

AVAILABILITY OF INFRASTRUCTURE IN RURAL COMMUNAL CENTERS IN POLAND

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INTRODUCTION

Infrastructure is a notion which has been defined in a variety of ways by different authors. Very briefly, one can define infrastructure as a "set of fundamental facilities and institutions which are necessary for the proper functioning of an economy and the organization of life of a population in a given territory".¹ In the framework of infrastructure, one most often distinguishes **technical infrastructure**, related to the production of material goods and to the provision of material services to a population and to an economy², and **social infrastructure**, meant for satisfaction of broadly understood social needs concerning: housing, education and upbringing, health and social care, culture, recreation, tourism and sports.³ One should also mention, as an additional element, facilities related to the functioning of trade and services, which, by principle, are not contained in the notion of "infrastructure", but in view of their importance in satisfying the needs of population, are often analyzed along with proper infrastructure.⁴

The degree of development of an infrastructural system influences, to a large extent, the growth and functioning of the national economy. This concerns both technical infrastructure which conditions the functioning of all domains of the national economy (e.g. power production and supply, or transport), and social infrastructure which, by directly influencing the living conditions of a population constitutes, depending upon its development status, a slowing down or stimulating factor for the development of a given area.⁵

The degree of development of infrastructure in Poland is strongly differentiated in space and in hierarchical scale (the latter especially concerns social infrastructure). There exists a tier system of service levels, of which the lowest one is constituted by local centers⁶, whose sites are as follows:

- (1) small towns which are seats of town and commune authorities and, in addition to their own population, serve also the surrounding communes;
- (2) villages which are commune centers;
- (3) other small towns.

Villages which are commune centers and provide local level services should constitute true service centers, focussing on the life of the inhabitants of the whole commune,

equipped with adequate sets of trade, social and everyday life services, of cultural and recreational as well as administrative services.⁷

The model of commune service⁸, existing at present and quite commonly used in spatial planning, distinguishes two grades of service according to the influence sphere of particular facilities:

- (a) the grade encompassing objects and facilities of the so-called "close reach" (distance of one to two km); depending upon local conditions, the population numbers within the reach of this grade of service may range from several hundred to one thousand people, and there may be several villages hosting this type of service within a commune;
- (b) the grade encompassing objects and facilities meant for the whole commune; they are as a rule concentrated in the commune center, but the situation is quite often encountered that there are "auxiliary centers" in a commune, i.e. villages equipped with facilities of significance beyond the local one (grade a).

The present model, considering the existing differentiation of the settlement system and the intermediate levels of service, tends towards the concentration and improvement of its standard. In the planning practice of the post-war period, aiming constantly at the development of the service function in rural areas, there were frequent changes in the criteria of organization for the service system. In the years just after the war the main criterion was locating the service as close as possible to the user and the creation of a multi-level system. Then, in the period of dismemberment of the administrative breakdown of the countryside, service development started to be related to the centers of 'gromada' (village district). At the end of the 1960s and the beginning of the 1970s, the rural service model was enriched with the elements of agricultural services. In the same period, the housing-and-service centers for employees of socialized agriculture started to be established in the communes, although not always in connection either with the existing settlement network or with the functioning centers. The administrative breakdown reform, performed over the years 1973-1975 was, in particular, meant for enhancing the development of well equipped local centers. Due to this reform 2,365 communes were created to replace the previously existing 4,135 village districts. (This number underwent a significant decrease over the following years.)

All these varying tendencies and changes in the concept of the service system did, in a way, contribute to a dispersal of investments and caused a slowdown in the development of service centers. The functions of a commune center are often divided among two or three centers of similar equipment and reach of service provided.

Facilities offered by a commune seat with regard to service do not depend solely upon the local settlement network but also upon the dynamics and the tendencies of commune development and upon its location. In the less developed communes, especially the ones with a dispersed settlement system, it is quite common to observe the lack of certain facilities included in the commune service model, and sometimes even of those from lower organization levels.

Attention should be turned to the fact that the commune service model includes objects and facilities of a threefold nature, when assessed from the point of view of financial-organizational criteria used until now:

- those which have a clearly defined ("districted") reach belonging to general and social service categories and are financed from the state budget (schools, health care dispensaries, state administration, communication, security service, culture);
- those of market nature with various sources of financing, now mainly in disposition of the co-operative sector but also private, both productive and service;
- a group which is only starting to take shape: the group of communal facilities, financed from various sources but depending mainly upon the activity and organization level of local communities.

The development of these three groups of service is subject to various laws and, because of this, it displays large spatial differentiation on the national scale. Thus, for instance, in the areas of suburban communes with intensive development of housing and productive functions, one can notice a restricted growth of the services which are commonly used by the population of these communes in the town due to daily mass commuting to work and to school, e.g. trade and culture, or service crafts. Hence, these factors which are connected to the socio-economic development level, the organizational level of the commune and its relations with the surrounding areas, also strongly influence the differentiation in the facilities offered and their quality.

CHARACTERIZATION OF SOURCE MATERIALS AND RESEARCH ASSUMPTIONS

The main source of information used in the present report, concerning availability of infrastructure in commune seats, is the study carried out by the Census Bureau of the Main Statistical Office (GUS) in 1988. This study encompasses a broad scope of problems but information referring to facilities is usually limited to a statement of existence of a given kind of service, without a specification of magnitude and the standard of a given facility. This sets a constraint upon the range of analyses that could be performed with regard to availability of selected social, life (education, health care) and agricultural services in commune seats.

The set of commune seats encompassed by the more detailed study has all the features of representativeness, for it includes altogether 160 villages of various population size classes, scattered throughout the country. Analysis was performed for all the community seats of less than 300 inhabitants (37 altogether) and for some 10% of localities—commune seats—from all the other size classes, including 31 small (with populations of 301–500), 34 medium (501–750 inhabitants), 27 big (751–1,500 inhabitants) and 31 very big

(more than 1,500 inhabitants) community seats. Such a composition of the analyzed representation of commune seats is related to the hypotheses forwarded in the first phase of research and concerned the weakness and inadequate availability of infrastructure in small localities.

According to functional types, the analysis performed encompasses, for instance, 8 agglomeration communes, 15 suburban communes located close to large towns, 23 tourism communes and 39 communes with high shares of socialized agriculture.

As information concerning the standard of facilities was limited, the object of analysis was to determine the degree of concentration (in per cents) of service facilities existing within the communes in their centers as well as to evaluate the set from the point of view of completeness of infrastructural outfit in the commune seat in the domain of the communal service grade. When the analyzed facilities did not exist in the commune seat, the fact was marked whether they appeared at all in the given commune. It sheds additional light on the position of the locality which is a commune seat and functions as a service center.

AVAILABILITY OF AGRICULTURAL SERVICE UNITS IN COMMUNE CENTERS

In the analysis of availability of agricultural services in commune seats, the frequency of appearance of 14 various types of service outlets were considered:

- agricultural equipment bases belonging to the so-called agricultural circles;
- State Machinery Centers;
- artificial insemination points;
- dispensaries and clinics for animals;
- agricultural product buying points for:
 - animals,
 - cereals,
 - potatoes,
 - milk;
- storage and sales facilities for:
 - mineral fertilizers,
 - protein fodders,
 - agricultural machines and tools,
 - pesticides and herbicides;
- service craft workshops:
 - blacksmiths and ironworks,
 - agricultural machine repair centers.

From among the agricultural service outlets mentioned above the ones most often encountered in commune centers were buying points for animals, cereals and milk, stores

with mineral fertilizers and protein fodders as well as agricultural equipment bases for farmer's circles and dispensaries for animals. (Table 1) The latter displayed an especially high degree of concentration in commune centers (56.2%). Especially rare were three kinds of service facilities related to agricultural machines, that is: State Machinery Centers (5.6% of the cases), stores with agricultural machines and tools (16.2%), and workshops for agricultural machine repairs (25.0%). Because of the very low indicator occurrence of these three kinds of agricultural service facilities, further statistical analysis was concentrated on the other eleven types.

Table 1
Frequency of appearance of agricultural service outlets in communes and commune centers

| Agricultural service outlets | Commune centers | Communes | Commune centers | Communes* |
|---|----------------------------|----------|-------------------------|-----------|
| | without service outlets, % | | with service outlets, % | |
| agricultural circle equipment bases | 39.4 | 8.1 | 60.6 | 16.9 |
| State Machinery Centers | 94.4 | 88.8 | 5.6 | 5.0 |
| artificial insemination points | 51.9 | 3.1 | 48.1 | 5.6 |
| dispensaries and clinics for animals | 36.9 | 16.9 | 63.1 | 56.2 |
| agricultural product buying points for: | | | | |
| animals | 30.6 | 3.8 | 69.4 | 45.0 |
| cereals | 28.8 | 3.8 | 71.2 | 46.9 |
| potatoes | 45.0 | 20.0 | 55.0 | 36.2 |
| milk | 29.4 | 1.9 | 70.6 | 11.2 |
| storage and sales facilities for: | | | | |
| mineral fertilizers | 26.2 | 0.6 | 73.8 | 35.0 |
| protein fodders | 26.9 | 2.5 | 73.1 | 46.9 |
| agricultural machines and tools | 83.8 | 76.9 | 16.2 | 14.4 |
| pesticides and herbicides | 46.9 | 22.5 | 53.1 | 43.1 |
| service craft workshops: | | | | |
| blacksmiths and ironworks | 48.1 | 13.1 | 51.9 | 42.5 |
| agricultural machine repair centers | 75.0 | 41.2 | 25.0 | 15.0 |

* with service outlets appearing solely in common centers

Generally speaking, the availability of agricultural services in communal centers does not display a distinct spatial differentiation. Centers with high and low degrees of development of agricultural services are scattered throughout the country. There is, on the other hand, a distinct dependence, with this respect, upon the size of the communal center. In order to establish a more precise shape of this dependence, all of the eleven kinds of services mentioned above were summed up for particular size classes of commune centers. (Table 2)

Table 2
 Frequency of appearance of agricultural service outlets (all types) according to the size classes of commune centers

| Population size classes | Percentage of missing service outlets | | Percentage of service outlets appearing | |
|-------------------------|---------------------------------------|--------------|---|----------------------------|
| | in a commune center | in a commune | in a commune center | solely in a commune center |
| below 300 | 46.4 | 6.4 | 53.6 | 30.2 |
| 301-500 | 40.5 | 10.0 | 59.5 | 35.8 |
| 501-750 | 33.7 | 8.3 | 66.3 | 29.1 |
| 751-1,500 | 30.3 | 9.8 | 69.7 | 39.1 |
| above 1,500 | 34.6 | 10.6 | 65.4 | 27.0 |
| Total | 37.6 | 7.3 | 62.4 | 31.9 |

The analysis of information contained in *Table 2* leads to the conclusion that the concentration of agricultural services grows together with the size of the center, reaching its maximum for the size class of 751-1,500 inhabitants. It is characteristic of the data presented that the share of service facility types not appearing at all within the communes whose seats are located in localities of not more than 300 inhabitants is very low, merely 6.4% . This indicates a high degree of dispersal of these types of service over the whole area of a commune, usually strongly dominated by agriculture, in which a well defined center is lacking. Commune centers of medium size (501-750 inhabitants) are characterized by low indicators of the share of agricultural service outlets located uniquely in the commune center (29.1%), and of those not appearing in the commune at all (8.3%). It may be thought to reflect the existence of other centers of similar size within the same commune, and therefore there is a competition among them. This might be seen especially well in the analysis of availability of education, upbringing and health care facilities in these centers.

**AVAILABILITY OF HEALTH CARE, EDUCATION AND
 UPBRINGING FACILITIES**

Analysis of situation in this domain was performed by considering the number of kindergarten places and the number of primary school pupils in the commune center, in relation to the respective numbers for the whole commune and to the number of inhabitants of the commune and of its center. Values of coefficients calculated thus are obviously dependent upon the size of the commune center as reflected by the number of inhabitants. That is why these values, like in the previous case of agricultural services, were grouped according to the size classes of the commune centers.

The degree of availability of kindergarten places in commune centers is strongly correlated with their size. The degree of concentration (the ratio of the number of kindergarten places of the commune center to those in the whole commune) increases together with the size of the center and attains its maximum, similarly to the case of agricultural services, for the size class of 751–1,500 inhabitants. (Table 3) It can be concluded from the analysis of this last table that the smallest centers (below 300 inhabitants) are, for the most part, deprived of kindergartens: more than one fourth of these communes do not have a kindergarten in its territory at all.

Table 3
Degree of concentration of kindergarten places according to the size classes of commune centers

| Population size classes | Commune centers | Communes | Commune centers with | | | |
|-------------------------|-------------------------|----------|-------------------------|----------|-----------|-----------|
| | | | without kindergarten, % | 0.1–40.0 | 40.1–60.0 | 60.1–99.9 |
| | concentration degree, % | | | | | |
| below 300 | 67.6 | 32.4 | 10.8 | 5.4 | — | 16.2 |
| 301–500 | 58.1 | 25.8 | 22.6 | 3.2 | 3.2 | 12.9 |
| 501–750 | 38.2 | 20.6 | 32.4 | 8.8 | 2.9 | 17.6 |
| 751–1500 | 14.8 | — | 25.9 | 18.5 | 14.8 | 25.9 |
| above 1,500 | 9.7 | 3.2 | 41.9 | 9.7 | 16.1 | 22.6 |
| Total | 39.4 | 17.5 | 26.2 | 8.8 | 6.9 | 18.8 |

Analogous calculations as for kindergartens were also carried out for the pupils of primary schools located in commune centers. The concentration coefficient, given by the ratio of the number of pupils attending the primary school in the commune center to those in the whole commune, attained its maximum in the size class of commune centers with more than 1,500 inhabitants (Table 4). In the smallest size class (below 300 inhabitants) attention should be paid to the very high value of the indicator of the lack of primary

schools (35.1%), along with a low concentration degree of existing schools. The low degree of concentration is characteristic, just as it was in the case of kindergartens, for the size class of centers with 501–750 inhabitants.

Table 4

Degree of concentration of pupils in primary schools according to the size classes of commune centers

| Population size classes | Commune centers without primary school, % | Commune centers with | | |
|-------------------------|---|-------------------------|-----------|-----------|
| | | 0.1–40.0 | 40.1–60.0 | 60.1–99.9 |
| | | concentration degree, % | | |
| below 300 | 35.1 | 43.2 | 16.2 | 5.4 |
| 301–500 | 9.7 | 45.2 | 32.3 | 12.9 |
| 501–750 | — | 67.6 | 20.6 | 11.8 |
| 751–1,500 | — | 51.9 | 33.3 | 14.8 |
| above 1,500 | — | 38.7 | 35.5 | 25.8 |
| Total | 10.0 | 49.4 | 26.9 | 13.8 |

Table 5

Number of primary school pupils per classroom in commune centers (%)

| Population size classes | Commune centers without primary school, % | Commune centers with | | | | | |
|-------------------------|---|-------------------------|-----------|-----------|-----------|-----------|----------------|
| | | less than 20.1 | 20.1–25.0 | 25.1–30.0 | 30.1–35.0 | 35.1–40.0 | more than 40.0 |
| | | pupils per classroom, % | | | | | |
| below 300 | 35.1 | 16.2 | 5.4 | 5.4 | 2.7 | — | 35.1 |
| 301–500 | 35.5 | 19.4 | 16.1 | 6.5 | 9.7 | 3.2 | 9.7 |
| 501–750 | 26.5 | 41.2 | 20.6 | 8.8 | — | 2.9 | — |
| 751–1,500 | 11.1 | 25.9 | 29.6 | 22.2 | 7.4 | 3.7 | — |
| above 1,500 | 12.9 | 12.9 | 29.0 | 12.9 | 9.7 | 22.6 | — |
| Total | 25.0 | 23.1 | 19.4 | 10.6 | 5.6 | 6.2 | 10.0 |

Interesting observations are provided by the analysis of *Table 5* containing data on the number of primary school pupils per classroom in communal centers, according to the population size classes. This degree of “crowding” in primary schools located in commune centers displays enormous differentiation (from 6.5 to 40), especially when com-

pared to the "crowding" in the primary schools of the whole commune. The lowest values of this indicator appear for the centers with the smallest population number, while the highest—for the biggest centers. Such a distribution of indicators is an evidence of the inadequacy of school dimensions to actual needs. The smallest centers, located often in depopulating areas, have similar schooling facilities in their capacity to those existing in localities of much greater population potential and demographic activity. An instance for the latter side of this discrepancy is provided by the commune centers of Halinów and Jaktorów, villages located within the confines of the Warsaw agglomeration, where population numbers grow from year to year but the development of infrastructure, especially of the social one, does not catch up with it.

Phenomena similar to those observed for education are also characteristic of health care. Communes whose seats are located in small centers feature monocentric distribution of health care dispensaries. As a rule, they were found in just one village of the commune, though quite frequently outside the commune center. (Table 6) Unlike this latter group in commune centers of 501–750 inhabitants distribution is, as a rule, at least bi-centric.

Table 6
Degree of concentration of medical consulting rooms according to the size classes of commune centers

| Population size classes | Commune centers without health care dispensary, % | Commune centers with | | |
|-------------------------|---|-------------------------|-----------|-------|
| | | 0.1–50.0 | 50.1–99.9 | 100.0 |
| | | concentration degree, % | | |
| below 300 | 32.4 | 8.1 | 18.9 | 40.5 |
| 301–500 | 22.6 | 22.6 | 3.2 | 51.6 |
| 501–750 | 5.9 | 41.2 | 23.5 | 29.4 |
| 751–1,500 | 3.7 | 29.6 | 25.9 | 40.7 |
| above 1,500 | — | 22.6 | 29.0 | 48.4 |
| Total | 13.8 | 24.4 | 20.0 | 41.9 |

CONCLUDING REMARKS

The analysis performed concerned first of all the position and actual service availability in commune centers. It also encompassed the infrastructural outfit of the communes to a significant degree. The main conclusion from this phase of analysis is the statement that in spite of certain infrastructural investments made in the communal centers over the last years, the level attained is still often not satisfactory, as confirmed by the facility standards, especially with regard to certain types of objects.

This would mean that in spite of the long time elapsed since the reform of the administrative division and in spite of the declarative strengthening of the functions of commune centers, the previously existing policentric service provision system persists, in reality hindering the development of communal centers. It is perhaps worth emphasizing here that breakdown of functions of a higher level among several centers usually lowers the standards of service, which is not entirely compensated by closer location.

In the spatial setting, the best availability of service in communes and in the majority of commune localities appears in the areas taken over by Poland in 1945 (the Northern and Southern parts of the country). The central part of the country receives negative distinction, where the concentration of service in commune centers is low and there are, in general, less and worse facilities. It is in this area that the multicenter system mentioned above prevails, entailing the dispersal of facilities and weakly shaped functions integrating and activating the communal centers. Such a situation may result from the specifics of the settlement system which has a great number of small villages of low activity and poor facilities. This spatial situation and the poor state of development is compounded by disadvantageous socio-demographic phenomena: high migration to towns and mass job commuting, weakening local activity.

As opposed to the background of the central part of the country, the image of development of commune centers located in the Eastern part presents itself quite advantageously, for there only the smallest localities, having a very weak infrastructure, have not attained an adequate level. The better development of the commune centers in the Eastern part of the country is presumably due to a sparse network of towns and a worse transport system, which was a stimulus for infrastructural development in rural commune centers. It would mean that the Eastern areas of the country, where depopulation processes have been taking place for years, from this point of view are more active than the central part.

The development of commune seats in Southern Poland is also quite specific. Commune seats, for the most part, are located there in large villages of even several thousand inhabitants. Though their infrastructural outfit level is very differentiated, in that respect the position of commune centers is often relatively low. This results presumably mainly from the nature of the settlement system: it is characterized by a dominating share of large villages, each one having certain elements of service infrastructure, frequently of high degree of specialization. It is also, to some extent, the result of the high importance of tourism and housing functions in this area, reflected in a more uniform development of several localities in a commune. In such a case, the concentration of service in the commune center is difficult and probably purposeless. This type of communes certainly requires more profound studies.

Within the spatial setting, communes located in the vicinity of large towns can also be distinguished. This group of communes features decidedly the poorest service availability, which would mean that a location close to town and, probably, strong links with it, limits the development of the commune center. A large proportion of service-related population needs is satisfied in the neighbouring town due to job and school commuting, and since this town becomes the focus of attention, the local activity is much lower.

The analysis of the infrastructural and service outfit of commune centers shows, especially for Central Poland, significant divergences from the general model presented at the

outset. In spite of the inadequate development dynamics and the disadvantageous conditions for investment at present, such a model clearly emerges although, perhaps, over a longer time horizon. It is necessary to improve the service standard and to bridge the existing gaps, and the best way towards the attainment of this goal is the development of communal centers with better civilizational conditions of functioning.

Such a development model would be appropriate both for the areas which are demographically active but feature high dispersal of service and lower quality and for the depopulating areas with low levels of general activity. It seems also possible to perform changes in the ranks of centers in the communes, having in mind to link the commune seat with the locality displaying clear development dynamics. The analysis conducted distinctly indicates that small localities, deprived of proper infrastructural outfit, are not capable of playing the role of a commune center and that then such a role is often played by other localities, instead.

NOTES

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² KARST, Z. 1986: *Techniczno-ekonomiczna infrastruktura gospodarki narodowej* (Technico-economic infrastructure of national economy) — PWN, Warszawa

³ CIECHOCIŃSKA, M. 1982: *Infrastruktura społeczna a organizacja terytorialna kraju* (Social infrastructure and spatial organization of the country) — In: *Gospodarka przestrzenna Polski i organizacja terytorialna kraju* — Eds. Jaroszyński, A. and Komorowski, S. M. — Warszawa — pp.156–180.

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⁵ SASINOWSKI, H. 1988: *Infrastruktura społeczna jako potencjalny stymulator aktywizacji wsi* (Social infrastructure as a potential stimulator of rural activation) — *Doctor of science dissertation* — OBN, Białystok

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⁸ KACHNIARZ, T. 1979: *Model i zasady przestrzennego zagospodarowania ośrodków gminnych* (Model and principles for spatial organization of commune centers) — IKŚ, Warszawa