

Collection of summaries of WAVE studies and research

(Fiscal 2006)

December 2007

Waterfront Vitalization and Environment Research Center

Major studies conducted by WAVE are described below.

## I Studies and research projects concerning port policy, planning and information

### Study and research on distribution

Study	Fiscal year when study was conducted	Study outline
Study on the international movement of goods in the Hokuriku region	2006	<p>The "Comprehensive Goods Movement Policy Outline (2005)" recommended region-based studies on the improvement of the efficiency of domestic and international goods movement by an international goods movement strategy team composed of industrial, governmental and academic experts. In order to implement the recommendation, the "Strategic team for international goods movement in the Hokuriku region" was established to share the awareness of the problems to be solved in the Hokuriku region and to make flexible and specific recommendations for goods movement policy considering the regional superiority and the sharing of tasks with other regions.</p> <p>The Hokuriku region is bordered by East Asia enjoying rapid economic growth and northeast Asia with rich resources and high development potential across the Sea of Japan. With the promotion of international specialization of production and great changes of international goods movement routes, speedy, seamless and low-cost domestic and international goods movement through the enhancement of the international goods movement infrastructure in the Hokuriku region is extremely important to the development of a vigorous country. As the specific measures required against the above background, the means of goods movement through the ports in the Hokuriku region were analyzed and</p>

		<p>the factors detrimental to the enhancement of efficiency of goods movement through the ports were identified. Based on the analysis results, four recommendations were made for the region to implement. Structural and nonstructural specific measures were reviewed.</p>
<p>Study on the methods for enhancing the functions of the ports in the Tokyo and Yokohama areas by using information technology for ports and optimally locating port facilities (Marine transportation)</p>	<p>2006</p>	<p>As a means of improving the efficiency of goods movement between ever congesting ports in the Tokyo and Yokohama areas and of reducing environmental loads, attention was paid to marine container transportation using barge transportation. A review committee for improving the efficiency of container transportation conducted verification tests in fiscal 2004 and 2005. Container liner services were launched in April 2006. In this study, aimed at further revitalizing barge transportation, the needs for use were identified and the measures to improve efficiency and expand services were examined. Verification tests were conducted concerning the barge transportation, one of the revitalization means, at highly congested piers to verify the effects of congestion alleviation in front of the gate, reduction of transportation time and reduction of CO2 emissions.</p>

<p>Study on the methods for enhancing the functions of the ports in the Tokyo and Yokohama areas by using information technology for ports and optimally locating port facilities (Land transportation)</p>	<p>2006</p>	<p>This study aimed at improving the efficiency of container transportation by land between the ports in the Tokyo and Yokohama areas and to the hinterland of the ports. Deliberations were made on different means of transportation (land transportation, marine transportation and rail transportation) to identify the concrete measures for efficiency improvement of goods movement by using information technology for ports and optimally locating port facilities. A working group on land transportation in particular identified the facts and problems concerning land transportation of containers in the Tokyo and Yokohama areas and made studies for improving the efficiency of goods movement between the ports in the Tokyo and Yokohama areas and to the hinterland of the ports, and for improving the efficiency of goods movement by using information technology for ports.</p> <p>First, existing survey results and statistical data were organized and freighters, harbor transport businesses, land transport firms and others were interviewed. The problems involved in the improvement of efficiency of container land transportation were extracted in view of the present goods movement trends and problems. Then, efficiency improvement measures were examined focused on the (i) improvement of efficiency of land transport of containers between the ports in the Tokyo and Yokohama areas, (ii) improvement of efficiency of container transportation to the hinterland in the Tokyo and Yokohama areas and (iii) improvement of efficiency of goods movement using information systems. An experiment of concentrated transportation between an inland depot in the hinterland and a Tokyo-Yokohama joint depot was planned and conducted considering the present</p>
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		<p>conditions of marine container transportation in the Tokyo and Yokohama areas, and the effect of the experiment was verified and problems were identified. As a result, it was found that shuttle transportation between the ports in the Tokyo and Yokohama areas and the hinterland via free-access controlled highways during the night could considerably reduce transportation cost, fuel consumption and CO2 emissions.</p>
<p>Study on the methods for enhancing the functions of the ports in the Tokyo and Yokohama areas by using information technology for ports and optimally locating port facilities (Rail transportation)</p>	<p>2006</p>	<p>Major Japanese ports have been seeing their competitive positions deteriorating while other ports in the Asian region have been growing remarkably. Strengthening their functions as "hub ports" with international competitiveness is required. Enhancing international competitiveness of the ports in the Tokyo and Yokohama areas, which handle approximately 40% of container cargo in Japan in particular, is important. To that end, enhancing the capacity of goods transportation from the hinterland to the ports in the Tokyo and Yokohama areas and shifting to efficient transportation means imposing smaller loads on the environment are required.</p> <p>In this study, the measures to enhance the rail transportation of marine containers in the Tokyo and Yokohama areas were examined.</p>

<p>Study on the enhancement of port functions as the backbone of manufacturing industries in the Chubu region.</p>	<p>2006</p>	<p>The Chubu region is the center of Japan's manufacturing industries and is the nerve center of Japanese economy. Numerous firms intending to enhance their international competitiveness have been trying to adapt to a globalized world economy through horizontal international division of labor and integrating their operations in domestic and overseas markets. Speedy, seamless and low-cost international movement of goods is therefore required.</p> <p>For the Chubu region to develop further as an internationally competitive hub of manufacturing activity, it is important not only to solve the urgent problems related to international movement of goods but also to develop a long-term regional development strategy and deliberate on future policies concerning international movement of goods.</p> <p>Against such a background, the Chubu Regional Development Bureau and the Chubu District Transport Bureau organized a "Chubu international goods movement strategy team" in March 2006 and have been making deliberations in order to identify the issues and problems concerning international and domestic movement of goods considering the position of the region as the center of manufacturing, examine the methods for efficiently solving the problems and propose a desirable direction of goods movement.</p> <p>This study conducted under a contract with the Port and Airport Department of the Chubu Regional Development Bureau aimed at providing assistance in the discussions at the second meeting of the strategy team. Deliberations were made for identifying the mobility of container cargo, needs of freighter firms, present state and problems concerning the cooperation with air transportation for efficiency improvement and the measures to</p>
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		eliminate bottlenecks in international goods movement, and for building an efficient goods movement system.
Social experiments for building an efficient domestic feeder transportation network	2006	<p>This study was conducted to strengthen the transshipment functions of ports by encouraging the use of domestic feeder transportation while implementing the super central port project, and to contribute to the enhancement of the international competitiveness of Japan's ports.</p> <p>First, the present state of feeder transportation in the Inland Sea area was identified by organizing the existing statistical data and interviewing the stakeholders and freighters, and problems and issues were identified. Social experiments and surveys were conducted to solve the problems and the effects were verified. Social experiments and surveys were conducted in Kobe and Hiroshima Ports and composed of (i) real-time filming of berths in the ports using live cameras, (ii) measurement of biased loads on containers and (iii) investigations of effects of information sharing between the two ports through the training of each other's staff. As a result, it was confirmed that the image data collected using live cameras were effective for communications and decision making between the terminal and ships, that the data on biased loads on containers and comprehensive risk judgement were important to the enhancement of work safety in the ports and the training of each other's staff was effective for improving the awareness of transport quality and safety. Issues were identified for building an efficient domestic feeder transportation network.</p>

<p>Study on the improvement of efficiency of goods movement for promoting wide-area cooperation between ports</p>	<p>2006</p>	<p>In this study, the problems of container transportation between adjacent ports and the measures to improve the efficiency of container transportation were deliberated, and verification experiments were conducted for the measures identified to specifically present problems and measures. The objective was to help improve the international competitiveness of Japan's ports by strengthening the wide-area cooperation between ports serving as super central ports through the improvement of efficiency of goods movement between adjacent ports.</p> <p>Questionnaire and interview surveys of shipping, goods movement and other firms were conducted concerning the intention of using container and barge transportation to investigate the state, problems and interest of the stakeholders related to container transportation between Osaka and Kobe Ports. Experiments were conducted on the marine transportation of vacant containers using port barges between the two ports. Based on the results of the experiments and the analysis of the intentions of the stakeholders, the effects and problems of marine transportation were identified and problems were studied. Fundamental studies were made for implementing projects.</p>
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<p>Study on the effect of goods movement on the environment in Tokushima-komatsushima Port</p>	<p>2006</p>	<p>This study was conducted to investigate the effect of goods movement in Tokushima-komatsushima Port on the environment of the hinterland and to examine the measures to reduce environmental loads and supplementary measures.</p> <p>The study was conducted to identify the effect of goods movement in Tokushima-komatsushima Port on the surrounding environment. WAVE developed plans and provided technical assistance in the investigations. The study was conducted by a separate survey organization under a separate contract.</p> <p>Based on the results of the above study and of the collections and reviews of similar examples, measures were examined to reduce the environmental impact in Tokushima-komatsushima Port, and the measures for assisting in reducing environmental loads in the port were reviewed.</p>
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## Studies on port space

Study	Fiscal year when study was conducted	Study outline
Study on the use of water zones in Sendai-Shiogama Port	2006	<p>The objective of this study was to enhance the efficiency of integrated use of canal water zones (Teizan Canal) between the Sendai and Shiogama districts, and the port space in Sendai-Shiogama Port by studying new methods for using the canal, for future port improvement. The specific measures included the investigation and identification of the mooring of pleasure boats in the Teizan Canal and the development of measures for improving the environment in the canal for appropriate mooring and storage of pleasure boats. The use of historic and cultural resources and facilities in the canal and the use of the canal area for recreational purposes were identified, and a model plan for using the canal water zones was prepared.</p>
Study on the use of port space in Hitachinaka Port	2006	<p>In the Hitachinaka Port area where beautiful beaches used to attract visitors, reductions of sea-goers have caused the local hotels and inns to lose steam. How to use port space for the "restoration of regional attractions" is presently at issue. This is also important for the "smoother port operation in the region".</p> <p>Accordingly, regional revitalization (redevelopment) measures were deliberated in this study using as an example the "Ajigaura beach" that connects the fishing port area and the port area. Social experiments were conducted to seek an ideal promotive organization to enable the local residents to voluntarily or continuously participate in the effort.</p>

<p>Study on port revitalization using the port space in the northern Kanto region</p>	<p>2006</p>	<p>The bathing place in the Ajigaura area on a shallow beach washed by mild waves was one of the major clean seas in Ibaraki Prefecture. More than two million tourists used to flock into the beach not only from within the prefecture but also from Tochigi, Gumma and Tokyo and Yokohama areas. In recent years, however, the bathing place has been used by a smaller number of people and the hotels and inns located in the hinterland have been stagnating.</p> <p>This study was conducted as a basic research for using the Ajigaura area as a quality space meeting new diverse needs. The reasons for the deterioration of attractiveness of the area was systematically and hierarchically identified using a schematic diagram by reviewing the existing statistical data, conducting interview surveys and collecting and organizing case studies of regional revitalization. Quantitative methods for verifying the direction of studies for revitalization (e.g. conjoint analysis and text mining) were identified and reviewed.</p>
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<p>Study on the method for forming projects for enhancing the use of port space with due regard to public interest</p>	<p>2006</p>	<p>In urban areas, people are losing interest in the sea and seacoasts because of economically oriented use of seacoasts, and seacoast culture has been deteriorated. Coastal space has frequently been created based on a specific value mainly of suppliers. The public are not fully satisfied with coastal space. In order to increase the attractiveness of seacoasts, it is necessary to make the coastal space along Tokyo Bay more attractive through the horizontal cooperation among various stakeholders. In this study, goals were set for enhancing the attractiveness of coastal space in Tokyo Bay through voluntary participation and cooperation of diverse stakeholders, and a mechanism was examined for appropriately capture the wishes of local residents along Tokyo Bay. <i>Ungan</i>, an website for sharing information on the Tokyo Bay coastal area, and the "Tokyo Bay coastal area attractions discovery program" were developed. <i>Ungan</i> is a tool for enabling diverse stakeholders to act in consonance with one another by sharing information. The program is a means of forming a project for improving the efficiency of use of port space using the tool.</p>
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<p>Study for preparing reorganization plans in the waterfront in the Moji Port area of Kitakyushu Port</p>	<p>2006</p>	<p>Moji Port once thrived as a gateway to Kyushu and a hub for trade with China. Its vitality has, however, recently been declining substantially. The port has therefore been implementing a Moji Port retro tour project using its historic structures and natural landscape and is now a tourist attraction accommodating more than two million visitors each year. The goods movement facilities throughout the port have, however, been deteriorating and unused land is outstanding in the Nishikaigan and Niihama areas. At issue is a review of land use throughout the port area.</p> <p>This study aimed at deliberating on the development of waterfront reorganization plans for refining the Moji Port retro tour project as a basis for revising next-phase port development plans. The present conditions of the Moji Port area including the waterfront were investigated and problems were identified. The new roles that the waterfront area was expected to play in the Moji Port area were identified. An effective means of operation of the former shed No. 1 for the Dalian route was sought and the contents of facilities for facilitating visitors were examined.</p>
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### Studies on port use and management

Study	Fiscal year when study was conducted	Study outline
Study on the improvement of efficiency of use of port space through the proper use of water zones	2006	<p>Designated as a study on the Program for Promoting Proper Utilization of Coastal Waters, this study was conducted for the purpose of considering various measures to utilize existing stock, methods for adjusting utilization rules and other related matters.</p> <p>In this study, the Nakagawa Canal connecting Nagoya Port and Nagoya Station was considered as a model case. Questionnaires were distributed to event organizers, participants and the government agencies concerned to identify and organize the needs, and to present the problems and issues concerning the utilization of water zones. As a result, it was concluded that (i) developing a basis (mechanism) for providing the public with easy access to water zones, (ii) continuously solving problems and developing human resources and (iii) simplifying the application procedures for use of water zones and facilities (designating a single point of contact) were important to the promotion of the utilization of water zones.</p>

<p>Study on the port functions of Kinuura Port</p>	<p>2006</p>	<p>Kinuura Port was designated in fiscal 2004 as a key port requiring the promotion of utilization*1 where existing stock should be utilized effectively. In the port with deteriorating facilities or crowded space, however, the needs have been increasing for the "enhancement of port functions as a hub for regional revitalization" while manufacturing was being revitalized in the hinterland.</p> <p>In this study, medium- to long-term measures were examined for promoting the utilization of Kinuura Port considering the role the port was expected to play in the Ise Bay area and the present and future conditions of the port.</p> <p>*1</p> <p>The 105 major ports were classified in February 2005 into the ports expected to be used more frequently with effective investment, and the key ports requiring the promotion of utilization by the national and local governments according to the mode of use (movement of public cargo) in order to improve the efficiency of investment in new facilities.</p>
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## Studies on long-term port schemes and regional revitalization

Study	Fiscal year when study was conducted	Study outline
Development of regional revitalization strategy using existing stock in the ports in the Kanto region as resources	2006	<p>Major ports in the Kanto region handle approximately 20% of cargo through Japan's ports and approximately 40% of foreign cargo. The ports have been increasing their international competitiveness and serving as a backbone of economic activities in the Tokyo metropolitan area. The waterfront area including the ports have been used mainly for goods movement and controlled by various organizations. The area has therefore been left closed to the public. Various requests have been filed for regional redevelopment and revitalization through the restoration of beautiful landscape in port space to provide comfort and recreational opportunities, and for the improvement of living conditions.</p> <p>In this study conducted against the background, ideas were collected from municipalities, non-profit organizations and civic organizations, the ports that used existing port stock as resources for regional redevelopment were examined as model ports by the case study method, the ideas, regional needs and the effects of implementation were verified, and an optimal port space was sought that could promote the movement of passengers. Examinations were made of the direction of assistance for the "Port Community Planning" under which the significance of maritime traffic is identified and the regional potential is developed, and the public take the initiative in the contribution to regional redevelopment and revitalization, and for the "Port Oasis" aimed at promoting regional redevelopment using existing port facilities. Regional redevelopment plans were prepared based on the results of the examinations.</p>

<p>Study on the measures for improving and operating key wide-area disaster prevention bases</p>	<p>2006</p>	<p>The Basic Plan*1 presented the need to develop "key wide-area disaster prevention bases" in three zones (zones a, b and c) in respective urban areas in Kyoto, Osaka and Kobe . In response to the presentation, the Committee*2 classified the functions of the "key wide-area disaster prevention bases" into the functions of a control tower to be performed by on-site disaster prevention headquarters of the central government or joint headquarters incorporating prefectural government as well, and the high-level assistance to be provided at the points for distributing relief goods, and verified the capacity of candidate places. Principles were presented to establish in steps a firm wide-area disaster prevention organization in approximately 20 years.</p> <p>This study used Sakaisemboku Port as a model because the Committee concluded that improving the port promptly for providing high-level assistance would be possible. A working group staffed with the members of the national and municipal governments had meetings twice to deliberate on the facilities to be installed at the port, the size and layout of the facilities and the effects of facilities improvement.</p> <p>*1 Basic Plan for developing key wide-area disaster prevention bases in urban areas of Kyoto, Osaka and Kobe</p> <p>*2 Committee for developing key wide-area disaster prevention bases in urban areas of Kyoto, Osaka and Kobe</p>
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<p>Study on the cooperation measures for revitalizing ports</p>	<p>2006</p>	<p>The ports in the Chubu region with Japan's leading manufacturing industries in the hinterland have been playing an important role as a backbone of goods movement for the industries. The sentiment for giving top priority to the industrial functions of ports, however, has been causing the local people to distance themselves from ports. Few people visit ports for recreational or sight-seeing purposes. The potential of port space for port community planning has not been fully utilized.</p> <p>In this study, deliberations were made on the methods for active partnership of the ports in the Chubu region to further activate port community planning based on the state of port community planning in some ports in the Chubu region. The results of related studies were also considered during the deliberations on the partnership.</p>
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<p>Assistance for Industrial Disaster Prevention Committee aimed at the continuation of goods movement services</p>	<p>2006</p>	<p>Various measures have been taken in Japan for preventing disasters. As the risk management for world economy gained importance, management for continuing key services in contingency and promptly restoring discontinued services have been required as part of business services.</p> <p>In the Chubu region, goods manufacturing firms are concentrated that work in a supply chain in close and elaborate contact with domestic and overseas organizations. The region is a global industrial center. There is, however, a high probability of a great earthquake occurring in the region. It has also been pointed out that the risk of a great earthquake is most imminent in the region. The discontinuation of operation of all the factories throughout the world due to the halt of international goods movement due to disasters has been of concern.</p> <p>To solve the problem, efforts have been energetically made to continue goods movement services in contingency under the slogans of "two types of shift" and "two types of partnership" as propose by the Chubu Regional Development Bureau, Ministry of Land, Infrastructure, Transport and Tourism. The "Industrial Disasters Prevention Council of Port User Firms" (the Council) staffed with industrial, administrative and academic human resources has been taking the initiative in the effort. The objectives are to identify the need of industrial disaster prevention in the Chubu region and to discuss the direction of approach to the continuation of business during a disaster and early restoration after a disaster.</p> <p>This study provides assistance to the Council. The knowledge obtained through the activities of the Council and the details of investigations are described below.</p>
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<p>Basic feasibility study for the improvement of port facilities in Ise Bay ports</p>	<p>2006</p>	<p>With the progress of horizontal international sharing of work with mass production factories in Asian countries and of business activities in close relation with the world economic conditions against a background of global supply chain management, the roles and functions of ports have been becoming more important as the backbones of business activities in Ise Bay with the industrially thriving Chubu region in the hinterland.</p> <p>In Nagoya Port, designated as a super central port in Ise Bay, the "container terminal on the south of the Tobishima container berth" was opened in December 2005. In Yokkaichi Port, the "international marine container terminal at the Kasumigaura-Kita berth" was opened in January 2006. Efforts have been made to strengthen the international competitiveness of ports in Ise Bay further.</p> <p>For improving the efficiency of goods movement in Ise Bay, not only utilizing the existing structures but also taking nonstructural measures for increasing the convenience of port users including the firms in the hinterland that transport goods and for reducing costs is extremely important. In fiscal 2006, the third meeting of the "Ise Bay Super Central Ports Partnership Council" was held in December and the meetings of a subcommittee deliberating on specific matters were held several times for deliberations and coordinations.</p> <p>In this study, assistance was provided by collecting and organizing the existing data when the Ise Bay Super Central Ports Partnership Council deliberated on the objectives and direction of super central ports improvement in Ise Bay, and short- and long-term measures for the partnership of ports and the partnership between ports and the hinterland. Thus, efforts were made to make the deliberations transparent. For taking measures to increase the</p>
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		competitiveness of ports, the international movement of goods through ports was identified and the logistics at ports were examined.
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<p>Study for promoting port tourism in Shikoku</p>	<p>2006</p>	<p>The objectives of this study are to deliberate on and propose mechanisms of joint efforts with the local stakeholders for promoting "port tourism" reflecting the characteristics of the ports in Shikoku based on the results of past investigations and deliberations on "port tourism".</p> <p>As specific measures, a "port tour guide map" and "guide and message signs" were prepared for Yawatahama Port, Ehime Prefecture in cooperation with the regional authorities. The results of activities of the "Council for Developing Attractive Ports in Shikoku" were compiled into a general guidebook.</p> <p>In this study, a system was developed and implemented for preparing a manuscript of the "Yawatahama port tourism guide map" in cooperation with the local residents. The results of the activities of the Council were proposed as a guide for the approach of other regions ("Information from Shikoku: Recommendations for Port Tourism"). The above results were made available to the public in fiscal 2007.</p>
<p>Study for promoting regional revitalization in and around ports</p>	<p>2006</p>	<p>In this study, aimed at helping organizations of residents effectively participating in port community planning in Shikoku, the needs and problems related to "port oasis" in Shikoku were identified, measures of cooperation among different players were examined, a social experiment was conducted in Yawatahama Port, Ehime Prefecture, and effective measures for cooperation in Shikoku were deliberated.</p> <p>This study identified the problems involved in continuous "port community planning". A proposal was made to distribute "port town coupons" based on regional cooperation throughout Shikoku in view of the results of the social experiment.</p>

<p>Study for developing basic plans for complex port facilities</p>	<p>2006</p>	<p>This study was started in fiscal 2005. The study of fiscal 2005 concluded that it was necessary to locate CIQ and other public organizations and other facilities on Tamashima Harbor Island for the convenience of port users. As a ripple effect, it was also hoped that business firms would be located on the island. At the point, relocating the administrative offices was not yet determined. In the study of fiscal 2006 (this study), a basic plan was prepared for complex port facilities on the assumption of entries of Mizushima Port Office, Bicchu General Service Bureau, Okayama Prefecture and other organizations. The possibilities of PFI projects and port improvement by a semi-public sector organization were discussed. The profitability of a public sector project was also estimated for information.</p> <p>As a result of the deliberations, PFI projects under a BTO (built, transfer and operate) system were found to be less costly than traditional public works projects. It was also found that a private sector project could be implemented by reducing common space and reviewing the structure, and reducing the cost of maintenance (simplifying the maintenance procedure) as long as users could be attracted.</p>
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<p>Study on the revitalization of cruising in Okinawa</p>	<p>2006</p>	<p>In Okinawa, the tourism industry has been positioned as a leading industry, and it is hoped greatly that cruising will promote tourism. It is required that the ports in Okinawa will improve structures such as cruise terminals and that nonstructural measures will be reinforced through effective port marketing using a combination of nature, history and culture, which are the attractions of Okinawa.</p> <p>This study was conducted to interview those involved in cruising in and out of Okinawa to identify the needs for cruising in Okinawa, and to develop action plans for inviting cruisers to Okinawa using diverse attractiveness of Okinawa through the partnership of ports and partnership with tourist sites in the prefecture.</p> <p>Twelve regional development action plans were proposed through the vitalization of cruising-based tourism in Okinawa by increasing the frequency of cruisers port of call and the duration of stay by cruise passengers. The issues expected in the implementation of the plans were identified.</p>
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## Port EDI projects

### Port EDI system operation support projects

Study	Fiscal year when study was conducted	Study outline
Management and operation of Port EDI System	2006	<p>The Port EDI (Electronic Data Interchange) System has been in operation since fiscal 1999 as an effort to simplify and computerize port-related procedures to be performed by port masters and port authorities. In fiscal 2003, quarantine, which is a task to be performed by the Ministry of Health, Labor and Welfare, was designated as an additional task to be performed. The System was then interconnected with the customs information processing system (Sea-NACCS) operated by the Ministry of Finance and other organizations, and the Ministry of Justice's foreigner entry and departure information system to create a single-window environment for providing one-stop services so that users can access other systems on a single screen as part of the export/import or port-related procedures. System modifications were also made for the standardization and simplification of the port entrance/departure report forms under the Convention on Facilitation for International Maritime Traffic signed in November 2005, and the standardization and simplification of the forms for the pre-entrance/pre-departure procedures. Additional modifications were made in April 2006 to increase the convenience of users. This study concerns the management and operation tasks, such as monitoring system operation and providing assistance to system users, so that electronic information for procedures performed by the system on a daily basis can be processed smoothly and efficiently.</p>

## Studies on the use of information technology for ports

Study	Fiscal year when study was conducted	Study outline
Study on the simplification of port procedures	2006	<p>Since the forms for the "sea-side" port procedures such as port entrance/departure report forms and the form for applying for the use of mooring facilities have been simplified and standardized following the signing of the Convention on Facilitation for International Maritime Traffic, this study, as well as the study in the previous fiscal year, considers the simplification and standardization of the forms for the "land-side" port procedures such as the form for applying for the use of cargo-handling equipment in order to further enhance the convenience for port users.</p> <p>In this fiscal year, the simplification and standardization of application forms were deliberated, a follow-up study was made on the simplification, and the possibility of computerization of procedures was discussed.</p>

## II Study projects related to the port environment and environmental ISO

### Study and research projects concerning the port environment and environmental ISO

Study	Fiscal year when study was conducted	Study outline
Study on environmental improvement measures in Kamaishi Port	2006	Changes in environmental conditions in Kamaishi Port were qualitatively predicted where a breakwater was completed at the mouth of Kamaishi Bay. The environmental data collected since the start of construction of the breakwater were organized, and environmental data were also collected in Ofunato Bay and Onagawa Bay, examples with an advanced breakwater, and in Yamada Bay, an example of a closed inner bay. These data were compared with the environmental data obtained in Kamaishi Port for the qualitative prediction. Based on the information obtained, measures for controlling future environmental changes in Kamaishi Port, and an optimum future environmental monitoring method were proposed.

<p>Education on the use of waterfront space through experience</p>	<p>2006</p>	<p>Nature experience events in coastal areas have been contributing to regional revitalization, community planning and environmental education by exposing the participants to nature although the goal of the event varies from region to region. Case studies of nature experience events in ports or on beaches were collected and examined, and plans were prepared for holding nature experience events in the Kamaishi area. Methods for establishing a partnership and building a network of regional organizations holding waterfront nature experience events were examined through pilot implementation of the prepared program in Kamaishi Port under the control of the Kamaishi Port Office.</p> <p>Nature experience events include various types of nature experience on beaches, in tidal flats, on rocky shores and in the sea, and require leaders in the events. Nature experience schools were created as a place for events and leaders development programs were developed.</p> <p>Maritime nature experience events and courses for developing skills on waterfront were conducted. The problems to be solved for conducting the courses and the requirements for building a network were organized and reviewed. The nature experience events in ports and coastal areas were expected to contribute to the understanding of nature, satisfaction of diverse needs, understanding of the roles of ports and coasts, regional revitalization and character building, through the contact with nature using the coastal resources. To that end, the partnership of the stakeholders and the building of a network are required.</p>
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<p>Study for promoting the use of marine environmental information</p>	<p>2006</p>	<p>Studies were made of the methods for promoting the use of environmental information through the encouragement of use of the Tohoku Coastal Environment Information Center, a basis of support for maintaining the rich natural environment and productivity in the Tohoku coastal area, for accelerating the network building via the Center, and for managing and operating the Center. Information was also collected on the developments in technologies applicable to coastal environment conservation, restoration and creation projects.</p>
<p>Seaweed bed restoration and creation and the deliberation on the measures for effective implementation of nature restoration projects as part of the environmental education in Tokyo Bay</p>	<p>2006</p>	<p>In this study, seaweed beds were transplanted on a trial basis and monitoring was conducted in cooperation with citizens and NPOs in Tokyo Bay. The objective was to standardize the adaptive management methods for monitoring after facilities improvement and for reflecting the monitoring results in subsequent facilities improvement. This study was made in view of the uncertainty of natural environment and the significance of consensus building.</p> <p>In order to arise greater sympathy with the environmental restoration in Tokyo Bay, investigations were made of the facilities for increasing public awareness of and interest in Tokyo Bay and of the places where people can obtain information on the sea, and the framework for developing leaders and providing environmental education for the nature experience events in Tokyo Bay and the measures for implementing nature restoration projects were deliberated.</p>

<p>Study on environmental studies in the water zones in and around Haneda</p>	<p>2006</p>	<p>This study aimed at identifying the facts based on the results of separate field studies in order to identify the actual influences that were unlikely to be obtained by numerical simulations made in various studies conducted concerning the re-expansion of Tokyo International Airport, developing evaluation methods whenever required and deliberating on the methods for publicizing the results.</p>
<p>Study on the technologies for environmental restoration through the use of dredged material in Nagoya Port</p>	<p>2006</p>	<p>This study was conducted against a background of increasing demand for recycling-based society to identify the possibility of recycling dredged materials, a type of the by-products created as a result of construction carried out in Nagoya Port, by applying a single or multiple technologies.</p> <p>The environmental characteristics of Nagoya Port and surrounding water zones were identified based on various reports, and the volume of dredged materials to be created in the future was estimated based on the past production of dredged materials in Nagoya Port. Data were collected and organized on the technologies for improving dredged materials, and the methods for using dredged materials in Nagoya Port were deliberated.</p>

<p>Study on the measures for using environmental information in Osaka Port</p>	<p>2006</p>	<p>In this study, the Osaka Bay Environment Restoration Information Council (chairperson: Kohji Michioku, Professor of Kobe University) was operated for the environmental monitoring for Osaka Bay restoration efforts in accordance with the Action Plan for the Restoration of Osaka Bay (adopted by the Osaka Bay Restoration Council on March 26, 2004). The Osaka Bay Environment Restoration Information Council deliberated on the collection and dissemination of information and monitoring and research involving the general public.</p> <p>The methods for building a network for disseminating and sharing environmental information and the monitoring programs for encouraging public involvement were deliberated based on the Osaka Bay Environmental Database. A platform was created for building a network for administrative and civic activities.</p>
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<p>Study on the measures of utilizing existing breakwaters</p>	<p>2006</p>	<p>Many of the port protection facilities are of vertical structure and have been preventing disasters and securing port functions contributing to economic growth. The facilities, however, have been causing numerous environmental problems such as the deterioration of diversity of coastlines serving as wildlife habitat and the deterioration of water quality and bed material quality due to poor seawater exchange.</p> <p>The Action Plan for the Restoration of Osaka Bay formulated in March 2004 positions the Nishinomiya Breakwater as an appealing feature of the Nishinomiya area. The Nishinomiya Breakwater is a very long (about 4 km long) structure and its coast- and ocean-side faces are vertical. <i>Wakame</i> (edible seaweed) culture has been continued experimentally since fiscal 2004 as an advanced project in the Osaka Bay area. Figure 1 shows the location of the Nishinomiya Breakwater and the experimental site.</p> <p>The main focus of the monitoring conducted for the purposes of this study was on whether or not a new generation of <i>wakame</i> is produced from the <i>wakame</i> planted in December 2004. In fiscal 2005, therefore, the <i>wakame</i> seaweeds planted in 2004 were monitored to observe their growth to compare the changes with time and the habitat. In fiscal 2006, the monitoring of their growth was continued.</p>
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<p>Study on environmental restoration in Osaka Bay</p>	<p>2006</p>	<p>This study aimed at establishing technologies for improving the marine environment for the restoration of Osaka Bay. Deliberations were made on the measures of marine environment improvement throughout Osaka Bay, the technologies for improving the marine environment by controlling the flow regime and the technologies for improving the marine environment in estuaries. First, the principles of study for early establishment of marine environment improvement measures for the restoration of Osaka Bay were presented, and subcommittees were organized to deliberate in detail on the flow regime control technologies in the norther port area and on the technologies for improving the estuary at the mouth of the Yamato River. In the deliberation on the flow regime control technologies, it was shown that replacing the permeable groin at the Daihachi-minami Breakwater reduced the water zones with a bottom DO of less than 3 mg/l in Kobe Port. In the deliberation on the technologies for improving the estuary, the optimal water depth to be achieved by shoaling and the structure of a desirable training wall were presented using the normal retention time and the thickness of deposition of suspended solids during a flood as indexes.</p>
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<p>Technical study on the depressions in Osaka Bay</p>	<p>2006</p>	<p>In this study, the present maritime environment in Osaka Bay was identified, the problems involved in future correction of depressions were extracted and the matters to be investigated and examined in the future were deliberated in order to correct the depressions in the marine environment using the sediments dredged in navigation channels.</p> <p>As a result, depressions were found at 21 locations mainly in the eastern water zone in Osaka Bay. The depressions were classified into eight categories according to the topographic property and the characteristics of surrounding water zones. The effects of the depressions on the surrounding marine environment and the effectiveness of filling the depressions were qualitatively identified. The environmental and construction problems involved in the filling of the depressions were identified and the investigation and review work required for future problem solution were presented.</p>
<p>Collection of case studies of seaside nature restoration technologies</p>	<p>2006</p>	<p>Held as pre-workshop exhibitions using panel boards at an <i>amamo</i> (<i>Zostera marina</i>), sea grass, summit were an open exhibition presenting case studies of <i>amamo</i> restoration and a pre-designed exhibition focused on the development of methods and technologies for seaside nature restoration.</p> <p>In order to highlight what types of tidal flats, seaweed beds and coral reefs could be restored at the present technical level, the goals of respective technologies, conditions for application, level of technical maturity and other information were compiled and shown in a uniform format on panel boards.</p>

<p>Study on the environmental restoration technology for the Nakagawa Canal</p>	<p>2006</p>	<p>This study was conducted for the purpose of considering the purification of the water and bed material in closed water zones using the Nakagawa Canal at Nagoya Port as a model in order to implement environmental conservation and restoration measures for Ise Bay effectively and efficiently. The study included the identification of present state through field investigations, extraction of the problems in respective water zones, determination of goals of restoration of water quality and bed material quality, organization of the technologies for purifying the water and bed material available in the Nakagawa Canal and development of field verification test programs, in the order of implementation.</p> <p>In the identification of present state, data were collected and organized on the natural and social conditions such as water quality and bed material quality, local species, flow, nutrient loads, climate and use of the canal to identify the environment in the vicinity. As a result, the contamination mechanism was identified for the Nakagawa Canal. The canal was divided into the upper, middle and lower reaches and the Yokobori Canal area according to the environmental property.</p> <p>Specified as the problems in the Nakagawa Canal were the deposition and odor of sludge, stratification due to density variation and reduction of dissolved oxygen content of bed material, and the lack of habitat for aquatic species. The goals set for the respective water zones were the "restoration of relationship between people and water" in the upper reaches, "environmental restoration in harmony with the functions of the canal" in the middle reaches, "promotion of cooperation with Nagoya Port for more sound material circulation" in the lower reaches and "restoration of habitat for aquatic species" in the Yokobori Canal area.</p>
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<p>Study on the environmental improvement measures in the Inland Sea</p>	<p>2006</p>	<p>In this study, a symposium for deliberating on long-term measures for environmental improvement and for providing information on the Inland Sea Environmental Improvement was held in order to help the administrators and citizens interested in improving the environment of the Inland Sea gain a better understanding of the necessity of environmental remediation. Public relations activities were performed and the effects of the activities were verified.</p>
<p>Study on regional partnership for the utilization of seaside space</p>	<p>2006</p>	<p>In this study, deliberations were made on the methods of building a partnership with the organizations engaged in various activities in coastal areas and of building a network of organizations in the east of Kochi Prefecture in order to promote the use of ports and seacoasts. The specific activities for building a network were identified to extract the organizations engaged in local environmental conservation, education and regional development, and the regional resources in coastal areas, and to deliberate on the possibility of creating a network and partnership. A study was made of an example of partnership and proposals were made for building a network by identifying the results of the study and the problems expected.</p>

<p>Commissioned supervision of sea grass bed study for public port coastal environment improvement and restoration</p>	<p>2006</p>	<p>In fiscal 1998, the Kojima Port Coast (Karakoto Area) Eco-coast Planning Committee drew up a plan for using the integrated coastal protection method by means of artificial beach nourishment for coastal improvement that harmoniously combines disaster prevention, environmental conservation and coast utilization and restoring (transplanting) the sea grass beds lost as a result of the beach nourishment work on a newly nourished beach. In the project area, a transplanting test area was set up in fiscal 1999, a transplanting test area and a seeding test area in fiscal 2001, and a medium-size pilot project area in fiscal 2001 through 2003 for continued monitoring.</p> <p>In this fiscal year, an attempt has been made at adaptive management of restored sea grass beds including the acquisition of new knowledge in view of existing knowledge and the present state (e.g., restored sea grass beds and surroundings) of the Karakoto area. In this study, the adaptive management was checked at each stage as an organization specialized in sea grass bed restoration projects. Adaptive management was performed at each stage of the sea grass life history (growth and decline periods) and adaptive management was also performed of the seeding test set up in fiscal 2006.</p>
<p>Technical study on the Bisan-seto Environmental Remediation Plan</p>	<p>2006</p>	<p>In this study, an environmental remediation plan for the Bisan-set water zone was deliberated, the methods for correcting deep boring sites and shallow areas were examined and a preliminary remediation plan was deliberated in order to implement the Inland Sea Environmental Remediation Plan formulated in February 2005.</p>

<p>Technical study on tidal flats construction in the Ariake Sea, Yatsushiro Sea and Buzen Sea</p>	<p>2006</p>	<p>This study aimed at restoring the tidal flats in the Ariake Sea (Miike Port and Ohura Port), Yatsushiro Sea (far in Yatsushiro Port) and Buzen Sea (Nakatsu Port). Verifications were made of the effects of marine environment improvement by constructing tidal flats using dredged materials and local bed materials, and the tidal flat construction technologies effective for tidal flat environmental improvement were established to reflect the technical results in tidal flats restoration projects.</p>
<p>Seaweed environment study in the Yatsushiro Port environmental improvement project</p>	<p>2006</p>	<p>This study was conducted to obtain the information needed to select an appropriate seaweed bed creation method for making up for the seaweed bed that would disappear as a result of the seawall construction being carried out on the south side of Yatsushiro Port (Otsukushima area). In this study, therefore, the seaweed bed creation testing to be conducted on an existing seawall was considered, and a seaweed environment study was conducted in the Otsukushima area and at the seaweed establishment test site.</p>
<p>Study on the environmental improvement in Nakagusukuwan Port (Awase Area)</p>	<p>2006</p>	<p>This study was conducted in relation to the identification of the environmental conservation and monitoring measures for constructing a dredged material disposal site under the direct control of the Ministry of Land, Infrastructure, Transport and Tourism in the Awase area in Nakagusukuwan Port. Deliberations and analysis were made concerning the project implementation, the results of environmental monitoring and the conservation of seaweeds and algae, based on the opinions of experts.</p> <p>Various deliberations were made in the fields related to this study based on the opinions of the committees and panels staffed with the persons of learning and experience listed below.</p>

<p>Study on the improvement of the artificial tidal flat in Nakagusukuwan Port (Awase area)</p>	<p>2006</p>	<p>The environmental impact assessment report for the artificial island construction in the Awase area describes the measures for conserving <i>tokagehaze</i> (<i>Scartelaos histophorus</i>) and <i>kubiremidoro</i> (<i>Pseudodichotomosiphon constricta</i>). The report specifies that habitat should be constructed for these species on the artificial tidal flat on the artificial island. This study aimed at examining the candidate sites suitable for artificial tidal flat construction and investigating the requirements for the habitat of <i>tokagehaze</i> and <i>kubiremidoro</i> and habitat design conditions.</p> <p>The candidate sites suitable for artificial tidal flat construction were examined based on the external conditions of the present habitat. The requirements for the habitat of <i>tokagehaze</i> and habitat design conditions were examined based on the results of follow-up studies on bed material improvement in the Awase area and of habitat environment investigations in the Shinko area.</p> <p>As a result of the study, a site suitable for artificial tidal flat construction was selected and presented based on the bottom shear stress. The design conditions established based on the requirements for the habitat of <i>tokagehaze</i> were also proposed.</p>
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<p>Study on the methods of coral reef friendly port improvement</p>	<p>2006</p>	<p>The "Coral Reef Survey Handbook for Okinawa Ports" (draft) was compiled based on the results of studies up to fiscal 2005. In fiscal 2006, the survey organizations using the draft handbook were interviewed. Then, the "Coral Reef Survey Handbook for Okinawa Ports" was finally prepared based on the comments of the members of the Committee Concerning the Study on the Methods of Coral Reef Friendly Port Improvement.</p> <p>At the same time, data were collected and organized. The latest state of surveys in Naha Port, Hirara Port and Ishigaki Port was identified, the latest developments in the conservation, restoration and use of coral reefs were organized, and the tasks to be performed by the Okinawa General Bureau for carrying out coral reef friendly port improvement were specified. In the studies for identifying the correlations between the distribution of coral reefs and environmental factors, an HEP (habitat evaluation process) was applied to predict the distribution of coral reefs on the breakwaters considering the port planning in Naha Port.</p>
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<p>Study on coastal improvement in the Hiyane marsh and Awase area</p>	<p>2006</p>	<p>The objectives of this study were the enhancement and preservation of water purification functions and environmental improvement on the coasts of the Hiyane marsh and in the Awase area. Improvement plans were deliberated and developed in fiscal 2006 based on the basic principles of improvement, basic policy, Hiyane marsh improvement policy and specific measures (plans).</p> <p>Achieving the objectives of the improvement plan required the development and implementation of environmental improvement and preservation action plans. A menu of measures and promotion measures were comprehensively reviewed and proposed, and action plans were prepared specifying the roles of and requirements for such participants as the administrative authorities, local residents and non-profit organizations.</p>
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## Studies on toxic substance, recycling and waste

Study	Fiscal year when study was conducted	Study outline
Study on air pollution control measures in port areas	2006	<p>With more global environmental problems occurring in recent years such as climate changes and sea level rises due to global warming and air and ocean pollution ascribable to the emissions of harmful substances from ships, environmental protection measures are required in ports under an international framework. Air pollution due to emissions of harmful substances from ships is in particular an urgent issue as evidenced by the fact that MARPOL Annex IV went into effect in May 2005.</p> <p>In this study, data were collected in and out of Japan on "on-shore power supply to the ships moored along the pier" aimed at reducing carbon dioxide (CO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>) and other harmful substances emitted from ships by supplying electric power required by the moored ships from an on-shore power supply system rather than generating power by an onboard system. The environmental effects and cost of on-shore power supply were identified. Adopting on-shore power supply instead of power generation by a system on board a ship along the pier using fuel with a sulfur level of 2.7% is expected to reduce NO<sub>x</sub> and CO<sub>2</sub> emissions by more than 95% and 50%, respectively. The cost of on-shore power supply will be nearly the same as the cost of power generation by an onboard system if 8.46 ships use a berth. If only one ship uses a berth, however, the cost of on-shore power supply will be double to triple the cost of power generation by an onboard system. If on-shore power supply is to be adopted on a wider scale, providing support and building an organizational setup for reducing the costs including the initial</p>

		<p>costs will be required.</p> <p>The cargo-passenger ship <i>Salvia Maru</i> was used for testing on-shore power supply at Takeshiba Pier of Tokyo Port. Safe, reliable and quick work methods and manpower deployment were examined.</p>
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<p>Study on smooth marine transport for promoting the building of recycling-oriented society</p>	<p>2006</p>	<p>For building recycling-oriented society, wider use of renewable resources is important. To that end, not only land transportation but also marine transportation should be used more actively because the latter has a capacity of transporting large quantities of goods. Smooth integration of land and marine transportation is also required.</p> <p>In this study, policy issues were organized and the direction of solution was identified to implement a used goods and wastes movement system mainly through the ports in the Kinki area as the key to wide-area use of renewable resources through smooth integration of land and marine transportation.</p> <p>In the Kinki area, Maizuru Port was newly designated as a recycling-oriented port in December 2006 in addition to Kobe and Hineji Ports already designated. Other ports have also been handling increasing quantities of renewable resources. Efforts to realize smoother marine transportation have been becoming even more important to the building of recycling-oriented society in the Kinki area. In the Kinki area with strong economic ties with East Asian countries, increasing quantities of renewable resources have been transported to other countries. Needs have been growing for appropriate waterfront control of international goods.</p> <p>Against the above background, comprehensive examinations were made of the present conditions, problems and corrective measures to enhance recycling support functions in the Kinki area. Proposals were made concerning the measures for coordinating optimum waste disposal and goods movement in ports, for promoting coordination for locating recycling industries in waterfront areas, for appropriately controlling the exchange of renewable resources among different countries and for encouraging the handling of renewable resources in</p>
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Technical study on waterproofing and other matters in the final landfill site improvement project in site No. 3 in Kinuura Port	2006	This study aimed at evaluating the validity of a basic plan for the final landfill site improvement at site No. 3 in Kinuura Port being prepared by the Aichi Waterfront Environment Improvement Center. Technical studies were made of the waterproof structure to be adopted in the basic plan, construction method and landfill method.

## Studies on landscape development, green space planning and environmental impact assessment

Study	Fiscal year when study was conducted	Study outline
<p>Study on landscape development in Tokyo Port using the Tokyowan-Rinkai (Tokyo Port Waterfront) Bridge (provisional name)</p>	<p>2006</p>	<p>This study aimed at deliberating on the measures for enhancing the landscape value of the Tokyowan-Rinkai Bridge scheduled to be put into service in fiscal 2010, by systematically combining the bridge with the landscape resources in the vicinity, and at increasing the value added of Tokyo Port to make the port familiar to a large number of people.</p> <p>Identified through literature and data research were the facts and plans concerning the development, land use, resource distribution, activities of the public, local residents, nonprofit organizations and other organizations, and accessibility. The viewpoints commanding a view of the Tokyowan-Rinkai Bridge were confirmed by field investigations, the view of the bridge from each viewpoint was verified using virtual reality, and the potential of viewpoints was identified. The landscape development measures using the landscape of existing large bridges, and the structural and nonstructural measures for excellent landscape development were grasped through literature and data research and data collection via the Internet.</p> <p>Two districts with a viewpoint having high landscape potential were specified, methods of using the respective districts and structural and nonstructural measures for excellent port landscape development were proposed. Numerical goals were set concerning the activities through the involvement of the public, local residents, nonprofit organizations and other organizations.</p>

Study on landscape development in ports	2006	<p>With greater interest in and increased needs for excellent landscape development in recent years, there have been rapid changes in relation to ports including the establishment of the Landscape Law and the preparation of the Port Landscape Development Guidelines.</p> <p>In this study, the past efforts for port landscape development were identified in relation to the development of long-term port policy and legal systems and social conditions, and the tasks to be performed in the future were extracted. Case studies of landscape development were used to examine the methods for using the Landscape Law, landscape development approach and the methods for publicizing port landscape, and future landscape development measures in ports were presented.</p>
Study on landscape seen by port visitors	2006	<p>This study is related to "landscape seen from the sea", one of the important factors of regional revitalization using ports and canals currently in progress. The needs for landscape seen from ships were identified and landscape improvement measures were examined. The measures of regional revitalization by increasing the number of visitors to ports were deliberated.</p>

## Studies on environmental management systems

Study	Fiscal year when study was conducted	Study outline
Improvement of the environmental management system at Niigata Port and Airport Technical Investigation Office	2006	This study aimed at providing assistance for the environmental management system at the Niigata Port and Airport Technical Investigation Office, and acquiring ISO 14001 certification. In this fiscal year, system operation was started in accordance with the manuals and procedures prepared. Assistance was provided to acquire ISO 14001 certification by offering support in internal audit and inspection by external organizations, revision of documents and recording formats and preparation of materials for review and other purposes.
Study on the maintenance of an environmental management system	2006	<p>In the second-phase construction project at Kansai International Airport, construction management paying adequate attention to the living and environmental environments in Osaka Bay and the surrounding areas through partnership with local communities is strongly requested. Kansai International Airport Land Development Co., Ltd. (KALD) has been preventing environmental pollution through effective operation in cooperation with the contractors involved in the second-phase project since the acquisition of ISO 14001 certification in December 1999.</p> <p>This study was related to the maintenance and operation of the environmental management system of KALD. Included in the study were support in review and revision of documents and procedures, material preparation for and implementation of general education and training of the staff of contractors, support in internal audit, presence at regular inspections, support in the implementation of corrective measures as specified and technical assistance.</p>

<p>Study on the environmental load reduction measures at Nagoya Port</p>	<p>2006</p>	<p>This study involved establishing an environmental management system for the Nagoya Port Office and conducting studies and research for acquiring ISO 14001 certification. In this study, the scope of activity, facilities and equipment of the Nagoya Port Office were fully identified. Then, a plan was drawn up, implemented and inspected. Manuals and various procedural documents were prepared, internal audit was conducted, assistance was provided in inspection by external organizations and educational programs were carried out.</p>
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### III Independent projects

Study	Fiscal year when study was conducted	Study outline
Community beach creation	2006	<p>In this study, regional history, culture and art (literature, songs and films); environment and landscape are investigated and analyzed for beaches throughout Japan where community beach creation activities have yet to be launched, as an initial step of community beach creation, and beach-related features are collected and identified.</p> <p>In the study of fiscal 2004, the beaches referred to in the <i>Manyoshu</i>, Japan's oldest anthology of poetry, were identified. In this study, similar work was carried out for <i>Hyakunin-issshu</i>, one hundred <i>waka</i> poems, and Japanese films and analysis was made of the beaches used as a theme of a poem over a long history of Japan or those that served as the setting of a film.</p> <p>As a result, it was found that the beaches and ports used as cultural or artistic themes were closely related to the political, economic or cultural centers of respective times.</p>