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A Mechanism of Establishment of Environmentally Advanced Society: A case study of Cities in Japan and Germany

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Abstract

This research explores key mechanisms of the establishment of ecologically advanced cities in terms of political science through a case study of two industrial areas in Japan and Germany, Kitakyushu and Rule industrial region. At first, I explain the commonalities of industrial and economic backgrounds of these two cities from 20 to 21 century. These two areas achieved significant economical development from the early to the middle of 20 century owing to the flourishing of heavy industry, but declined in the late of 20 century due to the transition of industrial structure. However, nowadays these two cities have successfully broken from the economical system which completely depends on the secondary manufacturing, and moreover they have launched a new framework for the regional revitalizations making much of ecological industries. As a result of that, recently these two cities are famous for the model cases of ecologically-advanced cities. In this study, I analyze the histories of Kitakyushu and Rule area focusing on the political factors like power relationship among social actors, and try to extract the key essences of their successful model change.

1. Introduction

Economic development is one of the most important purposes of human society and urbanization is indispensable for achieving this goal. A large amount of energy, material and labor force is spent concentrately in one place, and a large amount of manufactured goods is produced efficiently with a low cost. Especially, in recent years, rapid urbanization is in progress in developing countries like south-east Asia and Latin America.

However, due to the large priority to economic development, human society often ignores problems accompanied with urbanization, like air and water pollution¹⁾. For example, Kitakyushu city in Japan was suffer from serious air pollution and water pollution in the middle of twentieth century^{2),3)}. Similarly, in present world, a lot of actual case examples of public disruption have been reported, like air pollution in Beijing, China. Zhang et al. (2013)⁴⁾ investigated the influence of air pollution on human health in Beijing and estimated the economic loss at 23 billion

Chinese Yuan. Moreover, it is predicted urbanization will continue in the future in developing countries so a vast number of people will suffer from health problems.

Under this circumstance, the establishment of sustainable society is strongly required in present days. The idea of sustainable society (or sustainable development) was suggested by World Conservation Strategy in 1980 by IUCN⁵⁾ for the first time and pervaded all over the world by the declaration (Agenda 21)⁶⁾. There is variety of definitions about sustainable society but the most important and common theme among them is that sustainable development should satisfy the desire of present generation and future generation. Namely, sustainable society means all resources such as fossil fuel and mineral resources should be shared with future generation and it is not permitted for us to spend them like it growth on trees, and additionally we have a duty to preserve environment for healthy life of future generation.

With the diffusion of the idea of

Agenda 21, nowadays a number of national authorities and subnational government pay special attention to environment and they have launched their own and unique strategy for the construction of ecologically friendly city⁷⁾. Among a lot of such cities, there are some actual examples which have accomplished remarkable result. For example, Kawasaki city is one of the largest industrial cities in Japan and a serious public disruption (asthma) happened in the middle of last century. For this problem, local government of Kawasaki city enacted some ordinances for environmental problem, and get recovered the severe situation at that time by the cooperating with industrial companies. Furthermore, now Kawasaki city is approved as pioneering eco town by national government of Japan owing to the innovative environmental technologies produced by the experience of overcoming of the public disruption⁸⁾.

One of the key points for the construction of ecological city is practical policies based on the wide variety of knowledge. Moreover, it is also important to get consensus of residents and private companies because residents, non political organizations and syndicate of local companies are significant actors. For this reason, a lot of reportage and thesis about the relation among subnational government, private companies and local residents in a

city have been published so far. However, it is sometimes pointed out universality is not enough in them because these reports are just case study⁹⁾. Although there is no absolute direction for sustainable society because each city has specific conditions, it is highly important to present directions which include generality somewhat to consider the human society in the future.

Under this circumstance, in this study, I try to find the political essences for the construction of ecological society by the comparative analysis of two ecologically friendly cities, Kitakyushu-city in Japan and Emscher park area in Germany. As it is explained in the following section, the historical backbones and current situations of these two regions are amazingly similar although the political system and the city size are different. For this reason, the expected results of this study will provide effective guide of sustainable society. In other words, this study will provide many suggestive hints for next generation urban design and continued development of human society for the future.

2. Histroical background of model cases

It is well known that secondary industry has a prominent place in the economy of Japan and Germany (fig.1). Among many industrial areas in the two countries, Kitakyushu city and Emscher park area were one of the chief

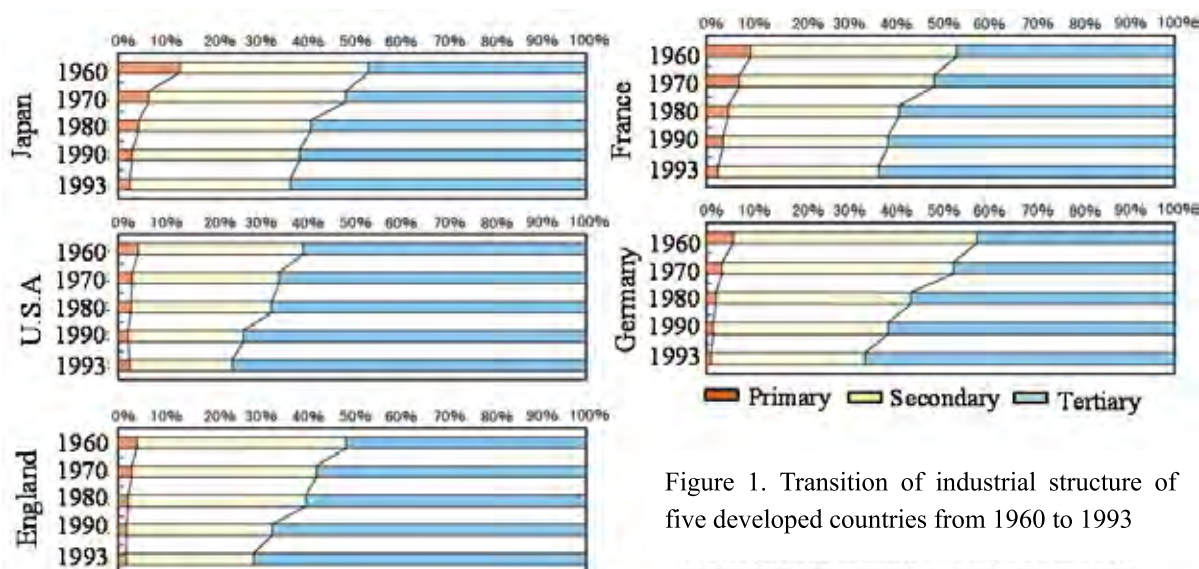


Figure 1. Transition of industrial structure of five developed countries from 1960 to 1993

(二) 焰延々 波涛を焦がし
 煙もうもう 天に漲る
 天下の壮観 我が製鉄所
 八幡八幡われらの八幡市
 市の進展は われらの責務

Fig.2 City-song of Yahata-city in the middle of 20 century



Fig. 3 Picture-postcard of Yahata-city in the middle of 20 century



Fig. 4 The photograph of Emsher area in the middle of 20 century

industrial areas at the middle of the 20th century, and furthermore there are some common points between Kitakyushu-industrial area and Emsher park area in their historical background.

The main industries of this two regions in 19-20 centuries were heavy industry, especially famous for steel industry. Yahata iron factory locates at the Yahata ward. It was established in the Meiji era by Japanese national government in a part of policy of wealth and military strength of a country and has led iron industry in Japan. Similarly, Emsher park area is included in the Ruhr industrial area (Ruhrgebiet) and large amount of iron and other heavy industrial materials have been provided¹⁾.

After the operation of second class industry started, the two areas played similar role in their countries, namely, these two industrial regions are expected as a production base of iron and their products were used for modernizations, such as construction of infrastructures. Especially, the demand for iron products drastically increased in Japan after the Sino Japanese war (1894-1895) and the Russo Japanese war (1904-1905) with the rise of opportunity for wealth and military strength of a country. This motivation for development had continued for several decades until the public disruption became serious. There are a lot of evidences which represent social conditions at that time. For example, fig. 2 is the Yahata city anthem in the middle of 20th century, and fig.3 is the picture postcard of Yahata at the same era¹⁰⁾. The song lyrics means as follows,

'The flame burns high waves, and the smoke covers the sky. The grand sight of the world, our iron factory. Yahata, Yahata, our home town. The progress of the city is our duty'

As the song and picture postcard indicates, the smoke emitted from factories was considered as symbol of the most advanced regions. Moreover residents called it rainbow smoke and were proud of it. As like as Kitakyushu, the rapid development of secondary manufacturing was welcomed in Emscher park area (fig.4) because it created a large amount of job opportunities for local residents with the increase of populations. There are few blatant evidences like Kitakyushu, the residents of Emscher park region were accepted the contamination by heavy industries.

However, the heavy industries in these regions gradually declined after the middle of the 20 centuries (fig.5, fig.6). There are some reasons of the declining, and it is frequently pointed out that the amount of coal spent for iron production drastically decreased by the innovation thus the advantage of the site in the vicinity of coal field was lost. In addition to that, industrial structural transformation toward the third class industry proceeded in the latter part of the 20th century. As a result,

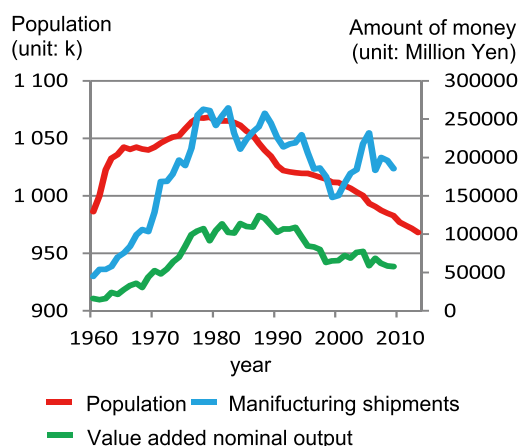


Figure 5. Transition of population and production amount of secondary industry in Kitakyushu city



Figure 6. Transition of population and production amount of secondary industry in Kitakyushu city

population gradually decreased and simultaneously unemployment rate rose. Furthermore, the public disruptions (air and water pollution) become serious in this time period and the bad image of environmental problems were widely spread and it accelerate the area declining (fig.6)¹¹⁾. In other words, Kitakyushu and Emscher park region were token advantage as if they are colony of resources for the development of nations but ironically they became forlorn places with the trend of the time¹²⁾.

However, despite these severe situations, now Kitakyushu city and Emscher park area are known as the most successful model cases of area rebirth. For example, Kitakyushu city were awarded in the eco capital contest of Japan in 2006 and 2007 and furthermore city government got prizes in



Figure 7. International workshop of ecological technology in Kitakyushu city



Figure 8. Winter leisure using disused factory in Emscher area

World Summit on Sustainable Development (WSSD) held in Johannesburg in 2002. In present days a lot of offices, researchers and non government environmentalist have visit Kitakyushu for leaning the policies and methods and the governments accepted students and trainees with eagerness from national and abroad (fig.7).

Similarly, Emscher park area is not famous for its unique challenge for establishment of new ecological city. As explained in the following sessions, a 10 year plan (1989 - 1999) was launched for area rebirth project and a variety of projects were proceeded under the leadership of IBA Emscher park public company. During the ten years, housing environment and infrastructure were improved, and moreover some new industries like tourist business utilizing the

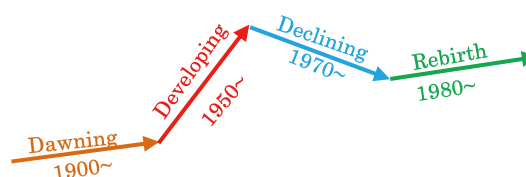


Fig.9 Four time periods of Kitakyushu and Emscher



remnants of old buildings were started (fig. 8). As a result of that, now a wide variety of people like government officers, workers of developer companies and tourist visit Emscher park area for learning and enjoying.

3. Summary and future plan

As it was explained in the previous section, now I can say that Kitakyushu city and Emscher park area have a lot in commons among their historical time period: dawning of secondary industry (1900~), flourish of secondary industry (1950~), declining and economic recession (1970~), and area rebirth period (1980~) (fig.9). Due to the uniqueness and significance of their historical background, they seem to be suitable for the model cases of this study. In this and following sections, I will especially focus on the 4th time period and analyze the processes how these two regions accomplished area revitalization. It is thought that, many rural cities in developed countries are in third stage in present days (Area recession in economy and population decrease). On the other hand, many cities in developing countries are in second stage in present days (rapid industrialization), and I predict they will enter third stage in years to come. Especially, the industrialization in the developing countries like South-East Asian countries and Latin-American countries largely depend on the investment from developed countries, so it is predicted the recession of rural area in these countries will be serious once divestment started. For this reason, it is important to find the method for mitigating the area recession in advance before entering the 3rd time period.

In the following analysis, I will focus on the relation among three actors: local government, private companies, and citizens. In my opinion, one of the key points of this study is the role and political position of subnational government because the target area of case study about Kitakyushu is included in single administrative division (city) but that of Emscher park area extends multiple administrative divisions. For this reason, it is expected that the power relation

with private companies, the process for promoting the citizens motivation and other political encouragement way are different between two target cases. By clarifying the similarity and difference of political function of local government, I expected some universal directions for the achievement of sustainable society will be obtained in the final conclusion.

Bottom note

- i) Honorary professor of the University of Kitakyushu, Yoshio Kanzaki said “The developing process of industry in Kitakyushu is different from ordinal one that is transition from light industry like textile manufacturing to heavy industry. Yahata iron factory suddenly appeared as state capital in the place where there is no major industry”. In addition, professor Sawada in Meiji University made similar comments about Emscher area.

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