STUDY ON REFORMATION OF REGIONAL SYSTEM IN JAPAN FROM THE VIEW POINT OF INFRASTRUCTURE DEVELOPMENT

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ABSTRACT: Japan's current local governance system is centralized, led by the national government. This system has been in operation since the Meiji Period. With society maturing further and administrative and financial structures collapsing, however, it is in the process of shifting, by means of decentralization and deregulation, to a system where more importance is attached to the autonomy of each local authority. Discussion centers on instituting a regional system (*do-shu sei*), in which there are two layers of local governance; regions (including Hokkaido) manage their areas at a high level while municipalities are in direct contact with residents. In this future vision for local management, the critical issue is role sharing between the region and the municipality. When focusing on incorporating the desires of residents, a municipality-led regional system is preferable, so the functions expected of municipalities will need to be expanded accordingly. What is important in that case is to fill the gap between the municipality and the residents that results when the municipality's organization and zone are enlarged. On the other hand, in order for municipalities to continue developing necessary features of social infrastructure against a backdrop of severe financial and social conditions, it is essential to carry out such development while avoiding unnecessary overlapping of facilities and maximizing functions and effects. In this study, the author sorts out these issues and constructs the concept of a social infrastructure development support system, termed a Layer System for Infrastructure (LSI), as a tool to support the roles to be played by future municipalities.

KEYWORDS; municipality-led regional system, Layer System for Infrastructure (LSI)

1. INTRODUCTION

In the field of local infrastructure development, local governments have assumed tasks ranging from the development of basic plans to the implementation of projects that provide livelihood and industrial foundations. Examples of this kind of project are construction or improvement of the transportation infrastructure, including airports and expressways, and disaster management measures against tsunamis and high tides in oceanfront areas. Today, however, partly due to prolonged economic stagnation, there are many cases where social infrastructure developments already in place are criticized as being unnecessary. Since the Meiji era, particularly in the 1960s, immediately after the post-war reconstruction period, when the country experienced high economic growth, Japan tackled the development of infrastructure, which was then underdeveloped, as a foundation to support its citizen's lifestyles and economic and industrial activities. Thus, the public eagerly welcomed public infrastructure improvements, as they had expectations and aspirations for affluent lives. Following that period, social infrastructure development progressed mainly in oceanfront cities

where people and industries were concentrated. As infrastructure coverage improved, individualism emerged and people's values changed. These changes, combined with the burst of the bubble economy, triggered an argument that public works projects are unnecessary. This arose first in the most-developed urban areas. Then, in 2002, the Koizumi administration initiated the "Trinity Reform," aimed at a drastic reformation of administration and finance. Under this reform, the government tried to change the administrative systems of local governments and streamline administrative management by "leaving what can be done by local governments to local governments" and "leaving what can be done by the private sector to the private sector", i.e., downsizing the organization and financing of the national government. However, this was done by cutting back subsidies to local governments without transferring financial sources to them, further damaging their financial situation. As a result, local governments in many parts of Japan were forced to review all their public works and implement further administrative and financial reforms, often suspending and aborting public projects. Moreover, when the Democratic Party of Japan took over the Liberal Democratic Party, the government announced public works cancellations and freezes. Accordingly, some local governments' social infrastructure development projects that were then about to start are now stranded. Through this process, public works have been put in a harsh environment, subject to not only administrative and financial reviews but institutional reviews as well. They are, then, undergoing a process of significant change. Added to this, future infrastructure development projects essentially require a revision of the administrative and financial roles played by the central and local governments and the development of wide-area coordination that can look at the region as a whole beyond the traditional borders between prefectures and between municipalities. It is necessary to validate social infrastructure developments from both institutional and facility standpoints and introduce a new local governance system and a social infrastructure development system that backs it up.

2. NEED FOR A NEW INFRASTRUCTURE DEVELOPMENT SUPPORT SYSTEM

2.1. Social background

Japan is facing the issue of a falling birthrate and aging population ahead of other countries. This phenomenon impacts every aspect of its citizens' social lives. Along with the continuing population decline, there is a growing unevenness in the distribution of people due to concentration in urban areas, and villages in both mountainous and urban areas are becoming more and more marginal. These factors are inducing structural social changes. Contrarily, the growth of the world population[1)] is giving rise to an international divide due to a lack of foodstuffs, water, resources and energy. This will constrain the economic activities of export-dependent Japan. That being the case, the urgent need is to construct a concise social infrastructure development system in accord with the international situation and Japan's economy, as it contracts with the falling birthrate and aging population.

2.2 Institutional issues

In December 2010, the Kansai region established Japan's first wide-area federation consisting of seven prefectures. The following April (2011), a law concerning decentralization, for which local governments have longed for many years, was enacted. Furthermore, in 2006, a Regional System Special Zone Promotion Law, which was modeled after Hokkaido, was established. This was followed

by a proposal for a “sovereign regional system”[2] and submissions of opinions on the implementation of wider-area local government from the Japan Business Federation, (*Keidanren)*, six regional organizations and various other entities. These efforts toward the introduction of a new regional system indicate that the current prefectural system, which has lasted since the Meiji era, no longer functions in the light of the social situation today and that it is high time for the central and local governments to revise the current system and reconstruct an administrative system based on new roles. This should be a system that puts an emphasis on the autonomy of local governments.

2.3 Issues related to facility development

The author has been involved in local government social infrastructure development for over thirty years. In that time, people’s values have gone through drastic changes along with a mounting sense of stagnation due to the slowdown of the Japanese economy since the burst of the bubble and to increased coverage of social infrastructure development. Furthermore, people’s demands have shifted from needs to wants, which has inevitably led the governments to distribute funds in small allotments to take care of the wants. This has made the effects of investment less visible. Additionally, worsened economic conditions in recent years have made it hard for governments to execute their budgets in an efficient manner. As a result, urban residents who live in areas with a sufficient, well-developed social infrastructure and rural residents who are still in need of further development have views that differ widely. From the point of view of social infrastructure development, a social system with a new style of administrative management of local governments needs to be introduced. To this end, this section describes a number of issues Japan has experienced associated with facility development.

2.3.1. Airports and expressways

In the 1960s, due to speedier air transport and the expansion of mass transit across the country, local airports became capable of handling jet aircraft on a full scale. For example, Kagawa Prefecture carried out a field survey[3] to find a suitable site for a new Takamatsu airport in 1970, relocated the airport to its current location and opened it in December 1989. From Kagawa Prefecture’s standpoint, the current location in a suburban area of Takamatsu City is most appropriate. However, for the people of the Shikoku region as a whole, a Shikoku International Airport situated near Kawanoe Junction, which could serve as an alternative to the Kansai Airport, would likely have been the best option, as each of the capital cities of the four Shikoku prefectures would have been about an hour away via the expressway network, when completed, and that airport would have had less airspace constraints. At that time all the prefectural governments were competing to obtain high-speed traffic modes under the slogan “One Airport Per Prefecture” and, unfortunately, airport development based on regional needs, making use of the expressway network was forgotten. This situation is a topic that the author discusses in lectures and informal discussions, and which is often viewed as one of the more problematic administration-related issues.

2.3.2. Industrial parks and wide-area coordination

Since the 1980s, inland industrial parks and distribution centers have been formed one after another around the newly-developed expressways and airports all over Japan, with the intent to increase employment and tax revenue by attracting companies from other prefectures. Kagawa Prefecture, too, created a number of complexes

within its borders. Individual municipalities, however, enticed companies without coordinating with other municipalities, and as a result, many companies in the prefecture relocated in the same prefecture. What was left was unused lots[4] and hollowed-out parcels of vacant land that inevitably draw people's attention. In future development of industrial infrastructure, logistics, from raw materials to consumption, will play a key role. Under the current circumstances where region-to-region competition is getting increasingly fierce, this can only be achieved by broader initiatives beyond the borders between prefectures and municipalities or between municipalities. Mechanisms to support such collaborations must also be in place. This region-to-region issue has also been highlighted as an intra-region issue as a result of municipal mergers that have generated distrust and dissonance. Therefore, consensus building within a region based on information disclosure among the administration, the municipal council and residents is indispensable, and a local administration support system that allows the administration and residents to send information both ways is needed.

3. CHALLENGES CONCERNING THE LOCAL GOVERNANCE SYSTEM

3.1. Movements towards local governance system reformation

3.1.1. From the end of the Edo Period to the Meiji Period

This section traces the changes made to the local governance system over time[5]. Japan became open to the world and saw a flowering of culture from the end of the Edo Period through the early Meiji Period. This was a period of globalization imposed by external pressure from Western countries that had drastically expanded their production capacity in the industrial revolution with its accompanying mechanization. They came to Asia in search of resources and markets. Japan's feudal government and the local domains at that time were in an impoverished financial situation, and the federal social system under the feudal government and the domains had come to an end. That is why Japan opened up the country, surrendering to belligerent pressure from the more powerful countries. The new Meiji government had only a vulnerable form of national management, and referred to advanced examples of foreign countries in creating laws and systems. It opted for strong centralized national management by the government in order to hold out against other countries.

3.1.2. Period of high economic growth

In the post-World War II period, the Japanese government maintained its centralized administration, which had continued since the Meiji Period. This was because the country needed strong leadership and the driving force of the powerful central government, though the GHQ gave it this role in order to restore the devastated land. During the 1960s, the so-called high economic growth period, an enormous amount of funding was needed to develop social infrastructure and provide an industrial foundation. Thus, a wider-area (regional) local governance system that would combine several prefectures together was once sought with the aim of establishing larger administrative zones and expanding the budget scale so as to attain more grants to local governments and more governmental subsidies. However, the necessity for this diminished as the Comprehensive National Development Plan (October 1962) and the New National Comprehensive Development Plan (May 1969) secured the flow of financial sources to local governments and developed industrial and employment infrastructure. In this way, the top-down, centralized system was effective in times

of organizational development and emergency; it worked in Japan as the system matched the situation.

3.1.3 During and after the bubble economy period

During the high economic growth period, people and assets flew out of rural areas and concentrated in urban areas, bringing social issues, such as overpopulation and pollution, into the spotlight. At the same time, as the range of socio-economic activities widened and people's daily living areas expanded, urbanization of all the nation's land accelerated. As a result, traditional cities, towns and villages became unable to manage such enlarged daily living areas. The focus was therefore placed on bridging the gaps among cities, towns and villages, in terms of scale and paperwork capability. There was discussion promoting the merging of municipalities wherever the conditions were right. Later, in the 1990s, the bubble economy collapsed, damaging socio-economic conditions and bankrupting both the central and local governments, a Law on Decentralization of Government Power (1995) was established. The revision of the "Act on Special Provisions of the Merger of Municipalities" included preferential measures that served as a ladder in the Great Heisei Merger of cities, towns and villages, which began in April 1999, reducing the number of cities, towns and villages from 3,232 to 1,820 by April 2006. In this way, as the Japanese society became mature and organizations became larger, the systems no longer matched the situation. Now a shift to parallel-type organizations and systems is necessary.

4. FUNCTIONS TO BE ASSUMED BY MUNICIPALITIES UNDER THE REGIONAL SYSTEM

4.1. Regional system and municipalities

4.1.1. Impact on municipalities

Municipalities will feel the greatest impact of the change in control from the centralized system to a decentralized, regional system because they are the basic authorities at the frontline of local administration. Their authority will be expanded beyond the existing area of their cities, towns or villages. The central and prefectural governments, who will play a central role in the regional system, will also be subjected to zoning changes, but what they do will be an extension of regional administration so they will experience less impact than municipalities. In order to verify the impact of implementing the regional system on municipalities, this section provides summaries of (i) objectives of the implementation of the regional system and (ii) challenges to be faced by municipalities arising from the implementation of the regional system.

(i) Objectives of the implementation of the regional system

- Break through the limitations of the centralized system that has lasted since the Meiji Period.
- Correct the maladies of over-concentrating politics, economic activity, corporations, mass media, universities, and so on in Tokyo.
- Resolve the sense of stagnation and crisis in rural areas.
- Remedy wide inter-region gaps
- Clarify the demarcation of roles played by the central government and local governments.
- Review the relationships and role-sharing between municipalities created as a result of municipal mergers and prefectures.
- Ensure sound administration and financing by streamlining the administration and strengthening the infrastructure.
- Encourage residents to participate in politics and administration.
- Relieve anxiety for the future caused by the current decreasing birthrate and aging population, as well as budget deficits.
- Eliminate anxiety and distrust for the current

social system

- Address globalization of local areas.

(ii) Challenges to be faced by municipalities, arising out of the implementation of the regional system

- Construct a decentralized society by decentralizing governance.
- Transform the unipolar economy to a multi-polar, distributed system and establish autonomy.
- Shift to community-based politics and administration.
- Ensure autonomy and diversity with the help of deregulation.
- Promote responses to the global society.
- Solve issues related to regional administration by unifying local areas.
- Promote administrative and financial reforms in cooperation between the central government and local governments based on transfer of financial sources.
- Secure independent financial resources by utilizing a special zone system.

As described above, municipalities under the regional system are expected to plan and implement a wide range of policy measures[6)] based on their own value judgments. Many of these have previously been done under the initiative of the central government. One thing that must be avoided when the regional system is implemented is overlapping of tasks not only between the central government and local governments but within a local government as well. A shift from the subsidy system to a package grant system in conjunction with decentralization is urgently needed to secure the autonomy of local governments as well as streamline public works. To do so, the conventional siloed social infrastructure development, carried out individually by the central government, prefectural governments and municipalities, needs to be examined to determine how to split projects and share roles among the three parties. These essential discussions relating to the design of the system must be prioritized. In so doing, the participation of residents should be encouraged, since they are the central players in resident-oriented regional administration reform. Their participation is the original intention; without it, discussions cannot get deep enough. Once the design of the system is fixed, division of regions should follow automatically.

4.1.2. Scheme of the regional system

The scheme used to design the regional system should be two-layered, comprising the central government and independent local authorities, as shown in Figure 4.1. The central government is responsible for diplomacy, defense and national minimum services necessary for the entire population. Below it, there are regions, each connecting the central government, prefectures and municipalities. They will be responsible for land conservation and basic facilities. The new municipalities, which are the direct interface for the livelihood of residents, are positioned on the same level as the region. Bloc coordination committees will be set up as a forum for narrowing the gap among regions or municipalities. The independence of large-scale ordinance-designated cities, which has been discussed in the past, will create a mezzanine which will complicate the regional administration. They should be treated as municipalities, except for the 23 wards of Tokyo.

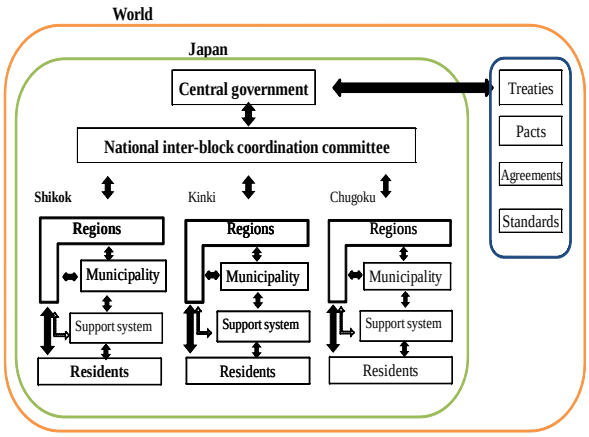


Figure 4.1. Scheme for the new regional system

4.2. Natural and facility infrastructures that regions should retain

4.2.1. Natural infrastructure

Even under the regional system, zoning of regions or municipalities that disregards historical and geographical features is unacceptable. For example, a river running through several prefectures induces conflicts over water rights and environmental conservation between upstream and downstream areas, which often makes coordination uneasy. As a result of the latest mergers of cities, towns and villages, there are some cases where the preceding mergers have undue influence or where the egoism of the administration and/or local people prevailed and created enclaves disregarding geographic conditions and ground features. In any case, the basis of infrastructure lies in nature in the form of climate, weather, terrain and ground features that support people's lives. Thus, it is important to go back to basics and construct institutional and facility infrastructures that recognize the importance of natural infrastructure[7].

4.2.2 Facility infrastructure

For regions to act as independent governments in managing local administrations, key infrastructure features must be available in their respective areas. Apart from the development of transportation infrastructure, such as air traffic control, railway/expressway networks, electricity, and information and communications infrastructures that cannot function without connection to domestic or international networks, each region should at least have distribution centers, such as international airports and international trade ports, traffic junctions, such as bullet trains and expressway interchanges, a core functional city which serves as the center of the local administration and politics, universities and research institutes, cultural exchange facilities, and so on. That is, a facility infrastructure for domestic use that allows each region to be self-sustainable and independent, and a facility infrastructure open to other blocs or other countries for interaction and trade must be secured so that they can function in sync.

5. Proposal for specific measures

5.1. Appropriate scale of municipalities under the regional system

5.1.1 Appropriate scale of municipalities

The appropriate scale of municipalities for efficient management of administration and social infrastructure development under the regional system is approximately 200,000 residents, taking into account the fact that for efficiently administrating expenses such as expenditures per capita and labor costs, the appropriate number of people is 100,000 to 300,000, as shown in Figure 5.1. However, the Japanese population is forecast[9] to decrease to roughly 70% of its current level by 2050. Therefore, by setting a current reference population of 300,000, and 140,000 should be targeted as the minimum level to be secured. Since the average population of cities, towns and villages today is about 79,000, new mergers are unavoidable. There are, however, cases where it is difficult to combine cities, towns and villages due to past circumstances or geographical conditions. In such cases, merging to a level where independent

administrative management becomes efficient, a population of approximately 300,000 , or wide-area coordination on a city scale, as described above, needs to be considered to achieve efficiency.

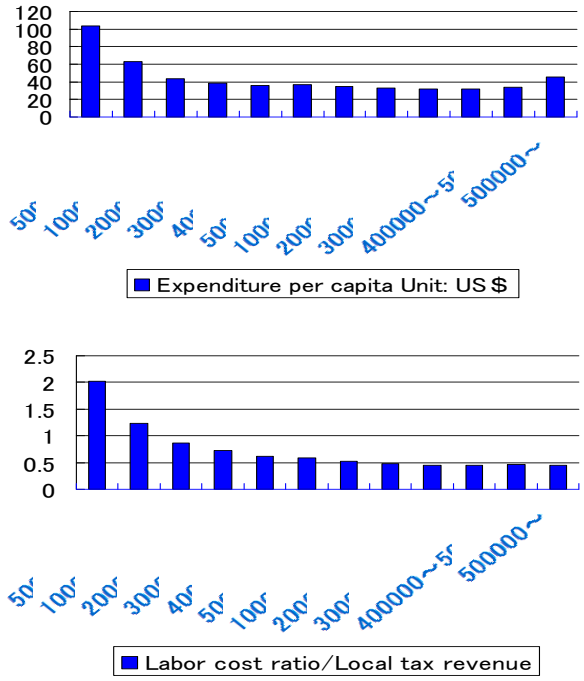


Figure 5.1 Population size and administrative expenses[8)]

5.1.2.Validation using the case of Shikoku

This section attempts to validate the suitable size of municipal restructuring using the four prefectures of the Shikoku region as an example. Currently, there are 95 cities, towns and villages, which can be merged into 12 to 14 cities with a population of 140,000 to 650,000 each. This is commensurate with the appropriate scale discussed above. On the other hand, a cross-prefectural-border merger, which transcends the borders between the four prefectures, can be considered in the southwest and central areas of the island. While the number of cities would be the same as cited above and the minimum population size would be approximately 170,000, it would be impossible to combine these areas because of geographic features and historical constraints, so such mergers will be infeasible.

5.2 Proposal for an administration support system

5.2.1 Social infrastructure development support system (LSI : Layer System for Infrastructure) [10)]

5.2.1.1 Background on construction of the LSI

The main factors behind the construction of the LSI system include changes in how residents are involved in administration and advances in ＩＴ. As previously mentioned, the author has been involved in local administration for many years, including an experience working together with municipalities in social infrastructure development as director of a civil engineering office. Already at that time, the recent administrative and financial reforms had reduced the manpower available in municipalities, and they no longer had leeway to cooperate in national and prefectural projects, even those requested by local communities, and were unable to carry out public projects as they had been in the past. Also, municipalities themselves lost access to direct dialogue with local residents in administrative operation because of expansion or changes in administrative zoning that resulted when municipalities merged. From the residents' viewpoint there were no familiar faces at the administration office counter whom they could trust and leave matters to. As a result, they lost confidence in the municipal administration. The implementation of public services has become uneven due to these two-way difficulties. This is one of the factors that cause public projects not to be accepted by residents. In the meantime, disclosure of information and the interactive exchange of accurate information from an early stage of projects are essential, since communication with residents and transformation of their awareness require time and labor. On the other hand, the awareness and values of residents have changed. Their emphasis has shifted from being community-based with a spirit of mutual help and

reciprocity to being self-centered materialistic individuals. This has come about with through the influence of regional urbanization, globalization and advances in information technology. For this reason, residents' demands have also changed from needs to a wide spectrum of wants. In actuality, this has caused cities, towns and villages, which are end administrative organs, to be swamped with demands. The heads of local municipalities are concerned about whether the new system can be implemented most effectively in the region, based on a thorough understanding of what support and subsidy schemes are available. In this sense, they are supposed to constantly collect accurate information on regions, determine bare minimum needs out of abundant requests, implement the best program selected from the upper-level administrative organ's menu in a timely manner, and reflect this all in the measures they take.

5.2.1.2. Policies for building the LSI system

As described above, municipalities that have already merged have created a growing distance between the administration and residents. Before the upcoming shift to the regional system further widens that distance, a system to close the gap and support administrative operations needs to be established. In the meantime, in May 2007 the Ministry of Internal Affairs and Communications (MIC) has enacted a Basic Act on the Advancement of Utilizing Geospatial Information, intended to encourage the development and use of integrated GIS systems in local governments. This was the first step in deploying a broadband network to every end of local authorities. The LSI system proposed in this study utilizes an integrated GIS system to aid in interpreting residents' demands, managing public facilities, and mapping, including hazard maps and resource maps. With this information base, the LSI system is designed to facilitate administrative operations and decision-making on social infrastructure and other measures. The following are policies governing the construction of the LSI system.

(i) Using GIS, the administration and residents can exchange area information with maps attached in real time. Information received is stored in the core system database, which will provide the foundation for building a system to support efficient infrastructure development.

(ii) Prompt deployment of policy measures will be made possible by sharing demands and information provided by residents among officials, including the top officials, within the administration.

(iii) The operation of system terminals of should be made easy even for the elderly, so that the system may be utilized in daily, routine work, such as checking on the safety of elderly residents.

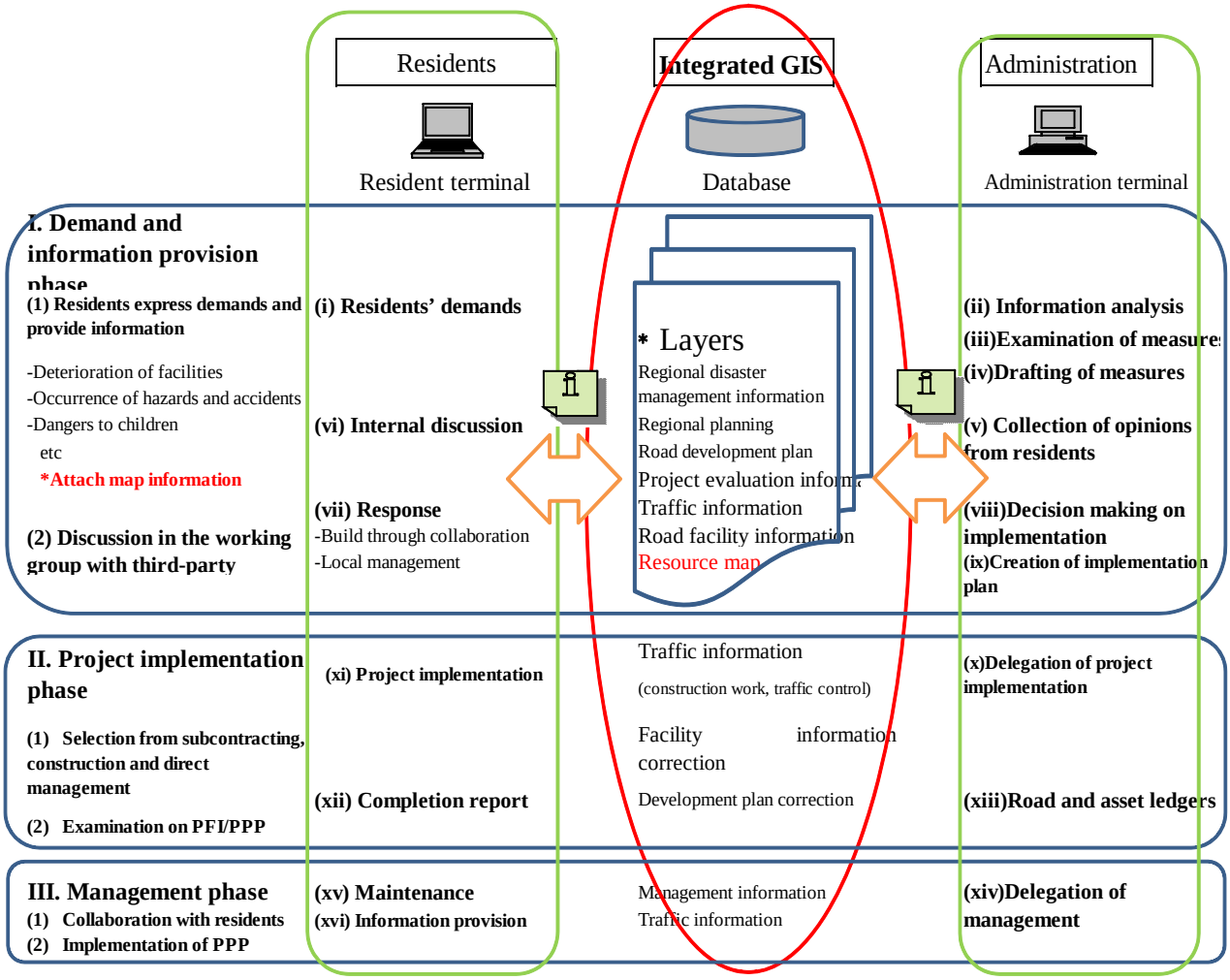
(iv) The administration may also use the system to announce measures and dispatch relevant information to residents and to reflect their responses in respective measures. In this way, the system helps administrative operation of not only infrastructure development but disaster management, welfare, healthcare and nursing and other areas as well.

(v) Each category of information is registered in the database as a layer, so that residents and other users may obtain necessary information on administration by combining necessary layers.

(vi) A call center function will be installed so that the system will serve as a center for dispatching information inside and outside.

(vii) All kinds of abilities of individuals and the regions in which they are available are put into a resource map so that know-how regarding promotion of projects within the region and other knowledge, such as the presence/absence of support for elderly people in times of disaster, will be transferred and shared, making it possible to

maintain traditional community-based administration.



*1. The numbers above identify the priority of clerical work. Database compilation is attempted through the PDCA cycle

Figure 5.2 Scheme of the social infrastructure development support system

5.3. LSI system scheme

The system is configured as shown in Figure 5.2 with a GIS server available for the administration and residents, so users can access the GIS library via the administration information network to report situations or submit communities' and individuals' demands of communities and to disseminate information provided by the administration. By compiling the information and demands articulated by a vast number of residents into a database, the administration will be able to ascertain needs from wants, make decisions and take action promptly after assessing how different measures conform to those wants and needs based on the accumulated data. They may postpone some implementation, if necessary, and feed the results back to the system. Also, in implementing a public project, a working group of residents, administrators and third-party organizations will be set up to advise the administration on the pros and cons of implementation and the methods employed. This will in turn enable the administration to disclose information to the residents early in project implementation, prevent various kinds of intervention as the project progresses, and bring to

fruition administrative operations driven by neither politics nor the administration but by residents' input. In addition, in emergencies, the system may be used to deliver disaster-prevention-related information or collect information on damages. It will also be equipped with an emergency button that allows disaster victims to report to the appropriate officials with a single button-push and a touch-panel display which simplifies the operation of terminals in normal situations, so as to expand the use of administrative support functions, such as checking on the safety of the elderly and consulting on healthcare and nursing. The system will help the administration communicate with and support the livelihood of low-end neighborhoods where the local community is collapsing due to a declining and aging population.

6. Conclusion

The local autonomous system, which has lasted for 140 years since the Meiji Period, must be transformed in the light of progressing globalization and the maturity of Japanese society.

When a municipality-oriented regional system is to be implemented, it is the municipality that plays the central role in the management of the region, so the organization and area will have to be enlarged. Subsequently, the relationship between the administration and residents can become tenuous and the true needs of the communities can become difficult. The author clarified current issues based on long experience in social infrastructure development, and showed a direction that future municipalities should head for.

It is necessary to implement a support system to help administrative operations, including social infrastructure development. These tasks will become more and more difficult, and the system needs to help solidify the ties between residents and the administration. A social infrastructure development support system (LSI) was proposed herein, taking road projects as an example, since road-related issues top the demand expressed to local governments for infrastructure development. Although this system is proposed for the purpose of supporting social infrastructure development, it can be used in other administrative fields. In the future, the effectiveness and issues for which this system works well will be verified as local municipalities run a system, as a step toward upgrading the system to a multi-purpose model. The system must contribute to the development of social infrastructure and the revitalization of regions.

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