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## The Structure of Settlement: Needed Adaptations to Change

David H. K. Amiran

### *Original Structure of Employment and Settlement*

In general the places of settlement and the routes or roads are the most persistent elements introduced by man into landscape. The «normal» or «traditional» pattern of settlement is of a hierarchical, roughly pyramidal structure, fitting the prevalent employment structure of the population. Until the Industrial Revolution the vast majority of the labour force had to be employed in the agricultural sector in order to provide an adequate food supply. In most populations the agricultural sector amounted to 80 per cent of the labour force or even more<sup>1</sup>. Consequently, for the vast majority of time of human history and for practically all countries, villages based on agricultural activity were the prevalent type of settlement. In addition to the villages which formed the essential subject matter of the settlement matrix there was a rather insignificant number of towns. These formed the upper segments of the pyramid of settlements, a majority being service towns for the agricultural villages, the rest serving as administrative centers and for a variety of purposes.

### *Changes in Employment Structure*

The Industrial Revolution brought about a basic change in employment structure which gradually gained considerable impetus. This change, however, had but little influence on the existing settlement fabric. Due to its inherent quality of persistence there were only minor changes in the settlement structure. These resulted essentially in the transformation (or sometimes reclassification) of some of the largest villages into towns, and in the establishment of a number of new towns. But irrespective of the significant decrease of agriculture as the prevalent element in employment structure there occurred but an insignificant shift in the numbers of villages and towns respectively.

The present Technological Revolution, in full swing since World War II, did have a revolutionary effect

on agriculture too through mechanization, irrigation and agricultural genetics. As a result the percentage of the labour force employed in agriculture is decreasing steeply. It did drop in a majority of countries below 40 per cent, is approaching 10 per cent in countries which made particular progress in agrotechnology, and is even decreasing below 10 per cent.

In short, an increasing majority of the population, amounting to or even exceeding 90 per cent in some nations, forms today the non-agricultural labour force: it has, therefore, no rational relation to villages or the rural sector of the settlement fabric.

The shift from a prevalently agricultural labour force distinctive of human population, and therefore settlement, since prehistory until the nineteenth century, to a prevalently non-agricultural employment structure increasingly characteristic since the last century has brought about a tremendous acceleration in urbanisation, one of the distinct features of the twentieth century. This process has been aggravated by another result of the Technological Revolution: the unprecedented increase in numbers of population, being another distinctive feature of the twentieth century.

### *Three Stages of Settlement Structure*

These developments permit to identify three stages in the structure of settlement.

*Stage A* – based on agriculture as the most important branch of employment. Accordingly, the basic element of settlement are villages which form the overriding factor in the settlement fabric. The top of the settlement pyramid is formed by urban strata, some of the towns growing to considerable size.

*Stage B* – a transitional stage. Changes in employment structure and in technology, including in transportation technology, bring about the partial functional obsolescence of some of the agricultural villages and consequently of some of the towns serving the rural sector. The result is rural to urban migration, the growth of many towns and the regression

and deterioration of others. The same applies, often to an even higher degree, to villages, a certain percentage of which suffers badly from rural depopulation.

*Stage C* – is essentially non-agricultural in its employment structure. The town, therefore, is its basic element of settlement. The number of towns is growing, and so is the size of the individual town. Some villages are abandoned, especially those marginal for location or production potential. Others undergo transformation, partial or in full, by introducing industry<sup>2</sup> or turning into dormitory settlements for towns within commuting distance.

Stage C experiences increasing migration into cities and increasing growth of the large cities amongst them<sup>3</sup>. Many of these are but ill fitted to accommodate the population influx; appalling slums are the result. As a complementary feature, stage C experiences rural depopulation including regression of some towns in rural areas.

### *Two Dichotomies of Settlement Pattern*

The result of all this is a double dichotomy of the settlement pattern. The first applies to nearly all countries and is the increasing polarity between rural and urban settlement. The second applies mainly to those countries in which urbanization has been greatly accelerated in recent decades, especially the so-called developing countries. This leads to an additional dichotomy within the urban sector, resulting in a small number of rapidly growing major cities, often overgrown in size, in distinct contrast to the small and medium-size towns which show but moderate development and not infrequently regression.

This second type of dichotomy has much to do with the underlying reasons stated by Mark Jefferson in presenting his Law of the Primate City: «Tither flows an unending stream of the young and the ambitious in search of fame and fortune<sup>4</sup>». This type of one, or a few, excessively large cities is found in particular in countries which underwent their main national development in the present century only. Metropolitan populations of close to 8 million for São Paulo, c. 7 million for Rio de Janeiro, 8 million for Buenos Aires, c. 2 million for Caracas, over 2 million for each of Santiago, Lima and Bogotá, as well as over 5 million for Cairo, close to 3 million for Alexandria, or 1,5 million for Casablanca, and over 1 million for Algiers and Kinshasa lack the understructure of medium-size cities to be found in countries which started earlier on the path of modern development, such as the majority of European countries, the USA, USSR, and others. In the developing countries it is the glaring gap between hardly developing rural areas and the economic diversity

and opportunities of the large metropolitan centers which is a powerful motive for migration to the major cities. However, the vast majority of these migrants join the lower, and lowest, ranks of the metropolitan labour force, and have to live in the rapidly growing shanty towns at their outskirts, where housing conditions are hardly better than in the poor rural areas whence they came, and often worse. The final words of the sentence by Mark Jefferson quoted above dealing with the attraction of primate cities «... and there fame and fortune are found» is true indeed, but applies only to an infinitesimal portion of the people who migrate there. The volume of migration results from the size of the gap of economic potentials and from an insufficient degree of communication which passes to the people in the rural areas only the information about the advantages of the big cities but suppresses their disadvantages.

### *Aims for Planning*

Stage C which is the stage in which many countries find themselves today presents a distinct case of maladaptation. It is prevalently urban in its economy but still retains most of its rural settlement structure, as heritage of its agricultural past. This maladjustment and the prospect of its further deterioration pose a number of objectives to national and regional planning.

The addition of new towns to the settlement fabric in order to bring it into better balance with the present and future employment structure of the population. These towns should be of sufficient size to provide an adequate range of services.

The planned transformation of an increasing number of agricultural villages into industrial settlements. This can have the double advantage of revitalizing the economic basis of many a village and arrest its regression, and of dispersing those branches of industry for which a big-city location is not mandatory.

Tackling the problem of small towns suffering severely from regression. They can no longer maintain adequate services for their diminishing population. They require the attention of planners before they deteriorate to semi ghost towns<sup>5</sup>. If their deterioration can not be reversed by infusion of new functions it might be advisable to bring about their planned abandonment, to prevent the social damage inherent in a severely underpopulated town.

The limitation by administrative and economic restraints of additional excessively large cities, in order to avoid their two most serious disadvantages. (1) A severe waste of manpower, the result of the overload of traffic in a large metropolitan city: this leads to the waste of 20 to 30 per cent of work

time in the journey to work. (2) Environmental and social deterioration including the various forms of pollution of the physical environment and the social deterioration characteristic for an excessively large city.

The stronger the planning authority, the better are its chances to achieve these goals. A pertinent statement to this effect has been made by Soviet planners, who foresee by the end of the century the majority of the population living in middle-size and large cities, and who have it declared their policy to limit the growth of the superlarge cities and at the same time to avoid the formation of excessively small urban settlements<sup>6</sup>.

## Notes

<sup>1</sup> The UN *Demographic Yearbook* for 1948 and the *Yearbook of Labour Statistics* for 1947–48 give the following percentages of the national labour force employed in agriculture for as late as the decade preceding World War II:

Turkey	1935	80%
Bulgaria	1934	78%
Romania	1930	78%
Yugoslavia	1931	78%
Colombia	1938	73%
Egypt	1937	71%
India	1931	68,5%
Mexico	1930	68%

Cf. George P.: *Introduction à l'étude géographique de la population du monde*. Paris, 1951, p. 104.

<sup>2</sup> Switzerland presents some prime illustrations for this, developing its tradition of village industries, a major item of which has been the watch industry for many a generation. Today a variety of industries are located in Swiss village communities, including some industries of considerable size. At a smaller scale, the most advanced type of agricultural village in Israel, the kibbutz, has introduced industrial plants to a considerable degree.

<sup>3</sup> Cf., e.g., Linton D. L.: *Millionaire Cities Today and Yesterday*, *Geography*, 43, 1958, pp. 253–8; Mountjoy A. B.: *Million Cities: Urbanization and the Developing Countries*, *ibid.*, 53, 1968, pp. 365–374.

<sup>4</sup> Jefferson Mark: *The Law of the Primate City*, *Geographical Review*, 29, 1939, pp. 226–232, ref. p. 226.

<sup>5</sup> The case of the former railroad towns in the Midwest of the USA might be mentioned here, though it is by no means the only one. For reasons of the technology of railroad construction these towns were established at distances of six miles from one the other. After completion of the railroad many a town did not succeed in establishing a sound economic base and some of them are in a sorry state of regression today.

<sup>6</sup> Pokshishevskiy V. V.: *The Economic Geography of the USSR by the Year 2000*, *Nauka i Zhizn'*, 1968, No. 2, pp. 70–73 (translated in *Soviet Geography*, 9, 1968, pp. 770–776, ref. p. 772).

## Die Berufs- und Siedlungsstruktur und ihr Wandel

Die ursprüngliche, «normale» oder «traditionelle» Struktur der Siedlungen baut sich im wesentlichen auf der beruflichen Struktur der Bevölkerung auf. Bis zur industriellen Revolution des 19. Jahrhunderts war die menschliche Arbeitskraft in allererster Linie der Landwirtschaft verpflichtet, deren Produkte der Ernährung und Bekleidung dienten. Entsprechend lebte die Großzahl der Menschen in Dörfern; die städtischen Siedlungen bildeten, als Markt- oder administrative Zentren, bei weitem die Minderheit. — Der außerordentliche Wandel, der seither, und namentlich seit dem Ende des Zweiten Weltkriegs eingetreten ist, hat zu vollkommen veränderten Strukturen geführt; in hohem Maße verdienen auch sie, vom Geographen beachtet und erfaßt zu werden. Der Autor skizziert in Kürze die einzelnen Phasen und die Resultate dieses Wandels. Unter anderem stellt er das unterschiedliche Ausmaß der Verstädterung von Gegenden fest, die zeitlich verschieden von den strukturellen Änderungen ergiffen wurden. Er ergründet dann die Möglichkeiten der künftigen Entwicklung, verweist auf die nicht zuletzt zu Wohnzwecken entstandenen und erweiterten halbstädtischen Siedlungen und sucht das Verhältnis Dorf–Stadt in seiner Abhängigkeit von den bevölkerungsstrukturellen Faktoren und Verschiebungen zu umreißen.