Urban and rural areas as defined by population density in Japan

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Introduction

Agrarian and industrial revolutions were two major turning points in the history of humankind. And the revolutionary change in information technology taking place today is indicated as the third turning point. Based on this understanding, the study presented in this paper reviews the formation of cities and rural districts in Japan. Population density and life expectancy are examined as the parameters for collective living (fig. 1).

Eve of agricultural revolution

Considering the late Stone Age of hunting societies, the population density of mammals could be deducted from their weight, hence it is possible to estimate the human population density at that time to have been 1.4 persons per square kilometer, and the life expectancy to have been 26.3 years. Results of recent studies in ancient history show that the population density in the Jomon period (Japanese hunting era) approximately corresponds to this estimate. Before 400 BC (Jomon era), the population density was 1.3 persons per square kilometer and the life expectancy was 31 years. This was an appropriate density for humans to live as a part of nature. The density is also considered as fundamental for population allocation for the future sustenance of land.

The agricultural revolution was the determining factor for humankind to settle down. The spread of rice cultivation that induced a population explosion demonstrates this effect.

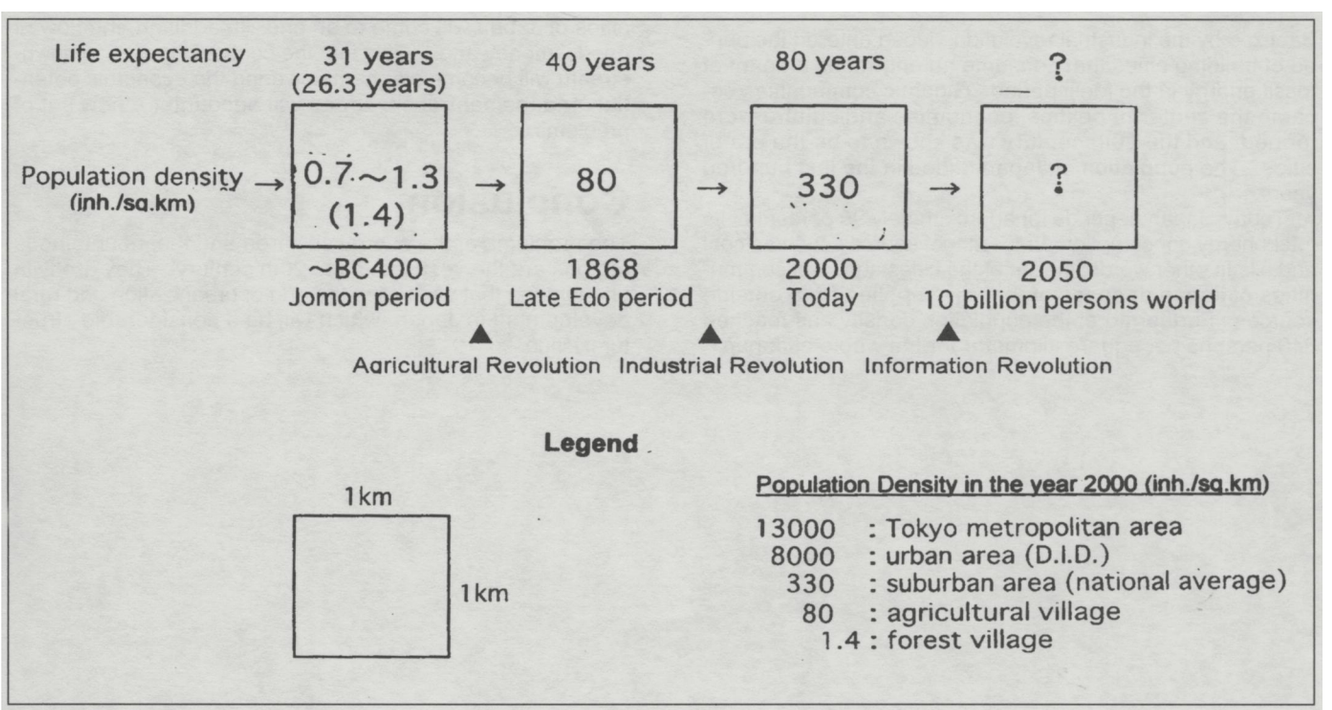

Fig. 1: Change of population density and life expectancy in Japan, 400 BC to AD 2050.

Urbanization and development of rural communities – Twin phenomena

Communities formed by settlement were in principle self-sufficient. However, cities emerged as power centers governing agricultural production or the distribution of agricultural products, a fact that forced communities in the periphery of cities to expand agricultural production. These communities under the control of cities became internalized as rural districts, which were subject to the governing power of these cities, and were given no choice but to emphasize their characters as the supplier of food, energy and labor for the cities.

In other words, the rise of cities led to the creation of rural communities. It is possible to perceive urbanization and development of urban areas as twin phenomena that develop in tandem. In the early stages of development of cities and rural communities, transport and information networks were underdeveloped; especially in the ancient period, when the elite class governed the cities and controlled the rural villages, it was comparatively easy to distinguish cities and rural communities. In medieval times, feudalism in the form of lord and vassal relationship based on provision of land became common, and the system formed the foundation of society and nation.

The closed system of cities and rural communities, self-sufficient within the district, realized by the agricultural revolution, reached its peak on the eve of the industrial revolution. Thus in Japan, city development using human power and the small help of power from livestock such as cattle and horses, and the new rice field development to supply the maximum food and energy to the cities, reached its peak in the late Edo period. As a result, the population density of Japan reached 80 persons/sq.km and the average life expectancy extended to around 40 years. These increases could be attributed to the civilization advanced by the agrarian revolution.

The industrial revolution – Advent of the era of modern urban development

Baptized by the industrial revolution, Japan entered the period of building cities that consume an enormous amount of fossil energy in the Meiji period. Gigantic communities became the center of politics, economies and culture were formed, and the 20th century was known to be the era of cities. The population of Japan tripled in the last hundred years.

Today, Japan depends for approximately 90 percent of its total energy consumption on fossil fuel sources such as coal and oil. In other words, the life of the cities and rural communities of Japan depends on energy supplied from outside sources. Furthermore, the population density has reached 340 persons per square kilometer for the whole of Japan – and as high as 12,800 persons in the 23 wards area of Tokyo – while life expectancy has leapt from 50 years in the pre-war period to 80 years at present. This longevity enjoyed by society is the product of advancement in civilization. In other words, each citizen now lives an inflated life span in which six extra months are given for each year of life, compared to their ancestors.

The urbanization process in Japan has now reached its final stage, and cities nationwide have expanded their range to the maximum. An urban lifestyle prevails: the majority of households depend on wage income and it is becoming difficult to distinguish between the city and the rural community by living conditions.

Issues of central cities and mountainous regions – Twin phenomena

In the past, food, energy and labor were supplied from the rural communities to cities. It was a one-way relationship comparable to the river flowing from upstream (production) to downstream (consumption). However, with the development of capitalism and the expansion of the global society and economy, the relationship of cities and rural communities is becoming global in its expanse. That is to say that Japan – the information city nation – is founded on rural communities corresponding to the villages witnessed in other countries of South East Asia, which, particularly in the case of Japan, is an extremely fragile formation. In the international perspective, Japanese rural districts can be considered to be in the downstream also. This indicates that the foreign rural communities are in the upstream, meaning that the rural region in Japan no longer serves the role of rural communities. Part of such rural communities will become incorporated into the cities, while the majority will face the problems of mountainous regions, such as depopulation for example.

On the other hand when the approximate city to rural population ratio of 8:2 becomes constant, the urbanization of the cities of Japan will come to an end. In addition, the flow of goods, money and people into the central cities in the downstream will become stagnant, lowering the economic potential, and the central city areas will encounter a new set of problems.

Conclusion

The problems of the central city area and the mountainous regions are the vestiges of the 20th century. They are twin phenomena that symbolize the end of urbanization and rural development in Japan, which will be a considerable structural issue.