Japan International Cooperation Agency

Data Collection Survey

on Maritime Safety and Security

in the Pacific Region

March 2019

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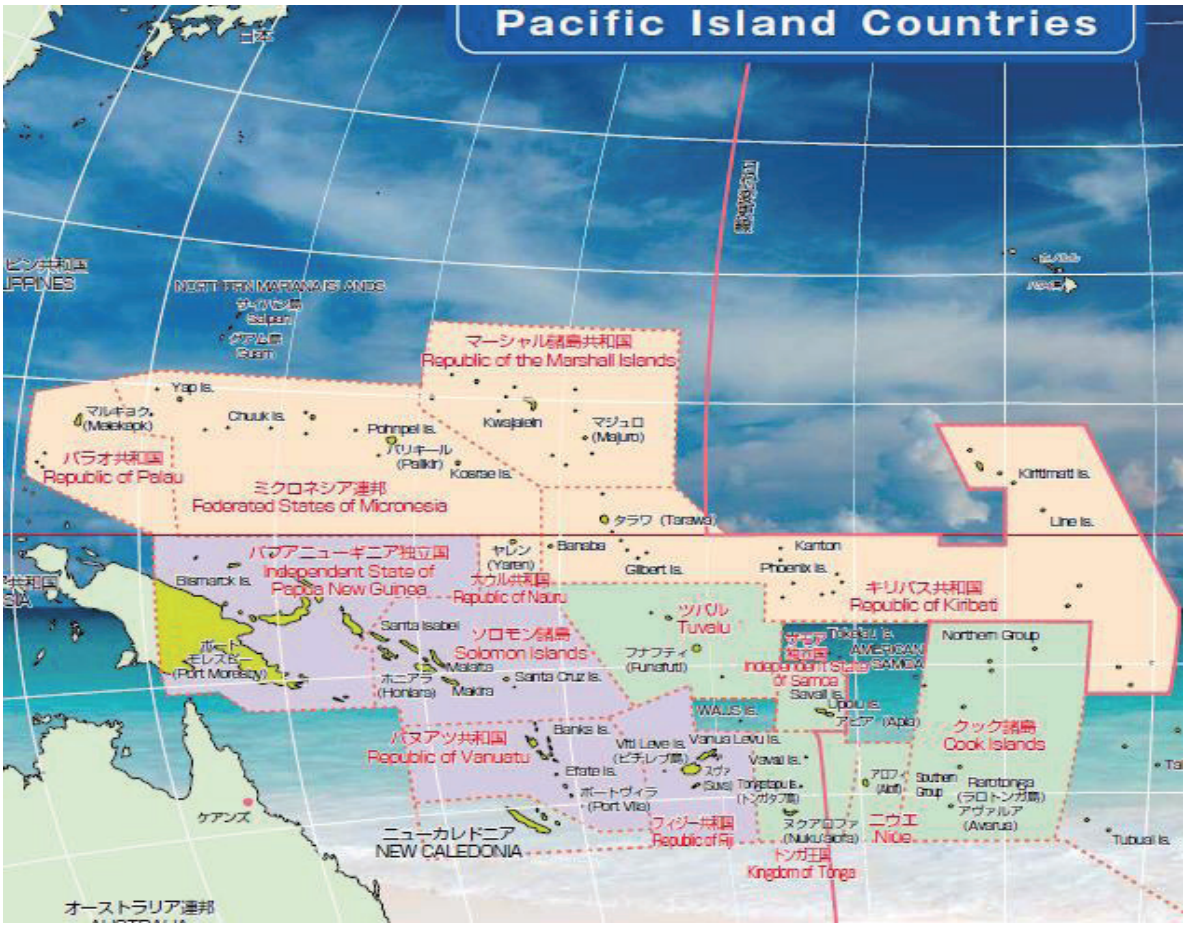

(Illustration 1) Location Map of the Pacific Region

Source: International Organization Pacific Islands Center (PIC)

Abbreviations	
General	
AIS	Automatic Identification System
APEC	Asia-Pacific Economic Cooperation
ASYCUDA	Automated System for Customs Data
CCTV	Closed-Circuit Television
Class NK	Nippon Kaiji Kyokai
DSC	Digital Selective Calling
DWT	Dead-Weight Tonnage
ECDIS	Electric Chart Display and Information System
EEZ	Exclusive Economic Zone
EMSA	European Maritime Safety Agency
ENC	Electronic Navigational Chart
F/S	Feasibility Study
FAO	Food and Agriculture Organization
FFA	Pacific Islands Forum Fisheries Agency
FRP	Fiber-Reinforced Plastic
FSC	Flag State Control
GIS	Geographic Information System
GMDSS	Global Maritime Distress and Safety System
GPS	Global Positioning System
GT	Gross Tonnage
HF	High Frequency
IALA	International Association of Marine Aids to Navigation and Lighthouse Authorities
ICPO	International Criminal Police Organization
IHO	International Hydrographic Organization
IMLI	International Maritime Law Institute
IMO	International Maritime Organization
INMARSAT	International Maritime Satellite Organization
IOM	International Organization for Migration
ISPS	International Code for the Security of Ships and of Port Facilities
IUU	Illegal, Unreported and Unregulated
JICA	Japan International Cooperation Agency
JOCV	Japan Overseas Cooperation Volunteer
KHOA	Korean Hydrographic and Oceanographic Agency
MDA	Maritime Domain Awareness
MIDAS	Migration Information and Data Analysis System
MRCC	Maritime Rescue Co-ordination Center
MSC	Monitoring, Surveillance and Control
OCO	Oceania Customs Organization
ODA	Official Development Assistance
OFCF	Overseas Fishery Cooperation Foundation of Japan
PEUMP	Pacific-European Union Marine Partnership
PIDC	Pacific Immigration Directors Conference
PIF	Pacific Islands Forum
PNA	Parties to the Nauru Agreement
PNG	Papua New Guinea
PSC	Port State Control
PTCCC	Pacific Transnational Crime Coordinating Center
RSE	Regional Seasonal Employment
SAR	Search and Rescue
SOLAS	International Convention for the Safety of Life at Sea
SPC	Secretariat of the Pacific Community

SPREP	South Pacific Regional Environment Programme
SSB	Single Side Band
STCW	International Convention on Standards of Training, Certification and Watchkeeping for Seafarers
SWP	Seasonal Workers Program
TEU	Twenty-Foot Equivalent Unit
ToT	Training of Trainer
TTP	Trans-Pacific Partnership
UKHO	United Kingdom Hydrographic Office
UNESCAP	U.N. Economic and Social Commission for Asia and the Pacific
UNODC	United Nations Office on Drugs and Crime
USAID	U.S. Agency for International Development
USCG	United States Coast Guard
USP	University of South Pacific
VHF	Very High Frequency
VMS	Vessel Monitoring System
VTMS	Vessel Traffic Management System
WCO	World Customs Organization
WCPFC	Western & Central Pacific Fisheries Commission
WGS	World Geodetic System
WMU	World Maritime University
Fiji	
CINEC	Colombo International Nautical and Engineering College
CTOG	Counter Terrorism Organization Group
FHS	Fiji Hydrographic Services
FMA	Fiji Maritime Academy
FNU	Fiji National University
FPCL	Fiji Ports Corporation Ltd.
FRCS	Fiji Revenue and Customs Services
GSS	Government Shipping Services
MFF	Ministry of Fisheries and Forest
MoIT	Ministry of Infrastructure and Transport
MSAF	Maritime Safety Authority of Fiji
Kiribati	
KCS	Kiribati Customs Service
KNSL	Kiribati National Shipping Ltd
KPA	Kiribati Port Authority
KPSP	Kiribati Police Service and Prison
MFMRD	Ministry of Fisheries and Marine Resources Development
MICTTD	Ministry of Information, Communication, Transport & Tourism Development
MOJ	Ministry of Justice
MSP	Marine Spatial Planning
MTC	Marine Training Centre
SOI	Statement of Intent
TSCL	Tarawa Shipyard Company Limited
Marshall	
CMI	College of Marshall Islands
DIDA	Division of International Development Assistance
EPA	Environmental Protection Authority
JMAS	Japan Mine Action Service
MIMRA	Marshall Islands Marine Resource Authority
MRO	Mass Rescue Operation
NDMO	National Disaster Management Office
Micronesia	

ARPA	Automatic Radar Plotting Aid
BP	British Petroleum
CCS	China Classification Society
DAF	Department of Foreign Affairs
DTC&I	Department of Transportation, Communication & Infrastructure
FMI	Fisheries and Maritime Institute
MCT	Micronesia Conservation Trust
NFC	National Fisheries Corporation
NORMA	National Oceanic Resource Management Authority
OFA	Office of Fisheries and Aquaculture
PMA	Pacific Mission Aviation
PPA	Pohnpei Port Authority
TMC	Taiyo Micronesia Corporation
ToT	Training of Trainer
Palau	
BCBP	Bureau of Customs and Border Protection
CID	Criminal Investigations Division
EQPB	Environmental Quality Protection Board
FRP	Fiber Reinforced Plastic
ICS	Incident Command System
JMAS	Japan Mine Action Service
Marine Law	Bureau of Maritime Security, Fish and Wildlife Protection, MOJ
MOF	Ministry of Finance
MOJ	Ministry of Justice
NEMO	National Emergency Management Office
NSARC	National SAR Committee
NSP	National Search and Rescue Plan
PCC	Palau Community College
Papua New Guinea	
DNPM	Department of National Planning and Monitoring
DOT	Department of Transport
NFA	National Fisheries Authority
NMC	National Maritime College
NMSA	National Maritime Safety Authority
PMC	Pacific Maritime College
Solomon	
MFMR	Solomon Ministry of Fisheries and Marine Resources
MID	Ministry of Infrastructure Development
NCP	National Contingency Plan
NDMO	National Disaster Management Office
SIMA	Solomon Island Maritime Authority
SINU	Solomon Islands National University
SIPA	Solomon Island Port Authority
SIPF	Royal Solomon Islands Police Force
SPOL	South Pacific Oil Limited
Vanuatu	
DPM	Department of Ports and Marine
MALFFB	Ministry of Agriculture, Livestock, Fisheries, Forestry and Biosecurity
MIPU	Ministry of Infrastructure and Public Utilities
OMR	Office of Maritime Regulator
PFRO	Principal Fisheries Resource Officer
PMW	Police Maritime Wing
VISR	Vanuatu International Ship Registry
VMC	Vanuatu Maritime College

VMSL	Vanuatu Maritime Service Limited
Australia	
AHS	Australian Hydrographic Service
AMC	Australian Maritime College
AMSA	Australian Maritime Safety Authority
DFAT	Department of Foreign Affairs and Trade
PMSP	Pacific Maritime Security Program
PPBP	Pacific Patrol Boat Program
TSSP	Transport Sector Support Program

Summary

The Pacific Ocean is a valuable global public resource that occupies about one-third of the earth's surface and is shared by all Pacific Island Countries (hereafter referred to as "PICs") and Japan. Maintaining the Pacific Ocean as a free and open area based on the rule of law (maintaining international maritime order) contributes to the creation of a peaceful and stable society by realizing autonomous and sustainable development in PICs. PICs have a historically deep connection with Japan; they have a vast exclusive economic zone (hereinafter referred to as "EEZ") and offer precious fishing grounds for deep-sea fishery. In addition, as a result of the Trans-Pacific Partnership Agreement (TPP) being concluded, PIC areas are some of the most important areas for maritime transport, and the peace and prosperity of PICs are directly linked to the national interests of Japan.

PICs are generally island countries with a narrow national landscape, low population, and limited human resources and budgets. Therefore, surveillance and control operations are insufficient for each country to control large sea areas such as their EEZs properly owing to difficulties. For this reason, various support methods for improving the management capacity to control these sea areas have been implemented for PICs for many years by the former suzerain countries of Australia and the USA. Both Australia and the USA concluded a free alliance with three Micronesian states: the Republic of Palau, the Federated States of Micronesia and the Republic of Marshall Islands. It is necessary to further improve the maritime security and maritime safety capabilities of PICs against the backdrop of recent awareness of conservation of marine resources, marine environment protection, and the importance of maritime security in the PIC region.

In order to respond to such issues and needs in the PIC region, the Government of Japan announced cooperation and assistance in the summit declaration of the 8th Pacific Islands Leaders Meeting (hereinafter referred to as "PALM 8") held in May 2018. Key topics covered at PALM 8 were issues in the maritime security and safety sector, such as improving maritime security capabilities and maritime transportation networks, including maritime law enforcement, based on the Free and Open Indo-Pacific Strategy.

The Japan International Cooperation Agency (hereinafter referred to as "JICA") plans to strengthen its support in line with these strategies and policies following the PALM 8 Leaders' Declaration. In order to respond to these strategies and policies, JICA conducted The Data Collection Survey on Maritime Safety and Security in the South Pacific Region (hereinafter referred to as "the Survey") for the purpose of collecting information, analyzing the current situation, and extracting issues in the maritime security and safety fields of PICs to draft a support policy and specific cooperation plan.

1. Target Area

Target countries for the on-site survey: 1) the Republic of Fiji (hereinafter referred to as "Fiji"), 2) the Republic of Kiribati (hereinafter referred to as "Kiribati"), 3) the Republic of the Marshall Islands (hereinafter referred to as "Marshall"), 4) the Federated States of Micronesia (hereinafter referred to as "Micronesia"), 5) the Republic of Palau (hereinafter referred to as "Palau", 6) the Independent State of Papua New Guinea (hereinafter referred to as "PNG"), 7) Solomon Islands (hereinafter referred to as "Solomon") and 8) the Republic of Vanuatu (hereinafter referred to as "Vanuatu") among PICs target countries by JICA, and 9) Australia

Target countries for questionnaires and documents survey: 1) Cook Islands (hereinafter referred to as "Cook"), 2) the Republic of Nauru (hereinafter referred to as "Nauru"), 3) Niue, 4) the Independent State of Samoa (hereinafter referred to as "Samoa"), 5) the Kingdom of Tonga (hereinafter referred to as "Tonga") and 6) Tuvalu

2. On-Site Survey Schedule

First on-site survey (from 26th August to 5th October 2018): Palau, Marshall, Micronesia, Solomon, and Australia

Second on-site survey (from 27th October to 4th December 2018): PNG, Fiji, Vanuatu and Kiribati

Third on-site survey (from 11th to 16th December 2018): Yap State of Micronesia

3. Outline of Present Situation and Issues of Maritime Security and Safety in the Pacific Islands Countries

PICs are generally island countries with a narrow national landscape, low population, and limited human resources and budgets. In light of these common characteristics, surveillance and control operations are insufficient for each country to control large sea areas such as their EEZs properly owing to difficulties. In order to overcome such difficulties, efforts have been paid on the collaboration between PICs, including the developed countries, to maintain maritime security and safety. The situation and issues of maritime security and safety in the PICs are outlined below.

(1) Surveillance, law enforcement and control over activities, including illegal fishing, such as IUU[1] fishing

Maritime law enforcement activities in the Pacific Region have been organized through collaboration among donor countries, international organizations, and law enforcement authorities according to the following summary.

1) Australia: The Pacific Patrol Boat Program (PPBP) provided 22 patrol vessels to 12 PICs from 1987 to 1997. Currently, the Pacific Maritime Security Program (PMSP) is planned as the next generation of the program, which includes 21 replacement patrol vessels (from 30m to 40m) and two planes deployed to support law enforcement activities in the region.

2) The United States: The Shiprider Program sponsored by the US allows for an enforcement official from the host country to embark on a U.S. Coast Guard (USCG) vessel for the purposes of patrolling within the EEZ and/or

[1] Illegal, unreported and unregulated

Territorial Seas of that nation. The Shiprider Program is a bi-lateral agreement that currently has nine signatory nations.

3) Japanese Private Sector: An assistance project for the capacity-building of maritime surveillance was required based on the cooperation of relevant states, including U.S.A., Australia, and Japan. for three (3) Micronesian States: Marshall, Micronesia, and Palau. As a response, assistance to enhance the capacity of maritime security in the three (3) states has been conducted at the initiative of The Nippon Foundation and the Sasakawa Peace Foundation in cooperation with the US and Australia since 2008. This assistance provides 14m-long-type small crafts, 40m-long-type patrol vessels, communication systems and their operating budget.

4) Pacific Islands Forum Fisheries Agency (FFA): The international agency tasked to conserve fishery resources in 17-member states. The FFA operates the Vessel Monitoring System (VMS), which coordinates satellite data to eliminate IUU fishing, shared such data with the member states and PPBP/PMSP, and patrol within the EEZs of the member countries.

5) Western & Central Pacific Fisheries Commission (WCPFC): The WCPFC is a regional fisheries management agency founded in 2004, with 26-member states, including Japan. Forty additional states and regions are related to the activities of WCPFC, participating as overseas territories and cooperative non-member states. The VMS of WCPFC covers a wider area than that of the FFA, which collects data within the EEZs of member countries. The WCPFC and FFA have been conducting patrol activities on IUU fishing.

6) Training on IUU by JICA: JICA has been conducting the Policies and Countermeasures Against IUU Fishing training course . The target countries for this training course are 12 PICs.

(2) Development of Human Resources in the Field of Maritime Affairs

The major areas of the development of human resources in the field of maritime security and safety are seafarers, port security officers, and vessel inspectors. The requirements of subjects on such areas are stipulated by the international convention, etc. This Survey focused mainly on the seafarer's education. Other than Fiji and PNG, such states are not conducting the seafarer's education and training for oceangoing vessels but for domestic sailing.

(3) Port Security and Safety

1) Port Security: The USCG has been acting as the main coordinator to implement guidance and assistance regarding port security in the PICs, and compliance with the above ISPS Code Regulations has been steadily improving. Each state needs to take necessary measures against smuggling, especially illegal drugs and fishing.

2) Port Safety: Normally, there are ports with a low congestion density of vessels, and the risk of collision and grounding is considered to be low if adequate inbound and outbound traffic management is conducted and the Aids to Navigational (AtoN) and nautical charts are accurately provided.

(4) Navigational Safety of Vessels

The primary infrastructure for maintaining the navigational safety of vessels are 1) Aids to Navigation (AtoN), 2) Vessel Traffic Management System (VTMS), 3) GMDSS[2] and 4) Nautical Charts. In this Survey, all countries pointed out the inadequacies of AtoN and nautical charts, and Solomon and Vanuatu pointed out the need for VTMS. Regarding the GMDSS, there are many countries where base stations are inadequate, and they are being pressed to respond in order to fulfill the role of the Maritime Rescue Coordinating Center (MRCC).

(5) Search and Rescue (SAR) Operations

Search and Rescue (SAR) operations have been implemented through regional collaboration by following the New Zealand initiative to cope with donor countries. International organizations operate regionally in order to cooperate with SAR organizations in respective counties in a similar regard to law enforcement operations. SAR operations occur in parallel with the law enforcement operations. The Pacific Maritime Safety Programme (PMSP) organized by New Zealand is aimed at supporting Pacific nations to develop a strong maritime safety culture. The key areas of the programme are 1) Regulatory support, 2) SAR and oil pollution response, 3) Domestic vessel safety and infrastructure, 4) Community education and awareness and 5) Support for the education and training of seafarers.

(6) Maritime Legal System Development

Regarding legal system development, it is necessary to develop a basic legal system in order to join the IMO. This maritime legal system is almost in place in each country with the support of IMO, SPC, etc. However, there are some countries with underdeveloped legal systems.

(7) Border Protection Measures

It is difficult to control the sea borders within the vast area of domestic jurisdiction for PICs, although the monitoring, law enforcement, control, and SAR activities that are the target areas of this survey are similar. PICs with numerous remote islands have borders at sea for each island separated from the capital. Furthermore, the customs offices of major international ports in the PICs have delayed installation of X-ray scanners for container cargo, and smuggling controls have not been adequately conducted.

(8) Ships and Seafarers

1) Ships: In keeping with a general trend in developing countries, aging ships and the lack of capability to manage safe operations are major issues. Security and economic development are additional issues for PICs, as hub ports and remote islands are a considerable distance from each other. The maritime transportation of foods, living goods,

[2] Global Maritime Distress and Safety System

fuel, etc. to remote islands has low profitability, and it is difficult for private shipping companies to cope with logistics; therefore, there is a necessity for state-owned shipping companies. At present, however, there are many cases where state-owned shipping companies are not able to make appropriate investments for the maintenance and management of their vessels, procurement of new vessels, etc., owing to insufficient government subsidies. For these reasons, some state-owned shipping companies are forced to operate sub-standard vessels.

2) Seafarers: In this survey, there were few countries that provided enough statistical data on the number of registered seafarers. It seems that employment of domestic shipping vessels or nearby coastal navigation vessels as crew members is in the majority, and there are few cases of seafarers supplying to foreign shipping companies like the Philippines. In the on-site survey countries, there are maritime education and training institutes in countries other than Palau, and it seems that vessels are operated by seafarers who possess the Certificate of Competency stipulated by STCW Convention.

(9) Prevention of Marine Pollution (Illegal Waste Dumping, Oil Spillages, etc.)

The Secretariat of the Pacific Regional Environment Programme (SPREP) is a regional international organization headquartered in Apia, the capital of Samoa. Regarding marine pollution control in the PICs, SPREP has greatly contributed, not only in preventing oil spills, but also in promoting cooperation among member countries on various environmental issues. This survey has unfortunately revealed that there are not enough facilities, equipment, and personnel capable of dealing with these issues in PICs. In many interview results, it was said that the USCG in Guam or Honolulu would correspond in the case of a massive oil spill incident, but scrambling ships from Guam and Honolulu is an inadequate contingency plan. Considering these findings, it is necessary to develop basic oil control facilities and equipment in each country.

4. Survey Result

The present situation on each subject is described (with the Proposals of Assistance Option) based on the on-site survey as follows.

(1) Surveillance, law enforcement, and control over activities, including illegal fishing, such as IUU fishing

- **Proposals of Assistance Option**: Many actors have been undertaking and planning activities internationally for surveillance, law enforcement, and controls, seemingly rendering additional assistance by JICA to be unnecessary for the time being considering the burden of each stakeholder. However, the continued implementation of the Policies and Countermeasures Against IUU Fishing training course is anticipated.
- **Outline of the country**
  - **Fiji**: The Fiji Navy has been engaged in surveillance duties in the EEZ in Fiji. It has been operating two PPBP patrol vessels and is supported by the Shiprider Program of the U.S.A and the New Zealand Navy.
  - **Kiribati**: The Kiribati Police Service and Prison (KPSP) exercises jurisdiction over law enforcement duties in Kiribati. The KPSP conducts patrol activities with PPBP patrol vessels. KPSP is planning to procure a new

vessel of 40m in length and to increase the number of staff. There have been few recorded cases of smuggling and illegal immigration in Kiribati. There was a case where a large amount of heroin packed in a bag drifted onto a beach; however, there was no way to respond in terms of criminal apprehension. Regarding IUU fishing, there are no noticeable cases other than transshipment at the port. The VMS information from FFA are watched closely; however, there are no emergency scrambles.

- **Marshall**: The Sea Patrol Division, Police Department, and Ministry of Justice each exercise jurisdiction over law enforcement and SAR duties in Marshall, which conducts patrol missions with one PPBP vessel and two small patrol boats that were granted by the Nippon Foundation. Also, for the Shiprider Program with the US, an agreement on joint maritime patrol activities was signed.
- **Micronesia**: The Maritime Wing of the Ministry of Justice has been conducting patrol operations with three patrol vessels supported by Australia (PPBP), and one vessel from the Nippon Foundation. The Australian Navy allocates the operation and maintenance advisors for PPBP operation Branches of the three countries in the Micronesia region. The advisors of the three countries are in close contact with each other, and joint training is under the control of FFA. Training is conducted around the boundary between Marshall, Palau and each EEZ, and mutual knowledge is shared.
- **Palau**: The responsible agencies concerning maritime law enforcement are the Bureau of Maritime Security, Fish and Wildlife Protection, and the Ministry of Justice (known as Marine Law). The Marine Law has established a coordination system with USCG, the Australian Navy, and the Japan Association of Marine Safety (JAMS). The current fleet of the Marine Law consists of one patrol vessel provided by the JAMS, one patrol vessel provided by Australia, and three patrol boats provided by JAMS. With the establishment of the National Marine Sanctuary Act, all foreign fishing vessels will be prohibited from fishing in the Palau EEZ from 2020. The Japanese Fisheries Agency has dispatched a fishery control vessel to provide support to Palau's IUU countermeasures and contribute to fishery management aimed at sustainable use of fishery resources. It is desirable to continue the logical operation of foreign fishing vessels while maintaining the marine resources in the sea area.
- **PNG**: Three organizations, 1) Water Police, 2) National Fisheries Authority (NFA) and 3) customs authorities, are responsible for maritime law enforcement duties in PNG. All three organizations have been granted police authority and are implementing maritime law enforcement work. The Water Police leads ordinary law enforcement duties, and NFA is leading illegal fishery response duties. As the Water Police and NFA vessel capacity are insufficient, the PNG Navy is requested to assist with such duties.
- **Solomon**: Since Solomon does not have a Navy, the Royal Solomon Islands Police Force (RSIPF) is responsible for all maritime safety and security responsibilities. The RSIPF personnel, facilities, equipment, and structures are inadequate to carry out these duties and heavily rely on PPBP activities of the Australian navy for support.

- Vanuatu: Law enforcement and SAR activities in the sea area within 12 miles of the coast are under the jurisdiction of the Police Maritime Wing (PMW), and the area beyond it within the EEZ is under the jurisdiction of the Fisheries Department and the Australian PPBP patrol vessel team. The most problematic aspect of IUU fishing in Vanuatu is illegal operations by registered ships. The cause is on the management side. Firstly, even if PMW receives a declaration about a catch, there are no personnel or system to confirm it.

(2) Maritime-related Human Resource Development

- **Proposals of Assistance Option**: 1) **The Fiji Maritime Academy (FMA)** is operated by a private maritime school in Sri Lanka under the umbrella of the Fiji National University (FNU). Both facilities and equipment are substantial, and there is no need for support by JICA. However, there is a plan to establish the Regional Maritime Academy (RMA) for the future of SPC, and if FMA becomes its base, human support will be necessary. Therefore, it is appropriate to understand the trend of SPC's plan and to consider future cooperation by JICA. 2) **The Fisheries and Maritime Institute (FMI) in the Yap State of Micronesia** has high expectations of Palau and Marshall concerning maritime education and training, and capacity improvement is expected at the regional level. Currently, FMI is carrying out education and training for coastal vessel crews, and if further improvement of capacity is achieved, it is expected from a long-term perspective that the FMI will be developed as a central maritime education and training institution for crews engaged in international voyages in the Micronesia region. For this purpose, it is necessary to provide a platform for practical training on board ships in parallel with improving the capacity of FMI.
- **Outline of the country** (All countries have problems with securing on-board training opportunities for students)
  - **Fiji**: The Fiji Maritime Academy (FMA) is the only maritime education and training institution in Fiji that conducts maritime education and training in compliance with international standards. Currently, FMA is operated by a private school in Sri Lanka. Regular seafarer courses for navigation and engineering officers (up to Class 3 each, the term of completion is two and a half years) are offered. The total number of enrollees is 225 in total for navigation and engineering departments. Regarding acceptance of foreign students, there are achievements from Vanuatu, Solomon, Tuvalu, Tonga, and about 5% of the students are international students.
  - **Kiribati**: The only maritime educational institution in Kiribati is the Maritime Training Center (MTC). The MTC was established in 1967 by a German shipping company group (six companies). The MTC carries out the rating training (including stewards) mainly for German shipping companies and carries out 530 ratings conforming to the STCW convention annually. Class 4 navigation and marine engineering courses are scheduled to be held starting in May 2019.

- **Marshall**: The College of the Marshall Islands (CMI), a maritime education and training program was established in 2012 under the support of the Marshall Ocean Resources Agency (MIMRA), SPC, and PNA. Two regular courses are conducted. Implementing courses conforming to the STCW Convention for the captain and chief engineer of fishing vessels as an apprenticeship program is under consideration.
- **Micronesia**: The maritime educational institution in Micronesia is the Micronesia College, the Fisheries Maritime School (FMI) in Yap State. Regular seafarer courses for navigation and engineering officers on Class 5 and 6 are offered and have about 50 enrollments annually in total. The development of FMI as a central maritime education and training institution in the Micronesia region is expected by Marshall and Palau. It is necessary to renew and newly provide the related facilities and equipment.
- **Palau**: There is no maritime education and training institute in Palau.
- **PNG**: The only higher seafarer education and training institution in PNG is the National Maritime College (NMC) in Madang. Regular seafarer courses for navigation and engineering officers up to Class 1 are offered. And there is the Pacific Maritime College (PMC), which is supported by China, for a rating educational institution. Both institutes receive certification from the Ministry of Transport as an education and training institution that conforms to STCW Convention regulations. PMC carries out boarding exercises on Chinese flag vessels, while NMC has difficulty securing berths aboard shipping company vessels that can accept trainees. It is necessary to renew and newly provide the related facilities and equipment.
- **Solomon**: The Solomon Islands National University (SINU), School of Technology and Maritime Studies (STMS) is the seafaring education and training center in Solomon. There are many young people who are interested in seafaring jobs, and the number of the STMS students is 350 students/year, including short courses. Regular seafarer courses for navigation and engineering officers from Class 4 to 5 are offered. Students are mainly employed on local merchant and fishing vessels. Some of them are employed by Australian domestic shipping companies and US fishing boat companies as ratings. It is necessary to renew and newly provide the related facilities and equipment.
- **Vanuatu**: The only maritime education and training institution in Vanuatu is Vanuatu Maritime College (VMC). There are four navigation and three marine engineering teaching staff members, and they oversee practical training such as workshop training. They face shortages of teaching staff members. It is necessary to renew and newly provide the related facilities and equipment.

(3) Port Safety and Security

- **Proposals of Assistance Option**: The top candidate for financing cooperation, in order of urgency and priority, is Pohnpei Port in Pohnpei State in Micronesia, but this case is already under investigation. Although information collected by this Survey was insufficient, there are possibilities to maintain the firefighting and oil spill response facilities, if necessary. And it is possible to instalfirefighting facilities, such as land facilities and

fire-float at the Port of Honiara in Solomon. Furthermore, as technical cooperation, a Port Operation and Maintenance Policy Adviser (Regional) is scheduled to be dispatched to the SPC in 2019.,As the other possible cooperation, it is assumed that the technical cooperation project to strengthen the port security management system in Vanuatu. The implementing agency is the Department of Ports and Marine (DPM), and it needs technical instruction related to the ISPS Code regulations.

■ **Outline of the country**

- **Fiji**: Regarding the international ports in Fiji (seven ports), the ISPS Code related port security management has been implemented according to the Port Security Plan. The Maritime Safety Authority of Fiji (MSAF), Navy and the Fiji Police Force under the Navy constitutes the Counter Terrorism Organization Group (CTOG). The CTOG reports the present situation to the Security Council and provides information to the Prime Minister's Office. There are no problems regarding port security at present regarding the international port area because their management complies with the ISPS Code.
- **Kiribati**: Regarding port management, matters related to the ISPS Code are under the jurisdiction of the Marine Division, and the port administration practice is carried out by the Kiribati Port Authority (KPA). Although it received the audit of SPC in 2017, it was evaluated as an international port of security level 1 and almost satisfied the regulations of the ISPS Code. Container inspection by X-ray scanner has not been implemented. The average number of vessels entering the port is five vessels/month, and container vessels loaded with 80 to 200 TEU[3]s are the average size.
- **Marshall**: The Ports Authority (RMIPA), Ministry of Transportation, Communications and IT has jurisdiction over Marshall's airport and seaport. The RMIPA has passed the audit by the USCG and meets the minimum standards of ISPS Code requirement. The person in charge also receives education and training in the U.S.A. (period of six months), and at present there are no problems concerning personnel; however, there is no future response plan. Container inspection by X-ray scanner has not been implemented. Some of the fences around the harbor premises are damaged and in need of repair. Also, there is insufficient illumination on the harbor premises, and there is a problem in monitoring the premises at night.
- **Micronesia**: The port development and management are under the jurisdiction of the independent port authorities in each State. Regarding ISPS Code compliance at the Port of Pohnpei, the USCG conducts auditing every year, and in the last audit result, only two points of inadequate fencing and documentation on access control were pointed out, and these points have already been improved. The issues in the current port include the maintenance of container yard pavements, lighting, and emergency generators.
- **Palau**: Currently, there are no problems related to security in the port. Although there are some issues, such as how to remove the storage place for dangerous goods and how to repair some parts of the fencing, they are managed through self-effort. It is not necessary to maintain a security camera because the security

[3] Twenty-foot equivalent unit

officers are patrolling on a 24-hour basis. The target area is narrow and there is no need to install security cameras. Containers of 200 to 400 TEUs/month are handled, and bulk cargo of 100 tons/month are handled.

- **PNG** : The main ports of PNG are operated by the state-owned PNG Ports Corporation Limited (PNG PCL), which operates a total of 16 ports, including 14 international ports. Among them, the Port of Lae and Moresby are the main ports. Mining, construction, shipping and other private companies operate over 11 other ports. In addition, there are more than 400 piers, wharfs and other areas operated by communities for small watercraft in rural areas. In order to respond to the ISPS Codes regulations, the port security advisers are employed from Singapore and Australia.
- **Solomon**: The Solomon Island Port Authority (SIPA) manages two international ports (Ports of Honiara and Noro) and the domestic part of the Port of Honiara. Other domestic ports (Gizo, Ring Cove, Tulagi and Yandina) are managed by each provincial government. The SIPA conducts port management according to the ISPS Code at two international ports and has the support of the PNG Ports Corporation Limited for its maintenance. The problem in the safety aspect of the Port of Honiara is the lack of firefighting facilities and equipment. Although the tankers loaded with 30 thousand tons (gasoline, jet fuel, etc.) usually enter the port, the port does not possess a fire boat, and the capacity for firefighting from the land side is inadequate for a large-scale fire. Moreover, the port does not have an X-ray scanner for container cargo inspection. Furthermore, it is necessary to develop the Vessel Traffic Management System (VTMS). It is necessary to implement appropriate vessel traffic management and ensure safety and security with the system that has the capacity to cover a range of about 20 to 30 nautical miles.
- **Vanuatu**: The Department of Ports and Marine (DPM) manages the international port (Port Vila Central Wharf). The Office of Maritime Regulator (OMR) is in charge on the management of the Port Vila Lapetasi International Multi-Purpose Wharf and domestic wharf. The challenges for the DPH are 1) no facilities and equipment for oil-spills, 2) an aging Port Vila Central Wharf and 3) human resource development necessary for port management and port security (ISPS code correspondence), ship safety at port, etc. at DPM.

(4) Navigational Safety of Vessels

- Proposals of Assistance Option: **1) Assistance for nautical chart publication and revision**: All PICs have a high necessity for the production of an Electronic Navigational Chart (ENC). As it is planning to implement the Training Program on the Nautical Chart Technic (The International Qualified Certification of Class B) until the Japanese fiscal year 2020, it should be considered that the candidates from the PICs be added for the course in 2020 or be added at the time of recruitment of participants in 2020 in order to fulfill the needs and expectations of the PICs. At the time of this training in Japan, it is expected to obtain detailed information on the navigational safety of vessels, including activities of other donors, etc.; **2) Aids to Navigation (AtoN)**: Regarding maintenance of the AtoN, few countries manage and analyze the current situation, it is said that the

USCG, South Korea, etc. are investigating. It is necessary to share such information to discuss assistance.; **3) Vessel Traffic Management System (VTMS)**: Regarding the Port of Honiara in Solomon and the Port Vila in Vanuatu, since there is not enough space in the ports, if there is a lack of management of entry/leaving port of large vessels, there is a possibility of collision in a narrow passage in the ports; therefore, it is necessary to maintain the VTMS with RADAR, CCTV camera, AIS and radio communication system; and **4) GMDSS and Communication Facilities**: In this Survey, Fiji, Kiribati and PNG presented the necessity to maintain the GMDSS and communication facilities.

■ **Outline of the country**

- **Fiji**: The Fiji Hydrographic Services (FHS) is responsible for chart production and revision in Fiji. Related to the chart production and revision, the FHS is working for a paper chart only; therefore, it is necessary to proceed for an Electronic Navigational Chart (ENC). The FHS received technical assistance from the KHOA[4] (South Korea) and the UKHO[5] (UK). Currently, although there are no major problems with personnel, facilities and equipment aspects, the FHS has enough technology on the Hydrography (waterway sounding) but requires guidance on cartography (charting), especially on digitization. there is no base station of GMDSS in Fiji; therefore, the Navy is anxious to improve it. A development plan under the support of South Korea is being studied, but there is no prospect of realization yet. In 2014, all the lights of the AtoN were replaced with LED lights, and 38 lighthouses were newly installed and relocated. Currently, the FHS manages 86 AtoN in total.
- **Kiribati**: Regarding the nautical chart, most of the charts in Kiribati are not updated with the latest information; therefore, the situation is obstructing the safe navigation of vessels in coastal waters and coral reef seas, and a few grounding incidents have occurred. From the International Hydrographic Organization (IHO), an international organization on the nautical charts recommended to Kiribati to develop a nautical chart for navigational safety of vessels in 2011. In order to respond to the recommendation, the survey of the sea area around Tarawa Island was carried out supported by Australia in 2015, and it is planned to be implemented around Kiritimati Island in 2019. The Marine Division does not have a hydrographic survey technician, facilities and equipment for the hydrographic survey. It is planned to arrange a candidate staff member and there is a need for education and training. The AtoN are managed by one supervisor and three staff members only at the Marine Division. The maintenance situation of the AtoN in the remote islands is poor. The Marine Division does not have a boat to work on maintenance in the remote islands. Radio communication with the remote islands waters is not provided. Such situations where communication between vessels and the ground station cannot be made are an obstacle, especially for the rapid implementation of search and rescue (SAR). Moreover, there are no functions of GMDSS and AIS.

[4] Korean Hydrographic and Oceanographic Agency
[5] United Kingdom Hydrographic Office

- **Marshall**: The USCG is planning to develop activities aimed at ensuring navigational safety including the issues of the AtoN and the nautical chart maintenance. At present, it is desirable to have a cooperative system with Japan because it is totally new.
- **Micronesia**: It is planned to maintain the necessary AtoN for the safe navigation of vessels surrounding Pohnpei and the remote islands area. The budget for this Project is estimated as 250,000 USD. It is also planned to remove sunken vessels in the same area as above at an estimated cost of 4,950,000 USD. It is also planned to maintain the AtoN by the Project under assistance from the World Bank. It is prohibited to enter/leave port at night between 18:00 PM and 06:00 AM owing to the facts that the present nautical charts have not been revised since the 1960s and lighting of the AtoN is unstable.
- **Palau**: The Hydrography Office of the US Navy conducted the sounding survey for the nautical chart in 2005, and the nautical charts were revised in 2006. There is no organization which conducts a revision of the nautical charts in Palau. Regarding the AtoN, a feasibility study was conducted by the Palauan side, estimating a total cost of 2,434,625 USD. Almost all buoys had lighting and a radar reflector on top initially; however, they were washed away by the wind-wave impact. Therefore, their present function is only as a target during daylight hours with good visibility.
- **PNG**: The National Maritime Safety Authority (NMSA) is the responsible body for the safety of vessels, environment and navigational safety in PNG. The vessels that sail along the coast of PNG are heavily dependent on the 280 AtoN and nautical charts. Regarding the nautical chart production and revision, the NMSA has been working assisted by the Australian Hydrographic Service (AHS) of the Australian Navy. PNG started operation of GMDSS in 2016. In the system, digital selective calling (DSC) is a core system of GMDSS, and it is planned to expand the coverage of GMDSS by newly preparing six land base stations; however, it is difficult to procure owing to limited technical and financial capacity; therefore, it is necessary to receive support from donors.
- **Solomon**: The Hydrographic Unit of the Solomon Island Maritime Authority (SIMA) has been working on the nautical chart publication and revision through self-efforts. Regarding the sounding duties, although currently owned sounding instrument is the single beam type, more accurate sounding data collection is desired by introducing multi-beam-type sounding instruments. Furthermore, renewal of a boat for sounding and related software are necessary. Since the current boat is an open type without a cabin and is too small, it can perform sounding work only in a quiet sea state, and it cannot perform sounding work in the case of rain.
- **Vanuatu**: The biggest issue concerning current navigational safety in Vanuatu is that the MRCC is not maintained, and it does not respond to the functions of the VMS, the GMDSS, the AIS, etc. This situation is inadequate as a safety management situation level in a port where huge cruise vessels frequently enter. It is impossible to develop these facilities and equipment only through self-help efforts, and efforts are expected to be supported by donors and international organizations for both hard and soft components. Moreover,

regarding the AtoN, approximately 34 active AtoNs in Vanuatu and other charted AtoNs are damaged owing to lack of maintenance. Regarding nautical chart development, the sounding and surveying works were conducted on the seven domestic ports assisted technically by the SPC and the UNESCAP[6] and the UK fund and self-budget of Vanuatu financially.

(5) Search and Rescue (SAR)

- **Proposals of Assistance Option**: Regarding search and rescue (SAR), many actors have been undertaking and planning activities internationally the same as the law enforcement activities; therefore, additional assistance by JICA seems to be unnecessary for the time being considering the burden of each stakeholder.
- **Outline of the country**
  - **Fiji**: Currently, the Navy is putting great emphasis on the SAR in collaboration with the police, the Maritime Safety Authority of Fiji (MSAF), the Fiji Ports Corporation Ltd. (FPCL), Civil Aviation Authority, etc., based on the SAR Act, to improve the SAR ability as its goal. New Zealand, the UK, Australia, New Caledonia and others cooperated to establish the MRCC. Its facilities and equipment are enough for urgencies. . Since the current patrol vessel (with SAR function) cannot navigate a sea state of 4 to 5, it is possible to improve the SAR ability by deploying additional patrol vessels (about four vessels) that have higher seaworthiness.
  - **Kiribati**: Regarding the SAR, the Ministry of Information, Communication, Transport and Tourism Development (MICTTD), the Marine Division is the coordination authority; however, the Marine Division does not have a floating asset; therefore, it works with the Kiribati Police Service and Prison (KPSP).
  - **Marshall**: Currently, the SAR Department is newly established in the Police Department, the Sea Patrol Division, and six National Task Force members are developing the National Search and Rescue Plan. The current SAR is implemented according to the procedure of the Mass Rescue Operation Response Contingency Plan (MRO). Private vessels also participate in this SAR activity. With the support of the U.S.A., joint surveillance drills were conducted in June 2018, but the future schedule is undecided.
  - **Micronesia**: The organization responsible for SAR coordination duties in Micronesia (SAR coordination authority) is the Department of Justice, and the active unit is the Maritime Wing of the National Police. In a serious SAR case, the USCG, Guam District provides the drifting models and the SAR plan, and other assistance by the request of the Ministry of Justice in accordance with the SAR Guidelines for Cooperation concluded with the USCG.
  - **Palau**: Regarding the SAR activities in Palau, the Bureau of Maritime Security, Fish and Wildlife Protection, the Ministry of Justice (commonly known as the Marine Law) is responsible for the core mission. Regarding serious maritime accidents, the National Emergency Management Office (NEMO) and the Office of the Vice

[6] U.N. Economic and Social Commission for Asia and the Pacific

President coordinate the necessary measures. Regarding such accidents that are not major, the Marine Law responds independently.

- **PNG**: The SAR coordinating organization of PNG is the National Maritime Safety Authority (NMSA). The NMSA oversees the MRCC and is organizing SAR activities based on the MRCC's distress information. The NMSA is an independent government agency and is managed by donations from the marine industry and a government subsidy. Although many cruise vessels currently sail near PNG, the ability to operate the SAR activities is low, including response to accidents by other cargo vessels. Currently, only three rescue boats with a length of 9.5m are deployed; however, it is obvious that this is inadequate.
- **Solomon**: Mentioned in the section of law enforcement above.
- **Vanuatu**: The Law enforcement and the SAR activities within 12 miles of the coastal area are the responsibility of the Maritime Wing and within the EEZ are under the jurisdiction of the Fisheries Department and the Australian patrol boat team.

(6) Maritime Legal System Development

- **Proposals of Assistance Option**: Although it is necessary to observe the trend in assistance by the IMO and the SPC in order for there to be a possibility of assistance by the Japanese side, additional assistance by JICA seems to be unnecessary for the time being considering the burden of each stakeholder.
- **Outline of the country**
  - **Fiji**: In Fiji, the MSAF manages maritime related laws and regulations, the effective regulatory framework, the maritime related strategies, the law enforcement, the compliance status of various maritime industry regulations and coordination duties with the IMO. The defined stakeholders with the MSAF are 1) Ship Operator, 2) Ship Owner, 3) Shipbuilder, 4) Seafarer, 5) Government Agent, 6) Trading Company, 7) IMO/ILO/IHO, 8) Government of Fiji, 9) Related Business and 10) Other international organization.
  - **Kiribati**: Regarding the insufficient maritime law maintenance situation, the Marine Division is steadily advancing system development, but it is recognized that it is insufficient in terms of capabilities; therefore, it is necessary to consult an expert from a foreign country.
  - **Marshall**: The Office of the Maritime Administrator (OMA) regulates the maritime laws and regulations in Marshall. The OMA has an office in the Marshall Islands Maritime and Corporate Administrators Inc. in Virginia State, U.S.A., which is entrusted with the maritime related duties by the government of Marshall. The OMA conducts maritime related duties in Marshall, such as laying groundwork, revision of the maritime related laws and regulations, communication and coordination with foreign countries and international organizations, ship registration, management of seafarers and so on.
  - **Micronesia**: Regarding the maritime laws and regulations in Micronesia, presently, the Marine Division of the Department of Transportation, Communications and Infrastructure coordinates and regulates the

nationwide maritime transportation system that will be adapted to future international and domestic commerce needs.

- **Palau**: In Palau, the Bureau of Commercial Development, Ministry of Public Infrastructure, Industries and Commerce works for drafting maritime related laws and regulations and collaborates with relevant organizations, and the Ministry of Justice formulates them.
- **PNG**: The maritime regulations in PNG are managed by the National Maritime Safety Authority (NMSA). The MNSA has established laws and regulations on maritime and shipping to support the fact that PNG is in conformity with the international standards and maritime practice system accepted by the international maritime society under the support of the IMO.
- **Solomon**: In Solomon, the organization that oversees maritime administration was the Solomon Islands Maritime Safety Administration (SIMSA), but it is preparing to transfer to the new organization of the Solomon Islands Maritime Authority (SIMA). The management of maritime law related provisions will be under the jurisdiction of SIMA.
- Vanuatu: The Government organizations in the maritime sector in Vanuatu are now in the transition phase, and in 2017 the Office of Maritime Regulator (OMR) was established as an independent external office overseeing the maritime sector of the Ministry of Infrastructure and Public Utilities (MIPU).

(7) Border Protection Measure

- **Proposals of Assistance Option**: Some countries pointed out the necessity of a patrol vessel for monitoring by the customs authorities; however, since it is too busy to operate a patrol vessel for law enforcement and the SAR activities and maintenance works, newly introduced support is not necessary for the time being. Regarding the installation of X-ray scanners, there is a possibility of implementation by grant aid.
- **Outline of the country**
  - **Fiji**: The customs operation is under the control of the Fiji Revenue and Customs Services (FRCS) in Fiji. The organization of the FRCS consists of four sections: 1) Seaport Section, 2) Nadi Airport Section, 3) Suva and Northeast Section and 4) Law Enforcement Section. The Law Enforcement Section supports other Sections on law enforcement matters in cooperation with the Navy, Police and Immigration Office. The FRCS emphasizes cooperation with communities such as remote islands, where patrol and surveillance activities cannot be carried out sufficiently, and collects relevant information by maintaining a good relationship with the community. As a result, there are many cases where smuggling and other crimes were caught based on information reported by the community. Facilities and equipment related to the customs clearance at the FRCS are well equipped and X-ray scanners are also maintained at both airports and seaports. The FRCS is fully functioning and intends to proactively implement training, etc. for neighboring countries as a regional leader.

- **Kiribati**: The Kiribati Customs Service (KCS) responsible for customs operations in Kiribati was under the Ministry of Finance but was transferred to the Ministry of Justice (MOJ) on September 28, 2016. It is in the transition period now, and the reform work is in progress under the leadership of the Secretary of Justice. The border management work in the current port and surrounding waters is vulnerable. In particular, the response to the IUU fishing is inadequate, and coastal monitoring and control need to be strengthen.
- Marshall: Marshall is preparing to introduce the Migration Information and Data Analysis System (MIDAS) developed by the International Organization for Migration (IOM) and will be the first country to introduce MIDAS among PICs. The introduction of MIDAS is expected to support the prevention of illegal entry and departure, rapid data collection on people's movement and strengthen risk assessment.
- Micronesia: **Customs Duties**: The Department of Finance and Administration oversees customs operations in Micronesia. Border control by the customs mainly focuses on inspection of imported goods. It is a serious problem for customs to carry out these cargo inspections manually based on the inspector's experience and intuition only because there is no X-ray scanner. Therefore, it is difficult to detect well prepared smuggling of firearms and illegal drugs. **Immigration Duties**: The Immigration Division, Department of Justice oversees immigration control. Regarding the fishing vessels and cargo-passenger vessels, although it is possible to ascertain the sailing route to a certain extent, it is difficult to know the sailing route of pleasure boats; therefore, careful examination is necessary. This is why pleasure boats are obliged to carry out the port entry procedure every time they enter any State of the four States of Micronesia. The fishing vessels and cargo-passenger vessels carry out the procedure only in the first State; then they are permitted to enter any port of the other States.
- **Palau**: **Customs Duties**: Offshore border control is under the jurisdiction of the Bureau of Maritime Security, Fish and Wildlife Protection, Ministry of Justice (commonly known as the Marine Law), and the Bureau of Customs and Boarder Protection (BCBP) and Ministry of Finance (MOF) are responsible for border management work at airports and seaports in Palau. X-ray scanners for the cargo inspection are procured from China on their own budget for two at the airport and one at the seaport; however, they broke down in less than five years; therefore, X-ray scanning is not being conducting now.

  Immigration Duties: These are also under the jurisdiction of the Ministry of Finance Division of Immigration, the Bureau of Immigration and Labor. Among private pleasure boats and yachts, there have cases of boats which did not have any leaving certificate at the last port of call. In such as case, it is necessary to thoroughly investigate by on-site inspection and decide on entry permission.
- **PNG**: The PNG Customs Service has three small patrol boats, but only coastal sailing is possible and offshore sailing impossible. The PNG Navy is operating two PPBP patrol vessels assisted by Australia which will be replaced with new vessels. In addition, the Customs Service responds by chartered private boats and aircraft as necessary. The Customs Service has been preparing a command center with VMS and the AIS

functions. The building is self-financed, equipment (hard component) is assisted by Australia; however, the software has not been procured yet because of a shortage in their own budget. Regarding X-ray scanners for the Customs Service, there are two container-type scanners (procured from China), two small mobile-type scanners (Australian support) and three large mobile-type scanners (Chinese support).

- **Solomon**: Countermeasures against smuggling are challenges in customs operations. There are few cases of illegal drugs but smuggling of tobacco and alcoholic beverages is common. Because there is no X-ray scanner, container cargo is inspected manually. It is necessary to provide adequate security at the Shortland Island in the West near the border with PNG and Lata in the East near the border with Vanuatu; however, it is inadequate. In the past, patrol activities were operated by vessels with support from the Solomon Islands Police Force (SIPF); however; it is difficult to conduct patrol activities by such vessels owing to a shortage in the budget for fuel costs.
- **Vanuatu**: The Vanuatu Customs and Inland Revenue (VCIR) oversees immigration control work customs duties. The VCIR is responsible for two major international ports, Port Vila and Luganville at Santo Island, as well as Tanna Island in the southernmost area. There is a sea area called a hot spot together with the so-called the Mystery Island (Aneitym Island) located in the south of Tanna Island. There is information that smuggling is rampant in that area; however, a monitoring system has not been developed there yet. The management of cargo and passengers at the port is inadequate, and cargo and passenger management around remote islands is also inadequate. Also, as there is no patrol vessel, it is difficult to conduct patrol activities at sea. Regarding the three important customs functions of 1) Port Security Response, 2) Tax Collection, 3) Customs Clearance Facilitation, only about 60% of capacity is dealt with.

(8) Ships and Seafarers

- **Proposals of Assistance Option**: Related to the seafarers, although there are many countries where through management of the seafarers' registration is necessary, specific support is not necessary. On the other hand, regarding ships, there are many countries that need to reinforce the passenger and cargo ship fleet. Among these necessities, it is considered that there is higher necessity for Marshal, Micronesia and Kiribati according to the Survey results
- **Outline of the country**
  - **Fiji**:

    Ships: Regarding ship registration, Fiji is not concerned with open registry, there are only domestic shipping vessels of its own nationality. The present registered ships number 205 with 100 gross tons or more, totaling 83,210.75 gross tons. The maximum size of ship has 5,864 gross tons. There are 17 ships with 1,000 gross tons or more.

Seafarers: The registered number of seafarers officer class are 2,571, and there are 1,598 ratings. There is no data on each class of Certificate of Competency in detail. All registered seafarers possess the Certificate of Competency conforming to the STCW Convention. The crew members of the GSS, the state-owned shipping company, has 60 officers and 113 ratings.

- **Kiribati**:

  Ships: The current issue concerning ship management is the control of Kiribati registered ocean-going ships managed by the official agent in Singapore. The management is carried out by the agent authorized by the Marine Division; however, the Marine Division does not fully know its registered content and does not know the owner's nationality. The current shipping companies are the Kiribati National Shipping Ltd. (KNSL) and eight other small companies who allocate small boats only. The KNSL owned vessels are two new ships: one vessel of 507 gross tons built in Taiwan and one of 326 gross tons built in Indonesia. Presently, it is planned to procure four new vessels (two by own procurement and two by government assistance).

  Seafarers: Although there is no statistical data on the number of registered seafarers, about 530 personnel are educated and trained annually at the MTC, and most graduates are employed by German shipping companies. Approximately 150 Kiribati seafarers are employed in bonito/tuna fishing boats in Japan, and about 30 new hires each year is customary

- **Marshall**: The Marshall Islands Shipping Corporation (MISC) is a state-owned shipping company and operates three vessels. Two vessels are provided by JICA (one is operated by MISC and another is transferred and operated by the Ministry of Works, Infrastructure and Utilities (MWIU)), and two vessels are procured by the MISC. Currently, the Board of Directors is discussing the possibility of procuring two vessels for the replacement of two own purchased ageing vessels. Marshall is the second largest registered vessel holder in the world of the vessel with the flag of convenience (237,826,000 deadweight tons in total according to the statistics of Global Note in 2018). Ship management that meets international standards is important to the Trust Company of the Marshall Islands (TCMI), which manages the open registry.

- **Micronesia**:

  Ships: The organization responsible for ship registration in Micronesia is the Department of Transportation, Communication & Infrastructure (DTC & I). It imposes an obligation of ship registration on ships with a total length of 12 meters or more, and fishing vessels are included, but the official vessels are not included. Approximately 60 vessels are registered and most of them are fishing vessels. Presently, the government owns four cargo-passenger vessels. Two vessels are cargo-passenger vessels granted by Japan. The other two vessels are a passenger-cargo vessel and a Ro-Ro vessel granted by China. These two vessels provided by China are not in service owing to the machinery failure.

  Seafarers: The number of registered seafarers is 53-54 persons. These seafarers have undertaken education and training in the FMI in the Yap State and the Australian Maritime College (AMC).

- **Palau**:

  Ships : Ship registration management in Palau is under the jurisdiction of the Bureau of Commercial Development (BCD) of the Ministry of Public Infrastructure, Industries & Commerce. For vessel inspections, the Marine Law is inspecting vessels with a length of 65 feet or less and vessels with a length that exceeds 65 feet are inspected by the BCD. There are 12 domestic vessels of the Palauan owners (regular liner vessels between Koror and the southwestern islands) and about 400 vessels flying a flag of convenience (FOC) of the foreign owners (11 passenger vessels, 220 cargo vessels and 122 others). There are three ship inspectors (one chief engineer and two captains). The vessels of FOC are managed by the Palau International Ship Registry in Greece and Houston, U.S.A.

  Seafarers: There are currently 48 Palauan seafarers registered, including three captains.

- **PNG**:

  Ships: Currently, there are 859 PNG registered vessels, and their average age is 10 years. Although between100 to 160 vessels call at the ports in PNG monthly, all vessels except LNG carriers and passenger vessels are inspected by means of on-board inspection. The NMSA does not have the capacity to inspect LNG carriers and passenger vessels. Since so many vessel inspections are carried out by only 12 inspectors, there is an urgent need to increase the number of inspectors; therefore, technical guidance by donors/international organizations is required.

  Seafarers: The NMSA is also in charge of seafarers' registration and management, and the number of registered seafarers in PNG is 343 captains, 493 navigation officers and 853 marine engineers. Also, there are 2,152 registered ratings.

- **Solomon**: The management work related to shipping, ship registration, and seafarers is the responsibility of the Solomon Island Maritime Authority (SIMA), the Ministry of Infrastructure Development (MID).

  Ships: Currently, the number of registered vessels is 292 (total length is 10m or more)

  Seafarers: The number of registered seafarers is about 3,000, including officers and ratings.

- **Vanuatu**:

  Ships: Regarding ship registration, the Office of Maritime Regulator (OMR) is responsible for the domestic vessels and the Vanuatu Maritime Service Limited (VMSL), which is private company, manages the registration duties and ship management of the foreign oceangoing vessels under the approval of the Ministry of Infrastructure and Public Utilities (MIPU). Currently, there are 572 foreign oceangoing vessels with about 300 million registered tons in total. The main shipowners are the U.S.A. and Japan.

  Seafarers: The number of registered seafarers is approximately 300 ratings, such as stewards for the oceangoing vessels, and about 600 for the domestic vessels.

(9) Prevention of Marine Pollution (Illegal Waste Dumping, Oil Spillages, etc.)

- **Proposals of Assistance Option**: In this survey, specific examples of the necessity of maintenance concerning marine pollution control were Marshall, Palau, PNG and Vanuatu. The final disposal site for oil waste is not maintained in all countries.
- **Outline of the country**
  - **Fiji**: The Maritime Safety Authority of Fiji (MSAF) oversees oil control in Fiji. The oil spill response duties and responsibilities in each relevant organization are stipulated in the Fiji National Oil Pollution Contingency Plan. The National Oil Pollution Committee has been established, and oil companies in Fiji (Shell, Mobil, BP[7]) are also members. The Oil Spill Control Center will be developed in cooperation with the fire department in Suva, the MSAF and the port authority.
  - **Kiribati**: Although the Marine Division of the Ministry of Information, Communication, Transport & Tourism Development (MICTTD) is responsible for oil spill control of Kiribati, official oil pollution control procedures are not established. Outside business hours of the MICTTD, the Betio Port Authority is the notification point. Other agencies involved in oil pollution control are the Ministry of Environment and Natural Resources Development (MENRD) and the Ministry of Works and Energy (MWE).
  - **Marshall**: The marine environmental management in Marshall is under the jurisdiction of the Environmental Protection Authority (EPA). And it is the Ministry of Transportation, Communications and IT that is responsible for oil pollution control. In the event of an oil spill accident, these organization are to cooperate with each other. Regarding the Kwajalein atoll, it is fully within the jurisdiction of the U.S.A. Mobil Oil Micronesia Inc. has limited oil pollution control equipment, and it cannot cope with a large-scale oil spill.
  - **Micronesia**: The Office of Fisheries and Aquaculture (OFA) is the agency in Pohnpei State and is responsible for protecting marine resources in the Marine Protection Area within 12 miles of the coast. The OFA has three small boats (29 ft, 23 ft and 18 ft in length) and has a total of 19 staff members. Since the OFA has no police authority powers over violators, they have to call the Maritime Wing if they find any violators. The OFA cooperates with the Maritime Wing, the Pohnpei Port Authority (PPA) in the case of a large-scale accident.
  - Palau: The Environmental Quality Protection Board (EQPB) is responsible for oil spill accidents due to ship stranding, collisions, etc. and oil control for oil spillage during loading and unloading of oil tankers. The EQPB has equipment and personnel capable for handling only small-scale spills, and if it cannot respond on its own, it receives the support of the ranger in each area and the domestic oil terminal company. In the case of a large-scale spill, the EQPB receives assistance through a collaboration agreement with the USCG Sector Guam.
  - **PNG**: In PNG, oil spill accidents occur frequently, there are only 38 oil spill accidents on record, and four serious accidents are included in these cases. Although oil control activities are entrusted to vessels and ports,

[7] British Petroleum

the National Maritime Safety Authority (NMSA) must implement its management, therefore, it is permitted to procure oil control equipment of the tier 2 under the budget for 2017 – 2018; however, procurement procedures have not advanced.

- **Solomon**: Oil spill control management in Solomon is under the jurisdiction of three organizations: 1) the Solomon Island Maritime Authority (SIMA), the Ministry of Infrastructure Development (MID), 2) the Environment and Conservation Division, Ministry of Environment, Climate Change, Disaster Management and Meteorology, 3) the Environment and Conservation and the National Disaster Management Office (NDMO), Ministry of Environment, Climate Change, Disaster Management and Meteorology.
- **Vanuatu**: Oil spill control in Vanuatu is under the jurisdiction of the Department of Ports and Marine (DPM) of the Ministry of Transport, Communications and Public Works. The DPM has jurisdiction over the two ports of Port Vila and Luganville Port. There are no facilities and equipment for oil spill control. In the case of an oil spill incident, the Secretariat of the Pacific Community (SPC) based in Suva, Fiji, is supposed to deal with it; however, it cannot cope with an emergency oil spill.

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1. Introduction

1.1 Survey Background

The Pacific Ocean is a valuable global public resource that occupies about one-third of the earth's surface and is shared by all Pacific Island Countries (hereafter referred to as "PICs") and Japan. Maintaining the Pacific Ocean as a free and open area based on the rule of law (maintaining international maritime order) contributes to the creation of a peaceful and stable society by realizing autonomous and sustainable development in PICs. PICs have a historically deep connection with Japan; they have a vast exclusive economic zone (hereinafter referred to as "EEZ") and offer precious fishing grounds for deep-sea fishery. In addition, as a result of the Trans-Pacific Partnership Agreement (TPP) being concluded, PIC areas are some of the most important areas for maritime transport, and the peace and prosperity of PICs are directly linked to the national interests of Japan.

PICs are generally island countries with a narrow national landscape, low population, and limited human resources and budgets. Therefore, surveillance and control operations are insufficient for each country to control large sea areas such as their EEZs properly owing to difficulties. For this reason, various support methods for improving management capacity to control these sea areas have been implemented for PICs for many years by the former suzerain countries of Australia and the USA. Both Australia and the USA concluded a free alliance with three Micronesian states: the Republic of Palau, the Federated States of Micronesia and the Republic of Marshall Islands. It is necessary to further improve the maritime security and maritime safety capabilities of PICs against the backdrop of recent awareness of conservation of marine resources, marine environment protection, and the importance of maritime security in the PIC region.

In order to respond to such issues and needs in the PIC region, the importance of capacity development in the maritime safety and law enforcement in the PICs was stated in the summit declaration of the 8th Pacific Islands Leaders Meeting (hereinafter referred to as "PALM 8") held in May 2018. At PALM 8, the Ministry of Foreign Affairs of Japan announced it would focus on the Free and Open and Sustainable Ocean as the core of assistance based on the Free and Open Indo-Pacific Strategy and cooperate/assist in the maritime security and safety sector, such as by maritime security capabilities and maritime transportation networks, including maritime law enforcement.

The Japan International Cooperation Agency (hereinafter referred to as "JICA") plans to strengthen its support in line with these strategies and policies following the PALM 8 Leaders' Declaration. In order to respond to these strategies and policies, JICA conducted The Data Collection Survey on Maritime Safety and Security in the South Pacific Region (hereinafter referred to as "the Survey") for the purpose of collecting information, analyzing the current situation, and extracting issues in the maritime security and safety fields of PICs to draft a support policy and specific cooperation plan.

1.2 Objective of Survey

The Objectives of this Survey are to collect information, analyze the current situation and extract issues in the maritime security and safety fields of PICs to draft a support policy and specific cooperation plan by JICA.

1.3 Target Area

The target countries for the on-site survey are eight (8) PICs, including 1) the Republic of Fiji (hereinafter referred to as "Fiji"), 2) the Republic of Kiribati (hereinafter referred to as "Kiribati"), 3) the Republic of the Marshall Islands (hereinafter referred to as "Marshall"), 4) the Federated States of Micronesia (hereinafter referred to as "Micronesia"), 5) the Republic of Palau (hereinafter referred to as "Palau", 6) the Independent State of Papua New Guinea (hereinafter referred to as "PNG"), 7) Solomon Islands (hereinafter referred to as "Solomon") and 8) the Republic of Vanuatu (hereinafter referred to as "Vanuatu") among PICs target countries by JICA, and 9) Australia as the leading country on maritime security and safety fields in the region, for a total of nine (9) countries. For the other six (6) PICs, including 1) Cook Islands (hereinafter referred to as "Cook"), 2) the Republic of Nauru (hereinafter referred to as "Nauru"), 3) Niue, 4) the Independent State of Samoa (hereinafter referred to as "Samoa"), 5) the Kingdom of Tonga (hereinafter referred to as "Tonga") and 6) Tuvalu, the survey was based on information obtained through document reviews, questionnaire responses, and hearings at the other sites surveyed remotely.

2. Framework of Survey

2.1 Survey Administrator

The Survey member and his assigned area are as shown in the Table 2.1.

Table 2.1 Survey Administrator

Assigned Area	Name	Affiliation
Organization Structure, Human Resource Development and Facilities and Equipment	Masaya OMAE	Success Project Management Office Co. Ltd.

2.2 On-Site Survey Schedule

The Survey was divided into three (3) on-site trips: the first on-site survey focused on Palau, Marshall, Micronesia, Solomon, and Australia from 26th August to 5th October 2018; the second on-site survey on PNG, Fiji, Vanuatu and Kiribati from 27th October to 4th December 2018; the third on Yap State of Micronesia from 11th to 16th December 2018. The detailed on-site schedule is shown in Appendix 5.1.

3. Outline of Present Situation and Issues of Maritime Security and Safety in Pacific Islands Countries

PICs are generally island countries with a narrow national landscape, low population, and limited human resources and budgets. In light of these common characteristics, surveillance and control operations are insufficient for each country to control large sea areas such as their EEZs properly owing to difficulties. These are common issues in developed countries around the Pacific Ocean; therefore, it is necessary for related countries who have the financial means and human resources, such as the USA and Australia, to collaborate with PICs in order to maintain maritime security and safety. The survey outlined in this report was conducted for the purpose of collecting information, analyzing the current situation, and extracting issues in the fields of maritime security and safety from PICs to draft support policies and specific cooperation plans. Firstly, the situation and issues of maritime security and safety in the PICs are outlined below. Each situation and issue is stated followed by the general outline for the specific region.

(1) Surveillance, law enforcement, and control over activities, including illegal fishing, such as IUU[8] fishing

It is necessary to secure international cooperation in order to monitor and control the illegal activities in the vast waters because it is difficult to do so using only the resources of PICs. Although illegal fishing is a particularly noticeable illegal activity, other cases such as smuggling and illegal immigration have not surfaced; however, it is said that this is due to insufficient monitoring. Maritime law enforcement activities in the Pacific Region have been organized under collaboration among donor countries, international organizations, and law enforcement authorities in the following summary.

1) Support from Australia

(Pacific Patrol Boat Program (PPBP) and Pacific Maritime Security Program (PMSP))

The Australian Navy has been conducting the Pacific Patrol Boat Program (PPBP) to provide support in PICs and South-Eastern Asian countries since 1960. The PPBP provided 22 patrol boats to 12 PICs from 1987 to 1997. The breakdown of the patrol boat distribution is one boat each to Cook, Kiribati, Palau, Marshall, Samoa, Tuvalu and Vanuatu, two patrol boats to Solomon, three boats each to Micronesia, Fiji and Tonga, and four boats to PNG. The program primarily was created to enhance the capacity of maritime patrols and law enforcement, but it also contributes to maritime search and rescue (SAR), disaster relief, and other necessary activities at sea. The patrol boats provided had the following specifications: 31.3m in overall length, 165 tons of displacement, 19 persons on-board capacity, and 2,500 miles navigable distance at 12 knots in speed. The boats have a capacity for 10 days fresh/frozen provisions and 21 days dry provisions. The PPBP also provided maritime surveillance advisors and technical advisors to each of the participating nations, which is supported by a network of 26 Royal Australian Navy (RAN) advisers posted across the region.

[8] Illegal, unreported and unregulated

The Australian Government agreed to the Pacific Maritime Security Program (PMSP) in 2015. The PMSP has three components: 1) replacement of the current fleet of PPBP (from 30m to 40m class), 2) aerial surveillance and 3) enhanced regional coordination. Under the PMSP, up to 21 replacement patrol boats will be constructed and distributed to participating nations between 2018 and 2023.

2) Support from the United States

(Shiprider Program)

The Shiprider Program, sponsored by the US, allows for an enforcement official from the host country to embark on a U.S. Coast Guard (USCG) vessel for the purposes of patrolling within the EEZ and/or territorial seas of that nation. This program gives the ship the authority to chase and capture suspected vessels. The Shiprider Program is a bi-lateral agreement that currently has nine signatory nations: Cook, Kiribati, Marshall, Micronesia, Nauru, Samoa, Tonga, Tuvalu, and Palau. The Shiprider activities have been conducted by the USCG command center of the 14th district headquarters, which has jurisdiction over the Pacific Region and is located at Hawaii.

(Oceania Maritime Security Initiative (OMSI))

The USCG and US Navy have been collaborating to detect and deter illegal fishing and other threats related to maritime security. The US Navy has been assisting the Oceania Maritime Security Initiative of the USCG. The goal of convened efforts by the USCG and US Navy through the OMSI mission is to combat transnational crime threats, including narco-trafficking, human trafficking, and IUU fishing.

3) Support from the Japanese Private Sector

An assistance project for the capacity-building of maritime surveillance was required, based on the cooperation of relevant states, including the U.S.A. (USCG), Australia (Navy), and Japan (Japan Coast Guard) for three (3) Micronesian States: Marshall, Micronesia, and Palau. Assistance to enhance capacity of maritime security in the three (3) states has since been conducted at the initiative of The Nippon Foundation and the Sasakawa Peace Foundation in cooperation with the US and Australia since 2008.

The provided facilities and equipment were as follows: 1) small craft (15m-long-type, FRP-hull, coastal multi-purpose/mission), three crafts for Palau, one craft for Micronesia, and two crafts for Marshall; 2) patrol vessel (40m-long-type), one vessel for Palau; 3) construction of the Bureau of Maritime Security and Fish & Wildlife Protection building in Palau; 4) construction of a pier for the patrol vessels in Palau; 5) installation of a communication system (new HF[9] antenna, set-up of VHF[10] repeater system, satellite communication system; 6) Emergency power generator for Palau; 7) high-speed SAR boats for Palau, 8) pick-up track for Palau and 9) ship handling simulator for Micronesia.

Operating costs were covered for fuel for the operation of the above-mentioned crafts and vessels, spare parts and

[9] High frequency
[10] Very high frequency

periodical replacement parts, direct guidance/training for high-tech maintenance work for the crafts and vessels, fuel costs for participation in the Regional Surveillance Operation with neighboring countries, and satellite communication fees.

4) Pacific Islands Forum Fisheries Agency (FFA)

The Pacific Islands Forum Fisheries Agency (FFA), established in 1979, is an international agency tasked to conserve fishery resources in 17-member states. The FFA operates the Vessel Monitoring System (VMS), which coordinates satellite data to eliminate IUU fishing. VMS data has been shared with the member states and is utilized to control suspicious vessels. However, the VMS has a capacity limitation as it can only monitor registered fishing vessels, and the satellite images are not real-time information. Furthermore, the capacity for analysis and diagnosis of the law enforcement officers in charge in the respective countries requires further enhancement. The FFA mentions the necessity of activities in line with Our Ocean Conference, which emphasizes ocean related issues internationally.

5) Western & Central Pacific Fisheries Commission (WCPFC)

The Western & Central Pacific Fisheries Commission (WCPFC) is a regional fisheries management agency founded in 2004. It currently consists of 26-member countries, including Japan, for a total of 40 countries and regions, including participating overseas territories and cooperating non-member countries. All decisions are decided at the annual general meeting of the committee. It is a regional fisheries management agency aiming at the long-term preservation and sustainable use of highly migratory fish stocks. WCPFC mainly controls bonito and tuna species accounting for 70 to 75% of the global total in the controlled area. The concerned countries are largely grouped into the high-seas fishing countries (Japan and other Asian countries, U.S.A. and EU) and coastal island developing countries. The high-seas fishing countries aim to secure sustainable fishing grounds, whereas the coastal island developing countries aim to maximize this source of income.

The WCPFC consists mainly of the following four committees;

- Scientific Committee: To conduct surveys and resource assessment of fishery resources and give advice to the committee to make scientific recommendations and on management for sustainable use.
- Technical and Compliance Committee: To provide the committee with information on implementation and compliance of storage management measures, technical advice and recommendations.
- Financial Management Sub-committee: To conduct financial management.
- Northern Committee: To provide recommendations to the committee on conservation and management measures of resources mainly inhabiting areas north of 20 degrees north latitude.

As the WCPFC collects data in the high seas within the Convention area, it is possible to monitor a wider range than the FFA, which collects data within the EEZ region of PICs via VMS. The WCPFC and the FFA have an MoU and exchange information with each other by paying fees to the FFA and obtaining FFA data but do not share

WCPFC satellite data. The WCPFC reports any information on a vessel suspected of a violation against the storage conservation measure determined by the WCPFC to the ship's flag state. Within the EEZ of coastal island developing countries, each coastal state operates surveillance activities based on the VMS data by FFA. On the high seas, the country with vessels that have been approved for boarding inspection based on the VMS data of the high seas is supported by WCPFC. This kind of role-sharing improves patrol efficiency. As WCPFC is the regional fisheries management agency, it does not take any direct action on violating vessels. The WCPFC is responding to compliance with preservation management measures determined by the WCPFC. The WCPFC prescribes the Boarding and Inspection Procedures and vessels approved by the WCPFC (about 60 vessels in total in the U.S.A., Japan, Australia, France, etc.) that can report information of violating fishing vessels in the high seas. The IUU fishing vessel list is updated annually and published on the Web.

6) Parties Nauru Agreement (PNA)

The Parties Nauru Agreement (PNA) is the regional organization that manages the world's largest tuna fishing waters headquartered in Marshall with eight member countries: Micronesia, Kiribati, Marshall, Nauru, Palau, PNG, Solomon and Tuvalu. The PNA has been monitoring the movement of vessels which are registered to the PNA based on the VMS information from FFA. The objective of the PNA is to manage the registered vessels and fishery fees of the member countries. The PNA receives registration fees from registered vessels as income, and manages to secure such fishery fees to be paid to each member country.

7) Training on IUU by JICA

JICA conducted the Policies and Countermeasures Against IUU Fishing training course in 2018. Among 14 target countries for assistance, 12 PICs applied to participate in the training course. The objectives of the course are as follows:

- To understand the present situation of IUU fishing in Japan and PICs,
- To understand the laws and regulations, know-how of control, and cooperation structure related to IUU in Japan,
- To discuss possibilities on the comprehensive measures related to IUU fishing PICs based on the above understandings.

(2) Development of Human Resources in the Field of Maritime Affairs

The major areas of the development of human resources in the field of maritime security and safety are seafarers, port security officers, and vessel inspectors. The requirements of subjects on such areas are stipulated by the international conventions. The seafarer education and training is conducted at the specialized educational institution in general, while the port security and vessel inspection education and training are conducted through a short-term training course by the responsible agencies or human resource development by on-the-job basis. In the PICs, the

SPC has been conducting the necessary assistance collaborating with the IMO in such fields; however, there are many issues to be solved.

1) Seafarer Education and Training

The International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) obliges seafarers to meet minimum requirements, while the Governments of the member states of the Convention supervise the education and training institutes based on the Convention and issue certificates of competency from Class 6 to Class 1 according to the navigation area, gross tonnage, and power of main propelling machinery of the vessels on board. See the Appendix 6.7 Manning Criteria of Navigation and Engineering Officers.

Educational institutions are operated in countries other than Palau, and the curriculum for the education and training are standardized because of the support by the SPC; however, many of them are confronted with difficulty in implementing the practical training. One of the reasons for this is the difficulty procuring and maintaining expensive practical facilities and equipment, including simulators. Fiji is the only example where such development and maintenance of facilities and equipment for practical training are appropriately conducted. Furthermore, it is difficult to secure opportunities for on-board training in order to satisfy on-board experience according to the level of each Certificate of Competency.

2) Port Security Officer Education and Training

The International Ship and Port Facility Security Code is an international convention established on the occasion of the 2001 simultaneous terrorist attacks in the US. This Convention aims at preventing/suppressing illegal acts related to maritime transport consisting of vessels and port facilities. In the ISPS Code, since the port management side, the ship management side and the ship side are responsible for securing the security of the ship and port facilities, it is necessary to allocate security staff for each side, and considerable technical guidance is necessary. Among the countries surveyed in the on-site survey, it seems that Fiji and PNG are maintaining the necessary level internationally; however, human resource development capacity by self-help efforts has not been secured; therefore, it is necessary to gain support from donors and international organizations.

3) Vessel Inspector (Foreign Vessel Inspector) Education and Training

The inspection by the port state has been conducted to eliminate sub-standard vessels which do not conform to the standards stipulated by the International Maritime Organization (IMO) and the International Labor Organization (ILO). Port states have the authority to inspect facilities and equipment of vessels and the certification of seafarers on board. This inspection is called the Port State Control (PSC). The port state inspects the safety and other regulation requirements of vessels which enter the state. Currently, the PICs are progressing education and training for vessel inspectors in accordance with designated requirements through regional cooperation by the Tokyo MoU[11];

[11] The Regional Port State Control organization consists of 20 member authorities in the Asia-Pacific region. The main objective of the

however, it takes time to train up a sufficient number of vessel inspectors in the PICs because of the lack of human resources of the Tokyo MoU.

The survey outlined in this report was conducted on-site mainly in regard to the present situation of seafarer education and training among 1) to 3) mentioned above. Only Fiji and PNG implement education and training for seafarers on international voyages; the other states implement those for domestic voyages up to class 4.

(3) Port Safety and Security

1) Port Security

The USCG has been acting as the main coordinator to implement guidance and assistance regarding port security in the PICs, and compliance with the above ISPS Code Regulations has been steadily improving.

The ISPS Code Regulation sets the port security level to be handled at each international port in three stages. The stage of PNG is Port Security Level 2; and the stages of other states are categorized as Level 1; therefore, excessive restrictions are not required based on the regulation of the ISPS Code. Despite the relatively low level of risk in PICs, each state takes necessary measures against smuggling, especially on illegal drugs and fishing. Notably in Vanuatu, a passenger vessel terminal has not been established at the Central Pier in Port Vila in spite of ship calls by more than 100 big cruise vessels; therefore, it is necessary to develop measures in accordance with the ISPS Code, especially in regard to controlling possible risks such as sidewalk vendors at the pier[12]. Furthermore, most countries noted a need for X-ray scanners for inspection of containers at port.

- Security Level 1: Normal (the level for which minimum appropriate protective security measures shall always be maintained.)
- Security Level 2: Heightened (the level for which appropriate additional protective security measures shall be maintained for a period of time as a result of a heightened risk of a security incident.
- Security Level 3: Exceptional (the level for which further specific protective security measures shall be maintained for a limited period of time when a security incident is probable or imminent, although it may not be possible to identify the specific target.)

2) Port Safety

Normally, there are ports with a low congestion density of vessels, and risk of collision and grounding events is considered to be low if adequate inbound and outbound traffic management is conducted and the Aids to Navigational (AtoN) and accurate nautical charts are provided. However, among the countries surveyed in the

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Tokyo MoU is to establish an effective port state control regime in the Asia-Pacific region through co-operation of its members and harmonization of their activities, to eliminate substandard shipping to promote maritime safety, to protect the marine environment and to safeguard working and living conditions on board ships. The member countries are Japan, Australia, Canada, Chile, China, Fiji, Hong Kong, Indonesia, South Korea, Malaysia, Marshall, New Zealand, PNG, Peru, Philippines, Russia, Singapore, Thailand, Vanuatu and Vietnam

[12] According to information from the ODA loan consultant in Vanuatu obtained after this Survey, cruise vessels exceeding 300m in length are supposed to use the Lapetasi international multi-purpose wharf which was maintained by an ODA loan. Although the passenger terminal is not maintained at the wharf, it is separated by fences as a bonded area and patrolled by resident security officers, and monitoring by CCTV is conducted on a 24-hour basis.

on-site survey, as the pier capacity is insufficient compared to the vessel entry at the Port of Pohnpei in Pohnpei State of Micronesia, the inside of the harbor is crowded owing to anchoring vessels. Furthermore, at the Port of Honiara in Solomon, tankers loaded with 30 thousand tons of gasoline, jet fuel, and other dangerous materials frequently enter the port; however, the level of firefighting facilities and equipment is very poor, not to mention a complete lack of firefighting vessels in the port.

(4) Navigational Safety of Vessel

The primary infrastructure for maintaining navigational safety of vessels is 1) aids to navigation (AtoN), 2) Vessel Traffic Management System (VTMS), 3) Global Maritime Distress and Safety System (GMDSS) and 4) nautical charts. In this Survey, all countries surveyed in the on-site survey pointed out inadequacies of AtoN and nautical charts, and Solomon and Vanuatu pointed out the need for VTMS. Especially in Vanuatu, adequate emergency response is considered necessary since large cruise vessels frequently call at Port Vila. Regarding the GMDSS, there are many countries where base stations are inadequate, and they are being pressed to respond in order to fulfill the role of the Maritime Rescue Coordinating Center (MRCC).

Concerning AtoN and nautical charts, although the Secretariat of the Pacific Community (SPC), USCG and the Government of South Korea have been analyzing the situation, comprehensive information is still unavailable. Although there is a need for assistance, further information gathering is necessary to avoid duplication of support by other organizations.

Maintenance of the electronic nautical chart (ENC) is also required for updated chart information. According to the International Convention for the Safety of Life at Sea (SOLAS[13] Convention), which is one of the 2012 IMO Conventions, ECDIS[14] installation is required for passenger vessels, tankers, and other existing vessels. Therefore, although it is necessary to provide ENC for ECDIS, which conforms to international specifications for vessels to enter port, the publication of ENC is not carried out by PICs in their own countries. This causes serious problems for entering and leaving port. ENC should be updated with the latest hydrographic survey results conforming to international specifications. If these specifications are not maintained, this situation not only interferes with navigational safety but also greatly decreases creditworthiness as an international port. The SOLAS Convention resolved to officially publish such nautical charts by related governments, and it is required to update them with the latest information. Regarding GMDSS, many countries need to form base stations to cover a wide range of areas, rather than only one station in the country.

(5) Search and Rescue (SAR) Operation

Search and Rescue (SAR) operations have been implemented through regional collaboration by following the New Zealand initiative and the other donor countries. International organizations operate regionally in order to

[13] SOLAS Convention was set in response to the Titanic disaster in 1914 as the international convention to secure the safety of vessels. It was revised in 2001 in response to the synchronized terrorist attacks in 2001.
[14] Electronic Chart Display and Information System

cooperate with SAR organizations in respective counties in a similar regard to law enforcement operations. SAR operations occur in parallel with law enforcement operations; therefore, it is necessary to develop capacities such as high-speed vessels/boats, planes, radio communication systems, etc. in order to implement SAR operations efficiently in vast waters.

1) Support from New Zealand

(Pacific Maritime Safety Programme (PMSP)

The Pacific Maritime Safety Programme (PMSP) organized by New Zealand is aimed at supporting Pacific nations to develop a strong maritime safety culture. This programme was established in 2011 and focused initially on Cook, Kiribati and Tonga. The programme has continued to grow, and the third phase was approved in 2018, with seven countries newly involved, including Niue, Samoa, Tokelau, and Tuvalu.

This programme was established after a series of serious maritime accidents, such as passenger ferry sinking cases in Kiribati and Tonga, with significant loss of life in 2009. More recently, the sinking of the Butiraoi and accompanying loss of life in Kiribati in 2018 highlights the ongoing risk in the region.

The key areas of the programme are 1) regulatory support, 2) SAR and oil pollution response, 3) domestic vessel safety and infrastructure, 4) community education and awareness and 5) support for education and training of seafarers. The key aspects of the programme are as follows:

- Provision of SAR boats (with support for training and maintenance) for Kiribati, Niue and Tokelau,
- Provision of SAR training, delivered by the Rescue Coordination Center New Zealand (RCCNZ[)] for all countries in the programme with an emphasis on developing planning and local capacity,
- Appointment of technical advisors to Kiribati, Tuvalu, and Tokelau to support the development of their maritime regulations,
- Support for an innovative community and an awareness / maritime safety education programme in Kiribati and Niue.

(6) Maritime Legal System Development

Regarding legal system development, it is necessary to develop a basic maritime legal system in order to join the IMO. This maritime legal system is almost complete in each country through the support of IMO, SPC, etc., however, there are cases in which international regulations and compliance matters for the conventions are reflected in domestic laws and regulations. Circumstances like this provide evidence of countries with underdeveloped legal systems.

(7) Border Protection Measure

Almost all PICs, as well as Japan, have their borders on the sea, so illegal acts such as the smuggling of goods and people are to be controlled at sea and ports. Under the United Nations Convention on the Law of the Sea

(UNCLOS), the oceans are classified into four areas: 1) territorial sea, 2) exclusive economic zone (EEZ), 3) high sea, and 4) contiguous zone, which is defined as the areas of the EEZ that connect to territorial seas. The definitions for each range are as follows:

- Territorial Sea: The range up to a limit not exceeding 12 nautical miles, measured from baselines determined in accordance with UNCLOS,
- EEZ: The range up to a limit not exceeding 200 nautical miles from the baselines,
- High Sea: All parts of the sea that are not included in an EEZ, in territorial seas, in internal waters of a state, or in the archipelagic waters of an archipelagic state,
- Contiguous Zone: The contiguous zone may not extend beyond 24 nautical miles from the baselines from which the breadth of the territorial sea is measured.

It is difficult to control the sea borders within the vast area of domestic jurisdiction for PICs, although the monitoring, law enforcement, control, and SAR activities that are the target areas of this survey are similar. PICs with numerous remote islands have borders at sea for each island separated from the capital. Furthermore, the customs offices of major international ports in the PICs have delayed installation of X-ray scanners for container cargo, and smuggling control has not been adequately conducted.

(8) Ships and Seafarers

(Ships)

In keeping with a general trend in developing countries, aging ships and the lack of capability to manage safe operations are major issues. Security and economic development are additional issues for PICs, as hub ports and remote islands are remarkably distant from each other. The maritime transportation of foods, living goods, fuel, etc. to remote islands has low profitability, and it is difficult for private shipping companies to cope with logistics; therefore, there is a necessity for state-owned shipping companies. At present, however, there are many cases where state-owned shipping companies are not able to make appropriate investments for the maintenance and management of their vessels, procurement of new vessels, etc. owing to insufficient government subsidies. For these reasons, some state-owned shipping companies are forced to operate sub-standard vessels. Table 3.1 shows the ship inspection results of 2017 by the Tokyo MoU, which supervises the inspection of PSC in Asia and the Oceania region. According to this data, more than half of PICs are on the black-list or grey-list, indicating high sub-standard rates. Fiji had the worst results among all the countries in the area.

Table 3.1 Result of detention of PSC in Tokyo MoU

Flag State	No. of Inspections	No. of defect Inspections	No. of defects	No. of detentions	Rate of detention (%)	Color of List
Cook	33	20	116	2	6.06	Grey
Fiji	23	21	211	11	47.83	Black
Kiribati	120	110	764	10	8.33	Grey

Marshall	2,667	1,301	4,404	53	1.99	White
Micronesia	67	64	499	8	11.94	Black
Niue	59	57	598	9	15.25	Black
Palau	89	87	767	12	13.48	Black
PNG	8	8	48	1	12.50	
Samoa	3	2	52	1	33.33	
Tonga	3	3	29	0	0	
Tuvalu	139	88	372	1	0.72	White
Banuatu	74	42	166	1	1.35	Grey
Total in Region	31,315	18,113	76,108	941	3.00	

Note: Color of list posted more than 30 PSC inspections only for countries implementing measures for more than three years.

Source: Annual Report on Port State Control in the Asia-Pacific Region 2017

(Seafarers)

In this survey, there were few countries that provided sufficient statistical data on the number of registered seafarers. It seems that employment of crew members for domestic shipping vessels or nearby coastal navigation vessels is in the majority, and there are few cases of seafarers supplying to foreign shipping companies like the Philippines.

In the on-site survey countries, there are maritime education and training institutes in countries other than Palau, and it seems that vessels are operated by seafarers who possess the Certificate of Competency stipulated by STCW Convention.

In Kiribati, graduates from the Maritime Training Center (MTC), supported by the German shipping company Hamburg Süd Group, are employed by the German shipping company. Since the inauguration of MTC, more than 5,000 seafarers have graduated, and more than 600 seafarers are now employed by German shipping companies.

Table 3.2 Global Demand and Supply of Seafarers (Officer, Rating) (2015)

	Officer	Rating	Total
Supply	774,000	873,500	1,647,500
Demand	790,500	754,500	1,545,000
Short/Excess	-16,500	119,000	102,500
%	2.1%	15.8%	6.6%

Source: MANPOWER REPORT The global supply and demand for seafarers in 2015

Table 3.3 Global Demand and Supply of Seafarers (Officer)

	2015	2020	2025
Supply	774,000	789,500	805,000
Demand	790,500	881,500	952,500
Short/Excess	-16,500	-92,000	-147,500
%	2.1%	11.7%	18.3%

Source: MANPOWER REPORT The global supply and demand for seafarers in 2015

Regarding the demand and supply of global seafarers, according to the 2015 analysis by the Baltic and

International Maritime Council (BIMCO), there was a shortage of 16,500 officers and over 119,000 excess ratings[15]. The current shortage of officers is estimated to reach 147,500 in 2025, which is anticipated to be nearly ten times worse than the current shortage. One of the factors that helped the Philippines succeed in supplying the international seafarer market was the high level of English communication skills of their seafarers. In this respect, the PICs are in a similar situation, and if PICs can produce quality officers, they can be a much-needed source for providing seafarers to the international seafarer market in the future.

(9) Prevention of Marine Pollution (Illegal Waste Dumping, Oil Spillages, etc.)

The Secretariat of the Pacific Regional Environment Programme (SPREP) is a regional international organization headquartered in Apia, the capital of Samoa. Regarding marine pollution control in the PICs, SPREP has greatly contributed not only to preventing oil spills but also to promoting cooperation among member countries on various environmental issues.

Although relevant bodies are required to have oil control abilities against oil spills from a standpoint of maritime safety and security, this survey has unfortunately revealed that there are not enough facilities, equipment, and personnel capable to deal with these issues in PICs. In many interview results, it was said that the USCG in Guam or Honolulu would correspond in the case of a massive oil spill incident, but scrambling ships from Guam and Honolulu is an insufficient contingency plan. In light of these findings, it is necessary to develop basic oil control facilities and equipment in each country.

[15] Officer and rating: An officer is a seafarer who has the Certificate of Competency stipulated in the laws and regulations. A rating is a seafarer who does not have such certificate to work to support officers on board.

4. Survey Results

The present situation on each subject is described in "Outline of the country," with "Proposals of Assistance Option" based on the on-site survey as follows.

4.1 Surveillance, law enforcement, and control over activities, including illegal fishing, such as IUU fishing

(Proposals of Assistance Option)

Many actors have been undertaking and planning activities internationally regarding surveillance, law enforcement, and control, seemingly rendering additional assistance by JICA to be unnecessary for the time being considering the burden of each stakeholder, as shown in 3.1 above. However, the continued implementation of the Policies and Countermeasures Against IUU Fishing training course, mentioned in 3.1 - 3.6 is anticipated. Furthermore, the FFA and the WCPFC have been collecting and analyzing information on vessels with potential for illegal fishing based on the VMS utilizing satellite information. Although the Survey discussed the possibility of supporting this satellite information technology, this Survey could not propose assistance owing to the present technology level because of the point of view on economic efficiency, even though it is possible technically to cover such vast area of the Pacific waters by the stationary satellite[16].

(Outline of the country)

(1) Fiji

The Fiji Navy has been engaging in surveillance duties in the EEZ in Fiji. The Fiji Navy has been operating two PPBP patrol vessels (three vessels were provided; however, one vessel is out of order after grounding). The Government of Australia has been conducting the Pacific Maritime Security Programme (PMSP) for PICs and supporting maritime law enforcement activities by collaborating with the Fiji Navy. The Government of Fiji signed up to the Shiprider Agreement with the U.S.A. in November 2018. This Agreement allows Fijian officials related to maritime law enforcement board vessels of the USCG and US Navy to survey and control illegal activities, such as illegal fishing, smuggling, etc., at sea within the EEZ of Fiji. Australia, New Zealand, and France are also cooperating with this program. Moreover, the New Zealand Navy has been dispatching vessels to the EEZ in Fiji for surveillance activities. The New Zealand Navy conducted boarding inspections for 250 fishing vessels and detected 45 cases of unreported and unregulated fishing in 2017.

(2) Kiribati

【Kiribati Police Service and Prison (KPSPr)】

KPSP, under the Ministry of Information, Communication, Transport and Tourism Development (MICTTD),

[16] The National Research and Development Agency, Japan Fisheries Research and Education Agency commenced joint research related to the IUU fishing with the Global Fishing Watch, which is non-profit organization in the USA and the Australian National Centre for Ocean Resources and Security in the University of Wollongong in September 2018. This joint research will share the analysis of information of the night-time satellite imagery and AIS signals in order to clarify the effect on fishery resources through analysis of the IUU fishing situation.

exercises jurisdiction over law enforcement duties in Kiribati. The coast guard activities are regulated by (1) national statutory orders and laws, (2) the Kiribati Police Powers and (3) Act 2008, and the Forum Fisheries Agency (FFA) PPB Operation Manual. PPBP patrol vessels and advisors are allocated from Australia to KPSP. Although it is impossible to perfectly monitor a vast EEZ area, KPSP is planning to increase the number of staff from 43 to 68 persons in order to strengthen organizational capacity. These 25 new staff members will be allocated to the new patrol vessel which will be procured by their own funding or donor assistance. The new patrol vessel is 40m in length, which is the same as the newly-provided PMSP patrol vessel from the PPBP successor program. The estimated values of this patrol vessel are €16 million by an Australian company and €18 million by a Dutch company. The procurement of the patrol vessel, which is under discussion by Parliament, is planned to be delivered by 2020. It is necessary to train the new 25 staff members; therefore, KPSP is requesting the Government of Australia for training to be provided at the Australia Maritime Academy (AMC). The chain of command for KPSP law enforcement falls under the minister of MICTTD as the commander, under whom serve the commanding officers of patrol boats.

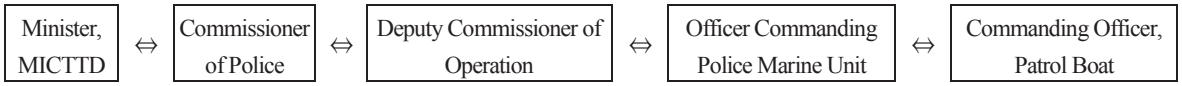


Figure 4.1.1 Chain of Command of KPSP (Source: KPSP information)

There have been a few recorded cases of smuggling and illegal immigration in Kiribati. There was a case where a large amount of heroin packed in a bag drifted onto a beach; however, there was no way to respond in terms of criminal apprehension. A summary of cases of law enforcement records is shown in Table 4.1.1 below.

Table 4.1.1 Summary of Law Enforcement Cases

Cases	Summary
Piracy and armed robbery	No cases
Illegal Immigration	One case by French to the Millennium Island around 2010
Smuggling	Illegal drug drifted to the beach of Line Island and Gilbert Islands
Marine Environment	Many cases of minor oil spills from foreign fishing vessels in harbor
Illegal Fishing	Some cases of illegal fishing more than 20 years ago. Illegal fishing also probable in the outer island sea area.

(Source: KPSP information)

With two new patrol vessels arriving in the near future, KPSP currently needs to construct a mooring pier. The current PPBP patrol boat is moored to the general pier at the Port of Betio, but there is no inspection function for entering the pier, which is a security problem. To complicate matters, there is currently not enough space for two patrol vessels.

Regarding IUU fishing, there are no noticeable cases other than transshipment at the port. VMS information from FFA is monitored closely; however, there are have been no emergency scrambles. KPSP has been monitoring the

VMS of FFA, which conducted on-site system operation training in Kiribati.

VMS monitor of FFA

PPBP patrol vessel

【Ministry of Fisheries and Marine Resources Development (MFMRD)】

The MFMRD also has a monitoring system of VMS of FFA, which is double-checked with KPSP. Coastal surveillance is a unique activity carried out by MFMRD via a small boat (about 7m in length) around Christmas Island. Also, land side surveillance is conducted by a pickup truck provided by the Overseas Fishery Cooperation Foundation of Japan (OFCF). There are more than 200 fishing vessels registered in the VMS. While the observer on-board rate for longline fishing vessels is about 5% due to limited space, it is 100% on the purse seine fishing vessel. The E-report system is utilized but the E-monitoring system is not implemented.

In order to strengthen monitoring, control and surveillance (MCS) activities, MFMRD plans to add one staff member in 2019, and four additionally in the future. It is necessary to receive technical instruction to strengthen MCS activities because such additional staff members do not have any previous experience; therefore, the volunteer members from New Zealand will implement MCS intensified training.

Since Kiribati prohibits transshipping in offshore areas, the IUU fishing detection countermeasures monitor transshipment at port. As one grim indicator of maritime safety, there are many fatal accidents of fishermen in Kiribati. The mortality rate fell as the result of technical support on survival at sea and awareness-raising for crisis avoidance (Maritime Safety Awareness Program), sponsored by New Zealand, but more attention is needed. Also, New Zealand conducted the January 2019 Human Resource Management survey, which covers not only fishery and maritime matters, but also human resource development in various fields.

Furthermore, support is required for MFMRD activities outside of maritime safety and security fields.

- The Marine Spatial Planning (MSP) plan for analyzing coastal fish variance using GIS[17] technology is in progress, and technical support for the plan is required.
- Heightened exploration of mineral resources in the deep sea will occur in the coming years. Currently, South Korea is preparing for the procurement of exploration equipment. Participation by Japan is also expected.
- Support for edible salt refining plant: Since Kiribati has an abundance of seawater and solar energy, it expects

[17] Geographic Information System.

economic effects from refining edible salt; however, support by donors or international agencies is needed.

(3) Marshall

The Sea Patrol Division, Police Department, and Ministry of Justice each exercise jurisdiction over law enforcement and SAR duties in Marshall. The duties are prescribed as follows:

- The conduct of patrols to deter and detect illegal fishing within the EEZ
- The maintenance of border security and integrity
- The enforcement of marine law
- The enforcement and promotion of maritime safety
- SAR operation

As an organization under the Ministry of Justice, the Commissioner and Chief of Surveillance are followed by the Sea Patrol Division under its jurisdiction. As the advisor to the Sea Patrol Division, two officials from the Australian Navy are assigned as part of the PPBP activities.

The Nippon Foundation has granted two small patrol boats (SPB: LOMOR II, TARLAN 04) to the Sea Patrol Division. In addition to SAR activities, these boats are engaged in coastal patrols, on-site inspections of foreign vessels for violation of laws and regulations, transportation of important people to remote islands, resident evacuation at the time of disaster such as storm surge, transport of disaster substances, etc.

Large-scale patrol activities are conducted about four times a year (about 10 to 14 days each) to patrol the borders of each other's EEZ with Micronesia. An MoU was created among countries to outline operations, and Marshall concluded an MoU with Micronesia.

PPBP patrol vessel (right) and patrol boat provided by the Nippon Foundation (left) at Sea Patrol Pier

The Australian Navy is deploying PPBP in collaboration with FFA and introducing 21 Guardian class patrol boats (40m in length) in the PICs region, and will add two aircraft to Vanuatu and Samoa, in order to strengthen law enforcement activities.

In order to moor the new patrol boat, there is a plan to expand the pier and to improve facilities with support from the Nippon Foundation in Palau. In the current facility, the standby space of crew members of the patrol vessel is insufficient; therefore, office space also will be renewed. The following training courses were implemented with the support of the Australian Navy in the year 2017/2018. Similar funds are expected in 2018/2019.

- Bridge Watchkeeping Officers Refresher Course
- Communications Management Course
- National Fisheries Officers Surveillance Course

- Survival Equipment Maintainer
- South Pacific Junior Officers Course
- Seamanship
- South Pacific Commanding Officers Course
- South Pacific Navigation Officers Course

For the Shiprider Program with the US, an agreement on joint maritime patrol activities was signed. The officer in charge boarded a US Navy vessel with USCG officers and received practical and technical guidance while navigating from Fiji to Guam.

(4) Micronesia

The most important focus for law enforcement in Micronesia is illegal fishing. Regarding marine resource management such as IUU fishing, the National Oceanic Resource Management Authority (NORMA) is always coordinating with FFA in Solomon. The Maritime Wing of the Ministry of Justice has been conducting patrol operations with three patrol vessels supported by Australia (PPBP) and one vessel from the Nippon Foundation. Boarding inspection procedures continue in accordance with the FFA program, ranging from confirmation of relevant documents to seizure of violators. Information on IUU fishing vessels is always shared with FFA, as it is the responsibility of each member country to scramble to the site for detection based on information from the FFA. Since the Maritime Wing does not have any aircraft and Micronesia has vast EEZ areas in four States (the distance from Pohnpei to Yap is five days, Chuuk is two-three days by sea), in the case of an emergency, USCG responds with aircraft from the USCG Sector Guam. If the Maritime Wing decides that it cannot deal with an emergency alone, it contacts the USCG Sector in Guam and requests assistance.

The capacity of crew members on board of the PPBP patrol vessel is 16 (maximum 18) per vessel. Crew education and training is carried out at the Australia Maritime College (AMC) in Australia. An average of 18 participants annually participate in the course that lasts from three to six months. There are courses on navigation, marine engineering, electricity, etc. The patrol vessel visited in the on-site survey was the oldest among the three vessels, launched in 1990; however, the maintenance situation of the bridge, the engine room and the other areas seemed to be good, and the inside of the vessel was well organized. Although the patrol vessel was about to dock for periodic inspection, in the comment of the crew members, there was no hindrance to the operation of the vessel.

Forecastle of PPBP patrol vessel (Arms on forecastle deck are removed)

Patrol boat provided by the Nippon Foundation alongside a PPBP vessel

As shown in the photograph, the firearm on the forecastle deck of the PPBP patrol vessel was removed, adhering to the policy of the attorney general stating that the vessel is "not a warship." The vessel is still equipped with small rifles and pistols, however. Although crew members may be leery of suspicious armed vessels, they have never experienced such a case. If such a case is encountered, the US Navy or USCG Sectors Guam or Hawaii can assist in response.

The Australian Navy allocates the operation and maintenance advisors to PPBP operation branches of the three countries in the Micronesia region. The advisors of the three countries closely contact each other, and joint training is under the control of FFA. Training is conducted around the boundary between Marshall, Palau and each EEZ, and mutual knowledge is shared. Previously, the IUU fishing responses were the primary purpose of the mission; however, the necessity to strengthen responses against illegal drug smuggling and wide area crimes, such as human trafficking, is currently being discussed. The EEZ of the four States of Micronesia is vast and its monitoring and SAR activities are required for efficiency. Ideally, if functions like the Maritime Wing of Pohnpei can be developed in each State, law enforcement and SAR functions will be enhanced. It will become possible to supply water, fuel, food, etc. to each State, as well as the operation centers with improved communication facilities. Furthermore, if it is possible to build operation centers with communication facilities and deploy patrol vessels and patrol boats at each, the function will be strengthened sufficiently.

The law enforcement and SAR duties at the Pohnpei State level are under the jurisdiction of the Department of Public Safety, Pohnpei State. Small-scale activities have been carried out by two small boats (27 feet in length, with two to three crew members). Commercial fishing by foreign fishing vessels within 24 miles of the coast is prohibited; however, it is impossible to conduct surveillance activities within 24 miles from coast by small boats; therefore, the main patrol activities have been carried out by the Federal Government. The crew members on police duties take a three-month education and training course at the Police Academy in Guam (two-three members annually). The expenses are paid by the Micronesia Conservation Trust (MCT) of NGO[18]. One future goal is to relocate the maritime department building to the coastal area. Currently, the office building of the department is

[18] Non-governmental organization

inland, however it is necessary to face the sea in order to properly respond to emergencies. This plan is currently seeking a permit from the Governor. Furthermore, since the current maritime department of eight staff members is insufficient, an increase in staff members is also being requested from the Governor. The Fire and Emergency Division is engaged in rescue operations in land and sea, and currently has a rescue boat (23 ft in length, 200 horsepower engine) provided by the Embassy of Japan, and seven divers belonging to the Fire and Emergency Division. Regarding maintenance of the boat, periodic inspections are conducted at a local Yamaha agent and regular inspections are carried out by crew members. The activities of this boat in the reef and in searching activities are dangerous at night because the boat does not have lighting equipment such as exploring lights installed.

Boat provided by Japan

Side mark of boat provided by Japan

(5) Palau

The responsible agencies concerning maritime law enforcement are the Bureau of Maritime Security, Fish and Wildlife Protection, and the Ministry of Justice (known as Marine Law). The Marine Law has established a coordination system with USCG, the Australian Navy, and the Japan Association of Marine Safety (JAMS), and its duties are as follows:

- Monitoring and control of territorial waters of Palau
- Response, seizure, arrest and investigation related to illegal fishing and other illegal activities in territorial waters of Palau
- Law enforcement coordination with the member counties of the international conventions
- SAR activities
- Provision of medical support and other governmental support to the south east islands

In case of an emergency, the USCG Sector Guam support system provides vessels and airplanes. Also, one maritime patrol adviser (Navigation) and one ship maintenance adviser (Marine engineering) are assigned along with one maritime patrol adviser from JAMS.

The current fleet of the Marine Law consists of one patrol vessel provided by the JAMS, one patrol vessel provided by Australia (to be provided in 2020; see Fig. 4.1.2.), and three patrol boats provided by JAMS.

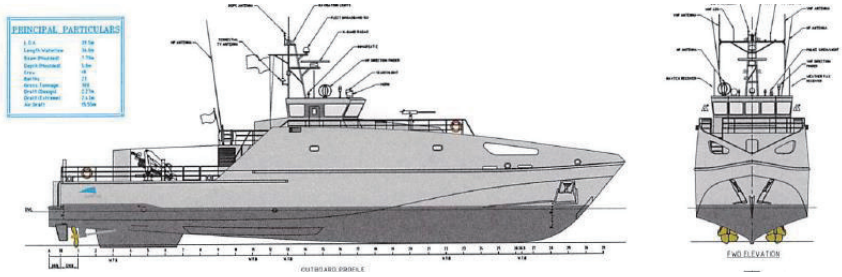


Fig. 4.1.2 Patrol vessel newly provided by Australia (Source: Australian Navy)

Regarding the education system of Marine Law staff members, the newly appointed staff members participate in the initial training at the Maritime Technical College of Japan, and after completing the training course at the Police Academy in Pohnpei they are given on-the-job training. Also, they participate in a wide range of education and training including navigation, marine engineering, maintenance of nautical equipment, fisheries inspection, stewardship, and shipboard hygiene. The Marine Law does not provide its own education and training course. Furthermore, the Marine Law employs graduates from the Criminal Justice Course, Palau Community College (PCC).

JAMS covers costs for fuel, manpower expenses, and maintenance costs of the patrol vessel provided by JAMS for 10 years in order to operate and maintain the patrol vessel. Since this fuel cost subsidy is equivalent to 1,400 hours a year, the subsidy is sufficient for fundamental activities. PPBP is a defense program for instructing maintenance techniques in parallel that the Australian Navy has been conducting in the Pacific Ocean region since 1994. Australia is responsible for all expenses related to activities from fuel, manpower expenses and other logistical support for PPBP. The PPBP activities cooperate with the FFA headquarters in Solomon, conduct patrol/enforcement activities utilizing satellite data information, etc. PPBP is planning next-generation operations using two aircraft and 22 patrol vessels newly provided to the program in order to improve the operational efficiency of the FFA in the PIC region. The current headquarters of Maritime Law was built by JAMS in December 2017.

Marine Law Headquarters Building supported by JAMS

Marine Law patrol vessels (left: PPBP, Right: JAMS)

Marine Law patrol boats (JAMS)

Marine Law has been conducting a patrol of five to six days, sailing monthly. Figure 4.1.3 shows the sailing route of the boarding inspection operation in the south west islands area in April 2018. The boarding inspection is

implemented in accordance with law enforcement provisions of the on-site inspection procedure. Although it is ideal that such patrol activities are carried out two or three times a month, it is difficult with the current staffing system; therefore, it is necessary to increase crew members.

With the establishment of the National Marine Sanctuary Act, all foreign fishing vessels will be prohibited from fishing in the Palau EEZ from 2020. The Japanese Fisheries Agency has dispatched a fishery control vessel to provide support to Palau's IUU countermeasures and contribute to fishery management aimed at sustainable use of fishery resources. It is desirable to continue the operation of foreign fishing vessels while maintaining the marine resources in the sea area.

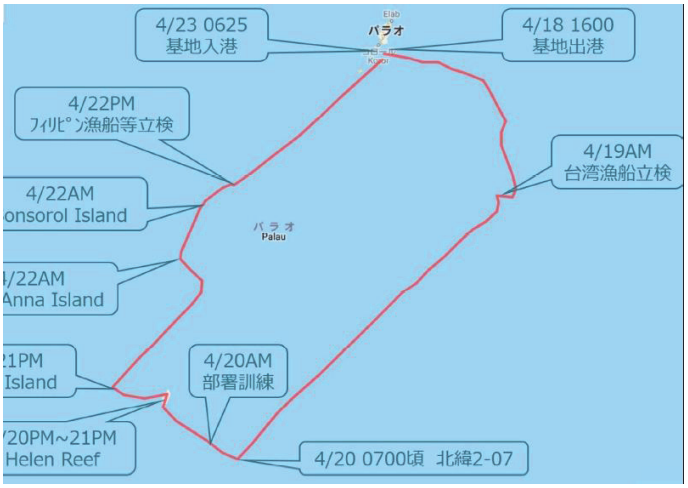


Fig. 4.1.3 South West Islands Patrol Example
(Source: Marine Law Advisor, JAMS)

(6) PNG

Three organizations, 1) Water Police, 2) National Fisheries Authority (NFA) and 3) customs authorities, are responsible for maritime law enforcement duties in PNG. All three organizations have been granted police authority and are implementing maritime law enforcement work. The Water Police leads ordinary law enforcement duties, and NFA is leading illegal fishery response duties. As the Water Police and NFA vessel capacity are insufficient, the PNG Navy is requested to assist with such duties. In situations when outside assistance is needed, the requesting party bears the expenses for the PNG Navy. There is no clearly stated command system for operation, but command us properly carried out on a case-by-case basis. The Water Police, NFA, Customs, and Navy have concluded an MoU and are conducting cooperative activities to counter IUU fishing.

【Water Police】

The area covered by the Water Police is a coastal area within 12 nautical miles, and the Navy responds in areas outside of that. In the development of the APEC[19]-related security system in 2018, the maritime security system was

[19] Asia-Pacific Economic Cooperation

improved in cooperation with Australia, New Zealand and the United States. Australia developed the Water Police headquarters building for APEC-related security, and New Zealand cooperated with this support. On the facility side, workshops and a boathouse were constructed, and technical assistance on practical aspects related to security system development was also implemented. The marine security operation plan was prepared in collaboration, table top exercises were carried out, on-site simulated training was implemented, and the security system was developed. This experience was an essential step in improving the capabilities of the Water Police. For the parallel special training, the Australian Navy conducted education and training for the Water Police staff members. Content of the six-month program included classroom lectures, boat handling training, offshore operation training, and workshop practice. Half of the 60 young Water Police officials were trained under this program.

The Water Police's boat fleet consists of one 12m aluminum boat (three 300 HP engines), two aluminum boats of 9.5m (two 250 HP engines), three 5.5m FRP boats (two 60 HP engines), four banana boats (one 60 HP engine) and six jet skis. It is obvious that these vessels alone cannot cover the vast waters of PNG.

12m aluminum boat

Banana boat

Jet ski

Rubber boat

Workshop

New headquarters building

【National Fisheries Authority (NFA)】

Patrol activities in the EEZ are carried out two weeks at a time, ten times a year. The coastal area is patrolled by two small boats owned by NFA (high-speed boats with a total length of 15m: manufactured by Stone Works, Philippines). However, NFA considers it necessary to procure patrol vessels around 30m in length (29m - 35m) in order to implement patrolling activities within the EEZ independent of the NFA. Because illegal fishing vessels have high-spec speed capabilities, patrol vessel with speeds as fast as 30 to 40 knots are necessary for these pursuits. However, this is a mid- to long-term plan due to the present lack of crew candidates. The challenge related to IUU

fishing monitoring is the transition from catch monitoring (via onboard observer) to E-monitoring of foreign-registered fishing vessels. Since five observers have gone missing and it is difficult to secure observer safety, it is necessary to introduce a system that can be remotely monitored. E-monitoring plans started in 2016 and shift to a full rollout in 2019, but this schedule may be slightly delayed.

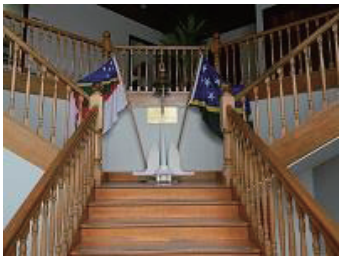
(7) Solomon

Since Solomon does not have a navy, Royal Solomon Islands Police Force (RSIPF) is responsible for all maritime safety and security responsibilities. The RSIPF personnel, facilities, equipment, and structures are inadequate to carry out these duties and heavily rely on PPBP activities of the Australian Navy for support. In addition, domestically, RSIPF has established a collaborative system with related organizations such as cooperation with the National Disaster Council for large-scale disasters. For maritime accidents, the Solomon Island Maritime Authority (SIMA) and Ministry of Infrastructure Development cooperate with FFA on illegal fishing and other fishery issues. This FFA information is shared with PPBP activities. Based on the satellite information from FFA, Solomon troops and naval forces from cooperating countries are implementing law enforcement via scrambling.

According to the annual activity plan of the PPBP patrol vessel, each two-ship group carries out patrol activities for about 10 days every month (12 times per year), with 20 days allotted for crew holidays / training and ship maintenance. However, the actual implementation of patrol activities is only about eight times per year. Although both PPBP patrol vessels are nearly 30 years old, the maintenance situation is in good standing. According to the Pacific Maritime Security Programme (PMSP) of Australia's new program, two new patrol vessels are planned to be replaced by 2023. Maintenance of the patrol vessels is undertaken with the support of Australia, including regular inspections at an Australian dockyard. A pier for the PPBP patrol boat was also developed with the support of the Australian government, and further expansion of the pier is planned by the Australian government to cope with the new program of replacing vessels (from the current length of 30m to 40m). In addition, nine Stabi Craft provided by Australia in 2015 have high-speed capabilities (200 HP outboard engine × 2) used for SAR and have been deployed in various places. As Solomon does not receive support from Australia, it is struggling to procure spare parts and funding to maintain these vessels. Regarding imports such those on as spare parts, government procurement is complicated in procedure and difficult to deal with in a timely manner; therefore, maintenance and repair response is occasionally delayed. The education and training of patrol vessel crew is undertaken at the Australian Maritime College (AMC), and the crew members who graduated from Solomon Maritime School are also similarly sent to AMC for training. The education and training at AMC is specifically for the actual patrol vessel; it is not a course to acquire the international Certificate of Competency as a seafarer. In Solomon, the patrol vessel crew members have no obligation to hold the Certificate of Competency as a seafarer. Of particular note is the support of private banana boats (small boats usually engaged in passenger and cargo transport) in SAR activities, which has contributed greatly to efforts. Many lives have been saved thanks to the cooperation of banana boat crew members who were

familiar with the surrounding sea area.

Police Maritime Headquarters



Entrance of Police Maritime HQ

PPBP patrol vessel

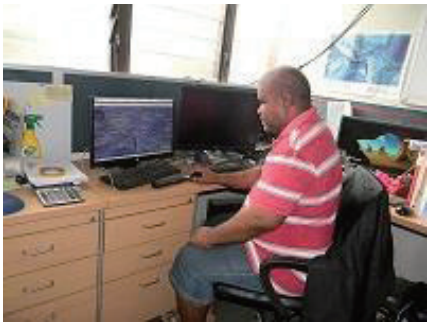
Pier for PPBP

Stabi craft

Banana boats

Also, the Ministry of Fisheries and Marine Resources (MFMR) conducts law enforcement activities focusing exclusively on IUU fishing. The MFMR is coordinating with FFA; however, since FFA is an international organization, the MFMR is only responsible for IUU fishing countermeasures in Solomon. The MFMR can share information of the satellite Vessel Monitoring System (VMS) and AIS from FFA in real time. In the monitoring program of FAA, joint patrols of aircrafts and ships have been conducted five times a year, with vessels performing monthly monitoring activities. For these vessel patrols, one or two observers from MFMR are on board. MFMR observers are also on board for registered fishing vessels in order to collect catch data. These observers not only collect information related to fisheries, but also confirm compliance with the resource preservation control measures prescribed by WCPFC. Because longline fishing vessels are usually poor shipboard environments, the observer boarding rate is about 5%. Other vessels are equipped with monitoring cameras and are remotely monitored by MFMR headquarters. This observer fee (about 40 US dollars/day) and installation of the monitoring camera is a cost burden taken on by the vessel owner. Fishing fees are determined under bilateral negotiations and related agreements based on the minimum standards determined by the Nauru Agreement. The majority of foreign fishing vessels fishing in Solomon sea areas are fishing vessels from Korea, Japan, and Taiwan. Notable IUU fishing cases are Blue Boats from Vietnam, three cases of which were detected in 2016.

Monitor of VMS at FFA



Staff operating monitoring

(8) Vanuatu

Law enforcement and SAR activities in the sea area within 12 miles of the coast are under the jurisdiction of the Police Maritime Wing (PMW), and the area beyond it within the EEZ is under the jurisdiction of the Fisheries Department of the Ministry of Livestock, Agriculture, Forestry and Fisheries and Bio security (MLAFFB) and the Australian PPBP patrol vessel team. The role of PMW is defined as follows:

- Surveillance and control activities on fishing
- Response to IUU fishing
- Enforcement of fishing regulations
- Provision of support services for immigration control, customs, and biosecurity sector
- Disaster relief and medical rescue activities
- SAR operation

Currently, PMW is discussing collaboration among the domestic border control organizations such as customs, immigration control, fishery management, biosecurity management, and quarantine. By sharing facilities, equipment, assets, human resources, and information, the equitation and training is to be implemented to enhance the border security management system of PMW. Furthermore, PMW recognizes that cooperation with neighboring countries is essential for maritime safety and security measures and is going to extend these domestic activities to neighboring countries.

The most problematic aspect of IUU fishing in Vanuatu is illegal operations by registered ships. The cause is on the management side. Firstly, even if PMW receives a declaration about a catch, there is no personnel or system to confirm it. Currently, the PMW controls 90 registered vessels, but half of them are considered to be making illegal declarations. Of the registered vessels, 70 are longline fishing vessels and their flags are China, Fiji and Taiwan. Inspectors are not on board the registered vessels. Recently, E-monitoring and E-reporting systems are being developed. These systems are currently under development assisted by FAO and SPC and utilized on two vessels on a trial basis. With this support, PMW aims to improve vulnerable staff situations. In Vanuatu, Australia, New Zealand, U.S.A., and France, FFA is conducting IUU fishing surveillance, but Vanuatu is not operating such

subjective activities because of a lack of patrol vessels.

Currently, the annual catch limit allocated to Vanuatu is 7,000 tons a year. Fishing fees ranging from 5,000 to 15,000 USD per year are collected from each registered fishing vessel. The fishing fee for longline fishing vessels is 5,000 USD and 15,000 USD for fish carriers. The limit of the annual catch per registered fishing vessel is not set, and when the total of the catch filed amount comes close to 5,000 tons per year, the limit is set individually for each fishing vessel; however, until now there has been no such case. It is conceivable that this self-declaration has not been conducted properly.

PPBP patrol vessel and pier to be extended

Commander at the bridge of PPBP patrol vessel

(9) Relevant information was not taken from the countries subject to a document review survey (Cook, Nauru, Niue, Samoa, Tonga and Tuvalu).

4.2 Maritime-related Human Resource Development

(Proposals of Assistance Option)

The Fiji Maritime Academy (FMA) is operated by a private maritime school in Sri Lanka under the umbrella of the Fiji National University (FNU). Both facilities and equipment are substantial, and there is no need for support by JICA. However, there is a plan to establish the Regional Maritime Academy (RMA) as a future plan of SPC, and if FMA becomes its base, human support will be necessary. Therefore, it is appropriate to understand the trend of SPC's plan and to consider future cooperation by JICA. It is also necessary to understand the situation of the RMA of SPC by Port Operation and Maintenance Policy Adviser (Regional) , who is scheduled to be dispatched to the SPC. These various situations need to be examined in order to determine the possibility of appropriate support. Regional organizations such as the RMA are expected to play an important role in fostering maritime experts with seafarer experiences that are lacking in PICs. The required range of necessity is wide and includes seafarers, teaching staff for the seafarer education and training institute, officials of the maritime affairs of ministries and agencies, private shipping companies, port operators etc.

For reference, if the RMA is to be established by Japanese cooperation, it is necessary to develop infrastructure. Everything from the building of facilities and equipment, curriculum development, faculty arrangement, soft

component development, etc., are essential components of this infrastructure development. It is assumed that IMO will be involved in its operation, and the SPC will also be involved in the region as in the case of the World Maritime University (WMU), the graduate university developed by IMO in Sweden. Since it is impossible to arrange all faculty members from Japan considering the limited human resources available, initially, it is desirable to invite faculty members from IMO member countries, then aim to nurture faculty members of PICs and to localize them serially. For WMU students, the Sasakawa Peace Foundation has provided scholarships, and graduates who received scholarship support are called Sasakawa Fellows and are active in the maritime field in their home countries.

Also, the Fisheries and Maritime Institute (FMI) in the Yap State of Micronesia has high expectations of Palau and Marshall concerning maritime education and training, and capacity improvement is expected at the regional level. Moreover, it is possible to train the crew members of PPBP patrol vessel in parallel. In such case, it is necessary to take the project design collaborated on between Japan and Australia into consideration. Currently, FMI is carrying out education and training for coastal vessel crews, and if further improvement of capacity is achieved, it is expected from a long-term perspective that the FMI will be developed as a central maritime education and training institution for crews engaged in international voyages in the Micronesia region. For this purpose, it is necessary to provide a platform for practical training on board ships in parallel with improving the capacity of the FMI. Currently, the Yap State operates vessels donated by China, but replacement of these vessels is necessary owing to continued failure. If this vessel replacement is provided, it will be possible to utilize them for FMI student training on board. The FMI support project is outlined below. With regard to the fisheries education and training of output 4) below, although it is unrelated to maritime security and safety, this was to be considered in response to the request for the lack of capacity of FMI.

Capacity Enhancement Project of the Fisheries and Maritime Institute (FMI) in Micronesia (tentative title)

- Project Purpose: The Fisheries and Maritime Institute (FMI) implements maritime education and training at the international level in the Micronesian region.
- Output: 1) FMI has the function to train seafarers for ocean-going vessels.
  2) FMI has the function to train port security officers.
  3) FMI has the function to train vessel inspectors.
  4) FMI upgrades the level of fisheries education and training.
- Input

  Long-term Expert: chief advisor, project coordinator

  Short-term Expert: navigation, marine engineering, port security, vessel inspection, fisheries

  Provision of facilities and equipment: cargo-passenger vessel[20] (provision to the Federal Government, not to

[20] Assume the alternative vessel of the cargo vessel in trouble assisted by China. She will be used for on-board training for FMI.

FMI), facilities and equipment for firefighting, lifeboat and davit, life raft and platform, GMDSS simulator and a set of real equipment for practical training, other necessary technical books, video materials, and software.

Counterpart training: Accept training to the following candidate organizations:

- Note: Regarding the project period, it takes three years to develop Class 4 for domestic seafarers and three years to prepare the inauguration of Class 3 for ocean-going seafarers related to Output 1. Technical assistance on the port security, vessel inspection, and fisheries will be conducted by the short-term expert with parallel training in Japan.
- Candidate expert and acceptance for training in Japan:

  Output 1: Faculty of Maritime Sciences, Kobe University, Marine Technical College, National Institute for Sea Training

  Output 2: Nippon Kaiji Kyokai (Class NK)

  Output 3: Tokyo MoU

  Output 4: National Fisheries University, School of Marine Life Science, Tokyo University of Marine Science and Technology

(Outline of the country)

(1) Fiji

The Fiji Maritime Academy (FMA) is the only maritime education and training institution in Fiji that conducts maritime education and training in compliance with international standards. The School of Maritime Studies (SMS) was established in 1970 and fell under the administration of Fiji National University (FNU) in 2009. In 2014, the Colombo International Nautical and Engineering College (CINEC), a private school in Sri Lanka, started operating FMI. Regular seafarer courses for navigation and engineering officers (up to Class 3 each, the term of completion is two and a half years) are offered. After completing the course, students advance to the course of Class 1 for one year after completing the predetermined boarding experience Next, after the specified boarding history, they acquire the Class 1 Certificate of Competency. Regarding teaching staff, the navigation department is satisfied with both the number of members and quality of instruction, but the marine engineering department is still lacking. The total number of enrollees is 225 in total for navigation and engineering departments. Regarding acceptance of foreign students, there are achievements from Vanuatu, Solomon, Tuvalu, Tonga, and about 5% of the students are international students. One challenge facing FMA is the acquisition of a shipping company that accepts student boarding training. Currently, domestic shipping companies are the main entities, which unfortunately do not meet the criteria for acquiring the Class 1 Certificate of Competency. As for training on ocean-going vessels, the China Navigation Company of Swire group based in Hong Kong accepts a few excellent students each year. Although facilities and equipment are mostly in place, it is necessary to renew the diesel engine plant provided by JICA in the 1980s. The results of the on-site survey of the facilities and equipment are as follows:

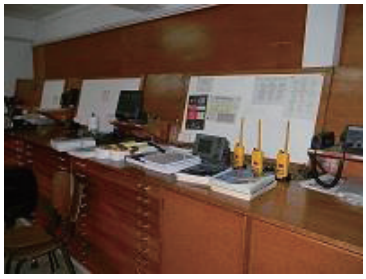
- Overhaul of engines and repair of davits are scheduled according to regulations, and there are no problems. The platform for jumping into the sea is insufficient in water depth and can be utilized only at high tide. Therefore, the swimming pool will be maintained in the campus and the platform will be improved.
- Six PC type ECDIS Simulators
- Ship Handling Simulator manufactured by TRANSAS with a horizon angle of 180 degrees (plasma display type). The types of vessel are Ro/Ro vessel, container vessel, oil and chemical tankers, and the size of vessels is up to 200 thousand deadweight tons. The simulator also has AIS, ECDIS and GMDSS functions, and it can connect with the Engine Room Simulator. It was procured by self-budget in 2013.
- The GMDSS Simulator is also manufactured by TRANSAS. It consists of ten PCs.
- The Engine Room Simulator is also manufactured by TRANSAS and can connect with the Ship Handling Simulator. Each booth simulates each auxiliary to provide respective simulated duties, not only at the central console, but also at each booth. The actual engine-based engine plant, which was provided by JICA in the 1980s, is still in operation. In addition to this, in order to create a new practical plant, the FMA purchased a main engine, including relevant auxiliary, from a ship recycling company in Bangladesh for US $100,000, and has been working to complete installation in February 2019.

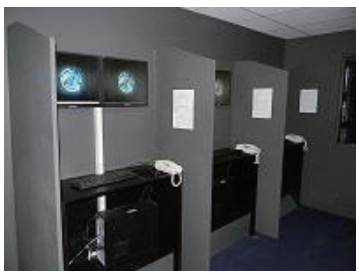
Currently, buildings under construction are expected to be equipped with classrooms, fisheries training equipment, high-voltage power supply training equipment, and so on. In addition, the fire extinguishing training facilities and swimming pool of 25m length are scheduled to be developed in the lawn space (there are holes in various places, and it is not a situation where you can walk safely). Total cost will be 400,000 Fiji dollars.

Planned site for firefighting facilities and swimming pool

Lifeboat waiting for repair and platform for jumping without sufficient depth of water

Bridge of ship handling simulator





Real GMDSS | **Engine room simulator, main console** | **Auxiliary booth of engine room simulator**

Engine plant provided by JICA and full view of engine training room | **Engine plant provided by JICA**

(2) Kiribati

The only maritime educational institution in Kiribati is the Maritime Training Center (MTC). The MTC was established in 1967 by a German shipping company group (six companies). The MTC carries out the rating training (including stewards) mainly for German shipping companies and carries out training for 530 ratings conforming to the STCW convention annually. The jurisdiction is the Ministry of Employment and Human Resources, and the content of education and training and Certificate of Competency is under the jurisdiction of the MICTTD Marine Division.

In terms of facilities and equipment, support from the New Zealand Government is the largest, followed by support from the Australian Government. As for dispatching experts, in addition to Germans, an Australian navigation expert was dispatched on a shuttle basis from June 2018. Phase 4 of the New Zealand-supported Institutional Strengthening Program (details are confidential) is in progress, and Class 4 navigation and marine engineering courses are scheduled to be held starting in May 2019. The MTC is aiming at enhancing facilities and equipment for the opening of Class 4 education and training, and also updating the ship handling simulator from the existing one to a full mission type to further improve the level of training. Most of the graduates find employment at the supporting German shipping companies, while some find employment in the Hong Kong-based Swire group.

There is also a fishing vessel crew course (STCW - F compliant), which mainly conducts education and training for bonito and tuna fishing vessel crews. Between 60 and 70% of these graduates find employment in Japanese fishery companies. In addition, they are employed by fishery companies in Taiwan, New Zealand, South Korea, China, and Vietnam. There are few cases of employment in a Kiribati fishery company. In this course, Japanese language education is being conducted by the Japan Overseas Cooperation Volunteers (JOCV) members, making it advantageous to get a job in a Japanese fishery company.

A current challenge of MTC is to upgrade the level of teaching staff. Of the 80 staff members, 45 are engaged in teaching. Mariners with the Certificate of Competency are not necessarily excellent teaching staff; they need to improve teaching methods in addition to their knowledge and skills in maritime fields. As a possibility of assistance from Japan, technical instruction for fishing vessel operation, and fishing gear/fishing techniques are desired. The

current New Zealand program has set a low priority for strengthening the fishery field. The necessity of assistance by Japan seems to be low because assistance from Germany, New Zealand, Australia, etc. is sufficient.

Firefighting facilities

Engine plant practical training facility

Lifeboat and davit

Free fall lifeboat and davit

Fisheries practical training facility

Ship handling simulator

(3) Marshall

The College of the Marshall Islands (CMI) is the only institution of higher education in Marshall. As part of the vocational training courses at CMI, a maritime education and training program was established in 2012 under the support of the Marshall Ocean Resources Agency (MIMRA), SPC, and PNA. The curriculum, syllabus, etc. are programs for fishing vessel crews which MIMRA has developed and started. Two regular courses are conducted, and the outline is as follows:

- STCW program: Basic safety courses such as firefighting, first aid, and survival at sea (two-week courses, six times/year, 10 participants for each course)
- Observer Program: Fisheries observer training course for MIMRA (five-week course, 12 participants) being conducted on an on-demand basis.

Implementing courses conforming to the STCW Convention for the captain and chief engineer of fishing vessels as an apprenticeship program is under consideration. For this purpose, facilities such as the ship handling simulator etc. are required; MIMRA requested JICA for assistance, but it was not adopted according to the results of the survey in 2014.

The Maritime Bureau needs high-quality staff with seafaring experience, but it is difficult to secure such human resources; therefore, firstly it is recognized that it is necessary to upgrade the education and training institution for seafarers. Since the three countries in the Micronesian region are in friendly relations with each other, it is necessary to develop an upgraded seafarer education and training institution in the region. Compared with other PICs (PNG and Fiji in particular), the quality level in the Micronesian maritime sector is low, and it is necessary to improve quality through collaboration among the three countries.

Basic education and training for crew members of the Sea Patrol Division is undertaken at the Australian Maritime College (AMC), covering a wide range of subjects, including navigation, marine engineering, electricity and stewardship. This education and training support has continued for 20 years and is scheduled to continue for the next 30 years. A total of 110 staff members have already taken the courses, and recently an annual average of eight staff members are accepted.

(4) Micronesia

The maritime educational institution in Micronesia is the Micronesia College, the Fisheries Maritime School (FMI) in Yap State. The base of FMI is the Maritime Fisheries Academy cooperatively established in 1989 by the Yap State and Pacific Mission Aviation (PMA), which carries out services using aircraft and vessels in Micronesia and the Philippines. Thereafter, in the leadership conference to discuss the development plan of the four states with the Federal Government in 1995, three priority issues were cited: 1) tourism and fisheries, 2) agriculture and 3) sea transport. Afterwards, publicization of the Maritime Fisheries Academy was discussed with the aim to develop human resources as the common issues of 1) and 3). The current FMI was established in 1999, and after the construction of the buildings and facilities and equipment, it opened in September 2000.

Initially FMI had two courses for safety, watchkeeping and merchant/fishing vessel crews, and the curriculum was improved with reference to the STCW Convention requirements. Despite these improvements, it was not approved as a course conforming to the STCW Convention.

1) Courses

(Regular Courses)

- Class 6 (Navigation and Marine Engineering) 16 weeks
- Class 5 (Navigation and Marine Engineering) 16 weeks + 16 weeks

(IMO Specialized Courses)

- Basic Safety Course（Elementary First Aid, Sea Survival Techniques, Basic Fire Fighting, Occupational

Health and Safety, Social Responsibility） 6 weeks

- Watchkeeping Courses (Maritime English, Basic Bridge Procedure, Basic Seamanship, Basic Machinery Systems) 10 weeks
- Advanced Safety Courses （Proficiency in Survival Craft, Advanced Firefighting, First Aid at Sea, Shipboard Security Awareness） four to six weeks

2) Number of Students

Trends in the number of students over the past five years are shown in the table below. Because FMI's public relations activities are not yet thoroughly statewide, the Student Service has been carrying out publicity with high schools across the state. The certificate of completion is issued to graduates of each course, but because there are few students who can secure the boarding experience for the following six months, there are only a few students who can satisfy the conditions for oral examination by the Federal Government and acquire the Certificate of Competency.

Table 4.2.1 Number of Students

Home State					
School year / State	2014 - 2015	2015 - 2016	2016 - 2017	2017 - 2018	2018 - 2019
Chuuk	7	6	10	15	12
Kosrae	6	4	7	3	0
Pohnpei	3	19	30	25	22
Yap	29	22	9	14	9
Total	45	51	56	57	43
Course					
School year / Program	2014 – 2015	2015 - 2016	2016 - 2017	2017 - 2018	2018 - 2019
Navigation	21	21	23	29	18
Fishing Technology	12	13	14	8	10
Marine Engineering	12	17	19	20	15
Total	45	51	56	57	43

(Source: FMI information)

3) Employment Situation

Although graduates are instructed to report their employment situation, only about 50% of graduates actually do so, making it difficult to sufficiently assess employment data. Domestically, employment opportunities are found on vessels owned by the Federated States of Micronesia (MS Caroline Voyager and MS Micronesian Navigators, both receiving JICA Grant Assistance), Yap State operated vessels (MS Hapilmohol 1: Cargo Passenger vessel from China) (out-of-service), the Maritime Wing of National Police, as well as various fishery jobs. Moreover, there are also many graduates employed as observers for monitoring foreign fishing vessels.

For employment abroad, graduates are employed as fishing vessel ratings by a Japanese company (Taishin Fishing Ventures), and by American companies in Alaska, Washington, Hawaii, Northern Mariana Islands, etc. In the U.S.A., Micronesians are not hired by merchant Vessels, but are limited to employment as ratings on fishing vessels. In addition, there are cases of graduates employed as crew members on small craft such as leisure boats, as well as diving services in Guam and Hawaii. It is said that such graduates are satisfied because they can maintain their livelihood sufficiently, but it is desirable to supply seafarers who can be active in the international seafaring market like the Philippines.

4) Teaching Staff Members

Six teaching staff members, including the Director, are shown in Table 4.2.2 below.

Table 4.2.2 Teaching Staff Member List

Names	Ranks	Position	Experience/ Employment
Matthias J Ewarmai	Master, Class 1	Director/Instructor, Navigation	Sept. 1999 to present
Tioti B. Teburea	Master, Class 2	Instructor, Navigation	May 2017 to present
Semesa Senicuraciri	Master, Class 3	Instructor, Navigation	Jan. 2015 to present
Alvin Sinem	Master, Class 4	Instructor, Fishing/Navigation	Oct. 2007 to present
Joseph D. Falmed	M. Eng'r, Class 4	Instructor, Marine Engineering	Jun. 2001 to present
Michael Mailuw	M. Eng'r, Class 4	Instructor, Marine Engineering	Jul. 2011 to present

(Source: FMI information)

5) Facilities and Equipment

(Result of SPC Audit)

FMI has been audited by the SPC every five years to confirm compliance with STCW regulations and accepted an audit team in December 2018, just before this on-site survey. The verbal findings were minor and are listed below.

- Lifeboat training: No facility
- Life raft training: Life raft training is impossible because air cannot be filled into the raft.
- Life jackets: Expiration date has past.

(Present Situation and Issues relate to Facilities and Equipment)

The present situation and issues regarding facilities and equipment are as follows:

- Facility for firefighting training: This is the facility provided by JICA. There are no problems with the facility itself, but fire extinguishing pumps are portable and of small capacity, while fixed-type fire extinguishing pumps (including water-pipe system) are necessary for a capacity upgrade. The portable water pump provided by JICA has a connection part with a Japanese-type hose that cannot be connected to the US-type hose; however, they are currently used as a stopgap measure.

- Facility for engine room training: The facilities provided by JICA are utilized along with equipment constructed from a secondhand fishing vessel engine. These are effectively used for practical training.
- Facilities for boiler training newly stipulated in the STCW Convention are not provided.
- Lifeboat: There is no lifeboat training facility at the FMI campus, and it was also pointed out by the SPC audit to not be in conformity with the STCE Convention regulations. Because the FMI campus is in an inland area, the lifeboat training facilities need to be prepared outside of campus. It is necessary to develop a marine training center at Yap Port and secure a candidate site for that purpose (Yap Fishing Authority property).
- Life raft: In its current state, buoyancy cannot be obtained by filling with air. A new raft is required.
- Ship handling simulator: Present simulator is a NTPro 5000 Ver. 5.25 manufactured by TRANSAS and provided by the Nippon Foundation. Although there are examples in which the steering wheel locks and does not operate for a few minutes after the start of operation, this is a malfunction in the case where it is operated without waiting for the prescribed waiting time (about 30 minutes) after starting, so it is not a problem. FMI said that the nautical chart data around Micronesia is too expensive to deal with, and practical training is possible without them.
- GMDSS simulator: There are nine PC-type stations and two actual equipment-type stations.
- No ECDIS simulator: With training up to Class 5, there are no domestic vessels equipped with ECDIS; therefore, there is no problem. However, ECDIS is necessary in ocean-going vessels for a Class 3 or higher navigation officer.

Ship handling simulator

GMDSS simulator (PC type)

GMDSS simulator (actual equipment type)

Firefighting facility

Engine Training Room (Near side is provided by JICA)

Portable fire extinguish pump

6) Issues on human resource and system, and expectations to JICA of FMI

- While the courses for navigation and marine engineering for Class 5 and 6 are presently being conducted, it is necessary to upgrade both the quality and quantity of teaching staff members. Currently, the curriculum, programs, etc. utilize SPC-provided teaching materials; however, it is necessary to confirm whether they match the current situation of Micronesia. The SPC audit also does not confirm the suitability of the teaching materials provided by the SPC, so third-party confirmation is necessary. Also, in the field of fishery, it is necessary to improve the quality of teachers. Technical assistance related to the education and training methods by OJT at the maritime and fishery educational institutions in Japan are necessary.
- Currently, since the education and training for the crew members of PPBP patrol vessels is conducted in the Australian Maritime College (AMC), it will help with the reduction of duties by Australia if such education and training is conducted in FMI in parallel to the education and training for merchant seafarers.
- Few obtain the Certificate of Competency because students cannot secure opportunities for onboard training. Such graduates seem to find employment as ratings, however the inability to issue the Certificate of Competency for graduates from the institute that complies with STCW Convention regulations is a serious problem. Obtaining the Certificate of Competency greatly increases the range of employment opportunities and grants access for Micronesian seafarers to the international seafaring market, which will have an even more pronounced shortage of personnel in the future.

7) Issues on facilities and equipment, and expectations for JICA of FMI

- Facilities and equipment for safety training: As training related to lifeboats and life rafts are not possible, it is necessary to provide a lifeboat with davit, life raft, life jackets, etc.
- With no ECDIS simulator, it is impossible to conduct the related training; therefore, provision is necessary.
- It is necessary to add a boiler function to the engine room training facility; provision is recommended.
- Improving the fire extinguishing training facility with a fixed fire pump (including water-pipe system) is required. The existing portable pumps have insufficient capacity.
- The training facilities and equipment are inadequate, and improvement is necessary.

- The government-owned vessels tend to be hampered by inadequate operation and maintenance of the engineering department. If trustworthy vessels owned by the Yap State are introduced, they can acquire and implement an ideal maintenance system while receiving assistance from JICA experts (marine engineering field), and concurrently meet student onboard experience requirements. If these conditions are met, a mutually beneficial relationship between the Yap State Government and FMI can be established.
- Classroom space in the institute is full of the implementation of the current courses, and it is necessary to increase the number of classrooms for Class 4 in the future, but budgetary measures cannot be taken.

(5) Palau

There is no maritime education and training institute in Palau. The seafarers in Palau have been educated and trained in neighboring countries such as Yap State of Micronesia for Class 5, in PNG and Solomon for Class 4 and in Fiji for Class 1. Currently, there is no plan to maintain the maritime education and training institute in Palau; therefore, Palau will be relying on overseas institutes. Estimated annual numbers of new crew members required are 12 navigation officers and eight marine engineers in Class 6, eight navigation officers and six marine engineers in Class 5, and six navigation officers and four marine engineers in Class 4.

(6) PNG

The only higher seafarer education and training institution in PNG is the National Maritime College (NMC) in Madang. The NMC was founded by the PNG government in 1974 and later promoted the development of facilities, equipment, and an educational program with the support of the Australian Government. Since its opening, the NMC has been under the jurisdiction of the Ministry of Transport, but in 2012 it became concurrent with the Ministry of Higher Education. However, the ISPS related courses are fully under the jurisdiction of the Ministry of Transport. The Pacific Maritime College (PMC), which is supported by China, is a rating educational institution in Port Moresby. Both institutes receive certification from the Ministry of Transport as an education and training institution that conforms to STCW Convention regulations. PMC carries out boarding exercises on Chinese flag vessels, while NMC has difficulty securing berths aboard shipping company vessels that can accept trainees.

Although the Ministry of Transport only authorizes the ratings education and training for PMC, the investment objective for the Chinese PMC is to make PNG seafarers available to the international seafarer market in a similar fashion to current Filipino seafarers. If seafarer education and training of the Pacific region improves via naming of the PMC, it can be assumed that students will be accepted from neighboring countries as well. If the Ministry of Transport approves PMC as an education and training institution for higher seafarers, NMC's utility will be questioned. In order to avoid such a situation, it is necessary to improve the capacity of the NMC as soon as possible, such as by extending and reconstructing the building used as the regional institute for the higher maritime education and training, and assistance from Japan is expected for each department and course of NMC as follows.

(Navigation Department)

The ship handling simulator Kongsberg (Norway) has had trouble since around 2015 and is currently under repair. Therefore, the ship handling simulator training and RADAR/ARPA[21] simulator training cannot be carried out, and ECDIS training also cannot be conducted. Regarding the GMDSS training, actual equipment-based training has been conducted. For practical training, the system is operated without transmitting distress signals. Because the demonstration version of PC-based manufacturer TRANSAS (UK) is used for the overall GMDSS training, it requires the full version; the demonstration version is insufficient.

(Marine Engineering Department)

In 2007 a machine-based diesel engine plant training facility was provided by support from Australia, although the facility has the following failures:

- The boiler system is not working.
- The main engine cannot be operated continuously because the dynamometer, which controls the loads of the main engine, is failing.
- It is impossible to operate remotely from the control room because the connection with the main engine has a failure, although it is possible to control from the engine side.

In order to deal with subjects that cannot be carried out owing to these defects, NMC procured an engine room simulator manufactured by Kongsberg with self-help efforts and is waiting for the installation engineer from Singapore. Support required by the engineering department is as follows:

- Repair of the real machine-based diesel engine plant training facility. It is necessary to conduct a malfunction diagnosis and subsequent repair based on the results.
- Provision of the test bench of high-voltage electricity (provision of equipment and technical instruction by an expert).

(Short Courses)

- Lifeboat Training: Traditional lifeboat training facilities are obsolete, but training is implemented without problems. Video teaching materials are also used. Since there is no free-fall-type lifeboat, its introduction is awaited.
- Fast Rescue Boat Training: As NMC does not have facilities required for fast rescue boat training, their provision is necessary.

(Capacity Development for Teaching Staff)

As there are no teaching staff members who have been educated abroad, quality upgrades are required. As there are not enough staff members to go abroad for study, the training of trainers (ToT) and evaluation of education and

[21] Automatic radar plotting aid

training as a limit of six weeks a year (from November through the holidays at the end of the school year in January) is required. The target subjects are the STCW Convention regulation short courses.

(Onboard Training)

Previously, there was no problem related to onboard training for cadets because such training had been implemented on government-owned vessels. However, those vessels were scrapped owing to aging, and since then private shipping companies have been relied on for training, but such companies are struggling to provide sufficient assistance. At the APEC Summit in 2018, it was announced that Taiwan would accept onboard training informally. If Japan can provide a cargo-passenger vessel to the Ministry of Transport, this vessel can be used for onboard training concurrently. As a detailed design survey is necessary for the specification of the vessel, a multi-purpose landing vessel for engaging in passenger and cargo transportation in the remote islands is expected. The Ministry of Transport of PNG is responsible for handling crew assignments, fuel costs, and maintenance.

(7) Solomon

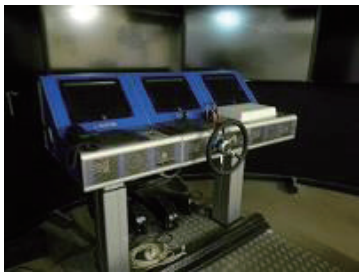
The Solomon Islands National University (SINU), School of Technology and Maritime Studies (STMS) is the seafaring education and training center in Solomon. STMS was founded with assistance from the United Kingdom in 1962. Curricula and syllabi were initially developed by British experts, and school management was transferred to the Solomon side later. There are many young people who are interested in seafaring jobs, and the number of the STMS students is 350 students/year, including short courses. The director has the Certificate of Competency of Class 1 and graduated from the maritime education master course at the World Maritime University. Other teaching staff members have the Certificate of Competency of Class 3 to 5 and have sea experience of more than ten years. The curriculum is prepared for navigation and marine engineering from Class 4 to 6. Students are mainly employed on local merchant and fishing vessels. Some of them are employed by Australian domestic shipping companies and US fishing boat companies as ratings. Major facilities and equipment are as follows:

- Ship handing simulator (procured from PIVOT Maritime International in Australia): Although it was broken owing to overcurrent after a power failure, repairs were completed by correspondence with Internet connection diagnosis from the manufacture. However, since the simulator function is a basic type, and the space around the console section for ship handling is too narrow, it is difficult to simulate training on the actual bridge of a vessel.
- There is no GMDSS or ECDIS training equipment.
- Lifeboat and davit: Because it has been exposed to the wind and waves for many years, it is in a state of severe deterioration. After an audit by the SPC, it was deemed unfit for use due to safety risks.
- Training space for rope works
- Life raft, two small boats, firefighting facility and other firefighting equipment
- Workshop for marine engineering

- Classrooms, library, restaurant, etc.

The facilities and equipment that require assistance are as follows:

- Replacement of the ship handling simulator
- Replacement of the lifeboat and davit
- Life raft
- Mannequin for first aid training
- ECDIS simulator
- GMDSS simulator



Ship handling simulator

Lifeboat and davit

Rope work training

(8) Vanuatu

The only maritime education and training institution in Vanuatu is the Vanuatu Maritime College (VMC). There are four navigation and three marine engineering teaching staff members, and they are in charge of practical training such as workshop training. Because of a problematic shortage of teaching staff members, an increase in members as well as enhancement of facilities and equipment has been requested by the OMR, but it has not been addressed yet. The current annual budget is 40 million Vanuatu vatu (almost the equivalent figure in Japanese yen), and the tuition fee income from students is added to this; however, there is a shortfall due to manpower costs.

The courses for navigation and marine engineering from Class 3 to 6 are provided; however, both navigation and marine engineering courses for Class 3 are not conducted because of a shortage of participants. Although seafaring is attractive to the young generation in Vanuatu, owing to the unfavorable employment situation and enrollment expenses, there are not enough participants. To illustrate the costs involved, the Class 3 course is a 32-week period of study, tuition fees are 210,000 Vanuatu vatu, and the dorm fee and meal cost is 2,000 Vanuatu vatu per day. VMC is operating short courses prescribed by the STCW regulations, such as firefighting, first aid, and survival at sea.

Regarding the facilities and equipment, the facility for firefighting is provided by Japan, while the lifeboat and davit are provided by Malaysia. The free fall lifeboat and davit will be provided by South Korea. The location of installation is under discussion.

The present issues are as follows:

- Because there is no GMDSS simulator or ECDIS simulator, students must go to Fiji to attend such courses.

There are instructors who participated in the course in New Zealand and were officially certified as instructors on both simulators in VMC.

- As neither the ship handling simulator, engine room simulator, nor the engine room simulator have been provided, the related education and training cannot be carried out.
- It is necessary to obtain approval as a maritime education and training institution by complying with the STCW Convention regulations administered by IMO.
- It is necessary to secure an onboard training platform and place for employment.

Cargo handling training facility

Classroom for renewal of the Certificate of Competency

Second hand engine for dismantling

Real machine-based engine simulator

Warehouse for firefighting equipment (provided by JICA)

Facility of firefighting training (provided by JICA)

Training boat

Lifeboat and davit (provided by Malaysia)

(9) Countries subject to the document review survey

- **Cook Islands:** In the Cook Islands, education and training for the skipper on small boats for passenger/cargo transportation sailing in territorial waters (within 12 miles) with a total length of less than 24m have been implemented. There is a two-week night class and a four-day daytime course for the participants from the

remote islands.

- **Samoa**: There are two maritime institutes in Samoa.

  1) National University of Samoa, School of Maritime Training (SMT)

  The predecessor of SMT was established in 1982 with the agreement between the Samoa government and a German shipping company. It was merged with Sania Polytechnic in 1999 and later merged with the National University of Samoa in 2006. The report for the evaluation to confirm the compliance status of the STCW Convention Regulation is being prepared by SPC experts. SMT has been conducting navigation and marine engineering courses for Class 5 and ratings. Moreover, it has been conducting short courses related to safety at sea as prescribed by the STCW Convention regulations.

  The facilities and equipment are a pier of 10m in length, three life rafts, one fast speed boat, one totally enclosed life boat (out-of-order), one open-type lifeboat, and life jackets.

  2) Samoa Shipping Maritime Academy (SSMA)

  SSMA is the maritime education and training academy operated by the Samoa Shipping Corporation, Ltd. SSMA provides navigation and marine engineering courses up to Class 3 level and also provides short courses for ratings and STCW Convention regulations. The places of employment are 1) Samoa Shipping Corporation Ltd., 2) Samoa Shipping Services, 3) Nafunua Patrol Boat, 4) Samoa Port Authority and other maritime related organizations.

- **Tonga:** The maritime education and training institute in Tonga is the Tonga Maritime Polytechnical Institute (TMPI). TMPI has formulated the Integrated Action Plan (IAP), which is a reconstruction plan with a target period of 2014 to 2019, but the majority of the plan has not been realized.

- **Tuvalu:** The maritime education and training institute in Tuvalu is the Tuvalu Maritime Training Institute (TMTI). TMTI is implementing education and training compliant with the STCW Convention regulations and has also provided support by ADB.

4.3 Port Safety and Security

(Assistance Option Proposals)

The Port of Pohnpei in Pohnpei State in Micronesia is an urgent priority candidate for financing cooperation, but this case is already under investigation. Although insufficient information was collected by this Survey, there is the possibility of preparing firefighting facilities and oil spill response management facilities, etc., if necessary. Lastly, the development of firefighting facilities, such as land facilities and a fire-float at the Port of Honiara in Solomon, should also be mentioned.

A Port Operation and Maintenance Policy Adviser (Regional) is scheduled to be dispatched to SPC in 2019. As for other cooperation in the field, a technical cooperation project to strengthen the port security management system

in Vanuatu is being considered. The implementing agency is the Department of Ports and Marine (DPM), which needs technical instruction related to the ISPS Code regulations. The assumed resource from the Japanese side is the Oversea Coastal Area Development Institute of Japan (OCDI). Also, as outlined in the Navigational Safety section later, relevant technical investigations are expected to be conducted for the development of the Maritime Rescue Coordination Center (MRCC) by the said technical cooperation project.

(Outline of the country)

(1) Fiji

Regarding the seven international ports in Fiji, ISPS Code-related port security management has been implemented according to the Port Security Plan. The Maritime Safety Authority of Fiji (MSAF), the Navy and the Fiji Police Force under the Navy constitute the Counter Terrorism Organization Group (CTOG). CTOG reports on the present situation to the Security Council and provides information to the Prime Minister's Office.

The Fiji Ports Corporation Ltd. (FPCL) is a State-Owned Enterprise (SOE) which functions as the port authority in general, covering port safety and security, vessels entering and departing, anchoring, pilotage, tugboat operation, etc. The investment rate is 49% by the government, 39% by the FPCL and 20% by Sri Lankan private firms. Terminal operation duties are under the jurisdiction of the Fiji Port Terminal Ltd. of which the investment rate is 49% by FPCL and 51% by Sri Lankan private firms. Fiji Heavy Industry Ltd. deals with shipbuilding, ship repair, and other heavy industrial duties. Operation complies with the provisions of the Sea Port Management Act.

There are no problems regarding port security at present. Regarding the international port area, port management at the Port of Suva complies with ISPS Code and received results of an audit by the USCG and the Maritime Safety Authority of New Zealand recently, with no problems noted. The port security management in Fiji was evaluated to be a benchmark for other PICs. A system for managing vehicles and people entering and leaving the international ports has been introduced, but the system is still inadequate and is being adjusted. The cost was 200,000 Fiji dollars.

At the Port of Suva, Customs is considering the installation site of an X-ray scanner for container inspection, and because space cannot be secured inside the port, it is under consideration for installation at an appropriate place outside the port. For the Port of Lautoka, there are many vessels bound for the U.S.A.; therefore, the X-ray scanner is already in place.

Domestic remote islands cargo-passenger vessel

Cargo space of the vessel in the left-side photo

Movable cargo handling crane

Landing craft-type cargo-passenger vessel

Domestic remote islands cargo-passenger vessel with shallow draft

Service company for the life raft near the port

In September 2018, when the 26th largest cruise ship in the world (Majestic Princess: passenger capacity 3,560 passengers, 140 thousand tons, Chinese shipowner, Princes Cruises) entered the Port of Suva, ISPS code related training was carried out on the ship's side, FPCL, Customs, Police, Immigration, the Ministry of Transport and other participants.

As a port authority duty, the FPCL has been preparing to develop the AIS and VMS. The Australian consultant completed the design of such systems, and procurement is in progress. The budget by the FPCL for this development is 2.2 to 2.5 million Fiji Dollars.

The assessment of the safety of vessels from the port-side view of FPCL has no problem with passenger vessels, bulk carriers, tankers, etc. Fishing vessels, however, are not adequately managed. Also, many passenger and cargo vessels sailing in the remote islands area are aged vessels, some of them 40 years of age. Such sub-standard vessels cannot obtain insurance for ships, and it is a very dangerous example. It is impossible to apply for insurance for such vessels.

(2) Kiribati

Regarding port management at the Port of Betio[22], the primary port in the capital of Kiribati, matters related to the ISPS Code are under the jurisdiction of the Marine Division, and port administration practice is carried out by the Kiribati Port Authority (KPA). Aids to navigation were originally the responsibility of KPA, but from 2018 it was

[22] Infrastructure development, renovation and expansion were implemented in 1996, 2004 and 2010 by grant aid from Japan

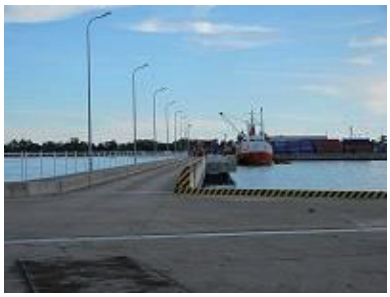
transferred to the Marine Division.

KPA is a fully state-owned enterprise under the jurisdiction of the government, and the port security service is managed according to the Security Plan at the Port of Betio. Although it received an SPC audit in 2017, it was evaluated that it was an international port of security level 1 and almost satisfied the ISPS Code regulations. Two main points where highlighted by the SPC audit: 1) that the security plan was not regularly checked and updated, and 2) that periodic drilling was not carried out. After the audit, the internal regulations were updated and there are no problems now. Container inspection by an X-ray scanner has not been implemented, but this also poses no problem at security level 1. There have been no documented cases of smuggling or importing of firearms.

There is no cargo handling facility at the quay at the Port of Betio under the jurisdiction of the KPA; all cargo handling is carried out by the vessel's crane. There are no problems with cargo handling from the vessel to the quay; however, upon receiving containers on the quay side and transporting them to container placement, depending on the maintenance situation of the existing four container trailers (provided by JICA in 2014), there are cases where full operation did not occur, and in such a case, cargo handling efficiency decreases. The current average cargo handling efficiency is 12 containers/hour. In order to raise this to 16 to 20 containers/hour, the mechanic staff are making efforts to adequately maintain container trailers.

The average number of vessels entering the Port of Betio is five vessels/month, and the range of container vessel size falls between 80 to 200 TEU[23]s. In addition, there is a port entry record of Kyowa Shipping Coral Islander II (18,000 DWT[24]), SWIRE SHIPPING Coral Chief (22,000 DWT), and Pacific International Lines KOTA HAPAS (19,000 DWT). Their normal lay days are about two days. The depth of water is 10m around the quay, and sounding is performed regularly. The entry limit is 8m and a margin of 2m is maintained. The sounding is carried out by the pilot boat with a sounding function (using a normal echo sounder). Although the KPA does not have a tug boat, since there is no danger when maneuvering by using the ship's side thrusters, it is possible to enter/leave port without tug boat assistance. Four private companies are administering the pilot operations.

JICA-assisted pier extension nameplate



JICA-assisted extended pier

[23] Twenty-foot equivalent unit

[24] Dead-weight tonnage。

Container placement

JICA-provided forklift

JICA-provided container trailer

Catamaran boat for remote islands at pier

(3) Marshall

The Ports Authority (RMIPA), Ministry of Transportation, Communications and IT has jurisdiction over Marshall's airport and seaport. Seaport management is prescribed in the Port Security Regulations 2007. Regarding compliance with ISPS Code regulations, RMIPA has undergone education and training by the USCG and simulated hands-on exercises. The RMIPA has passed an audit by the USCG and meets the minimum standards of ISPS Code requirements. The person in charge also receives education and training in the U.S.A. for a period of six months, and at present there are no problems concerning personnel; however, there is no future response plan. The RMIPA is not satisfied with compliance with minimum standards only. The facilities and equipment also meet minimum standards; however, it is recognized that there is a need for further improvement. Although a monitoring system by CCTV[25] camera is maintained at the International Port of Majuro, an X-ray scanner is not in place. Some of the fences around the harbor premises are damaged and in need of repair. Also, there is insufficient illumination on the harbor premises, and there is a problem in monitoring the premises at night. Regarding human resource development, the RMIPA expects training support in the port security field from JICA.

The Pacific International Inc. (PII), a private company, is a large company dealing with port management, fishing net repairs, real estate, and a wide range of other businesses. The plan of PII extends the quay 400 meters and develops a special tax-exemption zone. Furthermore, PII will supply fuel (400 thousand gallons), foodstuffs, fresh water, etc., when fishing vessels enter. In addition, PII will develop a frozen warehouse for fishery processing with a capacity for 4,000 tons and a processing plant for dried bonito (plans have already been completed and part of the construction has started). The development cost of the plan is estimated at approximately 30 million USD. The PII

[25] Closed-circuit television

expects support from Japanese companies in order to carry out this plan. Investment in the form of technical support by Japanese companies is also necessary for the bonito processing factory. As a private company, PII proceeds with such a development plan, but as it is an international port, PII must adhere to the ISPS Code.

PII planned place for dock
(400m from pier to the crane in the back)

Facility for repairing fishing nets
(Fishing net is suspended between the vessel and the gear in the photo and repaired)

(4) Micronesia

In Micronesia, port development and management are under the jurisdiction of the independent port authority in each State. The infrastructure development plan for 2016 - 2025 is planned for the port sector as follows:

- Weno commercial port improvements: To improve safety, security and efficiency as a commercial port (Chuuk State)
- Maritime transportation infrastructure improvements: To improve safety and comply with international standards at the Port of Okat and the Port of Lelu (Kosrae State)
- Safety and accessibility improvements at 3 harbors: To improve safety and navigability by dredging of the Ports of Okat, Lelu, and Utwe, and eliminate hazardous materials (Kosrae State)
- Pohnpei Port - Dredging of channel & anchorage: To implement dredging of the Port of Pohnpei and anchorage and eliminate hazardous materials (State of Pompeii)
- Improve port precinct lighting and fencing: to improve the lighting and fence around the Port of Pohnpei Development Project (Pohnpei State)

The maintenance of the Port of Pohnpei in Pohnpei State is aimed at eliminating congestion in the port by cargo vessels and fishing vessels. The Pohnpei Port Authority (PPA) changed the implementation of the initial planned ADB loan to a grant aid program by JICA two or three years after the ADB plan formulation owing to the financial situation of PPA. This was done to implement the project by loan. An investigation by the JICA Fact-Finding Team was conducted, the option for extending the wharf was presented, and it is going to adopt the extension plan for the north side. The site utilization problem of the planned north side was settled in 2018. The land-use problem in the

north side area will be settled in 2018 through consultation with the hotel owner. It is now waiting for the court judgment . The site is owned by the PPA, but consultation with the indigenous hotel owner is proceeding and judgment by the court is pending. Regarding the needs for extending the quay of the port, it is expected that in addition to the use of fishing vessels and cargo vessels, use by US Navy vessels, research vessels, European cruise ships, etc. will also increase in the future.

Regarding ISPS Code compliance at the Port of Pohnpei, the USCG is conducting auditing every year, and in the last audit result, only two points of inadequate fencing and documentation on access control were pointed out, and these points have already been improved. The next audit was scheduled to be conducted in January 2019. Current issues in the port are the maintenance of the container yard pavement, lighting, emergency generators (an emergency generator is installed at the airport but not at the seaport), etc. The PPA-owned boats consist of three pilot boats (27 ft, made by Yamaha), while the tug boat is owned by a private company.

The JICA grant aid project Weno Port Improvement Plan was completed in 2008, which renovated the commercial area and North area for the sole international wharf in Chuuk State.

(5) Palau

Currently, there are no problems related to security in the Port of Malakal. Although there are some minor issues, such as the removal of a storage place for dangerous goods and repairs to some fencing, they are managed by self-effort. It is unnecessary to maintain security cameras because security officers are patrolling on a 24-hour basis. The target area is narrow and there is no need to install security cameras. In order to maintain a security camera system, it is necessary to construct a monitoring/control room and allocate a person in charge. The cost does not justify camera security for the narrow space.

The commercial Port of Malakal is the main port of Micronesia, and the private sector is operating and managing it. There are two quays (164 m and 154 m in length) in the Port of Malakal, each of which can berth vessels up to 500 feet in length. Containers of 200 to 400 TEUs/month, and bulk cargo of 100 tons/month are handled. There is no crane on the quay side, only a reach stacker and forklift are available.

(6) PNG

The main ports of PNG are operated by the state-owned PNG Ports Corporation Limited (PNG PCL), which operates a total of 16 ports, 14 of which are international ports. Among them, the Ports of Lae and Moresby are the main ports. Mining, construction, shipping, and other private companies operate the other over 11 ports. In addition, there are more than 400 piers, wharfs, and other areas operated by communities for small watercraft in rural areas. The challenges that face the major Port of Lae are insufficient pier spaces, limited cargo storage capacity, and lack of large container handling equipment. PNG PCL will extend the pier at the Port of Lae, and the ADB started to support further extension in 2018.

All international ports in PNG are managed according to the Port Facility Security Plan, and all requirements of

the ISPS Code are complied with. The current security level of PNG under the ISPS Code is level 2, but PNG aims to clear security level 3. The USCG and the Department of Transportation collaborated to conduct an audit on compliance with ISPS Codes recently. In the past 18 months, staff training was carried out twice according to the Plan under the control of the Department of Transport (DoT). The USCG has been contributing greatly to enhance port security for the PICs. Recently, the USCG conducted a regional port security-related seminar in Fiji for the PICs. In order to respond to the ISPS Code regulations, port security advisors are employed from Singapore and Australia and all expenses are borne by the port side. As for the advisor, it is necessary to consider the possibility of Japanese expert support, although there is no point of contact with Japan now.

The installation of port security facilities such as fences and night lighting have been completed, but installation of the security (CCTV) camera is currently under preparation. All of these facilities are covered by self-funding. The Customs office has an X-ray scanner, and the port side borrows Customs facilities as necessary.

The port security officer (PSO) training was carried out at Singapore State College, Fiji Maritime College, and domestically at the National Maritime College in Madang. A total of 20 staff members have completed such training.

The port transportation business (stevedore) is under contract by International Container Terminal Services, Inc. of the Philippines. The entry of foreign companies into the port business is a first for PNG. This was planned by the DoT.

(7) Solomon

The Solomon Island Port Authority (SIPA) manages two international ports (Ports of Honiara and Noro) and the domestic part of the Port of Honiara. Other domestic ports (Gizo, Ring Cove, Tulagi and Yandina) are managed by each provincial government. SIPA manages the reporting system from all these ports. SIPA conducts port management according to the ISPS Code at two international ports and has the support of the PNG Ports Corporation, Ltd. for its maintenance. Regarding the Port of Honiara[26], considerable maintenance work is underway, but further development is urgently needed for the Port of Noro[27]. The ADB conducted a feasibility study on port maintenance. A security plan was prepared, and completion of port security improvement was set for the end of November 2018. Maintenance of fences around the port, CCTV cameras, night lighting, and so on has been completed, and Honiara Port maintains the underground fiber network in order to ensure information propagation stability related to the security and human access control. Security guards are patrolling every hour at night. The Port of Honiara obliges tugboat support with pilots for vessels of 40m in length (LOA) to enter and depart port. SIPA does not have a tugboat, so two private companies in PNG provide such services. One pilot boat is deployed to both the Honiara and Noro. (The pilot boat at the Port of Noro needs repairing.) There are no other boats at either port. The No. 1 pier of the Port of Honiara is 130m in length and 8 to 10m in depth and the No. 2 pier is 150m in length

[26] Facilities renovated by grant aid from Japan in 2013 and 2014.
[27] Assisted by the fisheries grant aid from Japan in the past

with a depth of 12m. There is no cargo handling crane on the pier side, but the reach stacker, forklift and transtainer are utilized. There are no major lapses in port security and the ISPS Code is level 1 (Normal). The Port of Noro has the capacity to receive vessels up to 64m in length; however, the facilities for cargo handling consist of only a reach stacker and forklift. Regarding port security, just as with the Port of Honiara, there were no security problems, and the ISPS Code is level 1 (Normal).

The Port of Honiara lacks firefighting facilities and equipment, which is an issue that must be addressed. Although tankers loaded with 30 thousand tons (gasoline, jet fuel, etc.) usually enter the port, the port does not possess a fire boat. Since the Port of Honiara is adjacent to a densely populated area, being adequately prepared to deal with a fire caused by highly flammable dangerous substances is an urgent necessity. One of the prevention measures is to conduct thorough management of persons entering the port (carriage of ID card with barcode) and to sufficiently manage the intrusion of divers from around the port. Plans have been made to introduce such a registration system.

Moreover, the port does not have an X-ray scanner for container cargo inspection. This equipment is vital for proper inspection and safety management and needs to be supplied.

Furthermore, it is necessary to develop a Vessel Traffic Management System (VTMS). It is necessary to implement appropriate vessel traffic management and ensure safety and security with a system that has the capacity to cover a range of about 20 to 30 nautical miles.

(8) Vanuatu

The duties of the Department of Ports and Marine (DPM) at the international port (Port Vila Central Wharf) include the harbor master service, pilotage service, tugboat service, port security duties (ISPS Code compliant), management and maintenance work for aids to navigation, ship entry/exit management, and stevedore service. The Office of Maritime Regulator (OMR) is in charge of the management of the Port Vila Lapetasi International Multi-Purpose Wharf and domestic wharf. The challenges for the DPM are as follows:

- There are no facilities and equipment for an oil-spill situation. In the event of an oil spill incident, the SPC is supposed to deal with it; however, it cannot deal with oil-spill control in an emergency. A complete set of equipment of oil booms (200 m × 2), oil fencing, oil skimmers, etc. is required. Another requirement is a boat for this work, which should be 7 - 8m in length. It is expected to cooperate with the existing pilot boat, so one boat should suffice.
- A passenger terminal is necessary to achieve safety and security on the premises of the Port Vila Central Wharf. Currently, the customs and immigration control operations for passengers are carried out on board and should be carried out efficiently and reliably at terminals outside the vessel. At present, when cruise vessels enter the port, there is a street vendor called Mama's Market on the wharf, which is an indicator that port security management is improperly carried out according to ISPS Code regulations.

- As the DPM has few skilled personnel in general maritime affairs, training human resources for port management, port security, ISPS Code correspondence, ship safety at port, etc. is necessary.

Full view of the Port Vila Central Wharf

The aging Port Vila Central Wharf

Warehouse provided by JICA

Cruise vessel in Port (P&O)

Security check at the wharf

Street vendor Mama's Market

Interrupted works for construction of domestic wharf by ADB loan.

Multi-purpose wharf constructed by JICA loan

(9) Countries subject to the document review Survey

(Samoa)

About 97% of foreign trade cargo handling in Samoa is carried out at the Port of Apia, which is operated and managed by the Samoa Port Authority (SPA). Two tugboats provided by the Japanese Grant Aid Project engage in navigational support. The current problems of the Port of Apia are as shown in the table below. Wharf No.1 (the old wharf) was constructed with assistance from New Zealand in 1966 and was extended with JICA grant assistance between 1988 and 1991. The length is 185m and the water depth is 10.4m. Wharf No.2 (the new wharf) was constructed with JICA grant assistance between 2000 and 2003. The length is 165m and the water depth is 9.5m.

Table 4.3.1 Present Problems of the Facilities in Apia Port

Existing Facility	Present Conditions	Current Issues due to the Present Conditions
Wharf	Old wharf: aging wharf New wharf: lack of berth length for large vessels	Low-level of safety for ships berthing and mooring to the old wharf. Low-level of safety for large cruise ships mooring to the berth.
Port Basin (Calmness)	Lack of calmness in the port basin because of swell waves entering the port during the wet season (Nov. to Apr.)	Very low-level safety for ship mooring and very low-level safety and low-level productivity for cargo loading and unloading operations due to ship movements.
Container Yard	Old wharf: Piping duct exposures at the Yard. Exfoliation of concrete on the floor slab side. Exposed steel bars and corrosion.	Low-level safety and efficiency for cargo handling operations. High risk of collapse of the deck slab of the expanded old wharf area.
Fender	Old wharf: excess installation of fenders. New wharf: Most fenders out of order, replaced by tires.	New wharf: high risk to ship body damage when berthing. Old wharf: bad influence on the wharf structures due to increasing fender reaction force when ship berthing.
Bitt/Bollard	Dissipation of some bollards on old wharf. Complicated mooring lines among the large ship lines and patrol boats behind the old wharf.	Low-level safety for mooring ships in the port area
Flows of Cargo and Passengers	Complex cargo handling operations and passenger transportation by buses and taxis in the terminal area.	When a passenger gets on and off, there is a high risk of collision between a bus, taxi, etc. and a cargo handling vehicle. Safety for passenger movement in the port is not sufficiently secured.
Aids to Navigation	Lack of lateral marker buoys at the port entrance and breakwater marker indicated on the nautical charts due to cyclone damage. Lack of caution markers to indicate the shallow area near the turning basin. Sub-standard temporary lights of the rear lamp of the leading lights.	Low-level safety for ships maneuvering to/from Apia Port. Lack of navigation safety at night due to the low visible distance of the leading light lamp.
Tugboat	Corrosion of ship hull, defects of fenders and some rigging devices such as navigation equipment, windlass, pumps engines and others.	Low-level safety and performance for safety navigation support to the ships.

(Source: Preparatory Survey Report on the Project for the Enhancement of Safety of Apia Port in the Independent State of Samoa: March 2015, JICA)

(Tonga)

There are three main ports in Tonga: Neiafu, Nuku'alofa and Pangai. In Tonga, Nuku'alofa is the central hub for transport and international import and export cargo shipping. Among those ports, the Port of Nuku'alofa complies with relevant international and IMO operating requirements. The existing ports have sufficient capacity for foreseeable needs. While the port system meets these basic needs for coverage, capacity and compliance, the standard of infrastructure has suffered from a lack of investment in core infrastructure and facilities and insufficient emphasis on maintenance of outer-island ports and channels. However, these issues are being addressed as part of the National Infrastructure and Investment Plan (NIIP) of the Government of Tonga.

Port of Nuku'alofa: One international container and general cargo terminal at Nuku'alofa and some domestic wharves serve inter-island ferries. Nuku'alofa port is a fairly deep harbor basin of approximately 3 by 10 kilometers surrounded by fringing reefs. There are two alongside berths and a mooring dolphin for discharge of oil and LPG cargoes. Nuku'alofa, as the major port of Tonga, supports container, ro-ro, general cargo and tanker traffic. Approximately 200 vessels per annum use the port and range in size from 4,000 to 50,000 GRT for passenger ships and from 1,500 to 14,000 GRT for merchant ships. The conventional berths are 320m in length with a maximum draft of 12m and 110m in length with a maximum draft of 11m. There are three reach stackers for 45 tons, and 18 forklifts of 3 to 26 tons. The ISPS Code is level 1 (Normal).

(Tuvalu)

According to the information from the Embassy of Japan and JICA office in Fiji, which concurrently oversee Tuvalu, they have been discussing the expansion of the container yards at Funafuti Port requested by the Government of Tuvalu.

4.4 Navigational Safety of Vessel

(Assistance Option Proposals)

1) Assistance for the nautical chart publication and revision

All PICs targeted by the Official Development Assistance (ODA) of Japan have a high necessity for producing Electronic Navigational Charts (ENC). Plans have been made to implement the Training Program on the Nautical Chart Technic (The International Qualified Certification of Class B) by the Japanese fiscal year 2020. Considerations should be made for candidates from the PICs to be added to the course in 2020 or at the time of recruitment of participants in 2020 in order to fulfill needs and expectations of the PICs. At the time of this training in Japan, detailed information on the navigational safety of vessels, including activities of other donors, etc. will be obtained

2) Aids to Navigation (AtoN)

Regarding maintenance of the AtoN, few countries manage and analyze the current situation, although it is said that the USCG, South Korea, etc. are investigating. Despite this investigation, the results of the survey have not been disclosed. In this survey, concrete examples showing the present status of the AtoN are as follows:

- Micronesia: Maintenance of the AtoN near Pohnpei and remote islands: 250,000 USD (the USCG is planning to conduct a detailed survey, and the World Bank is planning to support maintenance.)
- Palau: Maintenance of 162 AtoN nationally; 2,434,000 USD

There is the possibility of implementing these plans by financial cooperation.

3) Vessel Traffic Management System (VTMS)

The Port of Honiara in Solomon and the Port Vila in Vanuatu do not have enough space in port. If there is a lack

of inbound/outbound management of large vessels, there is a risk of collision in the narrow passage; therefore, it is necessary to maintain VTMS with RADAR, CCTV, AIS and a radio communication system.

4) GMDSS and Communication Facilities

In this Survey, the following countries presented concretely the necessity to maintain GMDSS and communication facilities:

- Fiji: There is no GMDSS base station.
- Kiribati: The marine communication bases are maintained at Batio and Kiritimati; however, there are no communication systems in the other remote islands.
- PNG: The GMDSS operation was started in 2016; however, the base station is located in Port Moresby only. It is necessary to additionally maintain six other base stations.

(Outline of the country)

(1) Fiji

Fiji Hydrographic Services (FHS) is responsible for chart production and revision in Fiji. FHS was developed by the Ministry of Transport in 1971 and was later transferred to the Royal Fiji Military Forces. After that, FHS was transferred to the Marine Department of the Ministry of Transport in 1989 and was transferred again to the Fiji Navy in 2010. The role and responsibilities of FHS are to collect geo-referenced data with systematic surveys at sea and along the coast related to 1) AtoN and port survey update, 2) depths of the area encompassed within Fiji's EEZ and of national interest, 3) sea bottom composition, 4) tides and currents, 5) physical properties of water column and 6) magnetic properties of the oceanic earth's crust within Fiji waters. Furthermore, such data are summarized into nautical charts and related documents to be provided for stakeholders. The present staff composition of FHS consists of 33 persons in total (six officers, six senior ratings, 21 junior ratings). Equipment possessed is as follows:

- Vertical measurement equipment

  1) MBES (R2 Sonic 2024), 2) MBES (R2 Sonic 2020), 3) SBES (Odom Echotrac MKIII), 4) SBES (O/E MKIII) side scan transducer, 5) SVP (AML), 6) seabed sampler (Vanveen Grab), 7) automatic tide gauge, 8) tide pole (Manual Observation), 9) motion sensor (Octan), 10) sounding boat (SMB)
- Horizontal measurement equipment

  1) GPS/antenna (sounding position), 2) Lwvel (Leica NKII), 3) total station (Leica TCR 802 Ultra)
- Related software and hardware

  1) Bathymetric data acquisition (Hypack 2017), (Quincy 8.17.1), 2) acquisition hardware (Panasonic CF31 Toughbook), 3) SVP software (Sea Cast), 4) work station PC, 5) tide gauge (Ruskin), 6) CARIS HIPS/SIPS Version 10.3 (bathymetry processing software), 7) monitors (Samsung)
- Equipment for cartography

1) 04 X client desktop PC (Dell), 2) 01 X Server (Dell), 3) 01 X A0 size HP plotter, 4) 01 X HP HD Pro 42-inch scanner, 5) Chart paper (-5000 A0 Sheets), 6) Caris Paper Chart Composer, S57 composer, base editor (five license keys)

Regarding chart production and revision, FHS is working on paper charts only; therefore, it is necessary to upgrade to an electronic navigational chart (ENC). FHS, KHOA[28] (South Korea) and UKHO[29] (UK) have an MoU concerning technical cooperation, and FHS received guidance on human resource development, etc. Currently, although there are no major problems in personnel, facilities and equipment aspects, or hydrography technology (waterway sounding), FHS requires guidance with cartography (charting), especially on digitization. However, it is necessary to confirm via a survey to determine if the precision required for that technology level is being carried out locally. The MoU with South Korea and the UK is agreed upon until 2020. The official nautical charts within the EEZ of Fiji are published by the UKHO. Currently, there are plans to relocate FHS and the Maritime Rescue Coordination Center (MRCC) to the same place as the civilian sector. By doing so, cooperation with each country's ODA is considered to be easier.

There is no GMDSS base station in Fiji, and the Navy is in a hurry to install one. A development plan under the support of South Korea is being studied, but there is no prospect of realization yet. Furthermore, a development plan for the SOLAS-compliant Maritime Surveillance Center has been under discussion. The MRCC was also transferred from the Maritime Safety Authority of Fiji (MSAF) to the Navy. In 2014, all the lights of the AtoN were replaced with LED[30] lights, and 38 lighthouses were newly installed or relocated. Currently, FHS manages 86 AtoNs in total. Government Shipping Services (GSS), under the Ministry of Infrastructure and Transport (MoIT), is in charge and implementing regular maintenance inspections every six months.

(2) Kiribati

At the Marine Division, AtoN is managed by only one supervisor and three staff members. The AtoN of Betio Port supported by JICA is the international standard; however, the maintenance situation of the AtoN in the remote islands is poor. The Marine Division does not have the necessary vessels to work on maintenance in the remote islands; therefore, it is impossible to conduct periodical checks on them. Even at Betio Port, the light and solar panels have been damaged by contact with a vessel; however, they are left unattended because spare parts are not available.

Problems related to communication facilities are serious. Currently, the marine radio stations are equipped at Besio and Kiritimati with VHF radio communication. For the waters surrounding Tarawa, a single side-band (SSB) radio of MF[31]/HF[32] is supported.

[28] Korean Hydrographic and Oceanographic Agency
[29] United Kingdom Hydrographic Office
[30] Light-emitting diode
[31] Medium frequency

However, radio communication with the remote islands waters is not provided. Situations where communication between vessels and ground stations cannot be made are dangerous and hinder the rapid implementation of search and rescue (SAR). Moreover, there are no available GMDSS or AIS functions.

Regarding the nautical chart, most of the charts in Kiribati are not updated with the latest information; some of them date back to World War II. This situation of outdated nautical charts is hindering the safe navigation of vessels in coastal waters and coral reef seas, and a few grounding incidents have occurred (statistical data not yet obtained). Also, these nautical charts do not correspond to the World Geodetic System (WGS) 84 or the Global Positioning System (GPS). From the International Hydrographic Organization (IHO), an international organization related to nautical charts, recommended that Kiribati develop nautical charts for navigational safety for vessels in 2011. In order to respond to the recommendation, a survey of the sea area around Tarawa Island was supported by Australia and carried out in 2015. The suggestions resulting from the survey will be implemented around Kiritimati Island in 2019. The Marine Division does not have a hydrographic survey technician, facilities, or equipment for hydrographic surveys. It is planned to arrange candidate staff members, who will need education and training.

(3) Marshall

The USCG is planning to develop activities aimed at ensuring navigational safety, with the issues of AtoN and nautical chart maintenance. At the moment, it is desirable to have a cooperative system with Japan because it is completely untouched.

(4) Micronesia

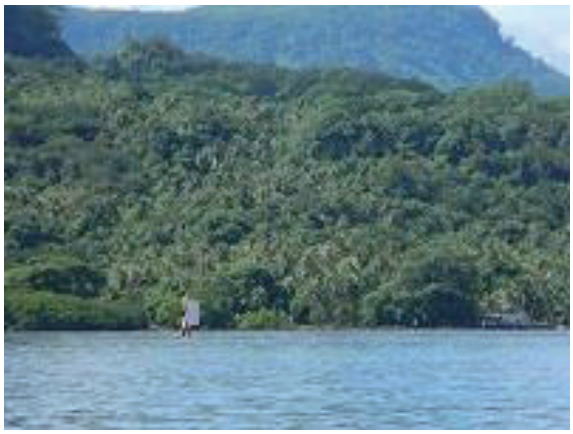
According to the Infrastructure Development Plan 2016-2025 as the Improve Navigational Aids - Pohnpei & Outer Islands project, Micronesia is planning to maintain the necessary AtoN for the safe navigation of vessels in Pohnpei and the surrounding remote islands. The budget for this project is estimated at 250,000 USD. Plans have also been made to remove sunken vessels in the same area through the Remove Sunken Vessels project, which has an estimated budget of 4,950,000 USD.

As for AtoN, it is necessary to replace lighthouses along the main navigational routes (the latest maintenance was by the USCG in the 1980s). Plans have been made to install four buoys for night traffic, and the USCG conducted a survey in November 2018. Furthermore, it is also planned to maintain AtoN by a project under the assistance of the World Bank (Report No: PIDISDSC23241). According to the report by the World Bank, "Outer islands throughout FSM typically lack access infrastructure and aids to navigation, and many do not have reef channels to access the islands. Consequently, vessels must anchor offshore and transfer passengers and cargo using small workboats or tenders. This poses a safety risk because many of the outer islands experience strong winds and waves. Government services to the outer islands are limited, and private operators are not regulated. Providing safe and reliable transportation to outer islands is a significant challenge." Maintenance of the main ports and AtoN, etc. is planned as

[32] High frequency

part of the project in order to develop Maritime Infrastructure, with a cost of 11.5 million USD.

The USCG has been conducting a survey on AtoN and nautical charts, according to information obtained from the Department of Public Works. The information details progress in defining the necessary AtoN for replacement or new installation, and such activities will be supported for the other three States at a later date. It is prohibited to enter/leave port at night from 18:00 PM to 06:00 AM owing to the fact that the present nautical charts have not been revised since the 1960s, and lightings of the AtoN are unstable. Shipping companies have submitted claims about the present situation.



AtoN in Pohnpei Bay

(5) Palau

The Hydrography Office of the US Navy conducted a sounding survey for nautical charts in 2005, and further revised the nautical charts in 2006. There is no organization that conducts nautical chart revision in Palau. An AtoN feasibility study was conducted by the Palauan side, and a summary of the survey result sis shown in Table 4.4.1 below. Most buoys had lighting and RADAR reflectors on the top of buoys initially, but they were washed away by wind-wave impact. Currently, these buoys only function during daylight hours when there is good visibility, although even then they cannot be detected by RADAR. Although skilled fishermen may be able to safely navigate these areas owing to their years of experience, it is quite a dangerous situation in general. There are cases of US Navy vessels being grounded. The lighthouse, which was installed at an important position for approach to Malakal, was damaged by Typhoon Haiyan[33] in 2013 and has not functioned since. Moreover, it is necessary to provide a catamaran boat as the buoy tender boat outfitted with a small on-board crane (45 feet in length, 2 foot draft).

Table 4.4.1 Necessary AtoN for maintenance

Location	Type	Q'ty	Unit cost (USD)	Subtotal (USD)
West & East Shipping Channel	Day Markers	47	14,850	697,950
West Shipping Channel	Floating Marker	5	18,025	90,125

[33] Known as Super Typhoon Yolanda in the Philippines.

Malakal Harbor	Floating Marker	3	19,200	57,600
Keiukl & Desbedall	Day Markers	88	14,850	1,306,800
Peleliu & Kayangel	Day Markers	19	14,850	282,150
Total				2,434,625

(Source: Bureau of Commercial Development information)

(6) PNG

The National Maritime Safety Authority (NMSA) is the body responsible for vessel safety. Environmental and navigational safety in PNG is complicated. Vessels sailing along the coast of PNG are heavily dependent on the 280 AtoN and nautical charts. The Maritime Information Management System (MIMS) of NMSA was a section newly established during the reorganization to deal with Maritime Domain Awareness (MDA) in 2018. MIMS works firstly to analyze the traffic situation of narrow passages by monitoring vessel operation status in order to secure the safe navigation of vessels by means of maintenance of the AtoN and separate traffic scheme. Regarding the nautical chart production and revision, the NMSA has been working with assistance from Australia according to the 1978 MoU with the Australian Hydrographic Service (AHS) of the Australian Navy. This MoU was revised to include the latest issues and measures to be taken in 2009; however, the signing between the Minister of Transport and the Chief of the Defense Force has been postponed. Currently, the official nautical charts are published by AHS. The issues related to nautical chart production and revision are as follows:

- Formulation of the national waterways service policy to secure involvement and support from higher levels of government.
- Securing of the initiative by NMSA, which is responsible for complying with IMO resolutions related to nautical chart installation requirements for all vessels prescribed in the IMO SOLAS Convention.

PNG started operation of GMDSS in 2016. Digital selective calling (DSC) is a core component of GMDSS, and it is planned to expand the coverage of GMDSS by preparing six new land-based stations. There have been difficulties in procurement due to both technical and financial capacity limitations; therefore, donor support is necessary. In order for the National Maritime Safety Authority to fully comply with the requirements of GMDSS, the Authority is now implementing the following:

- Provision of additional VHF DSC services to other ports
- Improvement INMARSAT[34] C capabilities
- Consideration for establishing a second coast radio station
- Provision of training for coast radio operators

(7) Solomon

[34] International Maritime Satellite Organization

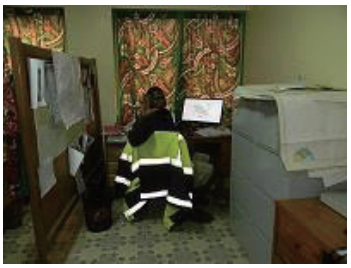
The Hydrographic Unit of the Solomon Island Maritime Authority (SIMA) has been working on the nautical chart publication and revision by self-effort. The Hydrographic Unit started duties in 2012 and has four technical staff members. The Director of the Hydrographic Unit has a diploma on geodesy from Solomon University, the Certificate of Competency as Seafarers and completion of the six months course at the Hydrographic Survey School in Australia. Two of the staff members have completed group training on nautical chart publication and revision by JICA, and one of them has been enrolled on the MSc course at Queensland University in Australia, expecting to return by the end of 2019. One more staff member has participated in the six-month group-training course in the UK, supported by the Nippon Foundation. Although an application has been made to the Ministry of Infrastructure Development (MID) requesting at least one staff member to be required from the viewpoint of efficient work implementation and current state of technology maintenance, it has not been approved yet.

Because Solomon is not a member of the International Hydrographic Organization (IHO), the Hydrograph Unit of SIMA cannot publish the official chart that is internationally approved. In light of this situation, the Hydrograph Unit of SIMA conducts the coastal survey of their own accord, and its survey data is edited by the Australian Hydrographic Service (AHS) and published on behalf of it after drafting. Domestically, the Hydrograph Unit of SIMA publishes and sells charts with the same data.

Regarding the sounding duties, although the sounding instrument currently utilized is the single beam type, more accurate sounding data collection is desired by introducing a multi-beam-type sounding instrument which provides the capability of planar surveying by sound waves oscillating in fan shape. SIMA procured the sounding instrument with a single beam with their own funding (120,000 Australian dollars) in 2013. It is estimated that the multi-beam type will cost 180,000 USD. The renewal of the boat used for sounding and related software is also necessary. Since the current boat is an open type without a cabin and it is too small as shown in the photo below, it can perform sounding work only in a quiet sea state, and it cannot perform sounding work in case of rain.

Boat for sounding

Inside of boat for sounding



Nautical chart maintenance works

Current challenges facing Solomon are related to the facilities and equipment concerning navigational safety, new establishment of an office building, maintenance of the AIS base station, and VTMS maintenance. In addition to these major challenges, various other improvements are necessary. For strengthening SIMA's MRCC function, enhancement of the GMDSS function is also necessary. In Solomon, the MRCC function of SIMA fulfills the role of information collection (ears and eyes) for SAR, and the Maritime Department of the Royal Solomon Islands

Police Force (RSIPF) plays the role for activation (hands and feet).

(8) Vanuatu

The biggest issue concerning current navigational safety in Vanuatu is that the MRCC is not maintained, and it does not respond to the functions of VMS, GMDSS, AIS, etc. This is an indicator of insufficient safety management in a port where huge cruise vessels frequently enter (more than 100 vessels only at Port Vila). It is impossible to develop these facilities and equipment only by self-help efforts, and support from donors and international organizations for both hard and soft components is expected.

Regarding AtoN, the Office of Maritime Regulator (OMR) is the point of contact with the International Association of Lighthouse Authorities (IALA). The Department of Ports and Marine (DPM) is responsible for the administration and maintenance management of AtoN. Although the DPM is responsible for all AtoN, there is only one staff member, indicating a severe staff shortage. Basically, the DPM covers only AtoN for navigational safety of vessels using international ports, Port Vila, and Luganville Port in Santo. This situation means that currently, it is not possible to respond to AtoN for domestic ships and leisure boats in remote islands routes. There are 34 lighthouses and buoys under the control of the DPM. There are no special engineers to work on AtoN maintenance. Instead, the quay workers of the DPM and local communities are utilized. A feasibility study on AtoN by the South Korean Government was administered, and the outlines of facilities and equipment development are summarized. Even after the survey, the possibility of actual implementation by the South Korean Government is still undecided. As Vanuatu (the two ports of Port Vila and Luganville) receives over 150 large cruise vessels annually, the importance of AtoN maintenance is high. As a first step, it is necessary to implement plans to improve the related organization, staffing and human resources, and then AtoN maintenance in a sequential order. At present, there is no prospect of maintenance of AtoN, which is the final purpose; therefore, the DPM is not working on organization improvement, staffing and human resource development for that purpose. AIDS TO NAVIGATION RISK ASSESSMENT IN VANUATU was implemented and supported by SPC and IALA in October 2018. The outline of the survey results is as follows.

Table 4.4.2 Trend in Number of Foreign Vessel Calls to the Port Vila Harbor

	2014	2015	2016	2017
Cruise Vessel	118	100	132	106
Cargo Vessel	59	16	59	91
Multi-Purpose Vessel	17	18	17	23
Tanker	16	47	16	26
Warship	4	6	1	9
Total	**214**	**187**	**225**	**255**

(Source: AIDS TO NAVIGATION RISK ASSESSMENT IN VANUATU)

(Background information of AtoN in Vanuatu)

- Aids to navigation service provisions are managed by the Department of Ports & Marine under the direction of the Competent Authority, the Ministry of Infrastructure and Public Utilities.
- Vanuatu is a maritime state, and maritime traffic is vital to its economy.
- Approximately 34 active AtoNs in Vanuatu and other charted AtoNs are damaged owing to lack of maintenance.
- Traditional markers still exist such as trees, rocks, and sticks planted on the reef edge to mark shallow waters. All of these markers are currently used by the local mariners in the islands region.
- Light dues / AtoN fees paid by international vessels have had a huge impact on the Vanuatu government revenue collection every year.

(AtoN Recent Development in Vanuatu)

- Replacement of Marine buoys in Port Vila Harbor to IALA Standard
- Installation of a new sector light in Port Vila funded by SPC
- Installations of new omni directional section light on Aore
- Installation of two marine buoys with flashing lights in Lolowai harbor
- New flashing lights for Emua wharf route marine buoy
- The South Korean Government, through its Aids to Navigation Association, conducted feasibility studies in 2016 on AtoN and is now in the process of signing an MoU with the Vanuatu Government for further development of AtoN.

Regarding the development of nautical charts, the sounding and surveying works were conducted on seven domestic ports with technical assistance from SPC, UNESCAP[35], the UK fund, and domestic Vanuatu funds. The Vanuatu side prepared vessels, and technical personnel worked with equipment supported by SPC and UNESCAP. There are no facilities and equipment for the maintenance of the nautical charts in Vanuatu. As for personnel, there is only one person who has participated in JICA training in the field. All the data on nautical charts in Vanuatu is managed by SPC, and the nautical chart copyrights also belong to SPC.

(9) Relevant information was not taken from the countries subject to the document review survey (Cook, Nauru, Niue, Samoa, Tonga and Tuvalu).

[35] U.N. Economic and Social Commission for Asia and the Pacific

4.5 Search and Rescue (SAR)

(Assistance Option Proposals)

Many actors have been undertaking and planning SAR activities internationally, similar to efforts outlined in **"4.1 Surveillance, law enforcement, and control over activities, including illegal fishing, such as IUU fishing."** In light of these efforts, additional assistance by JICA seems to be unnecessary for the time being considering the burden of each stakeholder.

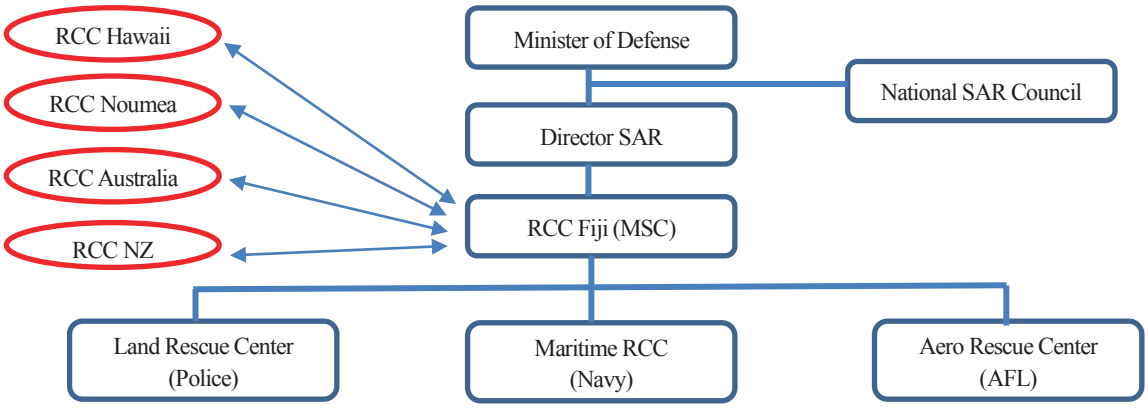
(Outline of the country)

(1) Fiji

Currently, the Navy is putting great emphasis on SAR, and in collaboration with the police, Maritime Safety Authority of Fiji (MSAF), the Fiji Ports Corporation Ltd. (FPCL), Civil Aviation Authority, etc., has made efforts to improve SAR capabilities based on the SAR Act. Fiji is a member of the Pacific Search and Rescue (PACSAR) Steering Committee and conducts SAR activities according to the Committee's 2017-2021 Strategic Plan. New Zealand, the UK, Australia, New Caledonia, and others cooperated to establish the MRCC. Its facilities and equipment are operating at nearly full capacity. Of course, further capacity-building is necessary to cover the vast EEZ area, but it is not feasible. Since the current patrol vessels (with SAR function) cannot navigate a sea state[36] of 4 to 5, it is possible to improve the SAR ability by deploying additional patrol vessels (about four vessels) that have higher seaworthiness. Of course, the Fiji Navy is responsible for the crew arrangement, fuel and maintenance. Patrol vessels should be capable of continuous sailing for about two weeks with a total length of 45m to 50m, and a maximum speed of 25 knots.

The latest news is the provision of a multipurpose vessel (with sounding function) by China. The vessel has already arrived in Suva and is waiting for the dispatch of an expert from China. After technical instruction by the expert, the vessel will engage in various duties.

The organization chart of SAR activities in Fiji is shown in Fig. 4.5.1 below.



[36] Sea state 4 (wave height is 1.25m to 2.50m: Moderate), Sea state 5 (wave height is 2.50m to 4.00m: Rough), Maximum is 9 (wave height is more than 14.00m: Phenomenal)

NB: AFL: Airports Fiji Limited
Fig. 4.5.1 Organization chart of the SAR activities in Fiji (Source: Fiji Navy)

(2) Kiribati

Regarding SAR, the Marine Division is the coordination authority under the Ministry of Information, Communication, Transport and Tourism Development (MICTTD). The Marine Division does not have a floating asset and therefore works with the Kiribati Police Service and Prison (KPSP). The procedures are as follows:

- Confirmation of a SAR case by the Marine Division
- Report to vessels in the surrounding waters by VHF and HF communications
- Contact to the operator of the VMS (the Police Maritime Unit and the Ministry of Fisheries)
- Broadcasting by Radio Kiribati (AM[37])
- Charter domestic vessels and airplanes
- Report to the RCC at Nadi in Fiji

(3) Marshall

Currently, the SAR Department has newly established the Sea Patrol Division in the Police Department and the division has six National Task Force members. These agencies are developing the National Search and Rescue Plan. The current SAR is implemented according to the procedure of the Mass Rescue Operation Response Contingency Plan (MRO). Private vessels also participate in this SAR activity. A reality-based system will be developed while utilizing the MRO to formulate the National Search and Rescue Plan from now on. Expenditure on SAR activities (primarily fuel costs) is disbursed from the Chief Secretary Office and is 70,000 USD a year. Joint operation training with related countries, such as Vanuatu, Kiribati, Solomon, and Nauru, was recently implemented. With the support of the U.S.A., joint surveillance drills were conducted in June 2018, but the future schedule is undecided. For Marshall, the USCG and US Navy of the Honolulu District are to respond to emergencies, and for SAR activities, a scramble system utilizing aircraft and vessels was developed in case of serious damage. Depending on the situation, the Guam District can also respond. Further assistance in the strengthening of the operation structure has been requested to the Government of U.S.A. For SAR activities, weather information is gathered from the meteorological office in Marshall. The University of Hawaii cooperated to develop a system that delivers weather forecasts, weather warnings, etc., and developed the applications.

(4) Micronesia

The organization responsible for SAR coordination duties in Micronesia (SAR coordination authority) is the Department of Justice, and the active unit is the Maritime Wing of the National Police. In a serious SAR case, the USCG, Guam District provides drifting models and SAR plans, and other assistance by the request of the Ministry of Justice in accordance with the SAR Guidelines for Cooperation concluded with the USCG. The Department of

[37] Amplitude modulation

Public Safety of Pohnpei State is responsible for SAR activities at the State level.

(5) Palau

Regarding SAR activities in Palau, the Bureau of Maritime Security, Fish and Wildlife Protection, and the Ministry of Justice (commonly known as the Marine Law) are responsible for the core mission. For detailed information, see **4.6 Surveillance, law enforcement, and control over activities, including illegal fishing, such as IUU fishing.** Regarding serious maritime accidents, the National Emergency Management Office (NEMO) and the Office of the Vice President coordinate necessary measures. The Marine Law independently responds to manageable accidents. Accident magnitude is evaluated by NEMO, and in enormous incidents, responds according to the Mass Rescue Operation Plan as follows:

- The National Emergency Committee is convened, the optimal response method is examined, the Vice-Presidential Decree is issued as necessary, and activities are implemented.
- The National SAR Committee is composed of private shipping and aircraft companies and individuals. Refrigerated container companies also participate in the Committee, when necessary, for food procurement, etc. Under the initiative of Marine Law, rangers in each state and private boats (mainly from diving shops), etc. work for seaborne operations. Rangers are emergency response units organized in each State. In the case of Koror State, a nine-boat fleet and 100 staff members are in charge of the SAR operation and protection of the marine environment. The Ranger has been patrolling within 12 miles of the coast on a 24 /7 basis.
- If it is judged that domestic capacity is insufficient for response, the USCG Guam District should be called for support, although this has not happened yet.

SAR activities in Palau are conducted in accordance with the National Search and Rescue Plan (NSP) established as part of the Palau National Disaster Risk Management Framework. The NSP regulates SAR activities via civilian organizations. The NSP categorizes the difficulty of SAR activities into three levels. Tier 1 is minor SAR response led by individuals or related groups, with no government support necessary. Tier 2 is domestic government support SAR level. Tier 3 requires USCG and other international support as part of SAR response. The roles and responsibilities of SAR-related organizations prescribed under NSP are as follows:

- National SAR Committee (NSARC): The NSARC is responsible for the provisions of the NSP, consistent with applicable laws and executive orders, and coordinates and provides guidance for its implementation.
- Republic of Palau SAR Coordinator: As the Lead Response Agency, the Ministry of Justice has primary responsibility for providing or arranging for SAR services within the twelve (12) nautical mile boundary around Palau.
- United States SAR Coordinator: The USCG is the recognized SAR Coordinator for the ocean area encompassing Palau and, as such, has overall responsibility for providing or arranging SAR services within the U.S./Honolulu SRR, except for the area the Palau SAR Coordinator is responsible for mentioned above.

- SAR Mission Coordinator (SMC): The SMC is a temporary arrangement individually designated for each SAR, and in the case of a Tier 3 situation, the USCG Guam or Honolulu District is in charge.
- Other Responsibilities: Supports by the Ranger deployed in each State, the NEMO, the Tourism Association, etc.

(6) PNG

The SAR coordinating organization of PNG is the National Maritime Safety Authority (NMSA). NMSA oversees the MRCC and organizes SAR activities based on MRCC distress information. NMSA is an independent government agency and is managed by donation from the marine industry and government subsidy. Each project is implemented and managed under government support from PNG, Australia, Japan, South Korea, ADB, and others.

Under NMSA coordination, SAR activities are conducted in collaboration with the Water Police, the National Fisheries Authority (NFA), Customs, Navy, etc. in a similar fashion as in the UK and Australia. On the other hand, Japan and the U.S.A conduct SAR activities with the Japan Coast Guard and the USCG.

Among independently planned NMSA activities, what should be noted is the countermeasure against the distress of small passenger boats (commonly called banana boats). According to the UNDP[38] survey, banana boats throughout PNG amount to five million boats and carry out 4,500 million operations per year. The banana boat is a small boat of about 7m in length that is involved in accidents frequently. Although the number of victims is 500 annually in the official announcement, in fact it seems to be about 1,500, or three times more than announced. In order to prevent accidents of these small boats, FRP[39] boats manufactured by YAMAHA, which are stable even when overloaded, are gradually being introduced. It is impossible to prevent all instances of overloading considering the number of operations; one of the only realistic measures is to raise awareness of the risks. Another measure is to distribute 10,000 life jackets to the community. Currently many banana boat users do not wear life jackets. It is thought that it is possible to save a considerable number of victims with this countermeasure alone.

Although many cruise vessels currently sail near PNG, the ability to operate SAR activities is low, including response to accidents by other cargo vessels. Currently, only three rescue boats with a length of 9.5m are deployed, which is insufficient. In particular, there are many accidents at the northern border of PNG (see the map below), and there is information that smuggling of illegal drugs occurs frequently around the Bougainville Island area of the eastern border. This situation is impossible to manage owing to a lack of vessels. Furthermore, in the northern border area, there is a very wide area without any coverage by mobile phone and other communication means; therefore, it is necessary to install a communication system in the area. If one patrol vessel which has the capacity to sail 14 days continuously is deployed in the northern border area for SAR and law enforcement, it would be very effective. There is a naval supply base in northern Lombrum (see the map below), and it is possible to replenish patrol vessels with fuel, water, food and so on.

[38] U.N. Development Programme
[39] Fiber-reinforced plastic

Fig. 4.5.2 Distress and drug trafficking frequent sea area
(Souce: the Survey Team, drawn based on information at interview)

(7) Solomon

Mentioned in **"4.1 Surveillance, law enforcement, and control over activities, including illegal fishing, such as IUU fishing" above.**

(8) Vanuatu

Law enforcement and SAR activities in the coastal area within 12 miles are the responsibility of the Maritime Wing, while the area within the EEZ is under the jurisdiction of the Fisheries Department and the Australian patrol boat team. The response procedures are as follows:

- Receive the distress message by the SAR Unit of Maritime Wing at Mala of Port Vila
- A preliminary survey is conducted by the SAR Unit at Mala, case information is opened, and necessary measures are planned.
- Report to the commander, chief of police, patrol vessel, person in charge of SAR
- Report to the director of the National Disaster Management Office, related agencies, such as port, civil Airline, etc.
- Planning and analyzing of SAR operations by related bodies
- Deploy patrol vessels and domestic aircraft
- Monitor the surrounding vessels near the case with cooperation from private companies headed by the Director of the Port Authority
- Receive assistance by RMRCC in Noumea if the domestic operation is insufficient

(9) Relevant information was not taken from the countries subject to remote survey (Cook, Nauru, Niue, Samoa, Tonga and Tuvalu).

4.6 Maritime Legal System Development

(Assistance Option Proposals)

Although it is necessary to observe assistance trends by IMO and SPC in order to assess the possibility of assistance from the Japanese side, additional assistance by JICA seems to be unnecessary for the time being considering the burden of each stakeholder.

(Outline of the country)

(1) Fiji

In Fiji, MSAF manages maritime-related laws and regulations, effective regulatory framework, maritime-related strategies, law enforcement, and the compliance status of various maritime industry regulations and coordination duties with IMO. The defined stakeholders with MSAF are 1) ship operators, 2) ship owners, 3) shipbuilders, 4) seafarers, 5) government agents, 6) trading companies, 7) IMO/ILO/IHO, 8) Government of Fiji, 9) related businesses and 10) other international organizations. The primary regulations are as follows:

- Maritime Safety Authority of FIJI Decree 2009
- Maritime Safety of FIJI Decree 2009
- Maritime Transport Decree 2013
- Maritime Regulations
- Marine Pollution Regulations
- Policies

(2) Kiribati

The Ministry of Information, Communication, Transport & Tourism Development (MICTTD), the Marine Division was an organization with only three staff members, but reorganization began after the current Director's appointment in 2012. Full-fledged efforts for a staff increase began in 2015, and now the team has 11 members. This revision is a result of the demand for improvement of the Marine Division 's capacity based on requests to respond to important matters such as maritime safety and security, ship management, seafarer management, etc. from home and abroad, as well as the official audit results. The present director holds the Class 1 Certificate of Competency for Seafarers, and other regulatory officers have the Class 2 or 3 of Certificate of Competency for Seafarers (obtained in the UK, Australia, New Zealand). The headquarters of the Marine Division is in Batio, and the branch office is located in Kiritimati Island with three radio operators (two are apprentice operators.)

Regarding the insufficient maritime law maintenance situation, the Marine Division is steadily advancing system development, but it is evident that it is insufficient in terms of capabilities. Therefore, it is necessary to consult outside experts. Phases 1 and 2 of the Maritime Safety Program for the Ministry of Fisheries (Fishermen's safety awareness-raising) were implemented with the support of New Zealand, and in Phase 3, the Collective Action Plan after the IMO audit was created for the Marine Division. This is an enumeration of fault points, and it is expected

that New Zealand will provide support in the future.

(3) Marshall

The Office of the Maritime Administrator (OMA) regulates maritime laws and regulations in Marshall. OMA has an office in the Marshall Islands Maritime and Corporate Administrators Inc. in the state of Virginia, U.S.A., which is entrusted with maritime-related duties by the government of Marshall. OMA conducts maritime-related duties in Marshall, such as laying groundwork, the revision of maritime-related laws and regulations, communication and coordination with foreign countries and international organizations, ship registration, management of seafarers, and so on. Current maritime-related laws and regulations are as follows:

- The Maritime Act 1990: The following subjects are stipulated; vessel inspection, rules of navigation, vessel registration, maritime business law, oil pollution damage, wrecks and salvage, merchant seafarers, domestic watercraft, safety at sea
- Maritime Regulations: The following subjects are stipulated; maritime disasters, seafarers, and others.

(4) Micronesia

Presently, for maritime laws and regulations in Micronesia, the Marine Division of the Department of Transportation, Communications and Infrastructure coordinates and regulates a nationwide maritime transportation system that will be adapted to future international and domestic commerce needs. The current situation is as follows:

- National Maritime Act 1997: The following subjects are stipulated: national flag and nationality, registration of vessels, mortgages and liens, certification of seamen, employment and welfare of seamen, pilotage, marine aid to navigation, wreck and salvage, carriage of goods by sea, limitation of liability and safety of navigation

(5) Palau

In Palau, the Bureau of Commercial Development, Ministry of Public Infrastructure, Industries and Commerce drafts maritime-related laws and regulations, collaborates with relevant organizations, and the Ministry of Justice formulates them. Current maritime-related laws and regulations are as follows:

- Maritime Regulations: The following subjects are stipulated: registration, documentation and identification of vessels, ship radio station, safety, pollution prevention and liability, tonnage measurement and inspection of vessels, seafarers and maritime labor, etc.
- Maritime Security Regulations: The following subjects are stipulated; administration of maritime security, Port Security Committee, Risk Management Plan, entering/leaving port procedures, Ship Security Plan, organization of shipping, violation of regulations and penalties, etc.
- Regulations Governing the Operation of Vessels Operating on the Waters of the Republic of Palau: The following subjects are stipulated: equipment and facilities for vessels, seafarer manning, penalties, etc.

(6) PNG

Maritime regulations in PNG are managed by the National Maritime Safety Authority (NMSA). NMSA has established laws and regulations on maritime and shipping to support the fact that PNG is in conformity with international standards and maritime practice system accepted by the international maritime society under the support of IMO. Current maritime-related laws and regulations are as follows:

- National Maritime Safety Authority Act: The organization, duties, etc. are stipulated.
- Merchant Shipping Act: The following subjects are stipulated: registration of ships, Safety, crewmen, shipping casualties, inquiries and investigations, navigational aids, pilotage, coasting trade, liability of shipowners and others, wreck and salvage, etc.
- Merchant Shipping Regulations: The following subjects are stipulated: registration of ships, aids to navigation, maritime security, tonnage measurement, load line, collision avoidance, dangerous goods, cargo on deck, safety, pilotage, STCW Convention, penalties, etc.

(7) Solomon

In Solomon, the organization that oversaw maritime administration was the Solomon Islands Maritime Safety Administration (SIMSA), but it is preparing to be transferred to a new organization of the Solomon Islands Maritime Authority (SIMA). The management of maritime law-related provisions will be under the jurisdiction of SIMA. Current maritime-related laws and regulations are as follows:

- Solomon Islands Maritime Authority Act 2018: The organization and duties of SIMA are stipulated.
- The Shipping Act 1998: Maritime business laws and regulations are stipulated.

(8) Vanuatu

Government organizations in the maritime sector in Vanuatu are now in a transitional phase, and in 2017 the Office of Maritime Regulator (OMR) was established as an independent external office overseeing the maritime sector of the Ministry of Infrastructure and Public Utilities (MIPU). At the time of OMR's establishment, reorganization was carried out with support from the ADB. The consultancy support by ADB was scheduled to be completed by the end of December 2018. The future goal of OMR is to play a role as a regulatory body in the maritime field, including ports. Regarding vessel management, there are no experts on vessel inspection; therefore, it is necessary to train such vessel inspectors. Plans have been made to train experts in the maritime field within OMR in the future, and to improve capacity as a supervisory body. The current number of OMR staff members is 15 at the Port Vila office and four at the Santo office, making 19 in total. The department is a three-part system consisting of the technical department, legal department, and management and finance department.

(9) Relevant information was not taken from the countries subject to the document review survey (Cook, Nauru, Niue, Samoa, Tonga and Tuvalu).

4.7 Border Protection Measure

(Assistance Option Proposals)

Some countries pointed out the necessity for patrol vessels that customs authorities can use for monitoring; however, the patrol vessel personnel are fully engaged in law enforcement and SAR activities for operation and maintenance works. The newly-introduced support is not necessary for the time being. Regarding the installation of the X-ray scanners, there is a possibility for implementation by grant aid.

(Outline of the country)

(1) Fiji

Customs operations are under the control of the Fiji Revenue and Customs Services (FRCS). The organization of FRCS consists of four sections: 1) Seaport Section, 2) Nadi Airport Section, 3) Suva and Northeast Section and 4) Law Enforcement Section. The Law Enforcement Section supports other Sections on law enforcement matters in cooperation with the Navy, Police, and Immigration Office. FRCS emphasizes cooperation with communities such as remote islands, where patrol and surveillance activities cannot be carried out sufficiently, and collects relevant information by maintaining a good relationship with the community. As the result, there are many cases where smugglers, etc. were caught based on information reported by the community.

Vessel inspection is required for all craft. Gradually, cargo inspection is shifting from manual inspection to the Automated System for Customs Data (ASYCUDA[40]) system, which is an electronic customs clearance system. Also, the integrated Border Management System has been introduced in collaboration with the Immigration Office. FRCS does not have floating assets; therefore, patrol activities at sea are conducted in complete cooperation with the Navy and Police.

The number of cases of illegal drug smuggling is increasing. Recently, there have been cases involving cocaine, methamphetamines, and other substances. In some cases, smuggling was attempted by packing 15kg of cocaine in 60 stick packs and drifting them.

As the promotion of customs facilitation and security are contradictory conditions, it is very difficult to coordinate a good balance. As a measure to promote facilitation of customs clearance, it is obligatory for vessels entering port to submit necessary documents at least 40 hours before entering the port. Then, information such as the vessel name, crew members, and passenger names obtained in advance is run through the Border Enforcement Manager system, and the possibility of any potential problems are detected in advance. This system is synchronized with data from the World Customs Organization (WCO), the International Criminal Police Organization (ICPO), Australia, New Zealand, and others. However, because the certainty of this information is not 100%, all vessel inspections still need to be carried out.

FRCS is well-equipped to deal with customs clearance, and X-ray scanners are also maintained at both airports

[40] Computerised customs management system which covers most foreign trade procedures which was developed by the UNCTAD (United Nations Conference on Trade and Development)

and seaports. These X-ray scanners were provided under the support of the Chinese Government. FRCS receives significant assistance from Australia and New Zealand for human resource development, facilities and equipment development, etc. Support from the U.S.A. and Japan is also very effective. FRCS is fully functioning and intends to proactively implement training, etc. for neighboring countries as a regional leader. For that purpose, it is also a good idea to promote support for neighboring countries in cooperation with JICA.

(2) Kiribati

The Kiribati Customs Service (KCS), which is responsible for customs operations in Kiribati, was under the Ministry of Finance but was transferred to the Ministry of Justice (MOJ) on September 28, 2016. This reorganization was aimed at strengthening border control in tasks that are mainly focused on conventional tax collection. It is still in a transitional period, and reform work is in progress under the leadership of the Secretary of Justice. Staff member allocation at present consists of 18 at Betio Port, two at Tarawa Airport, and three at Kiritimati Island. The Kiribati government formulated the Kiribati Vision 20 long-term plan for the next 20 years in 2018. In response to this plan, the MOJ is developing a strategic plan and execution plan in parallel. Within this plan, border management is regarded as a particularly important factor; therefore, collaborative improvement will be promoted for the customs, immigration control, food security management, and biosecurity sections. As human resources, facilities, and equipment resources are limited, efficient collaboration is necessary. In the past, as KCS has been mainly working on tax collection, KCS intends to strengthen law enforcement functions in border management works.

Currently, border management work in the port and surrounding waters is vulnerable. In particular, the response to the IUU fishing has been inadequate, and coastal monitoring and control requires strengthening. According to information from the community, it is said that foreign fishing vessels are often transshipping fish outside the port, however it was not possible to confirm this information. Also, there is information that the agent in Kiribati is providing arrangements for such illegal transshipment; however, the KCS cannot make an arrest because they have boats. There are no X-ray scanners at Betio Port and Kiritimati Island, and current container inspections are insufficient. Recently, there are indications of marijuana smuggling and other illegal activities, although they could not be confirmed.

In addition to the law enforcement duties in the EEZ by the Water Police supported by Australia, plans have been made to procure one new patrol vessel. Furthermore, as it is necessary to strengthen the patrol capability within the reef and coastal area, the procurement of small boats is also under discussion. Support from donor or international organizations is essential for these facility enhancement plans. Moreover, as it is impossible to develop human resources internally, outside support is necessary. The current crew members on the Australian patrol Vessel are well trained, educated, and have extensive experience in the field; therefore, they will be responsible for the education and training of newcomers. Despite this need, they cannot hold concurrent positions because they are engaged in

patrol vessel operation now.

(3) Marshall

Marshall is preparing to introduce the Migration Information and Data Analysis System (MIDAS) developed by the International Organization for Migration (IOM) and will be the first country to introduce MIDAS among PICs. IOM completed MIDAS training in November 2018, and installation of the system is in progress at Majuro International Airport (Amata Kabua International Airport) and Uliga Docks, which is the international port of Majuro. The introduction of MIDAS is expected to support the prevention of illegal entry and departure, instantaneous movement data collection, and strengthened risk assessment.

(4) Micronesia

(Customs Duties)

The Department of Finance and Administration oversees customs operations in Micronesia. Border control customs mainly focuses on the inspection of imported goods. There are a wide range of inspection targets, from marine and fishery processed products to general goods. Customs cargo inspections depend on inspector experience and intuition as they perform manual inspections without an X-ray scanner. In light of these circumstances, it is difficult to detect well-prepared smuggling of firearms and illegal drugs. Although a narcotic dog was procured, it was assigned to the Department of Public Safety, not to customs, and anti-drug operations at customs are inadequate. Smuggling inspections have been implemented in collaboration with relevant organizations. The fisheries sector is collaborating with the National Oceanic Resource Management Authority (NORMA), and on-site inspection and seizure at sea is carried out in collaboration with National Police and Surveillance. Enforcement activities are not implemented in the remote islands area and offshore; therefore, smuggling incidents with fishing or leisure boats there are not being controlled. Education and training of staff at airports and seaports is based on OJT, which is being upgraded with support from USCG security safety training, training by the Pacific Committee (SPC) and training in Japan by JICA.

(Immigration Duties)

The Immigration Division, Department of Justice oversees immigration control in Micronesia. Sea vessels should apply for entry to the port by e-mail attachment in advance (24 hours - 72 hours before arrival at port) via agent or in accordance with the entry application form on the Web. In this case, the Immigration Division obtains necessary information such as vessel name, flag of registry, port entry purpose, and crew/passenger list in advance, and after confirmation, issues entry permission to the vessel. When the vessel leaves, the information on crew members and passengers is confirmed and compared with the information at the time of entry based on their passports. Fishing vessels must meet NORMA specifications and possess fishing permission.

Although it is possible to analyze fishing and cargo-passenger vessels to a certain extent, it is difficult to know the

sailing route of pleasure boats, which warrants careful examination. Pleasure boats are obliged to carry out port entry procedures when entering any State of the four States of Micronesia. Fishing and cargo-passenger vessels carry out only in the first State; then it is possible to enter any port of other States. Small boats such as yachts, etc. that are illegally anchored/drifting offshore without entering the port are subject to enforcement by the Immigration Division in cooperation with the Maritime Wing.

Even with lawful entry, there are cases of illegal stay beyond the length of stay, but there are few malignant cases. It is necessary to strictly manage it, although foreign illegal labor and prostitutes, etc. are not treated as serious issues.

(5) Palau

Offshore border control is under the jurisdiction of the Bureau of Maritime Security, Fish and Wildlife Protection. The Ministry of Justice (commonly known as Marine Law), the Bureau of Customs and Boarder Protection (BCBP), and the Ministry of Finance (MOF) are responsible for border management work at airports and seaports in Palau. There was a case of smuggled tobacco dropped in the sea and carried away by a small boat at the time of a vessel inspection. BCBP is required to operate vessels for enforcement in order to respond to such cases. Based on a sense of crisis over this situation, the BCBP sought capability enhancement assistance from the Minister of Finance to set up a marine unit, but it has not yet developed. Officials have yet to be assigned, and appropriate implementation plans are being considered for the marine unit. The marine unit is to be serviced by an organization that can patrol several small boats at about 7 to 10 miles from the harbor. It is necessary to have the ability to detect smuggling cases and illegal transshipment cases in the coastal area. Currently, the main smuggled goods are believed to be cigarettes, but there is a high risk of other types of illegal smuggling due to the low capability of customs inspections. It is unknown whether drugs and firearms are traded by transshipment offshore. Capacity-building is necessary to prevent such cases from spreading. X-ray scanners for cargo inspection were procured from China by internal budgets; two were installed at the airport and one at the seaport. These scanners broke down in less than five years, and requests have been made for repairs. While waiting for a response from the service engineers, the X-ray scanning is not being conducted.

Immigration control is under the jurisdiction of the Ministry of Finance Division of Immigration, and the Bureau of Immigration and Labor. Inbound vessels from overseas (both domestic and foreign registry) report their crew list, passenger list, sailing route, last port of call, cargo list, etc. in advance and are inspected. On average, about 35 vessels (including fishing vessels) are inspected monthly. Among private pleasure boats and yachts, there are cases of boats that do not possess a leaving certificate at the last port of call. There are cases of boats that sail from the remote island directly to Palau without acquiring a leaving certificate, and it is necessary to thoroughly investigate by on-site inspection and decide on entry permission. Regarding measures against illegal immigration, the USAID[41]

[41] U.S. Agency for International Development

has been implementing an eradication campaign throughout the Pacific Ocean; however, it is not regarded as important because there are few actual cases in Palau.

Among the BCBP priorities in 2018, issues related to maritime safety and security are "To enhance BCBP's ability through high-risk cargo inspection by introducing 1) latest information and capabilities for detection, 2) drug-detecting dog, 3) X-ray scanner and to enhance the function of the Maritime Unit by capacity building and operation planning via technical assistance."

(6) PNG

The PNG Customs Service has three small patrol boats, but they are only capable of coastal sailing. The PNG Navy is operating two PPBP patrol vessels assisted by Australia which will be replaced with new vessels. In addition, the Customs Service responds with chartered private boats and aircraft as necessary. These charter fees are expensive at 10,000 Kina/day for a boat and 10,000 Kina/hour for a helicopter. Although operation by the government vessels and boats of the Customs Service, the Water Police, the National Fisheries Authority (NFA) and Navy has higher priority, even if it is expensive, it is dealt with by charter when necessary. Previously, in a detection case of 300kg of cocaine smuggling (not a smuggling into PNG but a passing case) at the border of PNG and Solomon, a vessel and helicopter were chartered for the response.

The Customs Service has been preparing a command center with VMS and AIS functions. The cost for the building is self-financed, and equipment (hard component) is supported by Australia; however, the software has not been procured yet because of an insufficient internal budget. Similarly, NFA has a control center with VMS and AIS functions, however, it oversees IUU fishing compliance only. On the other hand, the customs service can respond to both illegal vessels and IUU fishing. Tobacco and alcoholic beverages are the most common cases of smuggling, and transshipment in the offshore islands is given low priority. It is necessary to deploy a patrol vessel 40m in length which can sail offshore in order to respond to such cases. There is a slip-way repair dock that can treat up to 200m vessels: therefore, it is possible to maintain vessels without any difficulty if such a vessel is provided in the future.

Small patrol boats landed on the Water Police premises

Customs Service has two container-type X-ray scanners (procured from China), two small mobile types (Australian support) and three large mobile types (Chinese support) that have been used without any trouble. Regarding the container types, a Chinese service engineer has been resident for maintenance which is included in the contract. The mobile types supported by Australia are completely maintenance-free and there are no cases of failure if they are used according to the instruction manual.

(7) Solomon

Customs operations face challenges in countermeasures against smuggling. There are few cases of illegal drugs, but the smuggling of tobacco and alcoholic beverages is significant. Because there is no X-ray scanner, container cargo is checked by manual inspection, and there is no inspection of containers by the risk management method. It is also very difficult to eradicate such smuggling at the airport because there is no scanner there.

It is necessary to provide adequate security at Shortland Island in the west near the border with PNG and Lata in the east near the border with Vanuatu; however, it remains inadequate. In the past, patrol activities were operated by vessel with the support of the Royal Solomon Islands Police Force (RSIPF); however; it is difficult to conduct patrol activities by such vessels owing to a shortage in the budget for fuel costs. From the viewpoint that coordination between border control related organizations is necessary, an MoU for cooperation with the Customs and Police, Immigration control, Quarantine organizations, and others has been drafted, signed and put into practice.

Assistance from donors and the international organizations has included technical assistance for capacity building provided by Australia, New Zealand, South Korea, JICA, and other donors. Despite these efforts, further support for facilities and equipment is expected.

(8) Vanuatu

The Vanuatu Customs and Inland Revenue (VCIR) oversees immigration control work customs duties. The VCIR is responsible for two major international ports, Port Vila and Luganville at Santo Island, as well as Tanna Island of the southernmost area. There is a hot spot sea area together with the so-called the "Mystery Island" (Aneitym Island) located in the south of Tanna Island. There is information that smuggling is rampant in the area, yet monitoring systems have not been developed The management of cargo and passengers at the port is insufficient, and cargo and passenger management around remote islands is also inadequate. Furthermore, as there is no patrol vessel, it is impossible to conduct patrol activities at sea. There are currently only about 60 customs officials, a severe shortage of personnel. VCIR lends mobile phones to each village and conducts activities called Community Coast Watch to collect information on illegal fishing and smuggling. Even if useful information is collected, it is impossible to scramble to the spot without vessels. Although VCIR has the right to make arrests in the coastal area within 12 nautical miles, it is difficult for them to conduct activities.

Inbound vessels, such as cargo, passenger, and leisure vessels are required to submit information on crew/passengers in advance by email. VCIR conducts confirmation before port entry by matching personal information on crew and passenger lists with the Transnational Crime Unit (TCU[42]), which is a worldwide suspect information network.

VCIR is proceeding with procurement procedures with the support of China for maintenance of the Lapetashi

[42] The Unit introduced by the Australian Federal Police (AFP) collaborated with the Pacific Transnational Crime Co-ordination Centre (PTCCC), Headquarters in Suva, Fiji to respond the transnational crime, such as illegal drug and firearm smuggling and money laundering.

International Container Wharf X-ray scanners, and there are plans to install both mobile and fixed types there. In the wharf facility supported by JICA, a place for installing an X-ray scanner is maintained. Regarding the Lapetasi International Container Wharf, the conditions of the international port conforming to ISPS Code are satisfied; however, there are many issues in other ports.

There are three important functions for Customs: 1) port security response, 2) tax collection, and 3) customs clearance facilitation. Only about 60% of the necessary level of functions are dealt with. Also, it has recently become necessary to deal with money laundering. An organizational structure that can be managed by current personnel is under discussion with support from New Zealand.

(9) Relevant information was not taken from the countries subject to remote survey (Cook, Nauru, Niue, Samoa, Tonga and Tuvalu).

4.8 Ships and Seafarers

(Proposals of Assistance Option)

Although there are many countries where thorough management of seafarers' registration is necessary, specific support is not necessary. On the other hand, regarding ships, there are many countries that need to reinforce the passenger and cargo ship fleet. Among these necessities, it is considered that there is higher necessity for the following issues according to the Survey result.

1) Marshall

- Additional provision of the same type of the cargo-passenger ship as donated by JICA (49.85m in length, 560 gross tons, passenger capacity of 150 persons)
- Additional provision of the same type of landing-craft-type cargo-passenger ship as donated by JICA (45.55m in length, 10.80m in width, 463 gross tons, passenger capacity of 50 persons: 12.88 billion Japanese yen in 2012 for both vessels above)

2) Micronesia

- Additional provision of the same type of the cargo-passenger ship as donated by JICA (59m in length, 920 gross tons: 12.88 billion Japanese yen in 2012)

3) Kiribati

- Small landing-craft-type cargo and passenger ship (shallow-draft type capable of sailing around the remote islands area near Kiritimati Island)
- Small container ship (between Tarawa, Kiritimati Island and Kanton Island for 80 to 100 TEU/month)

(Outline of the country)

(1) Fiji

(Ship)

The Ministry of Infrastructure and Transport (MoIT) is responsible for maritime transportation in Fiji. The MSAF under the MoIT has jurisdiction over the implementation of maritime transport related policies, ship registration and enforcement of regulations. Regarding ship registration, Fiji is not concerned with open registry as there are only domestic shipping vessels of own nationality. The current number of registered ships is 205 with 100 gross tons or more, totaling 83,210.75 gross tons. The maximum size of ship has 5,864 gross tons. There are 17 ships with 1,000 gross tons or more. The Government Shipping Services (GSS) and the MoIT have responsibility for the ship building plan. Basically, the Fiji flag ships do not sail in international waters; however, it was reported that a Fiji registered ship was confirmed by the Port Authority of Singapore recently. This case is currently under investigation and was reported to the Tokyo MoU[43]. When revising the domestic laws relating to the SOLAS regulations in Fiji, the MSAF continues to revise the national law suitable for Fiji with the SOLAS regulations as the minimum standard. Regarding the Port State Control (PSC), many staff members of the MSAF have taken training related training by the Tokyo MoU secretariat, which coordinates PSC's regional cooperation in the Asia-Pacific region, for more than 15 years, and have taken sufficient measures. Now, 16 ex-participants of this training are working in the MSAF as PSC Officers.

The safety assessment of ships as seen from the port management side does not have problems regarding passenger ships, bulk carriers, tankers, etc. However, there are many fishing vessels in poor condition. Also, many passenger and cargo vessels sailing in the remote islands area are aged vessels, some of which are 40 years old. Such sub-standard vessels cannot obtain insurance for ships, and it is a very dangerous example. It is impossible to apply for insurance for such vessels.

The Government Shipping Services (GSS), a state-owned shipping company, oversees various operations for maritime transport under the direction of MoIT. The GSS operates owned vessels for the MoIT projects (maintenance of AtoN, etc.), various tasks and other duties requested by various Ministries (transportation of public officials to remote islands, foodstuff, drinking water, fuel, etc.). The sailing range is the remote islands sea areas and only for domestic transportation. The GSS also newly purchased a vessel with hospital functions. It is planned to operate between remote islands and to provide medical examinations and treatment for islanders. The GSS engages in public services only, and the private shipping companies are handling the private passengers and cargos. There are 11 vessels owned, two of which (secondhand ships purchased from Malaysia and South Korea) are in the moor for repair (see Table 4.8.1 List of Vessels owned by the GSS). The largest cargo-passenger ship owned is a secondhand ship of 693 gross tons purchased from Japan. This ship was built in 1992 and has been maintained well without any problems. Acquisition of spare parts for maintenance is directly from the Japanese manufacturer, and parts are less expensive than from an agent in Japan. The GSS has both general- and landing-craft types of vessels and takes them on different conditions in the sailing areas. The GSS does not have serious problems because the

[43] Member countries of the Tokyo MoU: Japan, Australia, Canada, Chili, China, Fiji, Hong Kong, Indonesia, South Korea, Malaysia, Marshall, New Zealand, PNG, Peru, Philippines, Russia, Singapore, Thailand, Vanuatu and Vietnam.

government budget has been appropriately provided and the maintenance staff members have adequate skills and abilities. Regarding the operation and maintenance of ships, the manuals were prepared and the internal education and training of the staff in charge has been conducted in a good manner. Next to the GSS, there is a private repair dock that can handle up to 100 ton vessels, and the repair dock under the Fiji Port Corporation Ltd. (FPCL) can repair up to 1,000 ton vessels.

Cargo ship built in 2011

Multi-purpose vessel with hospital function

Table 4.8.1 List of Vessels Owned by the GSS

Name of Ship	Type of Ship	Gross Tons	Overall Length (m)	Capacity	Speed (kt)	Year Built	Condition
Loilovatu (Ex-Japanese)	Conventional passenger	693	45.5	150	12	1992	Operating
Sigavou (Ex-Malaysian)	Landing craft-type passenger	495	47	35	11	2013	Ditto.
Vunilagi (Ex-Malaysian)	Ditto.	487	45.5	44	11	2011	Ditto.
Vatulawa (Ex-Malaysian)	Ditto.	229	35.5	20	12	2004	Ditto.
Rogovoka (Ex-Malaysian)	Conventional passenger	684	45.5	70	10	1987	Under repair
Dre Donu (Ex-South Korean)	Tugboat	183	33	12	11	2001	Ditto.
Vualiku	Dump barge	92	24	N/A	N/A	1999	Operating
Dautukituki	Salvage barge	110	18	12	N/A	1978	Ditto.
Cagivou	Conventional passenger	499	40	120	9	2014	Ditto.
Bali Ni Takali	Conventional passenger	319	36.8	25	11	2011	Ditto.
Tui Ni Wasabula	Research ship	28	17.6	19	7	1988	Ditto.

(Source: GSS information)

(Seafarers)

The registered number of seafarers of officer class is 2,571, and there are 1,598 ratings. There is no data on each class of Certificate of Competency in detail. All registered seafarers possess the Certificate of Competency conforming to the STCW Convention. The crew members of the GSS, the state-owned shipping company, has 60 officers and 113 ratings. Recently, many crew members have been retiring at retirement age; therefore, the seafarer shortage is serious. The GSS employs the Fiji Maritime Academy (FMA) graduates; however, it is difficult to acquire candidates because the employment conditions of the GSS are poor compared with private shipping companies. However, some new graduates enter the company for employment stability reasons. The GSS

encourages own seafarers in the officer classes to obtain a higher-ranking license, and when attending the FMA training courses, the company pays a basic salary by taking a leave of absence. The period for obtaining the certificate of the short-term training course required by the STCW Convention is treated in the same way.

(2) Kiribati

(Ship)

The ship inspector is only one principal supervisor in the Marine Division of the Ministry of Information, Communication, Transport & Tourism Development (MICTTD). As there are no other ship inspectors, they are gradually newly hired, and education and training will be carried out in the future. The current issue concerning ship management is the control of Kiribati registered ocean-going ships managed by the official agent in Singapore. Management is carried out by the agent authorized by the Marine Division; however, the Marine Division does not fully know its registered content and does not know the owner's nationality. The circumstances of this agency contract are currently being investigated. In order to respond appropriately to issues related to ship management, the Marine Board has been established, chaired by the principal supervisor, the board members are the chief pilot, two captains nominated by the minister and the representatives from the harbor masters and the port authority (KPA). Mainly, the Board is conducting elimination of sub-standard ships (both domestic and ocean-going vessels) and investigation of maritime accidents.

The current shipping companies are the Kiribati National Shipping Ltd. (KNSL) and eight other small companies who allocate small boats only. The KNSL was established by Kiribati Shipping Service Ltd (KSSL), its predecessor, from bankruptcy due to its inability to operate, and inheriting domestic transport operations in January 2018, KNSL was established. The Kiribati Shipping Service Ltd (KSSL), the predecessor of the KNSL, failed owing to its low management capacity. Later, the KNSL was established in January 2018 by taking over the domestic shipping service from the KSSL. The KNSL is a public corporation affiliated with the MICTTD, the same as the KSSL. The KNSL is applying to the government for subsidies (the MICTTD, the Marine Division), but at present it is difficult to obtain subsidies, and so it aims to operate through self-help efforts.

In remote island transportation, expenses are incurred; therefore, it will force the burden on consumers. However, the KNSL endeavors to carry out at a low price by making the best possible company effort.

The staff members of KNSL are 67 staff in total (63 in Betio and four in Kiritimati Island). The owned vessels are two new ships: a the vessel of 507 gross tons built in Taiwan and one of 326 gross tons built in Indonesia. Presently, it is planned to procure four new vessels (two by own procurement and two by government assistance). The outline is as follows:

- Tug boat and barge (self-procurement): less than 1m draft. The outbound cargo is drum cans and machinery, the inbound cargo is mainly copra. This is a case that has long been discussed in the parliament.

- Small ro-ro cargo and passenger ferry (self-procurement): High-speed small ferry with waterjet propulsion. Cargo truck loads supplies and delivers in the remote island.
- Small-landing-craft-type cargo and passenger ship (shallow-draft type capable of sailing around the remote islands area near Kiritimati Island)
- Small container ship (between Tarawa, Kiritimati Island and Kanton Island for 80 to 100 TEU/month)

It is necessary to arrange vessels once every two weeks on each remote island, especially to transport the fuel and foodstuff for the outbound route, and transporting copra on the return route is indispensable for maintaining the lives of remote island residents. In order to cope with the above need, the roles of the four small boats currently planned are essential, and the boats with a shallower draft are needed to navigate shallow waters inside the atoll. The KNSL analyzes meteorological and oceanographic information adequately and strictly stipulates its own regulations against overloading; therefore, the KNSL is convinced that even a small boat can maintain seaworthiness. The current issues for vessel operation are as follows:

- At some of remote islands without a jetty, there is an anchorage where the water depth is too deep for anchoring; therefore, a mooring buoy is necessary.
- At some of the remote islands where the tender boat of a main ship is engaged, it is necessary to prepare a simple pier on the beach for the boat.
- It is dangerous to sail at night because the nautical charts have not been revised for a long time. Even during daytime, although it depends largely on the experience of the navigator, the precision of the depth of water is not reliable.

Newly-built landing-craft-type cargo-passenger ship procured from Indonesia (326 gross tons)

(Ship Repair)

The Tarawa Shipyard Company Limited (TSCL) is a 100% private ship repair company that bought the Betio Shipyard, which was the public corporation of the Kiribati government, in January 2018 and was officially launched as the TSCL in May in the same year. The Frabelle Fishing Corporation in the Philippines and the Silla Corporation in South Korea contribute 50% each. The Ambassador of the Philippines in PNG visited TSCL's establishment

commemoration ceremony and made a speech, saying "I hope that Kiribati's ships will secure 100% seaworthiness", and in accordance with this policy, the motto of the company is “Navigation Safety First”.

The staff members consist of seven Filipino engineers, five apprentices of the Kiribati technician, 10 administrative staff and 10 Kiribati period employment staff. The engineer for engine overhaul and the qualified person to deal with the life raft are scheduled to arrive from the Philippines in order to make local works possible, such as the check/repair of engines and check of the life raft and repackaging of the container.

A slipway with up to 200 gross tons capacity was completed in April 2018. And one for up to 1,000 gross tons was completed in May. The TSCL repaired four fishing, cargo and passenger vessels in total at the small slipway and the landing-craft-type cargo and passenger vessel and the PPBP patrol vessel at the large slipway by the end of November 2018.

The TSCL can manage all types of ship hull of the domestic Kiribati flag, such as wooden, metal and aluminum constructed. Regarding the repair of engines and auxiliary equipment, these are not applied to the latest type of large-sized ship, but applied to the engine of conventional type (with high capacity for manufactured in Japan). The engineer will be working on the engine from 2019 . Equipment, paint and other necessities for repairing ships in the Kiribati market are expensive and are imported directly by the TSCL to alleviate the burden on shipping companies.

Catamaran on the smaller slipway

Slipway up to 1,000 gross tons

Large movable crane (Chinese)

(Seafarers)

Regarding seafarers, education and training are undertaken at the Marine Training Center (MTC) in Tarawa, and

the Marine Division approves programs, syllabi, faculty qualifications, etc. regarding education and training conforming to the STCW Convention. The Marine Division is also responsible for issuing the Certificate of Competency to Seafarers. Although there is no statistical data on the number of registered seafarers, about 530 personnel are educated and trained annually at the MTC, and most graduates are employed by German shipping companies. Approximately 150 Kiribati seafarers are employed in bonito/tuna fishing boats in Japan, and it is customary for about 30 new hires each year.

(3) Marshall

The Marshall Islands Shipping Corporation (MISC) is the state-owned shipping company and operates three vessels. Two vessels are provided by JICA (one is operated by the MISC and the other is relegated and operated by the Ministry of Works, Infrastructure and Utilities (MWIU)), and two vessels are procured by the MISC. Currently, the Board of Directors is discussing the possibility of procuring two vessels for the replacement of two own purchased ageing vessels. It cannot be said that the maintenance of the vessel is adequate. Regarding safety management onboard, although the result of audit by USCG is that the standards are satisfied, some items such as the safety equipment have not been updated, and some have already passed the expiration date. This safety equipment is updated when entering the dry dock in Fiji or other country; however, overseas dry docks are expensive. There are 90 staff members and crew members in total. Ships are operated by 15 seafarers (captain, three navigation officers, chief engineer, two engineers and other members) per ship.

As a public shipping company, even if profits do not rise, it is required to respond to the needs (especially food supply) for the residents in the remote islands. The outbound supplies are transported, and the ship returns to the home port with copra from each place. One of the challenges currently being faced is procurement of two alternative vessels for the ageing vessels (cargo passenger vessels: 50m in length, 550 to 580 gross tons). The second is strengthening the cargo handling capacity at Uliga Dock. At present, unloading of copra from each remote island is carried out manually, which is heavy work for laborers. It is necessary to provide one mobile crane vehicle for cargo handling at port with a maximum loading capacity of five tons.

JICA provided landing-craft-type vessel the MAJURO

Currently, the MWIU operates a landing-craft-type cargo -passenger vessel (MAJURO) which was donated by JICA. The vessel is engaged in operations such as repair of hospitals, airports, roads, food supply, transportation of heavy machinery, etc., as necessary.

Ship security is important in parallel with the port security. As many vessels with a flag of convenience are registered in Marshall, in addition to port security, it is important to ensure thorough ship security. Marshall is the second largest registered

vessel holder in the world for vessels with a flag of convenience (237,826,000 deadweight tons in total according to the statistics of Global Note in 2018). Ship management that meets international standards is important for the Trust Company of the Marshall Islands (TCMI), which manages the open registry.

The list of the domestic vessels in operation with the Marshall Flag that are registered with the Ministry of Transportation, Communications and IT is as follows.

Table 4.8.2 List of Registered Domestic Vessels

Name of Ship	Type of Ship	Gross Tons	Overall Length (m)	Year Built
F.V. Jebro	Fishing/Cargo	12	13.85m	2010
F.V. Laintok	Fishing/Cargo	14	52ft 5in	1999
LCM. Chase D	Landing-craft type	240	92ft	2012
M.V. Aemman	Cargo/Passenger	409	147ft 7in	2004
M.V. Indies Traders	Diving/Research	95	70ft	1978
M.V. Lady E	Cargo/Passenger	698	165ft	1966
M.V. Ribuk Ae	Cargo/Passenger	175	110ft	1996
M.V. Windward	Diving/Research	202	23m	1992
Majuro	Cargo/Passenger	416	40.38m	2013
M.S. Jeinica	Fishing/Cargo	34	56ft	1980
M.S. Mata	Cargo/Passenger	60	64ft	1976
M.T. Ralik II	Tug boat	334	109ft	1970
M.V. Koba Maron	Non-commercial	41	23.46m	1988
F.V. Timur	Fishing/Cargo	12	13.85m	2010
Kwajalein	Landing-craft yype	583	45.56m	2013
M.T. Ratak II	Tug boat	282	109ft	1971
Tarian 04	SAR	8.5	16.57m	2015
L.C. Michelle K	Landing-craft type	627	61.57m	1994

(Source: GSS information)

(4) Micronesia

(Ship)

The organization responsible for ship registration in Micronesia is the Department of Transportation, Communication & Infrastructure (DTC & I). It imposes a ship registration obligation on ships with a total length of 12 meters or more, and fishing vessels are included, but the official vessels are not included. Approximately 60 vessels are registered and most of them are fishing vessels. There is no classification society for ships in the country. Although the chief ship inspector is the Minister of DTC & I prescribed in the Vessel Registration Regulation 2.3, the actual inspection has been conducting by the safety & inspection manager. Since Micronesia is not a member of the Tokyo MoU, the Port State Control is not conducted.

Presently, the government owns four cargo-passenger vessels. Two vessels are the cargo-passenger vessels of the Caroline Voyager (57.5m in length, 1,335 gross tons) and the Micronesian Navigator (59m in length, 920 gross tons) donated by Japan. The other two vessels are the Chief Mailo (56m in length, 1,088 gross tons) and ro-ro vessel the

Hapilmohol (56m in length, 1,137 gross tons) donated by China. One of the two vessels donated by China repaired at the dock in the Philippines, docked down in November 2018 and resumed operation. However, the generator failed, and as of December 2018 it is moored at the Yap International Wharf. Another vessel is also malfunctioning, and it is not operating. The classification of Japanese donated vessels is the Class NK (Nippon Kaiji Kyokai), and the classification of Chinese donated vessels is the CCS (China Classification Society). The CCS has terminated services; therefore, such vessels donated by China will take another classification later. Both of the two Japanese donated vessels were well organized and the level of technology transfer at the time of provision was high. Some failures and malfunctions in the engine system were noted, but they were not fatal, and the maintenance situation seemed to be good. There is no repair dock in Micronesia; therefore, repair works are managed at the shipyard in the Philippines. Even in such a ship maintenance environment, the daily maintenance situation, especially for the engine room, by crew members is highly appreciated.

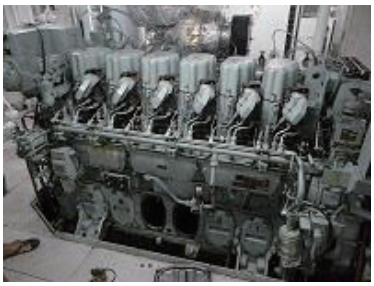
- Caroline Voyager: The circuit breaker of the generator switch board has been damaged, and the situation has been reported to the Sano Yasu shipbuilding. Waiting for parts replacement by service engineer.
- Micronesian Navigators: owing to the damage of a cylinder block of the main engine, reported to the Sano Yasu shipbuilding as well as Caroline Voyager and awaiting response. Also, the oil-water separator (oil-water separation of the ballast water in the ship) also failed, and the flow rate of the inlet pump was low, which means that the efficiency was poor.

Two vessels donated by Japan (left: Micronesian Navigator, right: Caroline Voyager)

Two vessels donated by Japan seen from the bridge of the Caroline Voyager

Damaged switch board of No. 2 Generator (Caroline Voyager)

Circuit breaker of switch board (Caroline Voyager)



Main engine (Micronesian Navigator)

Piston No. 4 (Micronesian Navigator)

No. 4 Cylinder block
(Micronesian Navigator)

Oil separator
(Micronesian Navigator)

(Present Situation and issues of vessels operated by Yap State)

(1) Present situation

The Hapilmohol 1 (provided by the Chinese Government in 2006), which is the sole vessel operated by the Yap State Government, was in a situation in which stable regular operation was not possible owing to repeated repairs, for engine trouble, etc. The Hapilmohol 1 was repaired at the Frabelle drydock in the Philippines between March and October 2018, docked down in November 2018, and resumed operation for remote islands services. However, the generator failed, and as of December 2018 it is moored at the Yap International Wharf.

There is information that there is a possibility that the Federal Government of Micronesia may receive 10 million USD from China, of which 5 million USD may be used for the project in Yap State. In response, the Yap State Government made a request to the Federal Government on the most important issue of procurement of the vessel and submitted an estimation of 5.1 million USD. This is information correct at the end of 2017, and the Yap State Government does not know the latest progress. If the vessel is provided by JICA, stable transport by reliable vessel in the future is expected. In 2015 the Yap State Government applied to the Federal Government of Micronesia for a similar vessel provision by the JICA Grant Aid Project (The Federal Government requested provision of the vessel officially to JICA in 2017, although the relationship with the said vessel is unknown).

The operation record of the Hapilmohol 1 is as follows:

Table 4.8.3 Operation Record of the Hapilmohol 1

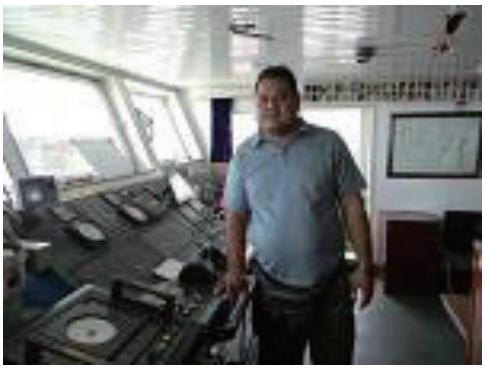
2015 fiscal year			2014 fiscal year			2013 fiscal year		
Sailed Period	**Cargo (Tons)**	**Passengers (persons)**	**Sailed Period**	**Cargo (Tons)**	**Passengers (persons)**	**Sailed Period**	**Cargo (Tons)**	**Passengers (persons)**
Oct. 13– Nov. 11	125.47	640	Dec. 16 – Oct. 13	187	319	Nov. 8 – Nov. 23	188.4	294
Dec. 20 – Jan. 5	101.19	282	Jan. 30 – Feb.16	140.24	303	Dec. 12 – Dec. 28	200	287
Jan. 24 – Feb. 6	81.26	413	May 5 – May 11	35.88	409	Feb. 22 –Mar. 14	483.93	380
Feb. 27 – Mar. 19	230.47	374	Mar. 21 – Apr. 9	93.69	305	Apr. 12 – May. 2	115.3	277
Apr.13 – Apr. 17	130	165	Jun. 4 – Jun. 23	192.42	454	May. 30 – Jun. 19	326.4	762
May 13 – May 29	134.04	460	Jul. 14 – Jul. 26	48.86	351	Aug. 1 – Aug.16	153	267
Jun. 6 – Jun. 26	223.66	983	Aug. 4 – Aug. 15	71.07	95	**Total**	**1,467.03**	**2,267**
Jul. 10 – Jul.14	77.67	121	Aug. 24 – Sep. 5	86.02	347			
Jul. 22 – Aug. 11	46.44	173	Sep. 28 – Oct. 13	158.31	395			

Total	**1,150.20**	**3,611**	**Total**	**1,013.49**	**2,978**			

(Source: Application Form for Grant Aid from Japan: Office of Governor, Yap State Government: 2015)

Hapilmohol 1

Slipway for landing craft



Captain of Hapilmohol 1

Bridge of Hapilmohol 1

Fore castle deck of Hapilmohol 1

Warehouse assisted by Taiwan on the wharf assisted by JICA

(2) The vessel requested for Grant Project by Japan in 2015

The summary of the requested vessel is as follows:

- Overall length: 57.5m
- Breadth: 11.5m
- Draft: 5.2m
- Cargo space: 730m^3, Frozen storage space: 15m^3
- Capacity including crew members: 400 persons
- Speed: 12-14 knots

- Price: 11.1 million USD, including the transportation and technical instruction: the price of MV Micronesian Navigator is referred to.

(3) Utilization of the requested vessel for the purpose to on-board training for the FMI

Although the necessity of the vessel is primarily for the purpose of transporting cargo and passengers between the remote islands in the Yap State, if it is possible to utilize it for on-board training for the FMI in parallel, it also helps to improve the maintenance ability of the vessel through work done by the crew members together with instructors and cadets of the FMI. During on-board training, as the instructors are on board to support training from the FMI, the cadets are expected to acquire skills by OJT while helping the crew members in the engineering section of the vessel, and it is considered that the work efficiency of the engineering section will improve.

(Seafarers)

The number of registered seafarers is 53-54 persons. These seafarers have undertaken education and training in the FMI in the Yap State and the Australian Maritime College (AMC). There is no maritime education and training institute in Pohnpei State.

(5) Palau

(Ships)

Ship registration management in Palau is under the jurisdiction of the Bureau of Commercial Development (BCD) of the Ministry of Public Infrastructure, Industries & Commerce. For vessel inspection, the Marine Law is inspecting vessels of 65 feet or less in length and vessels that exceed 65 feet are inspected by the BCD. There are 12 domestic vessels of the Palauan owners (regular liner vessels between Koror and the southwestern islands) and about 400 vessels flying a flag of convenience (FOC) of the foreign owners (11 passenger vessels, 220 cargo vessels and 122 others). There are three ship inspectors (one chief engineer and two captains). The vessels of FOC are managed by the Palau International Ship Registry in Greece and Houston, U.S.A. The drydock repair works are conducted at the Belau Shipyard of the Belau Transfer & Terminal Group of Companies. There is no information related to the size of the vessels and kind of service.

(Seafarer)

There are currently 48 Palauan seafarers registered, including three captains. The education and training for seafarers are conducting at the FMI in Yap State for Class 5, in PNG and Solomon for Class 4 and in Vanuatu and Fiji for Class 1. For the ship officer's examination, the written examination is conducted in Palau, and the examination results are assessed by the above-mentioned countries, then the Certificate of Competency is issued to the successful applicants. There is no maritime education training institute in Palau.

(6) PNG

(Ships)

The Government of PNG owned 54 vessels up to 1984; however, they own no vessels now. The Government plans to own domestic vessels firstly in the future. It has already been decided to procure 10 vessels in total. Their breakdown is three vessels for the regional level and seven vessels for the domestic level. The banana boats are operated for coastal services as before. According to the plan, a state-owned enterprise will be established to secure the income. Such vessels will be used for the on-board training for the National Maritime College (NMC) in Madan.

In PNG, ship inspection is under the jurisdiction of the National Maritime Safety Authority (NMSA). The NMSA is promoting human resource development to manage the Port State Control (PSC) and the Flag State Control (FSC). Currently, there are 12 ship inspectors in the NMSA. Regarding overseas training, the training of Tokyo MoU (one month) is most useful, covering both theory and practice, including lectures, boarding inspection practice, and practical training at major ports. Regarding the overseas training for ship inspector, the training at the Tokyo MoU is the most useful because it covers both theory and practice, including lectures, boarding inspection practice and practical training at major ports. Among above-mentioned 12 inspectors, three inspectors took the training by the Tokyo MoU. As the training has capacity for one participant from PNG annually, the related capacity has been enhancing steadily. Also, The Australian Maritime Safety Authority (AMSA) has been conducting on-board inspection training.

Currently, there are 859 PNG registered vessels, and their average age is 10 years. As there is no shipbuilder in PNG, the steel vessels are built in Malaysia, Singapore, Indonesia, Japan, China, Australia, and elsewhere. One small boat of 15m or less in length is built in PNG.

Although from 100 to 160 vessels call at the ports in PNG monthly, all vessels, except LNG carriers and passenger vessels, are inspected by means of on-board inspection. The NMSA does not have the capacity to inspect LNG carriers and passenger vessels. For inspection, it is already possible to develop human resources with self-help efforts, but further improvement of technology is necessary for surveys. Since so many vessel inspections are carried out by only 12 inspectors, it is necessary to increase the number of inspectors urgently; therefore, technical guidance by donors/international organizations is required.

Regarding vessel repairs, the Papua New Guinea Dockyard has slipway services with a capacity for vessels of 5,000 tons, 130m in length and 25m in width.

(Seafarers)

The NMSA is also in charge of seafarers' registration and management, and the number of registered seafarers in PNG is as follows:

Table 4.8.4 Number of Registered Seafarers in PNG

	Captain	Navigation Officer	Marine Engineer
Class 1	42	29	32

Class 2	34	35	106
Class 3	85	155	229
Class 4	132	137	194
Class 5	50	137	292
Total	343	493	853
Quarter Master	237		
Deck Rating	1,045		
Engine Rating	254		
Rating without Certificate	616		

(Source: NMSA)

(7) Solomon

The management work related to shipping, ship registration, and seafarers is the responsibility of the Solomon Island Maritime Authority (SIMA), the Ministry of Infrastructure Development (MID). SIMA is in a transition period of reorganization from under the jurisdiction of MID, it has been progressing towards autonomous organization of SIMA by the ADB support of six experts on 1) law, 2) human resources, 3) marine pollution, 4) ICT, 5) financial affairs, and 6) maritime organization strengthening. The source of revenue is the ship registration fee. It is estimated that an annual income of about 15 million Solomon dollars (about 2 million USD) and expenditure of 4.5 million Solomon dollars (about 600,000 USD) are expected. The number of staff members of SIMA is low, with 34 technical staff and nine administrative staff. SIMA has applied to the MID to increase the number; however, it has not been approved. If SIMA becomes fully autonomous, it will be possible to hire staff at discretion within the need for a budget.

SIMA has the two functions of 1) legal compliance and 2) maritime administration and marine environmental protection. Conventionally, although the duties were mainly focused on 2) above, SIMA is aiming to be an internationally recognized maritime nation by fully fulfilling its role as the regulatory body for 1) above.

Solomon is a maritime nation with the seventh largest EEZ in the world. Although Solomon is a member of the IMO, it has not qualified since 1978 owing to unpaid membership fees. Solomon has observer status for the IHO, IALA, Tokyo MoU, etc. Also, Solomon is not listed on the White List[44]. Since independence in 1978, there has been no history of ratification of any new international convention, treaties, etc. Solomon has been trying to enhance its related functions in order to enter the international maritime society. Since Solomon is an observer country, the PSC compliant activities are implemented voluntarily; however, the results do not have any validity. It is scheduled to receive an audit from the European Maritime Safety Agency (EMSA) in June 2019 and is being chased for a response. Although it will receive numerous points to participate in the international maritime society, various issues

[44] The White List distinguishes the nations that have displayed and established a plan of full compliance with the STCW-95 Convention and Code. Developed by an unbiased group of competent persons at the IMO, the White List was created using criteria such as what system of licensing the administration has, training center oversight, process of certificate revalidation, flag state control, and port state control.

will be clarified.

The issue of the Solomon shipping sector is that there is not enough capacity to regulate the Solomon-based cargo fare by oceangoing vessels owing to the lack of maritime laws and maritime economics experts. Therefore, it is an ridiculous that the fare in the 10 years from 2004 to 2013 has increased by an average of 17.8% per year, which is the fourth highest freight rate in the world. Although some PICs are making profits as a flag of convenience nation, it is not dealt with by Solomon since they don't have enough vcapacity. It is judged that it is unhealthy to pursue only profit without having the necessary expertise in ships, law, economics, etc.

(Ships)

The Solomon Island Maritime Authority (SIMA) of Ministry of Infrastructure Development (MID) is responsible for ship registration management in Solomon. Solomon-owned vessels are only domestic vessels and it does not have oceangoing vessels. Currently, the number of registered vessels is 292 (total length is 10m or more) in 2018 compared with 196 vessels in 2013. Inspectors conduct safety inspections on the safety management of the registered domestic vessels, particularly strictly confirming overloading.

Regarding vessel repairs, the Sasape International Shipyard Limited in the Central Islands Province has a slipway service capacity for vessels of 500 tons, 50m in length, 22m in width and 5m in draft.

(Seafarers)

The number of registered seafarers is about 3,000, including officers and ratings.

(8) Vanuatu

The primally issue for domestic shipping in Vanuatu is related to transportation for remote islands. Although there is cargo in the outbound route, the inbound is almost empty, which is inefficient and unprofitable. It cannot be operated without government subsidies. The ADB is also supported by such subsidies. Although the government is making efforts to promote tourism toward promotion of transportation, there is a delay in efforts to promote the fisheries industry, such as the delay to secure the cold chain.

(Ships)

Regarding ship registration, the Office of Maritime Regulator (OMR) is responsible for domestic vessels and the Vanuatu Maritime Service Limited (VMSL), which is a private company, manages the registration duties and ship management of foreign vessels under the approval of the Ministry of Infrastructure and Public Utilities (MIPU). It is stipulated for 1) domestic vessels by the Shipping Act Chapter 53 and 2) foreign oceangoing vessels by the Maritime Act Chapter 131. Currently, there are 572 foreign vessels with about 300 million registered tons in total. The main shipowners are the U.S.A. and Japan. The registered oceangoing vessels are classified by the international classification society, and annual inspections are also conducted according to the regulations. As there are not enough ship inspectors in Vanuatu, such inspections are conducted by the foreign inspectors. The VMSL is managed

and operated by the Vanuatu office, the US office (New York) and several overseas offices. The VMSL plans to integrate the US office functions with the Vanuatu office and plans to create a system that can unify management at the Vanuatu domestic offices. For this plan, it is necessary to nurture Vanuatu ship inspectors, and under the guidance of VMSL, the application for reorganization has been submitted to the government to promote the plan.

The number of registered domestic vessels is 57, and the breakdown is as follows; 1) 31 General Vessels, 2) 16 Landing-craft-type vessels, 3) 2 stern-ramp type vessels and 4) 8 tug boats. Regarding leisure yachts, the customs are in charge, but it is scheduled to be under the jurisdiction of the OMR.

From the ship inspection results, there were 29 vessels that the OMR has detained and uplifted during the period between June 2017 to December 2017. Most of the deficiencies identified related to safety of vessels involved: steering gear failures, safety certificate being expired, overloading of passengers and cargoes, poor maintenance of firefighting equipment and safety appliances (life raft) as well as an engine problem.

Regarding vessel repairs, although there are small repair docks at Santo Island and Port Vila, the majority of repairs are made in the neighboring countries such as Fiji, Solomon and New Caledonia. The Government of South Korea has an agreement with the Government of Solomon on the package cooperation with grant aid and loan to the NICON Shipyard at Santo Island for the slipway with a capacity for vessels of 1,000 tons in 2017 and to commence the services from 2020; however, the information on the progress was not collected. The assessment of this slipway was conducted by OMR, and its report is under preparation.

(Seafarers)

The number of registered seafarers is approximately 300 ratings, such as a steward for oceangoing vessels and about 600 for domestic vessels.

(9) Relevant information was not taken from the countries subject to the document review survey (Cook, Nauru, Niue, Samoa, Tonga and Tuvalu).

4.9 Prevention of Marine Pollution (Illegal Waste Dumping, Oil Spillages, etc.)

(Assistance Option Proposals)

In this survey, specific examples of necessary maintenance concerning marine pollution control are presented below. The final disposal site for oil waste is not maintained in all countries.

- **Marshall**: The Embassy of Japan in Marshall is planning to provide a complete set of equipment, such as an oil fence of 2 million USD with a boat to deploy the oil fence, oil water separator, etc.
- **Palau**: Provision of oil boom, oil-absorbing mats, and construction of storage for relevant equipment.
- **PNG**: Provision of seven Shallow draft oil recovery work boats (14m in length, delivered to the Navy in Norway and the Netherlands, built in Finland) 1,490,000 euros/boat
- **Vanuatu**: Provision of a complete set of equipment, such as oil boom, oil fence, oil skimmer, etc. and a boat

for works of about 7 to 8m in length.

(Outline of the country)

(1) Fiji

The Maritime Safety Authority of Fiji (MSAF) oversees oil control in Fiji. The oil spill response duties and responsibilities in each relevant organization are stipulated in the Fiji National Oil Pollution Contingency Plan. The National Oil Pollution Committee is organized with oil companies in Fiji (Shell, Mobil, BP[45]) also acting as members. The Oil Spill Control Center will be developed in cooperation with the fire department in Suva, MSAF and the port authority. Fiji is a member of the South Pacific Regional Environment Programme (SPREP). Facilities and equipment relating to oil spill control include an oil boom, oil skimmer, oil pump, etc. provided by New Zealand. The treatment plant for oil waste is inadequate and is currently under discussion.

(2) Kiribati

Although the Marine Division of the Ministry of Information, Communication, Transport & Tourism Development (MICTTD) is responsible for oil spill control in Kiribati, the official oil pollution control procedures have not been arranged. Outside business hours of MICTTD, the Betio Port Authority acts as the notification point. Other agencies involved in oil pollution control are the Ministry of Environment and Natural Resources Development (MENRD), and the Ministry of Works and Energy (MWE). Kiribati is a member of SPREP. There is no treatment facility for oil waste; therefore, export is the only option available for final treatment. The Kiribati Oil Company and BP in Kiribati have limited equipment for oil pollution response, such as oil absorbing mats, etc.

(3) Marshall

Marine environmental management in Marshall is under the jurisdiction of the Environmental Protection Authority (EPA), and the Ministry of Transportation, Communications and IT is responsible for oil pollution control. In the event of an oil spill accident, these organizations cooperate in response. The Kwajalein atoll is fully under the jurisdiction of the U.S.A. Although Mobil Oil Micronesia Inc. has limited oil pollution control equipment, it cannot cope with large-scale oil spills. There is no treatment facility for oil waste; therefore, exporting is the only option for final treatment. In order to improve insufficient facilities and equipment, the Embassy of Japan in Marshall is planning to provide a complete set of equipment, such as an oil fence of 2 million USD with a boat to deploy the oil fence, oil water separator, etc. Also, the Embassy of U.S.A. is considering the provision of an oil fence worth 9 million USD.

(4) Micronesia

The Office of Fisheries and Aquaculture (OFA) is an agency in Pohnpei State that is responsible for protecting marine resources in the Marine Protection Area within 12 miles of the coast. OFA has three small boats (29 ft, 23 ft,

[45] British Petroleum

and 18 ft in length provided by the Overseas Fishery Cooperation Foundation of Japan (OFCF)) and has a total of 19 staff members. OFA conducts conservation activities in areas such as dense mangroves. Since OFA has no police authority power over violators, they contact the Maritime Wing when found. OFA cooperates with the Maritime Wing and the Pohnpei Port Authority (PPA) in the case of a large-scale accident (aircraft sea crash, ship stranding, etc.).

(5) Palau

The Environmental Quality Protection Board (EQPB) is responsible for oil spill accidents due to ship stranding, collisions, etc. and oil control for oil spillage during the loading and unloading of oil tankers. EQPB has equipment and personnel capable of handling only small-scale spills and receives the support of the area ranger and domestic oil terminal company when assistance is required. In the case of a large-scale spill, EQPB receives assistance through a collaboration agreement with the USCG Sector Guam (there have been no large-scale spills). For oil tankers loading and unloading, oil spill control equipment is maintained at the terminal and has been deemed sufficient.

Regarding equipment and materials, the oil boom is not long enough for complete coverage around the ship. Furthermore, the number of absorbing mats is also insufficient. These materials and equipment are stored in a second-hand container, and there are problems such as deterioration of the absorbing mats due to rain leakage. It cannot cope with simultaneous instances of washing/repairing oil booms because there are no spare booms. Although it is necessary to procure such equipment and construct facilities, there has been difficulty securing funding.

Oil leakage from Japanese ships (warships, transport ships, etc.) sunk during World War II continues to be a problem. There are reports that not only oil, but also harmful chemical substances are flowing out. Currently, the Japan Mine Action Service (JMAS), a specified non-profit corporation, has been dealing with these sunken vessels. Since Malakal is the economic center of Palau and is a sightseeing base for various places, it is necessary to avoid large-scale contamination off Malakal. The dumping of FRP hulls of aging boats is another issue. Although it is permitted to dump FRP hulls without any contaminating materials (engine, fuel, etc.) at designated locations, there are also many instances of illegal dumping, which causes not only marine pollution, but also poses risks to the safe navigation of other vessels in shallow waters. Since FRP hulls cannot be recycled, processing used hulls is proving to be a challenge.

(6) PNG

In PNG, oil spill accidents occur frequently. There are 38 oil spill accidents on record, four of which were serious accidents. Although the oil control activities are entrusted to vessels and ports, the National Maritime Safety Authority (NMSA) must implement its management. Therefore, the procurement of tier 2 oil-control equipment was approved from the budget of 2017 – 2018; however, procurement procedures have not advanced. In addition, NMSA has requested ADB support for the procurement of seven Shallow draft oil recovery work boats (14m in length, delivered to the Navy in Norway and the Netherlands, built in Finland); however, there has been no progress. The boats can be used not only for the oil spill control but also for garbage collection, SAR, and transportation of passengers and cargo (See Photo). NMSA has specifications and quotations for 1,490,000 euros/boat. Of the 21 Provinces in PNG, 15 Provinces have coastal zones. There are more than 600 manned islands. Therefore, multipurpose boats such as those mentioned above are useful to ensure the lives and safety of people on these islands.

Shallow draft oil recovery work boat

(7) Solomon

Oil spill control management in Solomon is under the jurisdiction of three organizations: 1) Solomon Island Maritime Authority (SIMA), Ministry of Infrastructure Development (MID), 2) Environment and Conservation Division, the Ministry of Climate Change, Disaster Management and Meteorology, 3) Environment and Conservation and the National Disaster Management Office (NDMO), Ministry of Climate Change, Disaster Management and Meteorology. According to the plan, NDMO formulates the National Contingency Plan (NCP), and harbor masters and terminal managers are responsible for oil spills within port. SIMA is the responsible body with respect to oil spillage outside the port area in the EEZ. Solomon is a member of SPREP, and if the scale of an oil spill is large, Australia will implement major assistance if necessary. There is no treatment facility for oil waste; therefore, it is either exported or disposed of according to the approved processing method at the site for final treatment. Regarding oil control equipment, Mackworth Oil Limited and South Pacific Oil Limited (SPOL) share its provision, while the port authority manages the equipment.

(8) Vanuatu

Incidents of oil spill control in Vanuatu fall under the jurisdiction of the Department of Ports and Marine (DPM) of the Ministry of Transport, Communications and Public Works. The DPM has jurisdiction over Port Vila and

Luganville Port. There are no facilities and equipment for oil spill control[46]. In the case of an oil spill incident, the Secretariat of the Pacific Community (SPC) based in Suva, Fiji, is supposed to deal with it; however, it cannot cope with emergency oil spill control. The following set of equipment and boats are necessary: 1) oil boom (200m x 2), 2) oil fence, 3) oil skimmer, etc. and 4) boat for works of about 7 to 8m in length. The nearby oil spill control agencies are the USCG, and oil companies in the US Samoa, Guam, as well as the French Navy in New Caledonia.

(9) Countries subject to the document review survey

- **Cook**: The notification point for oil spill situations is the Ministry of Transport, and the Police Department is the governing agency. As Cook is located within the borders of New Zealand, in the case of oil spill incidents, it should be reported to the competent oil spill control authority in New Zealand. The Ministry of Infrastructure and Planning arranges vehicles, equipment, personnel, etc. as the responsible party for oil control in New Zealand. Cook is a member of SPREP and received the facilities and equipment from SPREP in 2010. According to the 2014 report, the port authority has been progressing enhancement of oil spill control capacity, while an energy supply company has maintained equipment. A massive oil spill incident occurred with the rupture accident of Rarotonga 's land pipeline in 1987. Diesel oil leaked out into the Avatiu Bay.
- **Tonga**: The notification point for oil spill situations is the Port Administration and the Police Department of the Ministry of Marine and Ports. The National Marine Pollution Plan was drafted in 1985, and the Police Force was appointed as the agency to control oil spills. Other relevant organizations participate in their respective activities, and the private oil industry also utilizes their expertise and equipment.

[46] After this on-site survey, the Japanese consultant in charge of the Yen Loan Project shared information that the Department of Ports and Marine has the absorbing mats and oil fences for oil spill response.

5. Maritime Security and Safety Sector Cooperation Policies in Pacific Islands Countries (Draft)

A Free, Open and Sustainable Ocea is one of the primary cooperation and assistance plans based on the "Promotion of Free and Open Indo-Pacific Strategy, which was drafted at the Eighth Pacific Islands Leaders Meeting (PALM 8) held in May 2018. PALMc8 focused on assistance actions such as 1) Capacity-development in the maritime security sector, 2) management of living marine resources, including preservation of the marine environment, and 3) strengthening of maritime connectivity through development of a maritime transport network.

The Cooperation policies are summarized regarding points 1) to 3) based on JICA's Basic Information and Data Collection Survey on Maritime Security and Safety (hereinafter referred to as "the Basic Survey").

Maritime security and safety sector assistance projects have already been implemented by donors and international organizations, such as Australia, the U.S.A, the Nippon Foundation etc.[47] in the Pacific Islands Countries. In light of these projects, the following three sectors have been selected to be promoted as priority sectors to avoid overlapping activities, aid coordination, etc. The results of considerations for cooperation on the other sectors are addressed under (3) mentioned below.

(1) Human Resource Development in Maritime Sector

Plans have been made to promote cooperation in human resource development in the maritime sector to strengthen the maritime security and safety capacity of seafarers, ship inspectors, port security officers, etc. at each base for education and training in the North Pacific region (Micronesia region) and the South Pacific region (Melanesia and Polynesia regions).

(2) Maritime Connectivity Strengthening

A. Port

Currently, there are some Pacific Islands Countries where the entry and departure of ships are not adequately controlled based on international rules and regulations such as SOLAS[48], ISPS[49], etc. Cooperation on port facility development and port management will be promoted continuously in order to sustain the effects of the ports[50] developed through Japanese support in past activities and future plans.

B. Ship

Transportation by cargo vessels are vital to many Pacific Islands Countries which have remote islands; therefore, Japan has provided cargo vessels, etc. to Micronesia, Marshall, Samoa, Tonga, Tuvalu, etc. Moreover, cargo-passenger vessels are an important form of transportation within the neighboring countries, especially Samoa, Tuvalu and Kiribati. Continuous promotion and strengthening of maritime connectivity is needed to assist with

[47] Focus on cooperation with NZ, EU, WB, ADB, SPC, FFA etc.
[48] International Convention for safety of live at sea by IMO
[49] International Convention for security of vessels and port which was newly established after simultaneous terrorist attacks in the USA.
[50] Tonga, Samoa, Solomon, Tuvalu, Vanuatu, Micronesia, etc.

maintenance management systems for vessels, including assistance to replace vessels in a self-sustaining manner for countries which operate independently without the provision of vessels and support.

(3) Navigation Safety

There are many countries where major infrastructure developments are inadequate, such as aids to navigation (AtoN), nautical charts, Vessel Traffic Management System (VTMS), communication system for automatic transmission of maritime safety information (GMDSS), etc. In light of these inadequacies, assistance needs are high. This sector also collaborates with law enforcement and search and rescue (SAR), which have been supported widely by other donors and organizations. Moreover, Japanese technical level is high[51], and achievements are abundant[52] in the sector; therefore, the promotion of cooperation in the navigation safety sector is vital.

The specific priority projects to be implemented along with their development efforts are as follows:

(1) Human Resource Development in Maritime Sector

(North Pacific region: Micronesia region)

Developing the Fisheries and Maritime Institute (FMI) in Yap State, Federated States of Micronesia, is essential. FMI receives foreign students from Palau and Marshall as the core institute of maritime education and training in the Micronesian region. The following support is necessary to ensure the effective development of FMI.

Scheme	Technical Cooperation Project
1. Project Name	**"Maritime Human Resource Development Project in the Micronesian Region" in Micronesia (tentative title)**
2. Project Outline	To support human resource development in the fields of 1) seafarers for ocean-going vessels, 2) port security officers and 3) vessel inspectors at the Fisheries and Maritime Institute (FMI) in Yap State, Federated States of Micronesia. Estimated budget size is three to five billion Japanese yen.
3. Project Purpose	FMI implements maritime education and training at the international level in the Micronesian region.
4. Output	Capacity development in maritime human resources and education in fisheries at FMI
5. Project Period	JFY[53] 2020 to 2023 (Phase 1) [54] , JFY 2023 to 2026 (Phase 2)
6. Special Note	♦ Candidate case for collaboration with Australia so that graduates of FMI can possibly be employed on the patrol boat supported by Australia, along with the deployment of an instructor from Australia to FMI. ♦ Project to contribute to national finance after the Compact of Free Association. The need for seafarers of ocean-going vessels is still high, and it is expected there will be many candidates for seafarers in the three countries in the Micronesian region.

[51] There is a high level of high-precision ENC-producing technology by the Japan Coast Guard, Hydrographic Department. As for AtoN and others, there is a high level of AtoN and VTMS in Tokyo Bay, which is the most congested port in the world. As for communication systems, the technical level of both Japan Radio Co., Ltd. and FURUNO Electric Co., Ltd. are highly respected in the world market.
[52] Achievement record includes ENC in Cambodia, AtoN in Philippines, Indonesia and Samoa, VTMS in Indonesia and Philippines and Turkey and GMDSS in Indonesia, Philippines and Vietnam.
[53] Japanese Fiscal Year: from 1st April to 31st March
[54] In Phase 1, maintenance up to current Class 4 will be carried out. In Phase 2, preparation of Class 3 inauguration, which is officer training for ocean-going vessels, will be carried out. For port security and vessel inspection, the development activities will be conducted in parallel.

Scheme	Grand Aid Cooperation
1. Project Name	**Provision of Vessel for Domestic Transportation and Onboard Training (tentative title)**
2. Project Outline	Cargo-passenger vessels in Yap State have struggled to function owing to continued failure, and FMI does not have a training vessel. These circumstances make securing stable vessel operation for domestic transportation, necessary on-board training, and recruitment of seafarers necessary.
3. Project Purpose	Capacity enforcement of domestic transportation in Micronesia and FMI
4. Estimated Timing of Cabinet Meeting and Scale	JFY 2022

(South Pacific Region: Melanesia and Polynesia regions)

The Fiji Maritime Academy (FMA) under Fiji National University is operated by the private maritime institute of Sri Lanka in Fiji as the candidate country in the South Pacific Region. As FMA has adequate facilities and equipment, it is not a high priority for support in human resource development in the maritime sector for the time being.

On the other hand, there is a future plan for SPC to establish the Regional Maritime Academy (RMA); therefore, discussions on the necessity and contents of coordination will continue.

(2) Maritime Connectivity Strengthening

Scheme	Grand Aid Cooperation
1. Project Name	**Port of Pohnpei Development and Expansion Project in Micronesia (tentative title)**
2. Project Outline	To expand the port capacity for dissolution of congestion due to various ocean-going and fishing vessels, including Japanese flags in the Port of Pohnpei.
3. Project Purpose	Capacity is enhanced and proper port security measures are conducted at the Port of Pohnpei.
4. Estimated Timing of Cabinet Meeting and Scale	JFY 2021: 25 billion Japanese yen
5. Special Note	♦ Candidate for collaboration with USA, as it is possible for the USA to bear the cost for utilities such as water and electricity supply, etc. These results stem from the policy consultations between Japan and the USA in June 2018. ♦ Japanese fishing vessels are users of the Port. ♦ There are issues such as soft foundations, land expropriation, etc.

Scheme	Grand Aid Cooperation or Non-Project Grant Aid
1. Project Name	**Inspection by X-Ray Scanning Development Project (tentative title) for multiple countries* *Main ports where there are no X-ray scanners in Samoa, Solomon, Palau, etc.**
2. Project Outline	To enhance capacity of customs to respond to illegal activities such as smuggling, etc. by means of provision of X-ray scanners to countries that currently only conduct visual inspections.
3. Project Purpose	Counter measures for smuggling and customs management capacities are improved.
4. Estimated Timing of Cabinet Meeting and Scale	Not yet determined. (Depends on the coordination with beneficiaries and budget)
5. Special Note	

Scheme	Technical Cooperation Project
1. Project Name	**Regional Port Operation and Maintenance Capacity Enhancement Project (tentative title)**

2. Project Outline	To select target countries for an advisor to be dispatched beforehand regarding efficient port operation and maintenance. Advisor also to enhance such capacities of the target countries together with SPC.
3. Project Purpose	The instruction ability on port operation and maintenance of SPC* is enhanced, and the capacity of port operation and maintenance in the target countries are also improved. *SPC: Secretariat of Pacific Community: Primary regional organization which conducts technical assistance and provides advice in the development for Pacific Islands Countries, including French occupation.
4. Estimated Timing of Cabinet Meeting and Scale	JFY 2021: the scale of the Project will be confirmed by the advisor dispatched by JICA.
5. Special Note	⬧ A port operation and maintenance policy advisor (regional) is scheduled to be dispatched to SPC in 2019. During dispatch of the advisor, Project plans will be formulated.

(3) Navigation Safety

Scheme	Grand Aid Cooperation or Non-Project Grant Aid
1. Project Name	**Aids to Navigation Development Project (tentative title) for multiple countries*** ***Main ports where the aids to navigation (AtoN) are not maintained properly in Palau, Micronesia, etc.**
2. Project Outline	Few countries manage and analyze the maintenance of AtoN. It is expected to 1) improve sailing and entry/departure into port at night, and 2) reduce cases of grounding and collision by means of AtoN development.
3. Project Purpose	Sailing and entry/departure port at night become possible, and the cases of groundings and collisions are reduced.
4. Estimated Timing of Cabinet Meeting and Scale	Confirmation required. (Depends on the coordination with beneficiaries and budget)
5. Special Note	⬧ There is a possibility to formulate a Japan-USA collaboration project if the survey information by USCG is matched, although it was not collected.

Scheme	Grand Aid Cooperation or Non-Project Grant Aid
1. Project Name	**Vessel Traffic Management System (VTMS) Development Project (tentative title) for multiple countries*** ***for countries where VTMS is not maintained, such as Solomon, Vanuatu, etc.**
2. Project Outline	To reduce possibility of collision in ports without sufficient space by securing the proper management of entry/departure of large vessels.
3. Project Purpose	Safety of navigation level is upgraded.
4. Estimated Timing of Cabinet Meeting and Scale	Confirmation required. (Depends on the coordination with beneficiaries and budget)
5. Special Note	

Scheme	Grand Aid Cooperation or Non-Project Grant Aid
1. Project Name	**Communication System (GMDSS) and Ancillary Facilities Improvement Project (tentative title) for multiple countries*** ***Main ports where GMDSS is not maintained: Fiji, Kiribati, PNG, etc.**
2. Project Outline	To develop GMDSS and ancillary facilities in order to secure stable information-sharing regarding the distress and emergency communications based on safety-at-sea information such as navigation and weather alerts.
3. Project Purpose	Capacity of SAR is enhanced.

4. Estimated Timing of Cabinet Meeting and Scale	<confirmation required> (depends on the coordination with beneficiaries and budget)
5. Special Note	♦ The maintenance capability for GMDSS in PNG is already secured.

Scheme	Technical Training
1. Project Name	**Training Program on the Nautical Chart Technic (The International Qualified Certification of Class B, duration is six months)**
2. Project Outline	To maintain Electronic Navigational Charts (ENC) to secure the safety of port entry/departure of passenger vessels, oil tankers, etc. through equipping with the Electronic Chart Display and Information System (ECDIS).
3. Project Purpose	Safety of navigation and connectivity are enhanced.
4. Estimate Timing	From JFY 2020 (Request Survey in JFY 2019)
5. Special Note	♦ The collection of related information will be conducted with a view to widening outputs by equipment provision as follow-up support. This will be done after the training program and enhance ENC production capabilities via the regional technical project. ♦ Collaboration with SPC and USCG is expected because there is information that they are implementing a field survey.

(1) Patrol Vessels

Many actors have been undertaking and planning activities; therefore, rendering additional assistance seems to be unnecessary for the time being considering the burden of each stakeholder. However, in the case that a request is made from a recipient country, and coordination with organizations and/or donors is secured, the case will be formulated as a collaboration project on a priority basis.

(2) Search and Rescue (SAR) Activities

Many actors have been undertaking and planning SAR activities similar to law enforcement activities; therefore, rendering additional assistance appears to be unnecessary for the time being considering the burden of each stakeholder.

(3) IUU Fishing

The country-by-country training in IUU Fishing for the Pacific Islands Countries was conducted in JFY 2018. Plans have been made to conduct training by subject; therefore, participation from the Pacific Islands Countries is recommended after JFY 2019.

(4) Maritime Legal System

Regarding legal system development, it is necessary to develop a basic legal system in order to join the IMO. This maritime legal system is almost in place in each country through the support of IMO, SPC, etc. Project formulation is not actively implemented, however; consideration is required when there is a request from recipient countries while focusing on the trend of support from IMO and SPC.

(5) Prevention of Marine Pollution

The Government of Japan provided oil fences, oil booms, and multi-purpose vessels for oil control in Marshall, Palau, PNG, and Vanuatu. If there is a demand from the Pacific Islands Countries, the Government of Japan will consider further support in the future.

Furthermore, regarding the issue of plastic-waste at sea, which is of growing concern recently, the ongoing project, Promotion of Regional Initiative on Solid Waste Management in Pacific Island Countries Phase 2 (J-PRISM2) from 2017 to 2022 has been responding to the issue; therefore, additional project formulation is not being actively implemented.

(6) Structural Enhancement of Surveillance using Satellite Information

Activities that utilize VMS based on satellite information, AIS, and google maps have been conducted mainly by FFA to prevent illegal fishing and promote law enforcement on the vast expanse of the Pacific Ocean. Despite these efforts, there are many issues that still need to be cleared in terms of improvement of functions from the technical and economic perspectives. Currently, the National Research and Development Agency, Japan Fisheries Research and Education Agency and others are demonstrating research trends that focus on continuous assistance utilizing satellite technology.

(Reference)

As of February 2019, technical cooperation utilizing satellite technology is under consideration in Indonesia. In the existing system manufactured in France, it is not possible to extract data freely, and operation costs are expensive; therefore, technical cooperation on system change and related operation is requested. Satellite systems have been monitored by FFA in the Pacific Islands Countries; however, problems still persist for free extraction of data, operation expenses, and others. The possibility of changing the system remains low, similar to the situation in Indonesia.

6. Appendix

6.1 Issues and Response Possibility (Country by country and international organization)

(Palau)

Field & Responsible Body	Issues	Response Possibility
(Navigation Safety) National Emergency Management Office (NEMO), Office of the Vice President	**(AtoN)** Most buoys had lighting and RADAR reflectors on the top of buoys initially, but they were washed away by wind-wave impact. Although skilled fishermen may be able to safely navigate these areas owing to their years of experience, it is quite a dangerous situation in general. There are cases where US Navy vessels were grounded. The lighthouse, which was installed at an important position for the approach to Malakal, was damaged by the Typhoon Haiyan in 2013 and has not functioned since. There is no recovery possibility at all because of the lack of expertise of staff for maintenance and budget.	Although there is not enough information on the response by USCG, these are the possible assistance cases if there is no assistance by others. The issues related to AtoN should be considered to match with the nautical charts.
(Pollution) Environmental Quality Protection Board (EQPB)	**(Oil Pollution Prevention)** EQPB has equipment and personnel capable of handling only small-scale spills and receives the support of the area ranger and domestic oil terminal company when assistance is required. In case of a large-scale spill, EQPB receives assistance through a collaboration agreement with the USCG Sector Guam. For oil tankers loading and unloading, oil spill control equipment is maintained at the terminal and has been deemed adequate. **(Scrapping Dumping of FRP Hull)** The situation of abandoned FRP hulls of aging boats is serious. Although it is permitted to dump FRP hulls without any contaminating materials (engine, fuel, etc.) at designated locations, there are also many instances of illegal dumping, which causes not only marine pollution but also poses risks to the safe navigation of other vessels in shallow waters. Since FRP hulls cannot be recycled, processing used hulls is proving to be a challenge.	The length of oil boom cannot surround the vessel, and absorbing mats also deteriorate over time and are not replaced. Also, there is no place to stock such materials and equipment. It is possible to assist for a relatively small cost.
(Smuggling) Bureau of Customs and Boarder Protection (BCBP), Ministry of Finance (MOF)	**(Custom Clearance Facilitation)** Since there is no X-ray scanner for customs inspection at port, checking for smuggled goods, such as cigarettes, is inadequate. Furthermore, the facilities and equipment of the Marine Unit, which was newly promoted, are inadequate.	It is necessary to provide an X-ray scanner and its ancillary facilities and instructions for analysis of the scanned image. Also, it is necessary to provide a small boat (30 feet in length) for the Marine Unit.

(Marshall)

Field & Responsible Body	Issues	Response Possibility
(Navigation Safety) Ministry of Transportation, Communications and IT	**(AtoN, Nautical Chart)** Although a sense of crisis was not felt from the Marshall side, they are inadequate in the present situation. It is said that maintenance by USCG is being studied.	As USCG pointed out the necessity to develop AtoN and a nautical chart as an issue. Collaboration with Japan is possible.

Field & Responsible Body	Issues	Response Possibility
(Port) Ports Authority	**(Port Security and Custom Clearance Facilitation)** There is no X-ray scanner for customs inspection at port. Also, there is not enough lighting in the port area; therefore, there is a problem for monitoring at night.	It is necessary to provide an X-ray scanner and its ancillary facilities and instructions for analysis of the scanned image. For the lighting in the port area, it is expected to be secured by self-effort.
(Education) Ministry of Transportation, Communications and IT	**(Promotion of Seafaring Experienced Personnel to the Maritime Related Organizations)** Although staff with seafaring experience are necessary to the maritime related organizations, they face the shortfall in human resources. Since the three countries in the Micronesian region are in friendly relations with each other, it is necessary to develop an upgraded seafarer education and training institution in the region. Compared with other PICs (PNG and Fiji in particular), the quality level in the Micronesian maritime sector is low, and it is necessary to improve quality through collaboration among the three countries.	Among the three countries of Micronesia, the Fisheries and Maritime Institute (FMI) in Yap State, Micronesia is dominant as the regional institute.
(Vessels) Ministry of Works, Infrastructure and Utilities	**(Ageing of Inter-Islands Cargo-Passenger Vessels)** They are needed to deal with needs of residents in the remote islands, especially transportation of foods and products. The challenge currently faced is to procure two alternative vessels for existing ageing vessels (cargo-passenger vessels: 50m in length. 550 to 580 gross tons).	The operation situation of landing type vessel provided by JICA (MAJURO) is good. The adequacy of additional alternative vessels is high.

(Micronesia)

Field & Responsible Body	Issues	Response Possibility
(Navigation Safety) Department of Transportation, Communication & Infrastructure (DTC&I)	**(AtoN, Nautical Chart)** The lighthouses in the main passages do not need to be replaced (the last maintenance check was conducted by USCG in the 1980s). Plans have been made to install four buoys for night traffic, and the USCG conducted a survey in November 2018. Furthermore, it is also planned to maintain the AtoN by a project under the assistance of the World Bank	After confirming progress of USCG and the World Bank, it will be discussed if necessary.
(Smuggling) Department of Finance and Administration	**(Custom Clearance Facilitation)** Since there is no X-ray scanner for customs inspection at port, it is difficult to detect well-prepared smuggling of firearms and illegal drugs because customs cargo inspections depend on inspector experience and intuition.	It is necessary to provide an X-ray scanner and its ancillary facilities and instruct for analysis of the scanned image.
(Vessels) DTC & I	**(Ageing of Inter-Islands Cargo-Passenger Vessel)** As the inter-islands' operation used two vessels provided by Japan and two vessels provided by China, two vessels by China were almost not operation and two vessels by Japan are under repair. Therefore, additional vessels are necessary.	The operation and maintenance situation of two vessels by JICA is good. Considering the rotation of maintenance of these two vessels, provision of additional vessels is highly relevant.

Field & Responsible Body	Issues	Response Possibility
(Education) Fisheries and Maritime Institute (FMI), College of Micronesia (Yap State)	**(Education and Training as the Core in the Sub-Region)** Although the FMI is expected to be the core institution for maritime education and training in the Micronesian Region, there are various issues with facilities and equipment: • Facilities for boiler training newly stipulated in the STCW Convention are not provided. • Replace life raft • Set up lifeboat and davit • Provision of gaskets for practical engine training (air and liquid sealing packing to be replaced at disassembly and assembly) • Replacement of Ship Handling Simulator: Although there are cases in which the steering wheel locks and does not operate for a few minutes after the start of operation, this is a malfunction in the case where it is operated without waiting for the prescribed waiting time after starting, so there is no problem. FMI pointed out that the nautical chart data around Micronesia is necessary for practical training.	It is relevant to develop the facilities and equipment at FMI in Yap State and draw plans to collaborate with Australia related to the dispatch of teaching staff. It is important to secure the on-board training, e.g. by newly providing a vessel to Yap State or foreign shipping companies.

(Solomon)

Field & Responsible Body	Issues	Response Possibility
(Navigation Safety) Hydrographic Unit, Solomon Island Maritime Authority (SIMA), Ministry of Infrastructure Development	**(Nautical Chart)** Regarding sounding duties, although the sounding instrument currently utilized is a single-beam type, more accurate sounding data collection is desired by introducing a multi-beam-type sounding instrument. The renewal of the boat used for sounding and related software is also necessary. Since the current boat is an open type without a cabin and is too small, it can perform sounding work only in a quiet sea state	Because the current staff's abilities are high, it is thought that the chart maintenance duties can be implemented by self-help efforts if the facilities and equipment are provided and the technical guidance is provided.
(Navigation Safety) SIMA	**(AIS and VTMS)** It is necessary to set up an AIS base station and VTMS facilities for the vessel traffic control.	Although it is not a high priority due to the congestion level of vessels, it is a reasonable request.
(Port) Solomon Island Port Authority (SIPA)	**(Firefighting Facility)** The port does not possess a fire boat. Since the Port of Honiara is adjacent to a densely populated area, being prepared for dealing with a fire caused by highly flammable dangerous substances is an urgent task.	The importance of provision of a fire boat is considered to be high.
(Smuggling) Ministry of Finance and Treasury, Solomon Islands Customs and Excise Division	**(Custom Clearance Facilitation)** Since there is no X-ray scanner for customs inspection at port, it is difficult to detect well-prepared smuggling of firearms and illegal drugs because customs cargo inspections depend on inspector experience and intuition.	It is necessary to provide an X-ray scanner and its ancillary facilities and instructions for analysis of the scanned image.
(Education) Solomon Islands National University（SINU, School of Technology and Maritime Studies（STMS）	**(Development of Facilities and Equipment)** It is necessary to replace or add the primary facilities and equipment. • Replacement of ship handling simulator • Replacement of life boat and davit • Replacement of life raft	As the capacity level of teaching staff is relatively high, it is possible to secure the sustainability if necessary facilities, equipment and

Field & Responsible Body	Issues	Response Possibility
	♦ Replacement of mannequin for first-aid training ♦ Set up of ECDIS simulator ♦ Set up GMDSS simulator	technical guidance is provided.

(PNG)

Field & Responsible Body	Issues	Response Possibility
(IUU) National Fisheries Authority（NFA）	**(Provision of Patrol Vessel and Education and Training for Crew Members)** The coastal area is patrolled by two small boats owned by NFA (high-speed boats with a total length of 15m). However, it necessary to procure patrol vessels around 30m in length in order to implement patrolling activities within the EEZ independent of the NFA. Because illegal fishing vessels have high spec speed capabilities, patrol vessels with speeds as fast as 30 to 40 knots are necessary for these pursuits. However, this is a mid- to long-term plan due to the present lack of crew candidates.	If the PNG side has the prospect of the placement of crew members, the provision of a patrol vessel and the crew education and training support will be considered.
(SAR) National Maritime Safety Authority（NMSA）	**(Provision of Patrol Vessel and Education and Training for Crew Members)** Accidents occur frequently in the northern border waters; however, SAR operation is not adequate. There are also the issues related to the communication means in the area.	It is necessary to discuss the possibility to provide a patrol vessel, including response to IUU fishing and smuggling. Also, it is necessary to discuss the possibility of communication system development.
(Navigation Safety) National Maritime Safety Authority（NMSA）	**(Expansion of GMDSS Facilities)** PNG started operation of GMDSS in 2016. Digital Selective Calling (DSC) is a core component of GMDSS, and it is planned to expand the coverage of GMDSS by preparing six new land-based stations. Donor support is necessary for this expansion.	It is important to cover vast waters through the development of DSC.
(Smuggling) PNG Customs	**(Provision of Patrol Vessel and Education and Training for Crew Members)** Under the same circumstances as IUU fishing, it is hard to respond to monitoring and patrol of transshipment of smuggled goods on offshore islands at present. It is necessary to deploy a patrol vessel 40m in length which can sail offshore in order to respond to such cases. It is recognized that only a PPBP vessel supported by Australia is inadequate.	If the PNG side has the prospect of the placement of crew members, the provision of the patrol vessel and the crew education and training support will be considered.
(Pollution) National Maritime Safety Authority（NMSA）	**(Provision of Multi-Purpose Oil Recovery Work Boats)** NMSA has requested ADB support for the procurement of seven Shallow draft oil recovery work boats (14m in length, delivered to the Navy in Norway and the Netherlands, built in Finland); however, there has been no progress.	The boats can be used for garbage collection, SAR, and transportation of passengers and cargo; therefore, the boats are useful to secure the lives and safety of people on remote islands.
(Education) National Maritime College (NMC) (Madang)	**(Development of Facilities and Equipment)** It is necessary to replace or add the primary facilities and equipment. ♦ Depending on repairs, replacement of the ship handling simulator is necessary.	In order to clarify the difference with the Pacific Maritime College (PMC) as the rating training institute supported

Field & Responsible Body	Issues	Response Possibility
	• Set up ECDIS and GMDSS simulator • Repair actual engine plant: The malfunction diagnosis and subsequent repair based on the results are necessary. • Provision of test bench of high-voltage electricity (provision of equipment and technical instruction by an expert). • Provision of free-fall-type lifeboat • Provision of fast rescue boat	by China, NMC should develop sufficient facilities and equipment as the education and training institute for officers. Regarding technical assistance, it is possible to instruct at the time of initial installation.

(Fiji)

Field & Responsible Body	Issues	Response Possibility
(Navigation Safety) Fiji Hydrographic Services (FHS) under Fiji Navy	**(Nautical Chart)** Although FHS has sufficient technical skill on Hydrography (waterway sounding), it requires guidance on Cartography (Charting). However, it is necessary to confirm via survey to determine if the precision required for that technology level is being carried out locally. The MoU with South Korea and the UK is agreed until 2020.	It is necessary to assist in Cartography (Charting) technology.

(Vanuatu)

Field & Responsible Body	Issues	Response Possibility
(Navigation Safety) Office of Maritime Regulator (OMR)	**(Search and Rescue Coordination Center (SRCC) Development)** SRCC is not maintained at Port Vila in Vanuatu. There are no facilities of VMS, GMDSS and AIS. This is an indicator of insufficient safety management in a port where huge cruise vessels frequently enter (more than 100 vessels only at Port Vila).	It is impossible to develop SRCC only by self-help efforts, and support from donors and international organizations for both hard and soft components is expected.
(Navigation Safety) Department of Ports and Marine (DPM)	**(Development of AtoN)** The South Korean Government conducted feasibility studies on AtoN and summarized an outline of the situation. Since then, the possibility of support by the South Korean Government remains undecided.	It is necessary to proceed with the plan in order of capacity building, staffing and human resource development and AtoN maintenance.
(Port) Department of Ports and Marine (DPM)	**(Measures Against Ageing of the Port Vila Central Wharf)** The Central Wharf was constructed with assistance by Australia in 1971. It is necessary to take measures against ageing.	Renovation of the wharf is necessary.
(Port) Department of Ports and Marine (DPM)	**(Development of passenger terminal)** A passenger terminal is needed to achieve safety and security on the premises of Port Vila Central Wharf. Currently, the customs/immigration control operations for passengers are conducted on board which should be made efficiently and reliably at terminal. At present, when a cruise vessel enters the port, there is a street vendor called Mama's Market on the wharf, which is an indicator that port security management is improperly carried out.	Development of a passenger terminal is necessary.
(Pollution) Department of Ports and Harbour (DPH)	**(Development of Oil Spill Response Equipment)** In the case of an oil spill incident, the SPC based in Suva, Fiji, is supposed to deal with it; however, it cannot cope with emergency oil spill control.	1) oil boom (200m x 2), 2) oil fence, 3) oil skimmer, etc. and 4) boat for works about 7 to 8m in length are necessary.

Field & Responsible Body	Issues	Response Possibility
(Education) Vanuatu Maritime College (VMC)	♦ **(Development of Facilities and Equipment)** It is necessary to replace or add the primary facilities and equipment. ♦ GMDSS, ECDIS, ship handling and engine room simulators	If there is the possibility to start the Class 3 course, the necessity is high.

(Kiribati)

Field & Responsible Body	Issues	Response Possibility
(Maritime General) Ministry of Information, Communication, Transport & Tourism Development (MICTTD), Marine Division	**(Maritime Legal System Development)** Although the Marine Division is steadily promoting system development currently, it is still insufficient; therefore, it is necessary to consult with a foreign expert.	Dispatch of expert on maritime law is necessary to develop the legal system.
(Navigation Safety) MICTTD, Marine Division	**(Development of AtoN)** AtoN of Betio Port supported by JICA is the international standard; however, the maintenance situation of AtoN in the remote islands is poor.	It is necessary to conduct a survey on the present situation of AtoN and maintenance of necessary AtoN.
(Navigation Safety) MICTTD, Marine Division	**(Nautical Chart Revision)** The nautical charts have not been updated for a long time; therefore, it is dangerous to sail at night. Especially, the depth of water around the reef area is not correct.	It is difficult to improve the ability to revise the nautical chart data locally; therefore, it is necessary to conduct sounding and updating data.
(Vessels) Kiribati National Shipping Ltd（KNSL）	**(Procurement of Passenger-Cargo Vessel for Inter-Islands)** It is necessary to arrange vessels once every two weeks on each remote island, especially as transporting the fuel and foodstuff for the outbound route and transporting the copra on the return route are indispensable for maintaining the lives of remote island residents. The following vessels are necessary: ♦ Small-landing-craft-type cargo and passenger ship (shallow draft type capable of sailing around the remote islands area near the Kiritimati Island) ♦ Small container ship (between Tarawa, Kiritimati Island and Kanton Island for 80 to 100 TEU/month)	Remote islands shipping is low in profitability; therefore, only the government supported shipping services can operate. It is necessary for stable supply of transportation for such islands.
(Port) MICTTD, Marine Division	**(Mooring and cargo Handling Facilities Development)** At some of the remote islands without a jetty, there is an anchorage where the water depth is too deep for anchoring; therefore, a mooring buoy is necessary for such anchorage. At some of the remote islands, where the tender boat of the main ship is engaged, it is necessary to prepare a simple pier on the beach for the boat.	Such facilities are necessary to improve environment.
(Smuggling) Kiribati Customs Service (KCS)	**(Set up of X-Ray Scanner)** There are no X-ray scanners at the Port of Betio and Kiritimati Island; therefore, it is impossible to inspect inside the containers.	It is necessary to provide an X-ray scanner and its ancillary facilities and instructions for analysis of the scanned image.

(SPC)

Field & Responsible Body	Issues	Response Possibility
(Navigation Safety)	**(Development of AtoN of Member Countries)** Regarding	It is necessary to consider the

Field & Responsible Body	Issues	Response Possibility
SPC	AtoN, conduct the baseline survey, risk assessment and capacity building. Training course on the level 1 of the International Association of Lighthouse Authorities (IALA) will be conducted in 2019. The most important issue is the maintenance and management of AtoN; therefore, the goal is to place an AtoN manager in each country by 2012. These countries lack the ability to procure AtoN by their own budget.	regional cooperation case through the network of SPC.
(Education) SPC	**(Establishment of Pacific Regional Maritime Academy)** There is a plan to establish the Regional Maritime Academy (RMA) as a future plan of SPC. It is undecided whether to extend the current Fiji Maritime Academy (FMA) or to launch a new institute.	It is necessary to decide the timing of participation by JICA. It will be the core institute in the PICs.

6.2 Organization in charge of each field

Field	Fiji
Law Enforcement	Fiji Navy
Education	Fiji Maritime Academy (FMA), Fiji National University (FNU)
Port	➢ Maritime Safety Authority of Fiji (MSAF) ➢ Fiji Ports Corporation Ltd. (FPCL)
Navigation Safety	➢ Overall Management: MSAF ➢ Nautical Chart: Fiji Hydrographic Services (FHS) of Fiji Navy ➢ GMDSS and MRCC: Fiji Navy ➢ AtoN: Government Shipping Services (GSS) under MoIY
SAR	➢ Fiji Police ➢ MSAF ➢ FPCL ➢ Civil Aviation Authority
Maritime Law	MSAF
Border Control	➢ Customs: Fiji Revenue and Customs Services (FRCS) ➢ Immigration: Department of Immigration of the Office of the Prime Minister, Sugar Industry & Immigration
Vessels	➢ Overall Management: MSAF ➢ Building Plan, etc.: Government Shipping Services (GSS) and MSAF
Seafarers	MSAF
Pollution	MSAF
Field	**Kiribati**
Law Enforcement	➢ Kiribati Police Service and Prison (KPSP), Ministry of Information, Communication, Transport and Tourism Development (MICTTD) ➢ Ministry of Fisheries and Marine Resources Development (MFMRD)
Education	Maritime Training Centre (MTC)
Port	➢ Marine Division, Ministry of Information, Communication, Transport and Tourism Development (MICTTD) ➢ Kiribati Port Authority (KPA)
Navigation Safety	Marine Division
SAR	Marine Division
Maritime Law	Marine Division
Border Control	➢ Customs: Kiribati Customs Service (KCS), Ministry of Justice (MOJ) ➢ Immigration: Ministry of Foreign Affairs and Immigration
Vessels	➢ Management: Marine Division ➢ Operation: Kiribati National Shipping Ltd. (KNSL)
Seafarers	Marine Division
Pollution	Marine Division
Field	**Marshall**
Law Enforcement	Sea Patrol Division, Police Department, Ministry of Justice
Education	College of the Marshall Islands (CMI)
Port	Ports Authority (RMIPA), Ministry of Transportation, Communications and IT (MTCIT)
Navigation Safety	Marshall Islands Marine Resources Authority (MIMRA)
SAR	Sea Patrol Division, Police Department
Maritime Law	Office of the Maritime Administrator (OMA)
Border Control	➢ Customs: Customs Division, Ministry of Finance ➢ Immigration: Division of Immigration, Ministry of Justice

Vessels	➢ Registration: MTCIT ➢ Ownership of the government vessels: Ministry of Works, Infrastructure and Utilities ➢ Operation: Marshall Islands Shipping Corporation ➢ Management of FOC: International Registries Inc.
Seafarers	➢ Seafarers registration for national flag vessels: MTCIT ➢ Seafarers registration for FOC vessels: International Registries Inc.
Pollution	MTCIT
Field	**Micronesia**
Law Enforcement	➢ Maritime Wing, Ministry of Justice ➢ National Oceanic Resource Management Authority (NORMA)
Education	Fisheries and Maritime Institute (FMI), College of Micronesia (Yap State)
Port	➢ Overall Management: Department of Transportation, Communication & Infrastructure (DTC & I) ➢ Port Authority in each State
Navigation Safety	Department of Transportation, Communications and Infrastructure, Marine Division
SAR	➢ Overall Management: SAR coordination Authority, Department of Justice ➢ Actual unit: Maritime Wing
Maritime Law	Marine Division, Department of Transportation, Communications and Infrastructure
Border Control	➢ Customs: Department of Finance and Administration ➢ Immigration: Immigration Division, Department of Justice
Vessels	➢ Registration of national flag vessels: Department of Transportation, Communication & Infrastructure (DTC & I) ➢ Registration of FOC vessels: Micronesia International Ship & Business Company Registry (MISBCR)
Seafarers	Department of Transportation, Communication & Infrastructure (DTC & I)
Pollution	➢ Overall Management: DTC & I ➢ Marine Resources Department of the Office of Governor in each State
Field	**Palau**
Law Enforcement	Bureau of Maritime Security, Fish and Wildlife Protection (Marine Law), Ministry of Justice
Education	Nil
Port	Malakal Port Authority, no information for the other ports
Navigation Safety	Bureau of Commercial Development, Ministry of Public Infrastructure, Industries and Commerce
SAR	➢ Overall Management: National Emergency Management Office (NEMO), Office of the Vice President ➢ Marine Law
Maritime Law	Bureau of Commercial Development, Ministry of Public Infrastructure, Industries and Commerce
Border Control	➢ Border control at sea: Marine Law ➢ Customs: Bureau of Customs and Boarder Protection (BCBP), Ministry of Finance (MOF) ➢ Immigration: Division of Immigration, Bureau of Immigration and Labor, MOF
Vessels	➢ Registration of national flag vessels: Bureau of Commercial Development (BCD), Ministry of Public Infrastructure, Industries & Commerce ➢ Registration of FOC vessels: Palau International Ship Registry (Offices in Greek and Houston, USA)
Seafarers	➢ Seafarers registration for national flag vessels: Bureau of Commercial Development (BCD), Ministry of Public Infrastructure, Industries & Commerce ➢ Seafarers registration for FOC vessels: Palau International Ship Registry (Offices in Greek and Houston, USA)
Pollution	Environmental Quality Protection Board（EQPB）
Field	**PNG**
Law Enforcement	➢ Water Police ➢ National Fisheries Authority (NFA) ➢ Navy
Education	➢ National Maritime College (NMC) (Madan)

	➢ Pacific Maritime College (PMC) (support by China at Port Moresby)
Port	PNG Ports Corporation Limited (PNGPCL)
Navigation Safety	National Maritime Safety Authority (NMSA)
SAR	➢ NMSA ➢ Water Police ➢ NFA ➢ Customs ➢ Navy
Maritime Law	NMSA
Border Control	➢ Customs: PNG Customs Service ➢ Immigration: PNG Immigration & Citizenship Service Authority (PNGICSA)
Vessels	NMSA
Seafarers	NMSA
Pollution	NMSA
Field	**Solomon**
Law Enforcement	➢ Royal Solomon Islands Police Force (RSIPF) ➢ Ministry of Fisheries and Marine Resources (MFMR)
Education	Solomon Islands National University (SINU), School of Technology and Maritime Studies (STMS)
Port	➢ Solomon Island Port Authority (SIPA): management of international ports (Honiara and Noro) and domestic port at Honiara ➢ Other domestic ports are managed by each State
Navigation Safety	Solomon Island Maritime Authority (SIMA), Ministry of Infrastructure Development (MID)
SAR	➢ Royal Solomon Islands Police Force (RSIPF) ➢ Ministry of Fisheries and Marine Resources (MFMR)
Maritime Law	SIMA
Border Control	➢ Customs: Solomon Islands Customs and Excise Division ➢ Immigration: Ministry of Foreign Affairs and External Trade
Vessels	SIMA
Seafarers	SIMA
Pollution	➢ SIMA ➢ Environment and Conservation Division, Ministry of Climate Change, Disaster Management and Meteorology ➢ National Disaster Management Office (NDMO), Ministry of Climate Change, Disaster Management and Meteorology
Field	**Vanuatu**
Law Enforcement	➢ Within 12 nautical miles: Police Maritime Wing (PMW) ➢ Over 12 nautical miles and within EEZ: Fisheries Department, Ministry of Livestock, Agriculture, Forestry and Fisheries and Bio security (MLAFFB)
Education	Vanuatu Maritime College (VMC)
Port	➢ International Port (Central wharf of Port Vila): Department of Ports and Harbour (DPH), Ministry of Infrastructure and Public Utilities ➢ Port Vila Lapetasi International Multi-Purpose Wharf and Domestic Wharf: Office of Maritime Regulator (OMR)
Navigation Safety	➢ Overall Management: OMR ➢ AtoN: DPH
SAR	➢ Within 12 nautical miles: Police Maritime Wing (PMW) ➢ Over 12 nautical miles and within EEZ: Fisheries Department, Ministry of Livestock, Agriculture, Forestry and Fisheries and Bio security (MLAFFB)

Maritime Law	OMR
Border Control	Vanuatu Customs and Inland Revenue
Vessels	➢ Registration of national flag vessels: OMR ➢ Registration of FOC vessels: Vanuatu Maritime Service Limited
Seafarers	➢ Seafarers registration for national flag vessels: OMR ➢ Seafarers registration for FOC vessels: Vanuatu Maritime Service Limited
Pollution	DPM
Field	**Cook Islands**
Maritime General	Ministry of Transport
Pollution	➢ Ministry of Transport ➢ Police Department ➢ Ministry of Infrastructure and Planning
Field	**Nauru**
Maritime General	Port Authority
Port	Port Authority
Field	**Niue**
Maritime General	Ministry of Infrastructure
Field	**Samoa**
Maritime General	Ministry of Works, Transport and Infrastructure
Education	➢ National University of Samoa, School of Maritime Trainings (SMT) ➢ Samoa Shipping Maritime Academy (SSMA)
Port	Samoa Port Authority (SPA)
Field	**Tonga**
Maritime General	Marine and Ports, Ministry of Infrastructure
Law Enforcement	Tonga Port Authority
Education	Tonga Maritime Polytechnical Institute (TMPI)
Port	Tonga Port Authority
Pollution	Port Administration, Ministry of Marine and Ports and Police Department
Field	**Tuvalu**
Maritime General	Marine and Port Services, Ministry of Communications and Transport
Education	Tuvalu Maritime Training Institute (TMTI)
Port	Marine and Port Services, Ministry of Communications and Transport

6.3 Assistant List of Donors and other Organizations

Donor/ Organization	Subject	Target Country	Contents
Australia	**Law Enforcement**	12 countries (Cook, Kiribati, Palau, Marshall, Samoa, Tuvalu, Vanuatu, Solomon, Micronesia, Fiji, Tonga)	**Pacific Patrol Boat Program（PPBP）** Since 1960, support for law enforcement and SAR related activities such as provision of patrol vessels (30m class), dispatch of resident advisors, financial support for operation and maintenance of vessels. **Pacific Maritime Security Program（PMSP）** Successor program of PPBP. Support for patrol, law enforcement, control. Replacement of patrol vessels to 40m class

Donor/ Organization	Subject	Target Country	Contents
			and provision of new planes.
		PNG	**Various preparations for APEC Conference** To support development of facilities, equipment and system of the Water Police for the APEC conference at Port Moresby in 2018.
	Ship Safety	PNG	The Australian Hydrographic Service AHS) supported the nautical chart creation and revision.
	SAR	Same as Law Enforcement	USCG, US Navy and Australian Navy provides support for large-scale marine disasters.
	Education	PNG	To support the preparation of facilities, equipment and educational program at the time of establishment of the National Maritime College (NMC)
U.S.A.	**Law Enforcement**	Nine countries (Cook, Kiribati, Marshall, Micronesia, Nauru, Samoa, Tonga, Tuvalu, Palau)	**Shiprider Program** Enforcement official from the host country to embark on a USCG vessel to patrol within the EEZ and/or territorial seas of that nation. The base is USCG command central of the 14th district headquarters
	Port	Three Micronesian Countries	**Technical Assistance on ISPS Code** To assist and instruct on capacity development of port security
	Ship Safety	Three Micronesian Countries	Present survey on the nautical chart and AtoN.
	SAR	Same as Law Enforcement	Assistance in large-scale maritime disasters from USCG and US Navy.
	Marine Pollution Response	Three Micronesian Countries	Assistance in large-scale oil spill incidents from USCG and US Navy.
New Zealand	**Law Enforcement**	Solomon	**Making Strong Solomon Islands Fisheries** Program aiming at the institutional development of a detection system. Training on law enforcement is implemented by four experts (leader, offshore detection, coastal detection, policy) from 2010 to 2019.
	Ship Safety	Kiribati	**Maritime Safety Awareness Program** Technical assistance on awareness for survival at sea and risk prevention.
	SAR	Cook, Kiribati, Tonga, Niue, Tuvalu, Tokelau, Samoa	**Pacific Maritime Safety Programme (PMSP)** Support for development of legal systems, SAR, oil spill response, domestic ships safety, infrastructure development, community education and awareness and seafarers' education and training.
Germany	**Education**	Kiribati	Full support by shipping companies (Hamburg Süd Group) for the Maritime Training Center (MTC) including support for on-board training and employment collaborating with New Zealand and Australia. Japanese language training by the Japan Overseas Cooperation Volunteers (JOCV) is implementing.
		Samoa	Support for establishment of the National University of Samoa,

Donor/ Organization	Subject	Target Country	Contents
			School of Maritime Trainings (SMT)
U.K.	**Education**	Solomon	Support for establishment of the School of Technology and Maritime Studies (STMS) in 1962: Buildings, facilities and equipment, curriculum preparation, etc.
South Korea	**Ship Safety**	Kiribati	F/S survey on AtoN in 2018.
	Education	Solomon	Support for STMS, fisheries department: building, facilities and equipment.
Nippon Foundation and Sasakawa Peace Foundation	**Law Enforcement**	Palau	♦ Three small craft (15m-long-type, FRP-hull) ♦ One patrol vessel (40m-long-type) ♦ Construction of headquarters building ♦ Construction of pier for the patrol vessels ♦ Installation of communication system ♦ Emergency power generator ♦ High-speed SAR boat ♦ Pick-up track ♦ Operation and maintenance cost
	Law Enforcement	Marshall	♦ Two small craft (15m-long-type, FRP-hull) ♦ Operation and maintenance cost
	Law Enforcement	Micronesia	♦ One small craft (15m-long-type, FRP-hull) ♦ Ship handling simulator for Micronesia ♦ Operation and maintenance cost
Pacific Community (SPC)	**Law Enforcement**	Vanuatu	E-monitoring and E-report system collaborating with the Food and Agriculture Organization (FAO)
	Port	Member countries of SPC	Confirm compliance status on ISPS Code
	Ship Safety	Member countries of SPC	Regarding AtoN, conduct the baseline survey, risk assessment and capacity building. Training course on the level 1 of the International Association of Lighthouse Authorities (IALA) will be conducted in 2019.
	Ships/ Seafarers	Member countries of SPC	Conduct the audit and technical assistance on the ship registration, including ship inspection and seafarer's management.
	Education	Member countries of SPC	Conduct the audit on compliance status for STCW Convention.
	Maritime Law	Fiji, Niue, Tuvalu, Kiribati	Support for legislation with IMO
Pacific Islands Forum Fisheries Agency（FFA）	**Law Enforcement**	17 member countries	To operate the Vessel Monitoring System (VMS) using satellite data to eliminate IUU fishing.
Western & Central Pacific Fisheries Commission (WCPFC)	**Law Enforcement**	40 countries, participating territories and cooperating territories	The vessels approved for boarding inspection are patrolling based on the data within EEZ by FFA and in the high sea by WCPFC. Direct measures for illegal vessels are not taken by WCPFC because it is the regional fisheries management agency.
Parties to the Nauru Agreement（PNA）	**Law Enforcement**	Eight countries (Micronesia, Kiribati,	To manage and control registered vessels movement based on the VMS information of FFA and to manage the payment of fishing

Donor/ Organization	Subject	Target Country	Contents
		Marshall, Nauru, Palau, PNG, Solomon, Tuvalu)	fee by registered vessels to the member countries properly.
Asian Development Bank (ADB)	**Port**	Cook	To conduct dredging at port, renovation of wharf of the Port of Abatiu in 2013.
		Fiji	Conducted wharf development at Suva Port and Lautoka Port in 2006. Conducted the Port Development Master Plan in 2017.
		Marshall	**Outer Island Transport Infrastructure Project** To maintain the landing facilities in the remote islands in 2006.
		Micronesia	**Pohnpei Port Development Project** Technical assistance on port management in conformity with the international standards for Pohnpei Port Authority in 2013.
		PNG	**Lae Port Development Project** Cooperation to extend the wharf at Lae Port (underway).
		Nauru	**Nauru Sustainable and Climate Resilient Connectivity Project** Development of wharf, container yard, water break, port office building collaborating with JICA.
	Ships/ Seafarers	Vanuatu	**Inter-island Shipping Support Project** Renovation of existing facilities and new wharf construction for domestic vessels for remote islands, support for shipping service and non-profit route and development of legal system.
World Bank	**Law Enforcement**	Micronesia	To assist with the monitoring, control and surveillance (MCS) for five years with 5 million USD (underway).
	Port	Marshall	Development of infrastructure for Delap Port, Ulaga Port and Ebeye Port
	Ship Safety	Five countries (Kiribati, Samoa, Tonga, Tuvalu, Vanuatu)	Conducted the survey on safety, efficiency and sustainability for maritime transportation system.
Oceania Customs Organization (OCO)	**Border Protection**	23 countries	Maintenance of legal flamework, risk management, latest technology transfer, etc. for customs matters.
South Pacific Regional Environment Programme (SPREP)	**Marine Pollution Response**	American Samoa, Cook, Fiji, Marshall, PNG, Solomon, Tonga, Vanuatu, Micronesia, French Polynesia, Kiribati, Nauru, Niue, Palau, Samoa, Tokelau, Tuvalu, Wallis and Futuna, New Caledonia	The regional organization to protect and manage the environment and natural resources of the Pacific with the mandate to promote cooperation in the Pacific region and provide assistance in order to protect and improve its environment and to ensure sustainable development for present and future generations.
Colombo International Nautical and Engineering College (CINEC)	**Education**	Fiji	Operation and management of the Fiji Maritime Academy (FMA)

6.4 On-Site Survey Schedule

(1) Schedule of the first On-Site Survey (Palau, Marshall, Micronesia, Solomon and Australia)

Day	Contents	Remarks
26 Aug (Sun)	Move: Narita >> Guam >> Koror (Palau)	Stay at Koror
27 Aug (Mon)	♦ JICA Office in Palau ♦ Embassy of Japan in Palau ♦ Bureau of Maritime Security, Fish and Wildlife Protection, MOJ (Marine Law) ♦ Overseas Fishery Cooperation Foundation of Japan (OFCF), Advisor ♦ Division of Oceanic Fisheries, Bureau Marine Resource	Ditto.
28 Aug (Tue)	♦ Division of Immigration, Bureau of Immigration and Labor, MOJ ♦ Criminal Investigations Division, Bureau of Public Safety, MOJ ♦ Bureau of Customs and Boarder Protection (BCBP), MOF ♦ The Japan Association of Marine Safety, Advisor	Ditto.
29 Aug (Wed)	♦ Bureau of Commercial Development and Transportation ♦ Environmental Quality Protection Board (EQPB) ♦ National Emergency Committee, Public Works, Koror State Government	Ditto.
30 Aug (Thu)	♦ National Emergency Management Office (NEMO), Office of the Vice President ♦ Palau Community College (PCC)	Ditto.
31 Aug (Fri)	♦ Koror State, Ranger ♦ JICA Office in Palau ♦ Embassy of Japan in Palau	Ditto.
01 Sep (Sat)	♦ Documentation	Ditto.
02 Sep (Sun)	♦ Documentation	Ditto.
03 Sep (Mon)	Move: Koror (Palau)>> Guam >> Majuro (Marshall)	Stay at Majuro
04 Sep (Tue)	♦ JICA Office in Marshall ♦ Embassy of Japan in Marshall ♦ SAR Committee, Police Department, Ministry of Justice	Ditto.
05 Sep (Wed)	♦ Ports Authority, Ministry of Transportation, Communications and IT ♦ Marshall Islands Shipping Corporation ♦ Pacific International Inc. (PII)	Ditto.
06 Sep (Thu)	♦ Parties to the Nauru Agreement (PNA) ♦ Ministry of Works, infrastructure and Utilities ♦ Police Department, Sea Patrol Division ♦ U.S. Embassy Majuro ♦ MOF, DIDA (World Bank) ♦ Marshall Islands Marine Resource Authority (MIMRA)	Ditto.
07 Sep (Fri)	♦ College of the Marshall Islands	Ditto.
08 Sep (Sat)	♦ Documentation	Ditto.
09 Sep (Sun)	♦ Documentation	Ditto.
10 Sep (Mon)	♦ Immigration and Border Management, International Organization for Migration (IOM) ♦ Division of Immigration, Ministry of Justice ♦ Embassy of Japan in Marshall	Ditto.

Day	Contents	Remarks
	♦ National Disaster Management Office (NDMO), Office of the Chief Secretary ♦ JICA Office in Marshall	
11 Sep (Tue)	Move: Majuro (Marshall) >> Pohnpei (Micronesia)	Stay at Pohnpei
12 Sep (Wed)	♦ JICA Office in Micronesia ♦ Department of Foreign Affairs ♦ Department of Resource and Development ♦ Embassy of Japan in Micronesia	Ditto.
13 Sep (Thu)	♦ Pohnpei State Office of the Governor, Pohnpei Port Authority (PPA) ♦ Office of Fisheries and Aquaculture (OFA) ♦ Department of Finance and Administration ♦ Department of Transportation, Communication & Infrastructure (DTC & I)	Ditto.
14 Sep (Fri)	♦ Immigration Division, Department of Justice ♦ Western & Central Pacific Fisheries Commission (WCPFC) ♦ Department of Public Safety, Pohnpei State	Ditto.
15 Sep (Sat)	♦ Documentation	Ditto.
16 Sep (Sun)	♦ Documentation	Ditto.
17 Sep (Mon)	♦ Overseas Fishery Cooperation Foundation of Japan (OFCF), Advisor ♦ Taiyo Micronesia Corporation (TMC) ♦ Pohnpei Port Authority (PPA)	Ditto.
18 Sep (Tue)	♦ Department of Public Safety, Pohnpei State	Ditto.
19 Sep (Wed)	♦ Department of Justice ♦ Department of Public Works, Chuuk State	Ditto.
20 Sep (Thu)	♦ Department of Foreign Affairs, Asia Affairs Division ♦ Department of Justice, National Police, Maritime Wing Unit	Ditto.
21 Sep (Fri)	♦ Australian Navy (PPBP Advisor)) ♦ JICA Office in Micronesia	Ditto.
22 Sep (Sat)	♦ Documentation	Ditto.
23 Sep (Sun)	Move: Pohnpei (Micronesia) >> Chuuk (Micronesia) >> Port Moresby (PNG) >> >> Honiara (Solomon)	Stay at Honiara
24 Sep (Mon)	♦ JICA Office in Solomon ♦ Embassy of Japan in Solomon ♦ Royal Solomon Islands Police Force Maritime Department	Ditto.
25 Sep (Tue)	♦ Solomon Island Maritime Authority (SIMA), Ministry of Infrastructure Development ♦ Hydrographic Unit, SIMA ♦ Solomon Island Port Authority (SIPA)	Ditto.
26 Sep (Wed)	♦ Solomon Ministry of Fisheries and Marine Resources (MFMR) ♦ Ministry of Finance and Treasury, Solomon Islands Customs and Excise Division ♦ Solomon Islands National University, School of Technology and Maritime Studies	Ditto.
27 Sep (Thu)	♦ Pacific Islands Forum Fisheries Agency (FFA): Facilities Observation ♦ Australia High Commission	Ditto.
28 Sep (Fri)	♦ JICA Office in Solomon ♦ Pacific Islands Forum Fisheries Agency (FFA): Exchange information ♦ Embassy of Japan in Solomon	Ditto.
29 Sep (Sat)	♦ Documentation	Ditto
30 Sep (Sun)	Move: Honiara (Solomon) >> Brisbane >> Canberra	Stay at Canberra
01 Oct (Mon)	♦ Documentation	Ditto.

Day	Contents	Remarks
02 Oct (Tue)	♦ Documentation	Ditto.
03 Oct (Wed)	♦ Pacific Division, Department of Foreign Affairs and Trade (DFAT)	Ditto.
04 Oct (Thu)	♦ Documentation	Ditto.
05 Oct (Fri)	Move: Canberra >> Brisbane >> Narita	

(2) Schedule of the second On-Site Survey (PNG, Fiji, Vanuatu, Kiribati)

Day	Contents	Remarks
27 Oct (Sat)	Move: Narita >> Manila	In flight
28 Oct (Sun)	Move: Manila >> Port Moresby (PNG) >> Madan (PNG)	Stay at Madan
29 Oct (Mon)	♦ National Maritime College in Madang ♦ Visiting Madang Fish Market	Ditto.
30 Oct (Tue)	Move: Madan >> Port Moresby ♦ Department of National Planning & Monitoring (DNPM) ♦ Department of Transport and Infrastructure, Maritime Transport Division	Stay at Port Moresby
31 Oct (Wed)	♦ National Maritime Safety Authority (NMSA) ♦ National Fisheries Authority (NFA)	Ditto.
01 Nov (Thu)	♦ PNG Ports ♦ PNG Customs ♦ PNG Water Police	Ditto.
02 Nov (Fri)	♦ Vessel Monitoring System Center (NFA) ♦ Australian High Commission ♦ JICA Office in PNG ♦ Embassy of Japan in PNG	Ditto.
03 Nov (Sat)	♦ Documentation	Ditto.
04 Nov (Sun)	Move: Port Moresby (PNG) >> Nadi (Fiji) >> Suva (Fiji)	Stay at Suva
05 Nov (Mon)	♦ JICA Office in Fiji ♦ Embassy of Japan in Fiji	Ditto.
06 Nov (Tue)	♦ Maritime Safety Authority of Fiji (MSAF) ♦ Fiji Ports Corporation Ltd. (FPCL) ♦ SPC-Maritime Governance Workshop	Ditto.
07 Nov (Wed)	National Holiday ♦ SPC-Maritime Governance Workshop	Ditto.
08 Nov (Thu)	♦ Government Shipping Services ♦ USP-Pacific Islands Transport Forum	Ditto.
09 Nov (Fri)	♦ Fiji Maritime Academy (FMA) ♦ Fiji Revenue and Customs Services (FRCS) ♦ Oceania Customs Organization (OCO)	Ditto.
10 Nov (Sat)	♦ Documentation	Ditto.
11 Nov (Sun)	♦ Documentation	Ditto.
12 Nov (Mon)	♦ Fiji Hydrographic Services ♦ Secretariat of Pacific Community (SPC) ♦ University of South Pacific (USP), Faculty of Science, Technology and Environment	Ditto.
13 Nov (Tue)	♦ Donor Consultation Meeting ♦ JICA Office in Fiji ♦ Embassy of Japan in Fiji	Ditto.

Day	Contents	Remarks
14 Nov (Wed)	Move: Suva (Fiji) >> Port Vila (Vanuatu)	Stay at Port Vila
15 Nov (Thu)	♦ Embassy of Japan in Vanuatu ♦ ADB	Ditto.
16 Nov (Fri)	♦ Vanuatu Maritime Service Limited ♦ Police Maritime Wing	Ditto.
17 Nov (Sat)	♦ Documentation	Ditto.
18 Nov (Sun)	Move: Port Vila (Vanuatu) >> Santo (Vanuatu)	Stay at Luganville
19 Nov (Mon)	♦ Vanuatu Maritime College (VMC)	Ditto.
20 Nov (Tue)	Move: Santo (Vanuatu) >> Port Vila (Vanuatu) ♦ Department of Ports and Marine (DPM)	Stay at Port Vila
21 Nov (Wed)	♦ Vanuatu Customs and Inland Revenue Department ♦ Large Cruise Vessel Observation at Port Vila ♦ New Zealand High commission	Ditto.
22 Nov (Thu)	♦ USP Emalus Campus ♦ Large Cruise Vessel Observation at Port Vila ♦ JICA Office in Vanuatu	Ditto.
23 Nov (Fri)	♦ Office of Maritime Regulator (OMR) ♦ Department of Ports and Marine (DPM) ♦ Ministry of Infrastructure and Public Utilities (MIPU) ♦ JICA Office in Vanuatu	Ditto.
24 Nov (Sat)	♦ Documentation	Ditto.
25 Nov (Sun)	Move: Port Vila (Vanuatu) >> Nadi (Fiji)	Stay at Nadi
26 Nov (Mon)	Move: Nadi (Fiji) >> Tarawa (Kiribati) ♦ Ministry of Fisheries and Marine Resources Development (MFMRD) ♦ Overseas Fishery Cooperation Foundation of Japan (OFCF), Advisor	Stay at Tarawa
27 Nov (Tue)	♦ Ministry of Information, Communication, Transport & Tourism Development (MICTTD) ♦ Kiribati Customs Service (KCS), Ministry of Justice	Ditto.
28 Nov (Wed)	♦ Maritime Training Centre (MTC) ♦ Kiribati Police Service and Prison ♦ Kiribati Ports Authority (KPA)	Ditto.
29 Nov (Thu)	♦ Tarawa Shipyard Company Limited ♦ Ministry of Justice (MOJ)	Ditto.
30 Nov (Fri)	♦ Kiribati National Shipping Ltd (KNSL) ♦ Ministry of Fisheries and Marine Resources Development (MFMRD)	Ditto.
01 Dec (Sat)	♦ Documentation	Ditto.
02 Dec (Sun)	♦ Documentation	Ditto.
03 Dec (Mon)	Move: Tarawa (Kiribati) >> Nadi (Fiji) >> Melbourne	In flight
04 Dec (Tue)	Move: Melbourne >> Narita	

(3) Schedule of the Third On-Site Survey (Micronesia, Yap State)

Day	Contents	Remarks
11 Dec (Tue)	Move: Narita >> Guam >>	In flight
12 Dec (Wed)	Move: Yap (Micronesia) ♦ Fisheries and Maritime Institute (FMI), College of Micronesia	Stay at Yap

Day	Contents	Remarks
13 Dec (Thu)	♦ Fisheries and Maritime Institute (FMI), College of Micronesia	Ditto.
14 Dec (Fri)	♦ Yap State Government, Vice Governor ♦ Hapilmohol 1 (Vessel provided by China) observation	Ditto.
15 Dec (Sat)	♦ Documentation	Ditto.
16 Dec (Sun)	Move: Yap (Micronesia) >> Guam >> Narita	

6.5 Main Interviewees

(1) Palau

Palau Side	
Bureau of Maritime Security, Fish and Wildlife Protection, Ministry of Justice (Marine Law)	
Acting Director	Mr. Thomas Tutii
Australian Maritime Surveillance Advisor	Mr. Clint Moore
Australian Technical Advisor	Mr. Nathan Smith
Bureau Marine Resource, Division of Oceanic Fisheries	
Director	Mr. Leon E. Remengesau
Bureau of Customs and Boarder Protection (BCBP), Ministry of Finance (MOF)	
Director	Mr. John TARKONG Jr.
Chief, BCBP	Mr. Bill ISKAWA
Statistics Specialist	Ms. Joline Spesungel
Division of Immigration, Bureau of Immigration and Labor, Ministry of Justice (MOJ)	
Chief	Mr. Flavin Misech
Assistant	Ms. Portia Franz
National Emergency Management Office (NEMO), Office of the Vice President	
Coordinator	Mr. WAYMINE T. TOWAI
Assistant Officer	Ms. TANYA O. RURGULBAI
Bureau of Commercial Development	
Director	Mr. William Hayes Moses
Environmental Quality Protection Board (EQPB)	
Executive Officer	Ms. Roxanne Y. Blesam
Assistant Executive Officer	Mr. Michael Blesam
National Emergency Committee, Public Works, Koror State Government	
Administrative Manager (Ex-JICA Trainee)	Ms. Elizabeth S. Ikertang
Palau Community College (PCC)	
Dean of Academic Affairs	Mr. Robert Ramarui
Koror State Government, Department of Conservation and Law Enforcement (Ranger)	
Director	Ms. Jennifer S. Olegeriil
Manager, Coastal Management	Mr. Collin Joseph
Compliance Officer	Mr. Levant T. Akitaya
Shift Captain	Mr. Elly E. Ymesei
Shift Captain	Mr. Feliciano Brel
Japanese Side	
JICA Office in Palau	
Resident Representative	Mr. Yoshikazu Tachihara
Program Officer	Ms. TAKADA Aileen
Embassy of Japan in Palau	
First Secretary	Mr. Takeshi Ogino
Third Secretary	Ms. Hitomi Murakami
Bureau of Maritime Security, Fish and Wildlife Protection, Ministry of Justice (Marine Law)	
Marine Law Enforcement Advisor	Mr. Toshiaki Tomita

(2) Marshall

Marshall Side	
SAR Committee, Police Department, Ministry of Justice	
Maritime Surveillance Adviser	Lieutenant Commander, Royal Australian Navy, Mr. Jonathan Lyons
Technical Adviser	Royal Australian Navy, Mr. Will Warncke
Chief of Surveillance	Mr. Harris Kaiko
Pacific International Inc. (PII)	
Chief Executive Officer	Mr. Jerry Kramer
Operations Manager	Mr. Kenneth Kramer
Ports Authority, Ministry of Transportation, Communications and IT	
Director	Mr. Joe Ticbech
Seaport Manager, Ports Facility	Mr. Thomas Maddison
Marshall Islands Shipping Corporation	
General Manager	Mr. Danny Wase
Deputy General Manager	Mr. Lankon Carthney
Chief Operations Officer	Mr. Ted J. Kiluwe
Marshall Islands Marine Resource Authority (MIMRA)	
Deputy Director	Mr. Samuel Lanwi
Division of International Development Assistance (DIDA), Ministry of Finance	
Project Manager, Pacific Resilience Project	Mr. Tony Mellen
Acting Director, DIDA, Ministry of Finance	Ms. Malie Tarbwillin
Ministry of Works, infrastructure and Utilities	
Personnel Officer	Mr. Roger Bien
Parties to the Nauru Agreement (PNA)	
VMS/VDS Officer	Mr. Penihulo Lopati
Police Department, Sea Patrol Division	
Deputy Commissioner	Mr. Almen Robson
U.S. Embassy Majuro	
Military Liaison Officer	Mr. James Orner
USAID Staff	Ms. Tiare Eastmond
College of Marshall Islands (CMI), Arrak Campus	
Dean of Land Grant	Mr. Stanley Lorennij
Division of Immigration, Ministry of Justice	
Director	Mr. Damien W. Jacklick
International Organization for Migration (IOM) Project Manager - MIDAS	Ms. Katherine N. WALKIEWICZ
National Disaster Management Office (NDMO), Office of the Chief Secretary	
Disaster Control Officer	Mr. Kennedy Glanry
Japanese Side	
Embassy of Japan in Marshall	
Counsellor	Mr. Hiroshi Watanabe
Economic Advisor/Researcher	Ms. Chizuru Seki
JICA Office in Marshall	
Resident Representative	Mr. Nobuaki Matsui

(3) Micronesia

Micronesia Side	
Department of Resource and Development	
Deputy Secretary	Ms. Alissa R. Tekesy
Department of Foreign Affairs	
Deputy Assistant Secretary for Multilateral Affairs	Ms. Stacy Yleizah
National Oceanic Resource Management Authority (NORMA)	

Executive Director	Mr. Eugene Pangelinan
Acting Chief of Compliance	Mr. Justino Klelgun
Chief Research Division	Naiben Bradley Phillip Jr.
Department of Finance and Administration	
Secretary	Ms. Sihna N. Lawrence
Custom Operations Management	Mr. Anderson Peter
Customs/Tax Advisor	Mr. Rensley Sigrah
Department of Transportation, Communication & Infrastructure (DTC & I)	
Manager, Safety and Inspection	Mr. John Tiegmai
Operation Manager	Mr. Louis Malfin
Chief Electrician	Mr. Brymer Soryz
Pohnpei State Office of the Governor	
Governor	Mr. Marcelo K. Peterson
Pohnpei Port Authority (PPA)	
General Manager	Mr. Pius Roby
Seaport Administrative Assistant	Ms. Rosenda Eluke
Office of Fisheries and Aquaculture (OFA)	
Acting Administrator	Mr. Chay Hedson
Immigration Division, Department of Justice	
###	Mr. Ricky Falcam
Department of Public Safety, Pohnpei State	
Director	Mr. Benito Cantero
Chief of Fish and Wildlife	Mr. Keper Joel
Chief of Fire, Division of Fire Management Services	Mr. Patrick Carl
Western & Central Pacific Fisheries Commission (WCPFC)	
Executive Director	Mr. Feleti P. Teo
Department of Justice	
Secretary	Mr. Joses R. Gallen
Department of Public Works, Chuuk State	
Director	Mr. Tos Nakayama
Department of Foreign Affairs, Asia Affairs Division	
Deputy Assistant Secretary	Mr. Berlino Martin
Department of Justice, National Police, Maritime Wing Unit	
Chief Petty Officer	Mr. Whylik Alfons
Chief Petty Officer	Mr. Takesy Rewn
Able Seaman	Mr. Alvino Willyonder
Royal Australian Navy	
Lieutenant Commander	Ms. Lauren Milburn
Japanese Side	
Embassy of Japan in Micronesia	
Ambassador Extraordinary and Plenipotentiary	Mr. Ryoichi Horie
Second Secretary	Mr. Koji Oda
Advisor/Researcher	Ms. Ratsuki Nakaya
JICA Office in Micronesia	
Resident Representative	Mr. Shinji Shibata
Overseas Fisheries Cooperation Foundation of Japan	
Resident Representative	Mr. Hidenobu Eguchi
Taiyo Micronesia Corporation (TMC)	
Director	Mr. Kei Hirose

(4) Solomon

Solomon Side
Royal Solomon Islands Police Force (SIPF)

Deputy Commissioner of Police	Ms. Juanita Matanga
Director, Maritime Department	Mr. Charles Fox Sau
Australian Government Department of Defence, Maritime Surveillance Advisor	Mr. Mick Rigby
Solomon Island Maritime Authority (SIMA), Ministry of Infrastructure Development (MID)	
Advisor	Captain Tim Harris
Acting Director	Mr. Jonah Mitau
Principal Shipping Officer	Mr. David Sutahi
Deputy Registrar of ships	Ms. Cathy Talua
Senior Marine officer	Ms. Rachel Bare-Anita
Senior Marine officer	Mr. Mcpherson Wako
Chief Hydrographic officer	Mr. Clifford Olisukulu
Principal Marine officer	Mr. Patrick Wamahe
Monitoring/Compliances	Mr. Derek Saru
Solomon Island Port Authority (SIPA)	
Chief Executive Officer	Mr. Eranda Kotelawala
Ministry of Finance and Treasury, Solomon Islands Customs and Excise Division	
Acting Comptroller	Ms. Sarah Wickham
Deputy Comptroller Operation	Ms. Georgina Ariki
National Manager Enforcement	Mr. Jeremy Wesley
Solomon Ministry of Fisheries and Marine Resources (MFMR)	
Deputy Director, Inshore Division	Ms. Rosalie Masu
Principal Fisheries Officer, Compliance Section	Mr. Samson Maenuta
Solomon Islands National University (SINU), School of Technology and Maritime Studies	
Director	Captain Starling Daefa
Australia High Commission	
Second Secretary	Ms. Alexandra Little
Pacific Islands Forum Fisheries Agency (FFA)	
Director General, Executive Management Division	Mr. James T. Movick
Executive Officer, Executive Management Division	Mr. Tevita Tupou
Training Advisor	Ms. Allison Riley
Director, Corporate Services	Mr. Perry Head
Tuna Industry Advisor, JPN Fund Manager, Fisheries Development Division	Mr. Taro Kawamoto
Japanese Side	
Embassy of Japan in Solomon	
Counsellor	Mr. Junji Yamazaki
JICA Office in Solomon	
Resident Representative	Mr. Motoyuki Uegaki
Assistant Representative	Mr. Shitau Miura

(5) Australia

Australian Side	
Pacific Division, Department of Foreign Affairs and Trade (DFAT)	
Director, Pacific Division, DFAT	Ms. Caroline Scott
Assistant Director, Pacific Division, DFAT	Ms. Joanna Hamilton
Advisor, International Relations, Australian Maritime Safety Authority (AMSA)	Ms. Kristy Morse-Evans

(6) PNG

PNG Side	
National Maritime College (NMC) in Madang	
Principal	Captain Dabung Kiong

Deputy Principal	Mr. Sod Baim
Financial Manager	Mr. Herman Kose
Head of Nautical Department	Mr. Teorae kabure
Head of TVET Department	Mr. Benson Collins
Head of Engineering Studies	Mr. James Hapoto
ICT Manager	Mr. Calistus Imanaui
Department of Transport (DOT), Maritime Transport Division	
First Assistant Secretary	Mr. Charles Siniu
Maritime Security Division	Mr. Sylvester Adema
National Fisheries Authority (NFA)	
Strategic Planning / Special Projects Manager, Office of Managing Director	Mr. Leka Pitoi
Assistant Compliance Manager, Coastal Fishery Compliance, Monitoring, Control and Surveillance Business Division	Mr. Mark Bangkoma
Monitoring and Evaluation Officer, Projects and Policy Management Business Unit	Mr. Siggie Mukaisi
National Maritime Safety Authority (NMSA)	
General Manager / CEO	Mr. Paul M. Unas
Executive Manager/ Maritime Operation	Capt. Krzysztof (Krys) Orlowski
Executive Manager/ Maritime Administration	Capt. Graham Pround
Manager, Corporate Strategy & Quality Assurance	Mr. Romanus Pakure
Acting Manager, Ship Survey & Inspections	Mr. Danny Fezamo
Manager, Marine Environment Protection	Mr. Pawa Limu
Manager, Small Craft	Capt. Peter Bell
Acting Manager Maritime Information Management Systems	Mr. Dii Thomas
Acting Manager, Qualifications	Mr. Paul Alloy
Customs	
Director National Border Command, Enforcement	Mr. Robert Kawapuro
Senior Advising Officer, Border Management	Mr. Nazila Yalambing
PNG Ports Corporation	
Security and Safety Manager, Security Manager	Mr. Thomas Bundu
Water Police	
Director, Chief Superintendent	Mr. Trevor A. Lapu
Chief Inspector, Coordinator Administration	Mr. John Bana Koiri
Australian High Commission	
First Secretary	Mr. Matt Kellam
Senior Transport Strategy and Policy Advisor, Institutional Partnerships Program, Australian Government TSSP Component 2 Manager (Aviation and Maritime), General Manager, DIRD/Dot MoU	Ms. Nicole Spencer
Maritime Security Technical Advisor, Department of Transport, PNG-Australia Transport Sector Support Program	Mr. Chris Dodd
Department of Transport (DOT)	
Secretary	Mr. Roy H. Mumu
Japanese Side	
Embassy of Japan in PNG	
Ambassador	Mr. Satoshi Nakajima
First Secretary	Mr. Mitsuyuki Namiki
First Secretary	Shinichi Maruo
JICA Office in PNG	
Chief Representative	Mr. Takashi Toyama
Senior Representative	Mr. Yoshihiko Chujo
Representative	Mr. Yukihiro Kondo
Assistant Representative	Mr. Tetsuji Nakasone

Department of National Planning and Monitoring (DNPM), Department of Treasury	
JICA Advisor,	Mr. Masayoshi Ono

(7) Fiji

Fiji Side	
Maritime Safety Authority of Fiji (MSAF)	
Chief Executive Officer	Mr. Philip R. Hill
Fiji Ports Corporation Ltd. (FPCL)	
Chief Executive Officer	Mr. Vajira Piyasena
Participants on the workshop at the Pacific Community (SPC)	
SPC, Deputy Director Oceans and Maritime, Geoscience, Energy and Maritime (GEM) Division	Mr. Thierry Nervale
SPC, Maritime Training Advisor, GEM	Ms. Ore O. Toua
SPC, IMO Technical Cooperation Officer	Ms. Mavis E. V. Joseph-Logavatu
SPC, Policy and Legal Officer	Ms. Francesca Pradelli
SPC, Maritime Port Security Adviser	Mr. Sitalingi Payne
International Maritime Organization (IMO), Head, Implementation of Instruments Support, Department of Member State Audit and Implementation Support	Mr. Brice Martin-Castex
Cook Islands, Ministry of Transport, Director of Maritime	Mr. Ngatokorua Nagatokorua Junior
Vanuatu, Office of Maritime Regulator (OMR), Legal Officer,	Mr. Lloyd Fikiasi
Kiribati, Director of Marine, Ministry of Information, Communication, Transportation and Tourism	Mr. Ruoikabuti Tion
Tonga, Director, Marine and Ports, Ministry of Infrastructure	Ms. Kelela Tonga
Nauru, Maritime & Operations Manager, Port Authority	Mr. Kemp W. Detenamo
Tuvalu, Director of Marine and Port Services, Ministry of Communications and Transport	Mr. Taasi Pitoi
Samoa, Acting Assistant Chief Executive Officer, Principal Surveyor, Ministry of Works, Transport and Infrastructure	Mr. Tapaga Collins
Niue, Director General, Ministry of Infrastructure	Mr. Andre Siohane
New Zealand, Pacific Safety Advisor, Maritime New Zealand	Mr. Gareth Argyle
Government Shipping Services (GSS), Ministry of Infrastructure and Transport (MoIT)	
Acting Director	Mr. Vinai Vatuvatu
Fleet Superintendent	Mr. Joeli Raloga
Interim Fleet Superintendent	Ms. Tarisi Ganilau
Fiji Revenue and Customs Service (FRCS)	
Acting Director Border	Mr. Winston Rounds
Fiji Maritime Academy (FMA)	
Director in Charge / Chief Executive Officer	Mr. Mahesa Abeynayake
Principal Lecturer	Capt. Tevita Robanakadavu
Oceania Customs Organization (OCO)	
Operation Manager	Mr. Tevita Tupou
Fiji Hydrographic Services, Fiji Navy	
Director	LCDR Mr. Saula Tuilevuka
University of South Pacific (USP), Faculty of Science, Technology and Environment	
Associate Dean (Learning and Teaching)	Dr. Bibhya Sharma
Diplomatic Side	

Australian High Commission, Counsellor, Regional Political and Economic Development	Mr. Matthew Lapworth
Delegation of EU for the Pacific, Attaché, Fisheries	Mr. Juan Ignacia de Leiva Moreno
Embassy of China, Second Secretary	Mr. Fu Yuanfeng
Embassy of China, Economic and Commercial Office	Ms. Hui Li
KOICA Fiji Office, Country Director	Ms. JiHi Kim
Japanese Side	
Embassy of Japan in Fiji	
Ambassador Extraordinary and Plenipotentiary	Mr. Masahiro Omura
Counsellor and Deputy Chief of Mission	Mr. Tsuguyoshi Hada
First Secretary	Mr. Genta Yamada
Second Secretary, Captain (Air Self-Defense Force)	Mr. Hiroshi Yamanaka
Second Secretary	Mr. Hirotaro Ohira
JICA Office in Fiji	
Resident Representative	Ms. Yukari Ono
Deputy Resident Representative	Mr. Shinya Tamio
Assistant Resident Representative	Mr. Shin Suto
Project Formulation Advisor	Ms. Atsumi Kani

(8) Vanuatu

Vanuatu Side	
ADB	
Unit Head, Extended Mission in Vanuatu, Pacific Department	Mr. Arto Ahonen
Ministry of Agriculture, Livestock, Fisheries, Forestry and Biosecurity (MALFFB) Fisheries Compliance Division	
Acting Deputy Director	Mr. William Naviti
Principal Fisheries Resource Officer (PFRO)	Mr. Christopher Arthur
Vanuatu Maritime Service Limited (VMSL)	
President and CEO	Mr. Robert M. Bohn
Police Maritime Wing	
Commander	Mr. Collin Kalwatonan
Vanuatu Maritime College (VMC)	
Office Manager	Ms. Lindy Abel
Operations Manager	Mr. Tapas Samol
Department of Ports and Marine (DPM)	
Harbor Master	Mr. John NASAK
Manager Operations	Mr. Charlie MANIEL
Senior Pilot Mentor	Mr. Luk BEANDI
Vanuatu Customs and Inland Revenue	
Acting Deputy Director of Customs	Mr. George PAKOA
New Zealand High Commission	
Counsellor	Ms. Kathryn Beckett
University of South Pacific (USP), Emalus Campus	
IT Manager	Ms. Nettie Collins
Associate Professor, Chair of the School of Law Research Committee	Dr. Pierre-Jean Bordahandy (Mr.)
Lecturer in Chemistry	Dr. Krishna Kumar Kotra (Mr.)
Department of Ports and Marine (DPM)	
Aids to Navigation Officer	Mr. Robson Tari
Ministry of Infrastructure and Public Utilities (MIPU)	
Commissioner/Manager of Maritime Affairs, Corporate Service Unit	Mr. John Markmon Ambong Batie
Office of Maritime Regulator (OMR)	

Regulator	Mr. Arthur Faerua
Japanese Side	
Embassy of Japan in Vanuatu	
Ambassador	Mr. Koichi Miyoshi
JICA Office in Vanuatu	
Resident Representative	Mr. Naoki Takechi
Assistant Representative	Mr. Katsuhiko Ohara

(9) Kiribati

Kiribati Side	
Kiribati Customs Service (KCS), Ministry of Justice	
Comptroller of Customs	Mr. Tekaie Ititaake
Ministry of Information, Communication, Transport & Tourism Development (MICTTD), Marine Division	
Sea Transport Regulatory Officer	Mr. Timau Itibita
Marine Officer in Charge of Aids to Navigation	Mr. Eritaia Tauro
Kiribati Port Authority (KPA)	
CEO	Mr. Ruatu Titaake
Maritime Training Centre (MTC)	
Superintendent	Capt. Malte Pertiet
Kiribati Police Service and Prison (KPSP)	
Assistant Superintendent	Mr. Tom Redfern
Ministry of Justice (MOJ)	
Secretary	Mr. Birimala Tekanene
Tarawa Shipyard Company Limited (TSCL)	
General Manager	Mr. Ruel Haygood Buhay
Ministry of Fisheries and Marine Resources Development (MFMRD)	
Deputy Secretary	Ms. Teue Baikarawa
Director CA	Ms. Tereere Tioti
Director of ICT	Mr. Iotua Itimwemwe
Director of Mineral	Ms. Kabure Yeeting
Director of PDD	Mr. Thomas Ruaia
Director of Fisheries Division	Ms. Tooreka Tatoa
Overseas Fishery Cooperation Foundation of Japan (OECF)	Mr. Koichi Sakonju
Kiribati National Shipping Ltd (KNSL)	
CEO	Captain John Round
Japanese Side	
JICA Kiribati Field Office	
Volunteer Coordinator	Mr. Takashi Ikeda

(10) Micronesia (Yap State)

Yap State, Micronesia Side	
Fisheries and Maritime Institute (FMI), College of Micronesia	
Campus Dean	Ms. Lourdes Roboman
Director	Mr. Matthias Ewarmai
Marine Engineering Instructor	Mr. Michael Mailuw
Marine Engineering Instructor	Mr. Ioe Falmed
Fishing Instructor	Mr. Alvin Sinem
Student Service	Mr. Fufles Yaisolug
Yap State Government	
Lt. Governor	Mr. James Yangetmai
Captain, Hapilmohol 1	Mr. Juliano Yarofaitig
Chief Engineer, Hapilmohol 1	Mr. Juanito Haretalyar

6.6 Primary Plan of Cooperation and Support Committed at PALM 8

Japan pledged to implement thorough development cooperation of the same kind as previously over the next three years while taking into account achievements to date, and declared that it would implement cooperation for human resource development and people-to-people exchanges for more than 5,000 people over the next three years based on the recognition that the basis for growth and prosperity is human resources development. As a part of that, Japan declared regarding cooperation for free and open and sustainable oceans, which is a particularly important pillar of the present cooperation, that it would conduct human resources development and people-to-people exchanges for 500 people over the next three years.

(1) Free and Open and Sustainable Oceans

To ensure free and open maritime order based on the rule of law, and sustainability of ocean resources in the Pacific region

- ☐ Support for capacity building in the maritime security field, including maritime law enforcement (Implementation of human resource development program for illegal fishing countermeasures and law enforcement, and provision of facilities and equipment, etc.)
- ☐ Cooperation in marine biological resource management and marine environmental conservation fields
- ☐ Strengthen connectivity by establishing a maritime transportation network (high-quality infrastructure development of ports, etc. in line with international standards.)

(2) Strengthening the Basis for Resilient and Sustainable Development

To respond to the issues regarding climate change, natural disasters and the environment, which threaten resilient and sustainable development

- ☐ Promotion of effective use of renewable energy
- ☐ Further strengthening of disaster prevention capacity (improvement of disaster information sharing system, etc.)
- ☐ Improvement of living hygienic environment by further improving waste management capacity (improvement of waste disposal site, etc.)
- ☐ Further improvement of social services such as health, medical care, education and others

To support industries such as tourism in the Pacific Islands Countries and support trade and investment promotion with Japan.

- ☐ Industrial development platform including infrastructure such as airport development and maintenance
- ☐ Boosting private economic exchanges with the Pacific Islands Countries (Business matching, including small and medium enterprises)

(3) **Connecting Pacific Citizens**

To support socio-economic development through strengthening human resources development, strengthen

human connectivity by interchange revitalization

- ☐ Promotion of the JENESYS human exchanges in diverse fields centering on the generations bearing the future.
- ☐ Promotion of Pacific-LEADS leadership development program
- ☐ Interchange vitalization in rural areas through Local Government Network Between the Pacific Islands Countries and Japan
- ☐ Introduction of multiple-entry visas in relation to all the Pacific Islands Countries
- ☐ Vitalization of Japanese Language (Cooperation towards launching of a Japanese language course at the University of South Pacific)
- ☐ Cooperation in the field of sports in light of Japan's hosting of the Rugby World Cup 2019 and the Tokyo 2020 Olympic and Paralympic Games

6.7 Manning Criteria of Navigation and Engineering Officers

Gross Tonnage	Unlimited Area				Offshore Area (to the outer boundary of the EEZ				Coastal Area (50 nautical miles from baseline)	
	Capt.	C/O	2/O	3/O	Capt.	C/O	2/O	3/O	Capt.	C/O
5,000GT & over	1	2	3	3	1	3	4	5	4	5
1,600GT & over	2	2	3	4	3	4	5	5	4	5
500GT & over	2	3	4	Nil.	3	4	5	Nil.	5	Nil.
200GT & over	3	4	5	Nil.	4	5	Nil.	Nil.	5	Nil.
20GT & over	4	5	Nil.	Nil.	5	Nil.	Nil.	Nil.	6	Nil.
Propulsion Power	**C/E**	**1/E**	**2/E**	**3/E**	**C/E**	**1/E**	**2/E**	**3/E**	**C/E**	**1/E**
6,000KW & over	1	2	3	3	1	3	4	5	4	5
3,000KW & over	2	2	3	4	3	4	5	5	4	5
1,500KW & over	2	3	4	Nil.	3	4	5	Nil.	5	Nil.
750KW & over	3	4	5	Nil.	4	5	Nil.	Nil.	5	Nil.
less than 750KW	4	5	Nil.	Nil.	5	Nil.	Nil.	Nil.	6	Nil.

Note: Number in each cell means the Class of necessary Certificate of Competency as Seafarer

Capt.: Captain, C/O: Chief Mate, 2/O: 2nd Mate, 3/O: 3rd Mate,

C/E: Chief Engineer, 1/E: 1st Engineer, 2/E: 2nd Engineer, 3/E: 3rd Engineer

GT: Gross Tonnage, KW: Kilowatt

(Source: Survey Team, prepared by referring to the Act of ships' Officers and Boats' Operators in Japan)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