Port and City Governance -
the case of Japan

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Biography

Satoshi Inoue is a visiting professor of the National Graduate Institute for Policy Studies (GRIPS), Tokyo, Japan. He works mainly on logistics and supply chain planning, port development and management, and coastal zone management. Having graduated from the Faculty of Urban Engineering, Tokyo University, he obtained a master degree from University of Washington, US and a doctoral degree from Tokyo University. He published a number of books and papers mostly in the field of port policy, development and management, urban waterfront redevelopment and coastal zone management. Prior to joining GRIPS, he had served as the Secretary General the International Association of Ports and Harbors (IAPH) from 1999 to 2009, which is the only worldwide organization of port authorities with the membership of about 220 ports of 90 countries. He actively organized international efforts to tackle a range of global port issues and represented the world port community at numerous international forums. He was instrumental in launching an IAPH-assisted global platform for port climate activities, called the World Port Climate Initiative. Before the SG of IAPH, he assumed various positions at the Japanese Ministry of Transport for over 30 years. He was also Executive Director, Port of Kitakyushu, from 1990 to 1993, the largest international port west to Port of Kobe, Japan. He was also engaged in overseas port projects in about 20 countries in Asia, Africa and Latin America. He worked for the Asian Development Bank in Manila, Philippines from 1980 to 1983.
Introduction

A Japanese letter meaning a port, actually an ideogram called Kanji, is made up with two components implying a water-edge and a town respectively. As such, the basic concept of port in Japan literally represents a town on the water. Therefore, ports in this country have long been and still are not only an interface between shipping and other transport modes, but also a central place for port cities to grow seawards. This duality of missions has made Japanese ports quite different from those in other countries and rather unique both physically and institutionally.

Small country, long coastline

Geographical settings

To better appreciate the context of port management in Japan, it is worthwhile to begin with a brief description of major backgrounds affecting ports in this country. Japan is an archipelagic country consisting of more than 3,000 islands, including four main islands. Consequently, despite the smallness of the country’s land area, it is endowed with an extremely long and intricate coastline. For example, while its land area of 377,000 km$^2$ is about 60% of France and 80% of the State of California, US., its coastline of 33,000 km is more than four times longer than France and about half the entire United States excluding Alaska.

In addition, the country is so mountainous that only 30% of the total land area is estimated as inhabitable and suitable for a range of human activities. (Figure1)

Furthermore, such inhabitable land is mostly found in small plains along the country’s coast. The reminder is only scattered along inland river valleys and basins. As a result, most of the major cities are developed on the coastal plains, where major ports of this country are located. According to the 2010 census, 21 of 29 cities with populations over 500,000 are all on the coast or in the suburb of coastal cities.

Demographic and economic densities

Another important factor to be kept in mind is the significantly high density of both population and economic activities, as shown in Table-1. With a population of 127 million in 2013, Japan’s population density is 349/ km$^2$, which is as three times high as France (121/ km$^2$) and nearly 10 times the US (35/ km$^2$). As a true measure of population density, the population density per inhabitable land of Japan (1,162/km$^2$) is even much higher than that of the most crowded countries in Europe such as the Netherlands (559/km$^2$) and Belgium (477/km$^2$).
Also in terms of economic density as measured by GDP/ inhabitable land, Japan ($45\text{million/km}^2$) is the highest among major countries in the world. Population and economic activities of such an unparalleled density have been built up mainly on the country’s coast, where most of inhabitable land is available and ports are developed. Thus tremendous pressures are exerted on the coastal land in general and port areas in particular.

**International trade**

Japan lacks domestic natural resources, including inhabitable land. Japan only produces marginal quantities of major metal ores and hydrocarbon resources. Therefore, Japan heavily depends on a huge import of raw materials for domestic production and also daily life of people. For instance, more than 90% of energy and more than 60% of foods are imported from overseas. And much of industrial products are exported to the world market. Almost all this trade is maritime borne, thus major heavy industries are located on the coast, virtually all in ports of the country.

In 2011, Japanese ports handled a total of import and export cargos of 1,230 million tons, comprising liquid bulk of 400 million tons or 32% (crude oil 15%, LNG/LPG 13%, petro products 4%), dry bulk of 440 million tons or 36% (coal 14%, iron ore 11%, grain 2.3%), container cargo of 250 million tons or 21% and others like automobiles and large machines of 140 million tons or 11%. In addition, Japan’s ports handled domestic cargos of 1,560 million tons, which accounts for 32% of the total freight of the country, on a ton-km basis. Therefore, the country could not have economically grown nor even sustained at all without efficient services of the ports all along its coast.
Port management system

Port management body
Major ports in the world being mostly corporatized today, it might be a surprise that ports of Japan are managed as part of local administration. They are tool port where both infra- and super-structure are provided by port, leaving terminal operations with private companies. Against the backgrounds discussed above, however, the Japanese ports have to play a uniquely versatile role. It is exactly for this versatile role that ports remain considered in Japan to best serve their local communities as an integral part of local administration. In other words, the management of a port in this country has to be responsible for more than marine terminals and logistics development.

The Ports and Harbors Act (the Act) places the primary responsibilities of managing a port upon a “port management body” (PBM) established by a local government, either prefecture or municipality, having jurisdiction over an area where the port in question exists. Most of them are an internal department or division of the local government’s administration system. In some cases, however, PBM is jointly established by the concerned prefectural and municipal governments. There is no port managed by the national government, which are restricted in role to setting out national port policy, guidelines and regulations; overseeing individual ports’ long-term planning; and financing implementation.

Port lands and waters
Under the provisions of the Act, the geographical extent of a port’s jurisdiction consists of land and water areas. The land area of a port is determined through collaboration by PMB and other departments, taking into consideration future spatial demands both from the port itself and the city as a whole. Once decided, under the City Planning Act, it is incorporated as a “port district” into the port city’s entire zoning system. Then, PBM sets out sub-zoning of its port district to more precisely guide permissible types of land use in conformity with its port master plan. Any development in the port district, by public or private, is required to obtain a permit issued by PBM.

The water area of a port is delineated as “harbor limit” under the Act by the PBM with approval of the Ministry of Transport (MOT), which needs to be wide enough to accommodate future demands for various activities envisaged by the PBM. While all the water area along the country’s coast is managed by the national government, PMB is delegated to manage water area within its harbor limit. Thus, any reclamation work within the harbor limit must obtain a permit from PBM subject to conformity to its port master plan.
Port planning and implementation

Since 1973, it had become an obligation of PBM to develop a master plan, conforming to the national port policy and planning standards as laid down by MOT. Also must be prepared an environmental impact assessment. To reflect views of local community, including fishery cooperative associations, PBM has to make public a draft master plan for their comments. A lengthy process of consensus is also required with concerned internal departments as well as ministries of the national government. Such consensus, however, is a key to success when it comes to implementation. Finally PMB should refer its plan to MOT. Under the Act, MOT has to review it with the National Transport Council but can only make recommendation to PMB for change, if any.

When it comes to actual construction of port facilities, a cost sharing scheme is applied between the national and local governments. These investments include breakwaters, channels, port roads and terminal facilities, which are not necessarily required to recover with user charges. As a tool port, PMB provides cranes and transit cargo sheds, which are financed by PMB with its bonds and recovered with user charges. As for the cost of land reclamation, it is also financed by PMB with its bonds and recovered through the sales of reclaimed lands.

Port as seaward expansion of mother city

Land reclamation in Japanese ports

Due to intensive demands for lands as already discussed, ports of Japan have carried out extensive reclamation works across the country. Since 1945, a total of 72,000 ha land has been reclaimed from the sea within the port areas. Especially during the period of Japan’s rapid economic growth in 1960s up to mid-1970s, land reclamation exceeded 2,000 ha every year, while it went down to a level of 100-200 ha/year for the recent decade. As shown in Figure-1, these reclaimed lands have been used for a wide range of uses, from marine terminals to waterfront industries, housing and offices.

Over the last 50 years, main uses of port reclaimed lands have changed significantly. In 1960s, approximately 80% of them were used for industrial activities, primarily heavy, chemical and energy industries. In 1970s and 1980s, industrial use decreased but still remained nearly half of them, while port-related and city-related uses and transportation and exchange activities gradually increased. In 1990s and 2000s, industrial use further went down to about 30%, city-related use and transportation and exchange activities accounted for 20% respectively and port-related use around 25%.
Case of Osaka Port

As shown in Figure 2, Port of Osaka, located in Osaka Bay as a leading port in the western Japan, presents a typical case of port area development for multiple uses. The Sakishima Area of the port is developed entirely on a reclaimed island of 1,050 ha. This island is a complex of marine terminals for international container and domestic ferry services, while it is a newly developed town of 26,000 residents and an urban center of business offices and shopping malls.

**Figure 2** : Port of Osaka: Land Use of Sakishima Island

Marine terminals occupy 196 ha (18.8%) of the Sakishima Island, including 6 container berths and 15 ferry berths both for domestic and international services. Logistics zone of 401 ha (38.3%) is developed just behind the marine terminals. It is used for warehousing, distribution centers and value-added logistics services. Urban activities zone is 130 ha (12.4%) for offices, shopping and exchange facilities such as Asia Trade Center, exhibition hall complex, hotels, and shopping malls. A residential area is 90 ha (8.6%) with 4 primary schools, 2 secondary schools and 1 high school. Also green area of 83 ha (8.0%) is developed for various types of parks for citizens. Artificial beach is also developed in a seaside park.

**Port redevelopments**

In the early 1980s, ports of Japan recognized a need to revitalize their inner port areas, which were rapidly deteriorated due mainly to insufficient water
depth. In 1985, MOT launched a new port policy for redevelopment, called Port Renaissance. In fact, Port of Nagoya started a redevelopment project even earlier to create “Garden Pier” (Figure 3). This project covers a port area of 15 ha that used to have three finger-type piers. The water between two piers was filled to develop a large seaside park and a cruise terminal. Having an aquarium and a maritime museum with a 63 m-high observatory tower, Garden Pier attracts 7 million people every year.

**Figure 3 : Garden Pier, Port of Nagoya**

Port of Yokohama provides a case of large-scale redevelopment, “Minato Mirai 21” (Figure 4). A former shipyard of some 120 ha was redeveloped together with newly reclaimed land of 80 ha to create a new waterfront urban center. Besides a large shoreline park, major landmarks include Japan’s largest sailing ship, a national convention center, an exhibition center, hotels and shopping malls. Every year, 48 million people visit this area of the port.
These are just a few examples of inner port redevelopments in Japan. All cases were carried out by PMB in close collaboration with other organizations concerned. Through these projects, ports of Japan have paved a way to revive their close and amicable relations with port cities as discussed in the introduction. Port should carefully restructure itself to create a new urban waterfront the citizens can feel proud of and connected to the port. Port management system therefore needs to be flexible to allow for such evolution of a port and also coexistence with the city. This is particularly the case with Japan.

**Spatial dimension of port management system**

Thus it is important to look into the spatial dimension of port authority. It can be discussed from two perspectives; (1) type of land use permitted in port area, and (2) ownership of land within the jurisdiction of port authority. In Europe, most of major ports are landlord type with their land area developed for marine terminals, logistics activities and waterfront industries. When port area is not required for such purposes, it is to be returned to the city for urban development such as housing and offices. In terms of land ownership, port land areas are owned by or trusted to port authority, thus generally no private land exists in the port.

In the United States, port authority also control its owned or trusted lands, but its lands are often limited to marine terminals alone and to less extent, some logistics
activities. For instance, any private land along the same shoreline even next to the port land cannot be regulated by the port authority. In Japan, however, port land area is legally defined as a port district in a city’s entire zoning system. PMB is empowered to regulate all land uses in the port district, regardless the ownership of land.

**Recent reform of container terminal management**

**Reforms triggered by containerization**

When containerization started in Japan late 1960s, two fundamental issues arose. First, as the surge of demands was so rapid that the national and local governments could not afford to finance the construction of container terminals in a short period of time. Second, containerization forced the traditional common-user terminal system to change to a dedicated terminal system. In Japan, at that time, it was not allowed to lease any terminals publicly owned for exclusive use. Therefore some new scheme needed to be introduced.

In 1967, the International Terminal Corporation (ITC) was created with capitals provided by the national government and relevant PMBs, one each for Tokyo Bay and Osaka Bay. ITCs constructed container and liner terminals to lease for dedicated use with its own and lessees’ loans as well as the governments’ loans. This was a complete departure from the traditional terminal development and management in this country.

**Creation of privatized bay-wise terminal companies**

In 1982, following a national policy of decentralization, ITCs were dissolved with all their assets as well as responsibilities transferred to local terminal corporations set up by the relevant PMBs of the two bay areas. In 2010, however, the Act was further revised to privatize these local terminal corporations and merge them to a bay-wise terminal company (BCTC), one each for Tokyo Bay and Osaka Bay with the respective PMBs as majority shareholders. At present, Ports of Tokyo, Kawasaki and Yokohama for Tokyo Bay and Ports of Osaka and Kobe for Osaka Bay are under way to create BCTCs.

Once established, while leasing terminal facilities from the national government and PMBs, BCTCs should be fully autonomous to manage all container terminals on a bay-wise basis. PMBs of the four major ports continue to carry out the management of port area, land and water, as well as port regulations such as safety and security. Under the revised Act, when preparing for a new port master plan, PMB must consider any proposal of terminal development submitted by BCTC. Thus it will result in a hybrid port management system for Tokyo and
Osaka Bays with PMB managing the respective port areas and port regulations while BCTCs managing container terminals of the bay areas.

**New challenges of the hybrid management system**

Obviously, the creation of BCTCs is expected to prevent fierce competition for terminal tenants and shipping lines between the neighboring ports of the same bay. As such BCTC’s united marketing will be more effective to global customers. Duplication of port investment is also possibly eliminated. However, success of this new system largely depends on how effectively BCTC and PMBs as main shareholder can work together for common goals. After all, each of PMBs pursues the realization of its own city’s goals, sometimes trying to win over the neighboring cities. Thus, essential to the success is closer than ever collaboration among PMBs if it is to develop maritime hubs at Tokyo and Osaka Bays.

This reform only relates to management of container terminals of the bay area ports. But closer bay-wise collaboration is also required among PMBs with respect to the management of port area. As all the ports of Tokyo and Osaka Bays are literally next to each other, PMBs of the respective bays should work together to best utilize as well as conserve the bay area as a whole rather than individually planning and developing their own port areas. This will be another challenge for PMBs and in fact cities of the entire bay area.

**Conclusions**

Japanese port management system is quite different from those in Europe and US. In Japan, as port areas often cover most, if not all, of the port city’s coastal zone, a port management body is fully responsible for utilization and management of this valuable resource of the local community. Thus it is quite natural in Japan for a port to be managed as part of a city administration. To effectively analyze the port-city governance, the spatial dimension of a port authority deserves more attention.

In Japan, the creation of bay-wise container terminal companies now in progress will bring up new challenges of the port-city governance. While both ports and cities of the large bay areas are competing with each other, this bay-wise organization, though limited to container terminals, is expected to push forward the long-awaited bay-wise collaboration among them in a full scale.
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