditions for irrigation also being rather disadvantageous.

Localities: Derekegyháza, Nagymágocs, Székkutas, Árpádhalom, Kardoskút, Gátér, Nagykopáncs, Nagyér, Ambrózfalva, Pitvaros, Csanádalberti, Rákos Királyhegyes, Csanádpalota, and Kövegy.

Area VIII: Suitable soils have little extension; the possibility of irrigation is insignificant and the average yields lag behind the average of the zone.

Localities: Szatymaz, Csengele, Tápé, Tömörkény, and Pusztaszer *(Fig. 11).*

The main features of the physical geography of Békés County do not differ from those of Csongrád County. The climatic elements (insolation, air temperature, precipitations, etc.) show hardly any difference from e. g. the deta for Szeged. Soil properties are excellent from the point of view of red paprika production, even though surface waters are less abundant than e. g. in the areas along the Tisza. Exception in Békés County is only the Körös Region where the physiographic environment offers prominent conditions for raising red paprika. On the other hand, in the southern part of the county it is, for the moment, the artesian and ground-waters that can only be utilized for the irrigation of red paprika. These water resources, however, are exploited here better than in Csongrád County, at least for the irigation of this crop (the co-operative farms of Orosháza irrigate very large red paprika plantations from artesian waters).

In Békés County the spread of red paprika is favoured also by the structure of agriculture, since the importance of row crops having the same character as red paprika is rather limited. In Csongrád County the row crops other than red paprika, such as onion, garlic, greens, sweet paprika, tomato, radish, strawberry, saplings, rose, flowers, etc. are also very important, while in Békés County, except for the immediate vicinity of Békéscsaba their role is less significant. In addition, the expediency of developing a red paprika zone in Békés County is emphasized by the prominent average yields obtained by the paprika-producing villages which have outstripped even the traditional paprika-producers of the Szeged region in this respect.

There are, however, three factors which speak against this development: *1. increase of the distances and costs of transport, 2. limited surface water resources, and 3. lack of skilled labour.* Irrigation cannot be based merely upon artesian waters. Empirical figures show that the yields of the artesian wells tend to decrease as operation proceeds. Thus, the plans for farming under irrigation may reckon with artesian wells only as a supplementary factor.

To solve the problem of irrigation is now of vital importance for the Hungarian red paprika culture, since a substantial reduction of the high

production costs is possible only by means of irrigation.

This factor also suggests to concentrate the plantations of red paprika in the areas along the two big rivers, the Danube and Tisza, i. e. in the regions of Szeged and Kalocsa.

Considering the factors cited, in the *red paprika region of Kalocsa* the following areas have been distinguished:

Inner Zone

Area A: All the factors which were considered while demarcating the zone show favourable patterns in this area.

Locialities: Kalocsa, Dunapataj, Szakmár, Bátya, Foktő, Fajsz, and Miske.

Area B: Most of the factors considered prove to be very favourable, but some of them do not reach the upper limit assumed.

Localities: Hajós, Harta, Ordas, Drágszél, Szeremle, Decs, Bogyiszló, Fadd, Várdomb and Sárpilis.

Area C: Although the factors cited look promising red paprika production is insignificant, the special skill of the farmers being feeble.

Localities: Bátmonostor, Nagybaracska (small red paprika plantations), Dávod, Hercegszántó, Sárszentlőrinc, Nagydorog, Kajdács, Tengelic, Medina, Harc, Sióagárd and Mözs.

Transition zone

Area D: It is characterized by soils of low quality and by comparatively lower average yields the other factors being favourable.

Localities: Géderlak, Dunabenedek, Öregcsertő, Homokmégy, Kecel, Dusnok, Nemesnádudvar, Sükösd, Érsekcsanád, Baja, Vaskút, Alsónyék, Öcsény, and Alsónána.

Area E: The conditions for raising red paprika are advantageous, alone the possibility of irrigation is limited.

Localities: Soltvadkert, Tolna, Dunaszentgyörgy.

Outer zone

Area F: Excellent soils, por conditions for irrigation, feeble special skill.

Localities: Szedres, Fácánkert, Jánoshalma, Kunfehértó, Kisszállás, Mélykút, Tompa, Borota, Rém, Csávoly, Bácsbokod, Madaras, Bácsborsod, Katymár, Gara, and Csátalja *(Fig. 12).*

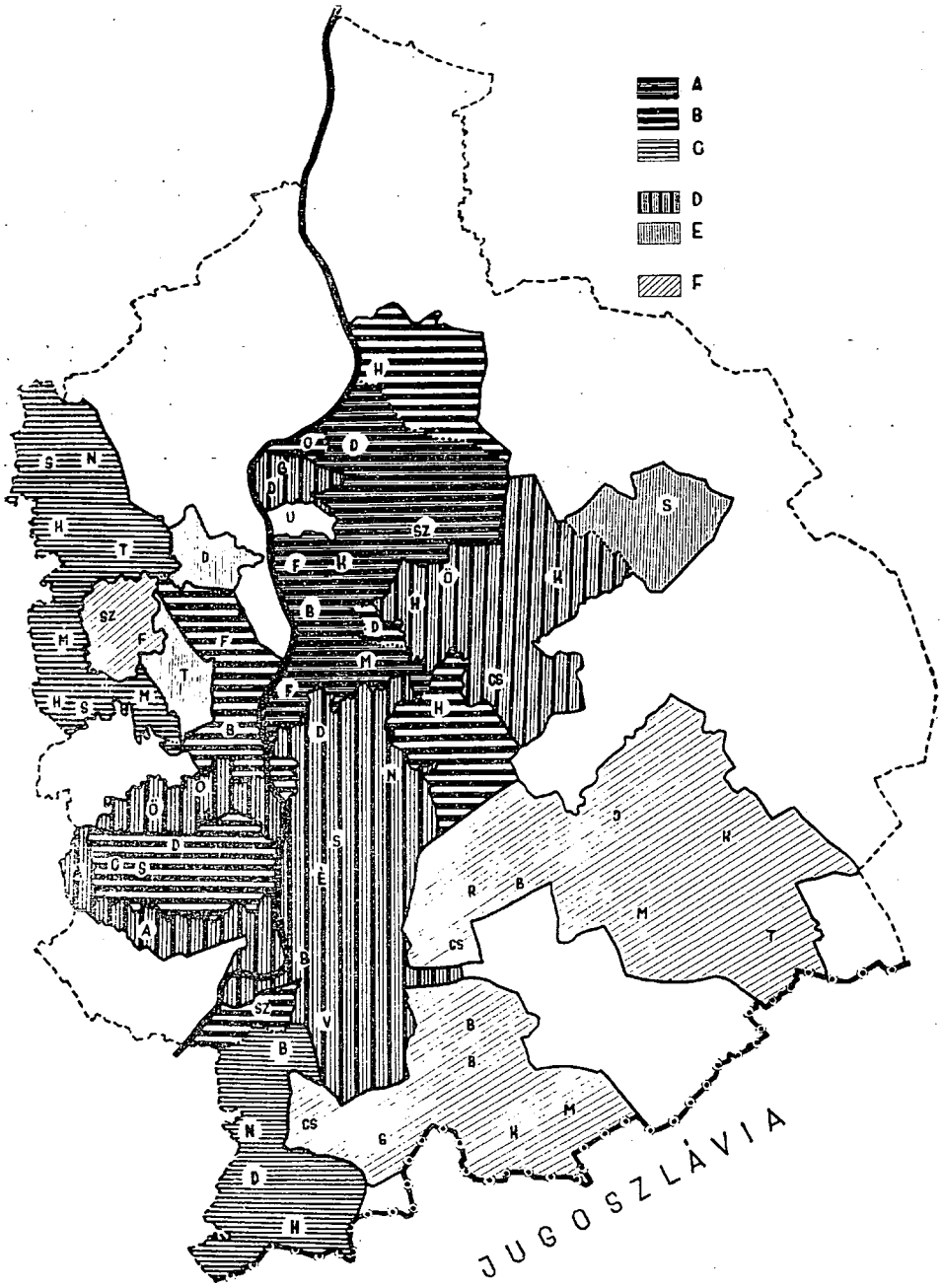

Fig. 12. The cultivation districts of red paprika of Kalocsa.
Inner districts A, B, C, Transitional districts D, E, Outskirts F.

Bibliography

1. A magyar fűszerpaprika (termesztés, feldolgozás, értékesítés). Budapest, 1954.
2. A Magyar Hidrológiai Társaság Szegedi Csoportja Paprikaöntözési Munkabizottságának jelentése és jegyzőkönyvei. Szeged, 1954. Kézirat.
3. Bács-Kiskun megye fontosabb stat. adatai. 1959—60—61-ben. Kecskemét.
4. Csongrád megye fontosabb statisztikai adatai 1959—60—61. Szeged.
5. *Elek László:* A gyümölcs termő tájak és tájoptimumok kutatása. Földraj. Ért. 3. füzet. 1956.
6. *Enyedi György:* A mezőgazdasági körzetek kutatásának új módszeréről. Földr. Ért. 2. 1959.
7. *Erdei Ferenc—Csete Lajos—Márton J.:* A termelési körzetek és a specializáció a mezőgazdaságban. Bp. 1959.
8. *Ernyei József:* A paprika történetéből. Pesti Napló. 1909.
9. *Gyenes Lajos:* Komplex termőtájkutatás elméleti és gyakorlati kérdései (A magyarországi termőtájkutatások története, módszerei és eredményei.) Kandidátusi értekezés. 1958.
10. *Krajkó Gyula:* A gazdasági körzetesítés néhány elvi problémája. Földr. Közl. 3. sz. 1961.
11. *Kreybig Lajos:* A mezőgazdasági tájbeosztás alapelvei. Agrokémia. 7. 1949.
12. *Pénzes István:* A magyar fűszerpaprika gazdasági földrajza. Kandidátusi disszertáció. Kézirat. 1963. Szeged.