

Collection of summaries of WAVE studies and research

(Fiscal 2004)

October 2005

Waterfront Vitalization and Environment Research Center

Major studies conducted by WAVE are described below.

### Planning research projects Study

Study	Fiscal year when study was conducted	Study outline
<p>Study on Cargo Volume in Main Categories at Ports in the Kanto District (Kanto Regional Development Bureau)</p>	<p>2004</p>	<p>In 1997, the Fourth Tokyo Bay Port Planning Scheme was drawn up for implementation by 2010. In March, 2002, the Metropolitan Port Scheme was formulated as a follow-up to the abovementioned scheme. As a next step, it is becoming necessary to consider port planning for the next planning period roughly from 2010 to 2020.</p> <p>In view of these circumstances and on the basis of the content of the information and data collected and collated in fiscal 2003 and the estimation methods considered, in this study, international container cargo volumes at the ports in the Kanto region were estimated. At the same time, information on the trends in domestic unit load cargo was also collected and analyzed, and its demand was estimated.</p> <p>To be more specific, future volumes of international container cargo and domestic unit load cargo at the international marine container handling ports and domestic unit load handling ports in the Kanto district were estimated by using a model developed according to the data obtained from container cargo flow surveys and net flow surveys.</p> <p>According to this study, the total volume of port cargo in the Kanto district including overseas transshipment is estimated to be 8,200,000 to 9,500,000 TEU in 2015 and 9,200,000 to 10,800,000 TEU in 2020. The estimated total of domestic unit load cargo (excluding domestic feeder cargo) handled at the ports in the Kanto district is a 53% increase from the present level (2002) and a 57% increase in 2020.</p>

<p>Study on Container Cargo Trends at Ports in the Tohoku Region</p>	<p>2004</p>	<p>This study was conducted to compile basic data concerning the development of ports in the Tohoku district in the coming years and identify measures to promote the use of the ports in the Tohoku district.</p> <p>As the first step, seven international maritime cargo handling ports (Hachinohe Port, Miyako Port, Kamaishi Port, Sendai Shiogama Port, Akita Port, Sakata Port and Onahama Port) in the Tohoku district were selected, and the state of container cargo and trends at the seven ports were determined and analyzed on the basis of data including the National Survey of Export/Import Container Cargo Flows (hereafter referred to as "NSEICC").</p> <p>As the next step, in order to identify measures to be taken to promote the use of the ports, future potential cargo volumes in different routes in 2015 were estimated on the basis of the NSEICC data, and, in view of the estimates thus obtained, the possibility of opening new marine transportation routes at each port in the Tohoku district was evaluated. In the evaluation, potential new routes were considered from the viewpoint of port networking (effective networking of a number of ports) because it was considered difficult for a single port to achieve the cargo volume required for opening a new route. The study revealed that even at local (Tohoku) ports handling relatively small volumes of cargo, it is possible to open a new route by port networking, and that joint efforts in port marketing are effective in attracting cargo to a new route.</p>
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2004 Study on International Container Cargo Flows	2004	<p>In this study, the results of a national survey of container cargo flows conducted in 2003 to collect basic information necessary for international container terminal layout planning and related facility planning in Japan were put together and analyzed in greater detail.</p>
Study on Formulation of Logistics Strategy for Ports in Shizuoka Prefecture	2004	<p>This study was conducted to formulate a long-range strategy for becoming a winner in increasingly severe competition among ports in the coming years and promoting the use of the ports in Shizuoka Prefecture for handling international cargo and thereby contribute to industrial and regional revitalization in the prefecture.</p> <p>The study is to be conducted for two years from fiscal 2004 to 2005. For the first year, the conditions surrounding the ports in Shizuoka Prefecture including Shimizu Port were investigated, and future directions of the ports were considered.</p>

## Studies on port space

Study	Fiscal year when study was conducted	Study outline
<p>Study on impact of changes in the economic conditions in China and other Asian countries on Japanese industries (Chubu Regional Development Bureau)</p>	<p>2004</p>	<p>Because of the rapid economic growth of the Asian countries including China and the horizontal division of work between countries, there has been growing concern about the hollowing out of the industries in the highly industrialized Chubu region caused by the relocation of key industrial facilities to other countries and about possible a decline of the industries in the region caused by the increase in the import of inexpensive high-quality products. Under these circumstances, in July, 2004, Nagoya Port and Yokkaichi Port were designated as "super hub ports," and efforts have begun to make them even more competitive in the international market in order to make them more competitive in terms of cost and service-providing ability than the other Asian ports.</p> <p>In this study, in order to further strengthen the industries located in the area behind Ise Bay and the industrial activities of the businesses that are using Ise Bay as a hub port, the economic and industrial conditions in China and other Asian countries and the trends in global logistic networks resulting from international collaboration and the horizontal division of work in the international community are investigated, and problems to be solved are identified. Measures that can be taken to help strengthen the international competitiveness of Ise Bay are identified by studying and analyzing the economic and industrial conditions in China and other countries and the industrial activities of the Japanese businesses that have already moved their bases to other countries.</p>

## Studies on port utilization and management

Study	Fiscal year when study was conducted	Study outline
<p>Study on requirements for ports as hubs for emergency transportation (Shiga Prefectural Government)</p>	<p>2004</p>	<p>This study was conducted for the purpose of verifying the effectiveness of the coordination of lake transportation and land transportation in mitigating earthquake-induced damage to bridges, which are important for emergency transportation activities, in the event of an earthquake centered in the fault zone along the west shore of Lake Biwa in Shiga Prefecture, where major earthquake damage is expected, or the long-predicted Tonankai Earthquake or Nankai Earthquake. Ports that are likely to be used effectively in the event of an earthquake were selected as regional transportation hubs, and requirements for them were identified.</p>
<p>Study on the economic impact of Miyazaki Port</p>	<p>2004</p>	<p>This study was conducted in order to clarify the role that Miyazaki Port should play in connection with the local economy, evaluate the effect of development of Miyazaki Port quantitatively, and determine the degree of contribution to the local economy and employment.</p> <p>In the study, as the first step, the methods of measuring the effect of port development on the local economy and the present state of Miyazaki Port and the economy of Miyazaki Prefecture were determined and analyzed. As the next step, a questionnaire survey was conducted of the port-dependent industries and port-related industries using Miyazaki Port, and the present use of Miyazaki Port and the trends in the use of the port were analyzed. Then, on the basis of the results thus obtained, the effect of Miyazaki Port on the local economy was measured quantitatively.</p> <p>As a result, the study revealed that the effect of Miyazaki Port on the local economy is worth 140.7 billion yen per year.</p>

## Studies on long-range port schemes and regional revitalization

Study	Fiscal year when study was conducted	Study outline
<p>Study on Port Integration in the Kyushu District (Kyushu Regional Development Bureau)</p>	<p>2004</p>	<p>With the aim of providing assistance in integrating local ports in the district for which Kyushu Regional Development Bureau is responsible, this study was conducted to identify possible port integration areas and draw up a model plan for port integration. Since the ports of remote islands have different functions from those of mainland ports, the integration of the remote island ports was considered taking into account their peculiar characteristics.</p> <p>To extract possible port integration areas, the port-to-port distances, port authorities and the municipalities in which individual ports are located (with the trends in the merger of municipalities taken into consideration) were determined for a total of 360 local ports in the district, and those ports were classified according to objective criteria. Remote island ports were classified individually into a number of patterns, taking into account such factors as the type of cargo handled and route conditions. Thus, along with the overall classification, the extraction of possible port integration areas was performed.</p> <p>From the possible port integration areas, port integration model areas were selected, taking into consideration a general tendency toward integration. For the mainland model areas, port integration councils were established and convened for port integration planning.</p>

<p>Study on Master Planning for Ports and Airports in the Hokuriku Region (Hokuriku Regional Development Bureau)</p>	<p>2004</p>	<p>Continued from the 2003 study, this study was conducted for the purpose of indicating future visions of ports and airports out of the "future visions" indicated in the report titled "Future Visions of Infrastructure in the Hokuriku Region," which was prepared for the Hokuriku bloc in accordance with the Priority Plan for Infrastructure Development and considering more than one method for realizing those visions.</p> <p>In the study, existing information on regional revitalization by means of tourism and the creation of a recycling-oriented society was collected and analyzed to identify the present state and problems of the Hokuriku region. On the basis of the results thus obtained and the results of the 2003 study results, a long-term scheme for ports and airports in the Hokuriku region and measures to be taken to implement that scheme were identified. For these purposes, a round-table conference composed of outside experts was organized for in-depth discussions.</p>
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<p>Study on Partnership with Citizens and NPOs for Communication Space Creation (Shikoku Regional Development Bureau)</p>	<p>2004</p>	<p>This study was conducted to verify certain methods for involving local residents in the conceptualization and planning of tourism promotion measures through social experimentation with the aim of promoting the communication between local residents and visitors in the ports and coastal spaces in Shikoku and augmenting "port tourism" efforts that take advantage of the personality of each community in the district.</p> <p>In the study, attention was paid to the ports near the Eighty-eight Sacred Places of Shikoku, and two areas, namely, the Imabari Port–Miyaura Port area (Ehime Prefecture) and the Murotsu Port–Muroto New Port–Muroto Point area (Kochi Prefecture), were selected for social experimentation. The Port Expedition Team conducted on-site investigations, held workshops, compiled port travel guide maps and considered port travel promotion measures.</p> <p>In a previous study, the basic concept of port tourism in Shikoku was expressed as "Creation of friendly ports: creating hospitality-minded, hand-made hubs for living and cultural activities." In this study, port travel guide maps were prepared by the Port Expedition Team composed mainly of local residents and concerned citizens.</p>
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<p>Study on Methods for Creating Communication Hubs (Chugoku Regional Development Bureau)</p>	<p>2004</p>	<p>In 2003, the Chugoku Regional Development Bureau and the Shikoku Regional Development Bureau have instituted the "Port Oasis" system with the aim of creating hubs for communication by making effective use of the port facilities and spaces and encouraging local residents to participate.</p> <p>Since, however, the current system is based on the regional characteristics, needs and human factors at the ports considered in the case study that began in 2002, there may be cases to which the abovementioned conditions are not applicable. In order to apply the system to many ports, therefore, it is important, in trying to create hubs for communication, to keep in mind those methods of creating a hub for communication varies widely from region to region.</p> <p>In this study, questionnaire and other surveys were conducted at ports where communication hub creation efforts can be expected in the coming years to explore ways to implement the Port Oasis system including ways the reconsideration of registration requirements.</p>
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<p>Study for Landscape Planning for Ishigaki Port (Okinawa General Office)</p>	<p>2004</p>	<p>This study was conducted to identify ways to make Ishigaki Port (in the district managed by Ishigaki Port Office) a port that takes advantage of Ishigaki's characteristic landscapes, taking into consideration the changing functional and landscape needs and the actual state and characteristics of Ishigaki Port.</p> <p>In the study, fact-finding surveys, questionnaire surveys, expert interview surveys, etc., were conducted to identify the direction of landscape planning taking advantage of Ishigaki's characteristics.</p> <p>Specifying selected areas as model areas in which to create landscapes taking advantage of Ishigaki's characteristic landscapes, this study proposed a set of concepts in the form of design guidelines and guideline maps.</p>
<p>Study on Promotion of Port Tourism and Communication (Kinki Regional Development Bureau)</p>	<p>2004</p>	<p>This study was conducted for the purpose of identifying problems to be solved in order to promote port tourism and communication in a concerted effort with the local community and develop methods for drawing up a port tourism and communication promotion plan in a case study of Shingu Port in Wakayama Prefecture.</p> <p>In the study, case studies of 13 ports in Japan were conducted to identify the present state and problems of port tourism and communication promotion measures, and a framework for port tourism and communication planning was also developed. On the basis of these results, a tourism and communication promotion plan for Shingu Port was drawn up on an experimental basis.</p> <p>This study clarified problems to be solved in connection with port tourism and communication promotion efforts through case studies and indicated a template plan for port tourism and communication promotion plan.</p>

<p>Feasibility Study on the Takamatsu Port Asahi Area Quaywall (-12 m) Project (Shikoku Regional Development Bureau)</p>	<p>2004</p>	<p>This study was conducted to hear the opinions of a wide range of users about the effects of the proposed project for the construction of a multipurpose international terminal (Asahi Area Quaywall (-12 m)) in Asahi F area of Takamatsu Port (in the district managed by Shikoku Regional Development Bureau) and verify the effects of the project in order to make the project effective and efficient.</p> <p>In the study, as the first step, the mechanism by which the project would produce the logistic improvement effect was determined. Then, the results were examined by conducting an interview survey of local businesses and the costs of transportation and other tasks necessary for quantitative evaluation of the effects of the project were studied. On the basis of the information thus obtained, a cost-benefit analysis was performed, the analysis results were evaluated by a committee, and the project appraisal results were documented.</p> <p>The study confirmed that the multipurpose international terminal project would help solve the factors hampering logistic efficiency improvement at Takamatsu Port and contribute to logistic efficiency improvement in the local industries, thus indicating that the project would be beneficial to the national economy.</p>
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## Studies on port computerization

Study	Fiscal year when study was conducted	Study outline
Study on Methods of EDI Implementation in Logistics	2004	<p>This study focuses on "the sharing of standard business processes and the design of standard messages (common forms) and MIGs (Message Implementation Guidelines)" and "efforts toward EDI implementation."</p> <p>In the study, business processes related to LCL (Less than Container Load) cargo were considered, and, on the basis of interview surveys of related businesses and comments made at the Conference on EDI Implementation in Port Logistics, existing problems were identified and ideal business processes were defined. Specific directions of EDI efforts in the coming years were also determined.</p> <p>This study clarified the necessity of standardization in the area of EDI implementation in port logistics. This study also made a proposal concerning ideal business processes that are essential for EDI implementation, indicating a direction in which the EDI efforts in the coming years should be headed.</p>

<p>Fact-finding Study on EDI Implementation in Port Surveys</p>	<p>2004</p>	<p>In 2003, the Japanese government announced a new direction of statistics administration, stating that the government would endeavor to conduct statistical surveys efficiently and smoothly and solve various problems including a reduction of the burden on reporters.</p> <p>In a port survey, which is one of the statistics surveys specified by the Minister for Internal Affairs and Communications, the prefectures that are collecting statistics by recovering survey forms are being instructed to extract necessary data from existing data kept by Nippon Automated Cargo Clearance System Operations Organization (NACCS) or other organizations and use those data for survey purposes, in order to reduce the burden on applicants such as shipping companies and simplify and streamline statistics-gathering tasks.</p> <p>In this study, fact-finding surveys on calculation methods and accuracy analyses on the use of existing data were conducted for the purpose of developing a port survey common statistics calculation system (hereafter referred to as the "common statistics system") that perform calculations necessary for port surveys by using NACCS data and other existing data.</p>
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## Other studies

Study	Fiscal year when study was conducted	Study outline
<p>Study on Landscape and Environmental Creation in the Coastal Area along Tokyo Bay (Kanto Regional Development Bureau)</p>	<p>2004</p>	<p>This study was conducted, with the understanding that in order to gain public understanding of development projects in Tokyo Bay's coastal area, it is important to increase public understanding of and interest in the environment and landscapes of Tokyo Bay's coastal area, for the purpose of developing and verifying effective methods for doing so.</p> <p>In the study, a photography contest featuring "the 100 best views of Tokyo Bay" was held to verify the effectiveness of the ongoing efforts and identify measures to be taken in the coming years.</p> <p>This study has shown that the use of "the 100 best views of Tokyo Bay helps increase public understanding of the environment and landscapes of Tokyo Bay's coastal area and of future projects in the coastal area.</p> <p>The study proposed that in order to increase public interest and build a foundation for landscape planning in Tokyo Bay's coastal area, it is necessary to continue information dissemination and public relations efforts, and that landscapes be utilized for regional regeneration.</p>

<p>Environmental Creation for Demonstration of the Free Mobility Project</p>	<p>2004</p>	<p>Attaching importance to the realization of a universal society in which people with physical impairment and people who speak different languages do not feel inconvenienced, the Ministry of Land, Infrastructure and Transport is implementing the Free Mobility Project with the aim of creating an environment in which information on travel routes, means of transportation, destinations, etc., that is necessary for participation in society and for working is available to "anyone, anytime and anywhere."</p> <p>The commissioned task includes the determination of criteria for support equipment for providing information to pedestrians, layout planning for such equipment and the installation of the equipment so as to create an environment for project demonstration in the Kobe port area, which has been selected as a model area for the Free Mobility Project.</p>
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## II Environmental research projects

### Studies related to environmental research projects, environmental education or environmental restoration technology

Study	Fiscal year when study was conducted	Study outline
Study on Integrated Learning Assistance (2004)	2004	<p>This study considered activities related to integrated learning including environmental education in order to gain public understanding of the improvement project for Sakata Port in Yamagata Prefecture. With the aim of assisting children, who are the bearers of Sakata City's future, in their integrated learning in cooperation with the local community so as to raise the children's interest in the sea and the port, various fieldwork activities including nature observation were organized to consider and help children learn about topics and issues they are interested in.</p> <p>In order to have these activities take root in the local community, local supporters involved in the activities and nature experience activity leaders with expert domain knowledge including WAVE experts (hereafter referred to as "masters") jointly developed curricula and participated in learning activities as instructors and supporters.</p>
Study on Networking Methods in Osumi Area	2004	<p>This study considered ways to collaborate with organizations organizing nature experience activities in the coastal area of the Osumi area in Kagoshima Prefecture and methods for networking between different organizations by conducting case studies.</p> <p>To be more specific, a seaside nature experience instructor training program that can be conducted locally was developed. After the results and problems of experimental training courses were studied, a proposal was made concerning ways to promote nature experience activities in the coming years.</p>

<p>Fact-finding Study of the Environment at Tokuyama Kudamatsu Port</p>	<p>2004</p>	<p>In this study, basic information necessary for determining the actual state of the environment at Tokuyama Kudamatsu Port was collected and analyzed, and a desirable form of environmental education associated with environmental remediation was identified, in order to implement an effective environmental remediation project in the Seto Inland Sea area centered on Tokuyama Kudamatsu Port. This study began in 2003. In 2004, environmental learning program was conducted on an experimental basis, and problems were identified and sorted out. After that, a desirable form of environmental remediation involving citizens was defined.</p> <p>The study was conducted while hearing the opinions of a committee composed mainly of educators in Yamaguchi Prefecture.</p>
<p>Study on Requirements on Seaside Planning at Ports in Okinawa</p>	<p>2004</p>	<p>It is thought that considering not only the structural aspects such as infrastructure but also the nonstructural aspects such as efforts related to nature experience activities as one way to utilize the natural environment existing in the facilities and port areas completed in past projects is a very effective approach to seaside planning at ports in Okinawa.</p> <p>In this study, therefore, ability requirements for field personnel acting as instructors in seaside nature experience activities, details of training programs for those instructors, and ways to continue instructor training programs over a long period of time were considered.</p>

<p>Study on Methods for Using Existing Breakwaters Effectively</p>	<p>2004</p>	<p>Breakwaters are being required to have a number of functions including environmental functions besides being effective in preventing disasters, which is the primary function of breakwaters. This study focused on the environmental requirements for the Nishinomiya Breakwater, one of the appeal points in the Action Plan for the Restoration of Osaka Bay. Because the Nishinomiya Breakwater is very long (about 4 km) and its inside and outside surfaces are vertical, the breakwater has room for improvement in terms of environment-friendliness, and a considerable effect can be expected from improvement. The environment-friendliness of vertical structures is also one of the important considerations in port projects in the coming years. The study and experimentation concerning the breakwater, therefore, will become a model case in environmentally considerate planning for Osaka Bay.</p> <p>The 2004 study looked at the use of seaweed beds, which have the water purification function and the habitat function for diverse species of life, as a representative environmentally considerate approach. In the study, seaweed (<i>wakame</i>) culture experiments and case studies on environmental considerateness involving citizens were conducted. The study clarified the conditions required to grow wakame in the environmentally degraded waters in the innermost part of Osaka Bay and indicated that wakame can be used for seaweed bed formation. The recovery and use of wakame were identified as the next step, and it was decided to address them and water purification by use of common mussels and their recovery and use in 2005.</p>
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<p>Study on Methods for Creating Coral Reef-Friendly Ports</p>	<p>2004</p>	<p>The 2003 study indicated that the development of a uniform guideline for monitoring surveys was an urgent task. In this study, therefore, research was done in reports on coral-related studies previously conducted by the Okinawa General Bureau, and information was collected on the methods of monitoring surveys conducted by research institutions in Japan and other countries. Also, on the basis of the opinions collected by a committee of six experts and people concerned, the Manual of Coral Reef Survey at Okinawa Ports was compiled.</p> <p>In this year, the 10th International Coral Reef Symposium was held in Okinawa. In this study, the exhibition booth was managed for the publicity of the Okinawa General Bureau's efforts related to coexistence with coral reefs, and a workshop on the coexistence of humankind and coral reefs was held.</p>
<p>Documentation of Administrative Activities Related to Tokyo Port (Part 4)</p>	<p>2004</p>	<p>This study was conducted for the purpose of preparing basic documents and PR materials to inform the general public of ongoing port administration efforts related to seaside nature and the environment in the waters and coastal areas near Tokyo Port and deepen public understanding of port administrative efforts for the conservation and improvement of the environment of Tokyo Port through various environmental education and nature experience activities conducted in the seaside areas.</p>

<p>Study on Methods of Waterfront Restoration</p>	<p>2004</p>	<p>This study considered methods that make possible both the disposal of bottom material polluted with toxic chemicals and nature restoration.</p> <p>The combined use of depression landfill and undersea disposal and tidal flat creation is a method of storing polluted bottom material at one place in a concentrated manner. This method has a very low risk of causing the diffusion of pollutants such as dioxins. The study also showed that a waterfront restoration project can be implemented for the real sea if the distribution of pollutants such as dioxins can be determined with higher accuracy.</p>
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<p>Verification Study on Seaweed Bed Creation at Omaezaki Port</p>	<p>2004</p>	<p>In 1995, studies on the distribution of seaweed beds in the sea near Omaezaki Port and the marine environment at the port and seaweed transplant experiments began for the purpose of a study on the creation of seaweed beds in the Omaezaki Port area. In 1999, a committee of experts began to deliberate on survey items, survey methods, analyses of survey results, etc. The committee has been conducting surveys on seaweed bed creation. In 2003, on the basis of the study results obtained as a result of the studies conducted previously, large-scale transplanting of mother algae was carried out and measures were taken to prevent feeding damage. The monitoring that was conducted after that showed that new algae emerged outside the enclosed area, indicating that the enclosed area formed as a slit caisson structure can be used as a source of supply of algal spores (mother zone).</p> <p>In 2004, on the basis of these results, a follow-up survey of the growth of the created seaweed beds was conducted, and a study was conducted mainly for the purpose of verifying the effectiveness of slit caissons in seaweed bed creation for future projects. This study was conducted for a total of 11 slit caissons (No. 38 to No. 48) of the Omaezaki Port breakwater (west) located in the Menwa area in Omaezaki-cho, Haibara-gun, Shizuoka-ken (ken=prefecture) (now part of the city of Omaezaki).</p>
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<p>Study on Environmental Technology for the Seto Inland Sea</p>	<p>2004</p>	<p>This study aims to establish a technology for creating tidal flats, etc., that makes effective use of dredged material for environmental remediation and creation projects for the Seto Inland Sea by conducting a number of studies including (1) a study on ways cope with technical problems related to the design and construction of tidal flats, etc., (2) a study on design and construction methods for economically creating tidal flats, etc., that are stable over a long period of time, (3) a study on maintenance and monitoring planning that employs methods for evaluating environmental improvement effects and (4) a study on setting standards for the design and construction of tidal flats, etc.</p>
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<p>Study on the Artificial Beach at Nakagusukuwan Port (Awase Area)</p>	<p>2004</p>	<p>This study was conducted for the purpose of determining a stable beach shape and drawing up a planting plan for an artificial beach for a artificial beach project for the Awase area of Nakagusukuwan Port.</p> <p>Because the artificial beach was to be created on marine landforms characteristic of Okinawa, such as leaf topography, and in a shallow water area, there was concern about the influence of tidal action and beach cliff formation caused by a rise in mean water level in times of high waves. In this study, therefore, a stable beach shape was determined by using a one-line model, and the N-line model capable of dealing with changes in isobaths due to tide level changes and the S-beach model developed by incorporating tide level changes into the cross-sectional change model were used to solve related problems and consider measures to be taken.</p> <p>Problems to be solved and tasks to be performed identified by collecting information on examples of artificial beaches with biological areas and questionnaire survey results concerning the opinions of the local community were used to identify problems to be solved and tasks to be performed in order to create habitats for certain species such as the terrestrial hermit crab, which is the purpose of biological area creation, and verify consistency between the results with the basic policy and other details determined in 2003. Furthermore, in order to draw up a planting plan for an artificial beach, examples of planting near the artificial island and in coastal areas in the prefecture were studied to determine appropriate plant mixes and species to be introduced.</p>
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<p>Study on Nature Restoration Type Projects in Urban Coastal Areas (2004)</p>	<p>2004</p>	<p>The seaside areas in Yokohama used to be dotted with sea grass beds, which were a cradle of life for many species of marine life. Sea grass beds play an important role in purifying seawater by absorbing excess nutrients and filtrating seawater.</p> <p>This study aims to carry out and consider urban seaside restoration, focusing mainly on the restoration of sea grass beds, in cooperation with citizens and various organizations and consider matters related to implementation systems toward the realization of nature restoration projects in urban coastal areas.</p> <p>In the study, the Kanazawa Ward area in Yokohama City, Kanagawa Prefecture, was selected as a study area, and seaside restoration in an urban area through the restoration of sea grass beds was considered, and matters related to an implementation system for the realization of a nature restoration project in an urban coastal area were considered.</p>
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<p>Study on Methods for Conserving and Utilizing the Natural Environment of Hirara Port</p>	<p>2004</p>	<p>In the improvement of Hirara Port, efforts have been made such as the construction of environment-friendly breakwaters that are harmonious with the natural environment and the conservation of the marine environment of Hirara Port. With the growing public concern about environmental conservation, however, there have been growing calls for a port that can serve not only as a hub for the movement of goods as in the past but also as a hub for the movement of people. The Hirara Port Plan (revised in 2000), therefore, positions the Toriver district as a green recreation zone.</p> <p>Hirara Port, too, is being required to improve the living environment by taking active measures to conserve and utilize the invaluable natural environment such as providing local residents with a place in which they can experience nature through nature experience learning and ecotourism activities.</p> <p>In this study, concrete methods of nature experience learning and ecotourism activities in and around the Toriver district, and, by carrying out those methods, identified problems to be solved and task to be performed and developed methods for addressing them.</p> <p>As the first step, the state of the environment of the Toriver district was determined, and information on examples of nature experience activities in Okinawa Prefecture was collected. Then, programs for nature experience learning and ecotourism activities making effective use of the natural environment of the Toriver district were developed. The programs thus developed were verified through trial implementation, and suggestions were made concerning efforts for use in the coming years.</p>
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<p>Study on the Environment of Osaka Bay</p>	<p>2004</p>	<p>The environment of Osaka Bay has a number of problems, namely, the degradation in amenity-oriented quality, the degradation in biodiversity, the degradation in water quality and the degradation of landscapes. This study aims to elucidate the mechanisms by which these problems occur in order to establish technologies for solving them. The 2004 study addressed five priority problems selected from a number of problems that need to be solved in order to achieve the restoration of Osaka Bay.</p> <p>In the study, a concrete monitoring plan was proposed for the restoration of Osaka Bay by considering the development of a continuous monitoring system and wide-area monitoring methods essential for the monitoring of Osaka Bay. The study also shed light on the characteristics of flows in the northern bay area and the Yodo River estuary area, the origin of organic deposits in these areas, and the distribution of seafloor depressions in the Osaka Bay area.</p>
<p>Fact-finding Study of the Environment of Kure Port</p>	<p>2004</p>	<p>In order to determine the state of the natural environment of the Seto Inland Sea, an on-site environment study was conducted at Kure Port with the participation of local residents. In the study, information on the natural environment of the study area was collected, and a nature observation event titled "Marine Nature School in Kagurahama" was held with the participation of citizens to determine the state of the natural environment.</p>

<p>Study on Tidal Flats at Tokuyama Kudamatsu Port (2004)</p>	<p>2004</p>	<p>In connection with the project for tidal flat creation using dredged material at Tokuyama Kudamatsu Port (Oshima area in the Shunan City) shown below, this study focused on the method of reclamation using material dredged for the tidal flat creation project, the method of tidal flat creation, environmental impact, maintenance and project effectiveness verification planning, and monitoring planning.</p> <p>As a continuation from the 2003 study, in 2004 tidal flat shapes for final design were considered, and a tidal flat creation manual was compiled. The tidal flat creation manual was developed, in view of the results of the study, to ensure good understanding and appropriate action by the people involved in the tidal flat creation in the Oshima area at Tokuyama Kudamatsu Port.</p>
<p>Study on Methods of Environmental Restoration at Yokkaichi Port</p>	<p>2004</p>	<p>With the aim of improving the quality of the water environment of the Yokkaichi Port area, a series of field experiments on a water quality improvement method making use of the material circulation system mediated by seaweeds was conducted over a two-year period from 2003 to 2004 to evaluate the environment improvement effect of the method and its applicability to Yokkaichi Port.</p>

## Studies on toxic materials, recycling and waste

Study	Fiscal year when study was conducted	Study outline
Study on Ecoport and Other Port Environmental Measures	2004	<p>Ten years have passed since the Port and Harbor Bureau adopted the government policy for port environmental administration, "New Port Environmental Policy: Aiming for an Environment-friendly "Ecoport" (March, 1994). In order to cope with the changing conditions surrounding the port environment and meet the changing needs of people, the direction of port environmental administration in the coming years was redefined, and the policy was renewed. As a follow-up to the ecoport policy mentioned above, the present state of the port environment based on various data was reviewed and analyzed, tasks to be performed in connection with port environmental measures were identified and sorted out, and the principle and basic direction of port environmental policy in the coming years were considered. The results thus obtained were published as <i>Greening of Port Administration</i> (Port and Harbor Bureau, Ministry of Land, Infrastructure and Transport). In accordance with the redefined policy, individual policy issues were considered, and requirements for the port environmental policy in the coming years were identified.</p>

<p>Study on the Creation of Coastal Recycling Hubs Capable of Handling Polluted Soil and Marine-transportation-based Reverse Logistics Networking (2004)</p>	<p>2004</p>	<p>In view of the growing demand for polluted soil treatment, this study was conducted to consider the creation of coastal reverse logistics hubs capable of shipping and treating polluted soil and the creation of a network of these hubs interconnected by a means of marine transportation with a low environmental load and to develop reverse logistics systems, such as a system for sharing information on the occurrence and receiving of resources to be circulated, the locations of transportation systems and treatment facilities, etc., and an information management system for tracking resources and checking their quality and quantity to prevent inappropriate treatment and dumping, and the technologies for those systems.</p> <p>In the study, future demand was predicted, and challenges associated with networking and requirements for hub sites and wide-area networking were determined. In order to increase the handling of circulatable resources at ports, considerations in trying to enable ports to perform their functions were identified.</p>
<p>Study on the Seaweed Bed Management Method for the Wake Area along the Matsuyama Port Coast</p>	<p>2004</p>	<p>In view of the aging of disaster prevention facilities such as tide embankments, a coastal improvement project has been underway since fiscal 2000 in the Wake area of the Matsuyama Port coast. The project includes artificial beach nourishment. For the purpose of the beach nourishment, it became necessary to transplant <i>koamamo</i> (<i>Zostera japonica</i>), a rare sea grass species growing in communities in the Wake area.</p> <p>In this study, a monitoring survey of the koamamo transplanted in the Horie area, an area adjacent to the beach nourishment area, was conducted to determine the state of growth and habitat of the transplanted koamamo.</p>

## Studies on landscaping, green space planning and environmental impact assessment

Study	Fiscal year when study was conducted	Study outline
Study on Revegetation Technology for New Kitakyushu Airport (2004)	2004	<p>This study was conducted to obtain basic information necessary for a study on the execution planning of landing strip revegetation at New Kitakyushu Airport currently under construction for opening in 2005. On the basis of a follow-up study on the on-site demonstration test started in 2003, possibilities were explored of introducing revegetation technology in order to reduce maintenance cost. Optimum and efficient revegetation methods were also determined, taking into consideration the basement conditions such as stone and gravel conditions and working conditions such as environmental characteristics determined by offshore siting, and a basic revegetation plan and revegetation specifications were drawn up.</p> <p>This study showed the formation of green spaces by short crawler grass, which is the goal of the greening of the airport landing strips. In view of the offshore location of the airport and severe conditions for grass growing and maintenance such as high temperature and low humidity in summer and autumn typhoons, the use of sprinkler systems and salty wind damage control measures were proposed.</p>

<p>Study on Prediction of Environmental Changes in the Awase Area of Nakagusuku Airport</p>	<p>2004</p>	<p>In this study, HSI models of a large tropical seagrass species and <i>kubiremidoro</i> (<i>Pseudodichotomosiphon constricta</i>) growing in the Awase area of Nakagusuku Bay in Okinawa Prefecture were constructed for the purpose of calculating the quantitative effect of environmental conservation and creation projects through environmental prediction and evaluation by use of the HEP (Habitat Evaluation Procedure) method.</p> <p>The large tropical seagrass is a representative species of life inhabiting the tidal flats and shallows in the study area distributed widely in the study area (Awase area). <i>Kubiremidoro</i> is a rare species in this area classified as "Threatened II" in the Ministry of the Environment's Red Data Book of plants.</p> <p>For the large tropical seagrass, water depth, the mean particle size of bed material, bottom shear stress and the Shields number were selected as main factors through multiple regression analysis in view of the natural and environmental conditions. The HSI modeling of coverage was done on the basis of these main factors. As a result, a model capable of giving calculated HSI values showing good agreement with the measured values was obtained.</p> <p>For <i>kubiremidoro</i>, environmental factors were selected and HSI modeling was done by following the same procedures as those used for the large tropical seagrass. Since, however, available information concerning ecology and environmental factors was not sufficient, the calculated values did not show an acceptable degree of agreement with the measured values.</p>
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<p>Study on Enhancement of Port Landscape Development Methods (2004)</p>	<p>2004</p>	<p>As society matures, the demand for a higher quality of the living environment grows and there is growing interest in and need for better landscape development. In order for the Ministry of Land, Infrastructure and Transport to meet such public demand appropriately, it is essential not only to take efficient infrastructure development measures but also to develop high-quality infrastructure taking landscapes into consideration. MLIP has been taking various infrastructure development measures giving consideration to the development of excellent landscapes such as the formulation of the Policy Guideline for Creating a Beautiful Country (July, 2003) and the enactment of the Landscape Act (June, 2004). Ports are marine logistics and industrial hubs where there are facilities characteristic of ports, such as quaywalls, cargo-handling equipment and warehouses, along with an open shoreline and natural landscapes. There is a need, therefore, for a different landscape development approach from that applied to urban areas. In cases, for example, where redevelopment or the improvement of existing facilities is to be carried out in a harbor district, the development of space coordinated and harmonious with the hinterland city is essential, and it is necessary to develop landscapes in harmony with the hinterland landscapes, taking into consideration the characteristics of port landscapes.</p> <p>Thus, in this study, evaluation methods and development policies for port landscapes were considered, and a guideline for creating excellent port landscapes was developed.</p>
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## Studies on environmental management systems

Study	Fiscal year when study was conducted	Study outline
Study on Environmental Study Information Management for the Awase Area of Nakagusukuwan Port	2004	<p>This study aims to develop a database system by incorporating environmental information into a geographic information system (GIS) mainly on the basis of the results of environmental monitoring studies conducted in the Awase area of Nakagusukuwan Port in the district managed by the Okinawa General Bureau so that the environmental information can be searched and viewed on the database system.</p> <p>The environmental data used were obtained from the environmental studies conducted in 2003. After the data obtained from these study results were collected, integrated and turned into digital data, a database format was developed for each environmental data item. On the basis of the information thus obtained, location information was added to the database, and a geographic information system was constructed. In addition, using the GIS as a basis, a system capable of showing the results of the 2003 study was developed.</p> <p>In this study, the GIS database system as the core of the planned system was developed. By adding existing information (studies conducted in and after 2002) and the results of future studies (studies to be conducted in and after 2004), a system that is useful for analysis, study and data viewing purposes can be constructed.</p>

<p>Study on Measures to Improve the Marine Environment of Osaka Bay</p>	<p>2004</p>	<p>This study considered concrete measures to be taken to carry out various tasks, such as projects, technology development, research and demonstration tests, under the Action Plan for the Restoration of Osaka Bay.</p> <p>In the study, as the first step, marine environment improvement technologies and a case study area concerned with the marine environment improvement were selected. Then, measures to be applied were considered, and problems to be addressed for the purpose technology development and project implementation were identified. After that, the following tasks were performed: (1) a study on constituent technologies required for the restoration of the environmental functions of the tidal zone, (2) on-site surveys of existing sand and mud coasts and young fish, (3) the verification of measures to provide vertical seawalls with environmental functions, (4) indicating concrete procedures and considerations concerning experiment methods for flow regime improvement, and (5) identifying and presenting measures to be taken to make effective use of existing environmental improvement facilities for the purpose of restoring Osaka Bay. Finally, information on examples of port-related publicity activities in Japan and abroad was collected, the present state and problems of public awareness were identified through questionnaire and interview surveys, and, as a case study, a workshop for NPOs was held in Sakai City.</p>
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<p>Study on the Construction of an Environmental Management System</p>	<p>2004</p>	<p>In the second phase of the Kansai International Airport project, there have been strong public calls for construction management that pays careful attention to the conservation of the living environment and natural environment of Osaka Bay and surrounding areas and that is performed in cooperation with the local community. Since the acquisition of ISO14000 certification in December, 1999, Kansai International Airport Land Development Co., Ltd. (KALD) has been working in cooperation with the businesses participating in the second phase project to prevent environmental pollution by taking various effective measures.</p> <p>In this study, technical assistance was provided in connection with the maintenance and operation of KALD's environmental management system (EMS), including the preparation of educational materials for general and contractor education, the implementation of educational courses, witnessing of internal audits and periodic examinations, and the implementation of corrective measures in connection with action items.</p>
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<p>Study on an Environmental Survey and Cleanup Ship and the Marine Environment</p>	<p>2004</p>	<p>The basic policy under the Act on Special Measures to Restore the Ariake Sea and the Yatsushiro Sea ("Special Measures Act") requires that environmental survey and cleanup ships designed for cleanup operation and environmental surveys be provided. Toward the end of 2003, the Ministry of Land, Infrastructure and Transport brought into service an environmental survey and cleanup ship, <i>Kaiki</i>. In this study, in view of the results (Table 1, Fig. 1) of four periodic environmental monitoring surveys instituted in 2003, namely, water mass structure survey, discharge and flux survey, bed material and benthos survey and fixed-point continuous water quality survey, methods of putting together survey results were determined and the scopes of survey were reconsidered. For the selection and planning of conservation and restoration projects that can be implemented in the two seas in the coming years, a special, experimental environmental survey plan focusing on important environmental indicators of environmental anomalies of the two seas, such as siltification of bed material and oxygen-poor water masses, was drawn up. Methods for publicizing the environmental survey results mentioned above were also considered.</p>
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<p>Study on the Bottom Environment of Mikawa Bay</p>	<p>2004</p>	<p>In the Mikawa Bay area in Aichi Prefecture, the Ministry of Land, Infrastructure and Transport and the Aichi Prefectural Government jointly constructed a total of about 620 ha of tidal flats, shallows and sand covering works at 39 locations in the bay area by using 6.2 million cubic meters of high-quality material dredged from the Nakayama Strait located at the mouth of Mikawa Bay, in order to improve the sea bottom environment. This study examined the effects of the tidal flats and shallows thus created by using the results of monitoring surveys of bed material, benthos, etc., conducted in the tidal flat and shallow areas. The study showed that the tidal flats and shallows, and sand covering works are contributing to the improvement of water quality in Mikawa Bay.</p>
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<p>Supervision of Study on Restored Seagrass Beds in Public Port Coastal Environmental Improvement (No. 9-1)</p>	<p>2004</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.</p> <p>In the project area, a transplanting test area was set up in 1999, a transplanting test area and a seeding test area in 2001, and a medium-size pilot project area in 2001 and 2002 for continued monitoring.</p> <p>In 2004, 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, surroundings) of the Karakoto area. In this study, the adaptive management was checked at each stage.</p> <p>In this project, adaptive management was performed at each stage of the sea grass life history (growth, decline). For the adaptive management, the necessity of a study of the effect of the closing of submerged levee openings was pointed out, and problems to be addressed in order to proceed with the eco-coast project were identified.</p>
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<p>Study on Ocean Disposal and Utilization of Dredged Material (2004)</p>	<p>2004</p>	<p>As part of the study for the ratification of the London Protocol adopted in 1996 concerning the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (commonly called the "London Convention"), a study on measures to be taken in connection with dredged material has been continued by the Port and Harbor Bureau since 2000.</p> <p>Because ocean disposal of sea bottom material dredged for the purposes of construction projects is governed by the London Convention, the revision and modification of the domestic laws and related systems are currently under study. In keeping pace with the revision and modification efforts, this year's study focused on the ocean disposal of dredged material and considered technical guidelines for the ocean disposal of dredged material. In addition, for the purpose of promoting the utilization of dredged material in "sea blue" projects (projects for restoring a blue sea where fish can live), technologies necessary for that purpose were also considered.</p> <p>In this study, the Technical Guideline for Ocean Disposal and Utilization of Dredged Material at ports was drafted.</p>
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<p>Study on Construction of an Environmental Management System</p>	<p>2004</p>	<p>This study provided technical support for the construction and operation of an environmental management system (EMS) at the Niigata Port and Airport Technical Investigation Office, including preparing manuals and written procedures, documenting and implementing general and manager training courses, witnessing internal audits and periodic examinations, and assisting in taking corrective measures for action items.</p>
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## Other studies

Study	Fiscal year when study was conducted	Study outline
Construction of an Environmental Information Network for Osaka Bay	2004	In this study, the Osaka Bay environmental database system (Kobe Port and Airport Technical Investigation Office, Kinki Regional Development Bureau; Web site opened on April 28, 2004) was updated and upgraded, and desirable forms of coordination and collaboration with diverse entities such as academic experts, citizens, businesses and NPOs and a desirable form of monitoring involving citizens were considered, in order to carry out environmental monitoring for the restoration of Osaka Bay under the Action Plan for the Restoration of Osaka Bay (Osaka Bay Restoration Council; adopted on March 26, 2004).
Study on Rare Species Handbooks for the Awase Area of Nakagusukuwan Port	2004	The purpose of this study was to compile a handbook describing environmentally considerate practices for construction work to be carried out under the project for the reclamation of public water areas in the Awase area of Nakagusukuwan Port, and, for use as reference information, a handbook describing the shapes and characteristics of and ecological findings about the rare species in and around the project area.

<p>Study on Oceanographic Radar Site Location</p>	<p>2004</p>	<p>In this study, conditions under which efficient and highly accurate observation can be made with an oceanographic radar system to be introduced to cover the Ise Bay and Mikawa Bay areas and locations at which such observation can be made were identified.</p> <p>In the study, after such conditions as observation instrument conditions, site conditions and the conditions in the adjacent areas were identified, on-site investigations were conducted. Judging from the various conditions mentioned above, the suitability of the candidate sites under consideration as an oceanographic radar site was evaluated.</p> <p>This study proposed an oceanographic radar location that enables the radar system to cover a large area including both Ise Bay and Mikawa Bay and that is most suitable for oceanographic measurement.</p>
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<p>Publicity for Tokyo Bay Entrance Waterway (Part 2)</p>	<p>2004</p>	<p>Fort No. 3 that was damaged by the Great Kanto Earthquake of 1923 has now turned into something like a sunken reef and is obstructing the passage of ships on the Uraga Strait route. Tokyo Bay Waterway Office of the Kanto Regional Development Bureau, Ministry of Land, Infrastructure and Transport, is removing Fort No. 3 to ensure fast and safe passage of ships at the entrance to Tokyo Bay.</p> <p>Tokyo Bay Waterway Office thinks that it is important to disseminate information on the Tokyo Bay entrance route improvement project and clearly explain the historical significance of the Tokyo Bay forts to the general public so that they can think about it, in order to preserve and utilize the forts in the coming years.</p> <p>As part of the efforts to this end, on Saturday, December 18, 2004, the Symposium on Tokyo Bay Forts: Talking about the Tokyo Bay forts in the Boso region (co-organized by Futtsu Municipal Government, sponsored by Chiba Prefectural Government, supported by Waterfront Vitalization and Environment Research Center), organized by Tokyo Bay Waterway Office, was held at the Futtsu Public Hall. The symposium picked up where the symposium (organized by Tokyo Bay Waterway Office) held in Yokosuka City in December, 2003, left off. A total of about 450 people composed mainly of Futtsu and Kimitsu citizens attended the Futtsu symposium. The Yokosuka symposium was subtitled "Romanticism of the Meiji Period: Frontier Spirit of Fort No. 3." The 2004 symposium focused on the relationship between the future of the fort and the citizens based mainly on the relationship between the local community (Boso region) and the Tokyo Bay forts.</p>
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<p>Study on Good Practices in Providing Environmental Information to Outsiders</p>	<p>2004</p>	<p>Yokohama Port and Airport Technical Investigation Office created a Web site named "Tokyo Bay Environmental Information Center" (TBEIC) as a link between environment-related activities for Tokyo Bay restoration located mainly in the coastal area and environment-related information as a result of the study that began in 2002. At the same time, TBEIC has been continuing a study that aims to promote the utilization of environmental information owned by TBEIC. This study reports the results of a study on the standardization of data, a study on ways to assist in utilizing environmental information to promote environment-improving activities and a marine environment awareness survey conducted by study groups.</p>
<p>Study on the Construction of Marine Environmental Information Database</p>	<p>2004</p>	<p>This study was conducted for the purpose of identifying the necessity and significance of and a basic policy for sharing environmental information, constructing environmental information sharing system and conducting a basic study for the operation of a planned environmental information system.</p> <p>The studies conducted as part of this study were made on the basis of the opinions of a study group composed of academic experts and local government personnel. The marine environmental information database system was developed as an experimental version of an information sharing system (clearinghouse) and installed as part of the intranet of the Sendai Port and Airport Technical Investigation Office.</p>

Study on Measures to Support Environmental Experience Activities	2004	This study was conducted in order to obtain reference information that can be used by the personnel of Yokohama Port and Airport Technical Investigation Office to conceptualize, plan and implement environmental experience activities making effective use of the facilities (e.g., seawater intake ponds, Diversity Plaza (multipurpose hall)) in the premises.
Study on Methods for Utilizing Coastal Environment Information	2004	This study includes a series of studies for the construction of a system (Seto Inland Sea Environmental Information Center (provisional name)) for facilitating the collection, accumulation, management and distribution of environmental data (environmental information, research results, results of technology development, etc.) mainly in order to implement environmental measures in the Seto Inland Sea, contribute to environmental education and build information and human networks of the organizations concerned.

### III Port EDI projects

#### Port EDI system operation support projects

Study	Fiscal year when study was conducted	Study outline
Study on Development for the Expansion of the Scope of Single Window System Services	2004	<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, Labour and Welfare, was added 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, etc., 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 as part of the export/import or port-related procedures.</p> <p>The 2004 study includes the study and design work to incorporate the procedures associated with conformance to the amended SOLAS (International Convention for the Safety of Life at Sea) requirements and a number of other procedures into the single window system as part of the efforts to expand the scope of services handled by the system.</p>

<p>Study on Improvement of Efficiency in Container Handling at International Container Terminals</p>	<p>2004</p>	<p>In order to increase the international competitiveness of an international port, it is important to enhance the level of services provided in addition to improving necessary port facilities. A number of systems have already been developed to computerize procedures among private businesses to enhance efficiency. The procedures performed at the gates of container terminals, however, remain inefficient partly because the means of information exchange between marine cargo forwarding agencies, customs clearance agencies and land carriers have not been standardized and partly because of human errors. In order to solve these problems, work has been underway to standardize procedures and computerize and share information.</p> <p>In this study, a demonstration system incorporating an imported system was constructed (the system incorporating the imported system is called the "JCL-Net (Japan Container Logistics Network)") with the aim of improving logistic efficiency by computerizing and sharing information on container movement at container terminals.</p> <p>This study showed that the computerization of information on container movement and the sharing of information among the people concerned helps eliminate factors hampering the improvement of cargo handling efficiency and improve the efficiency of the tasks performed by the people concerned.</p>
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<p>Management and Operation of Port EDI System</p>	<p>2004</p>	<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, Labour and Welfare, was added 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, etc., 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 as part of the export/import or port-related procedures.</p> <p>This task involves system management and operation including monitoring system operation and providing support to system users to enable the system to process electronic information for various day-to-day procedures smoothly and efficiently.</p>
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