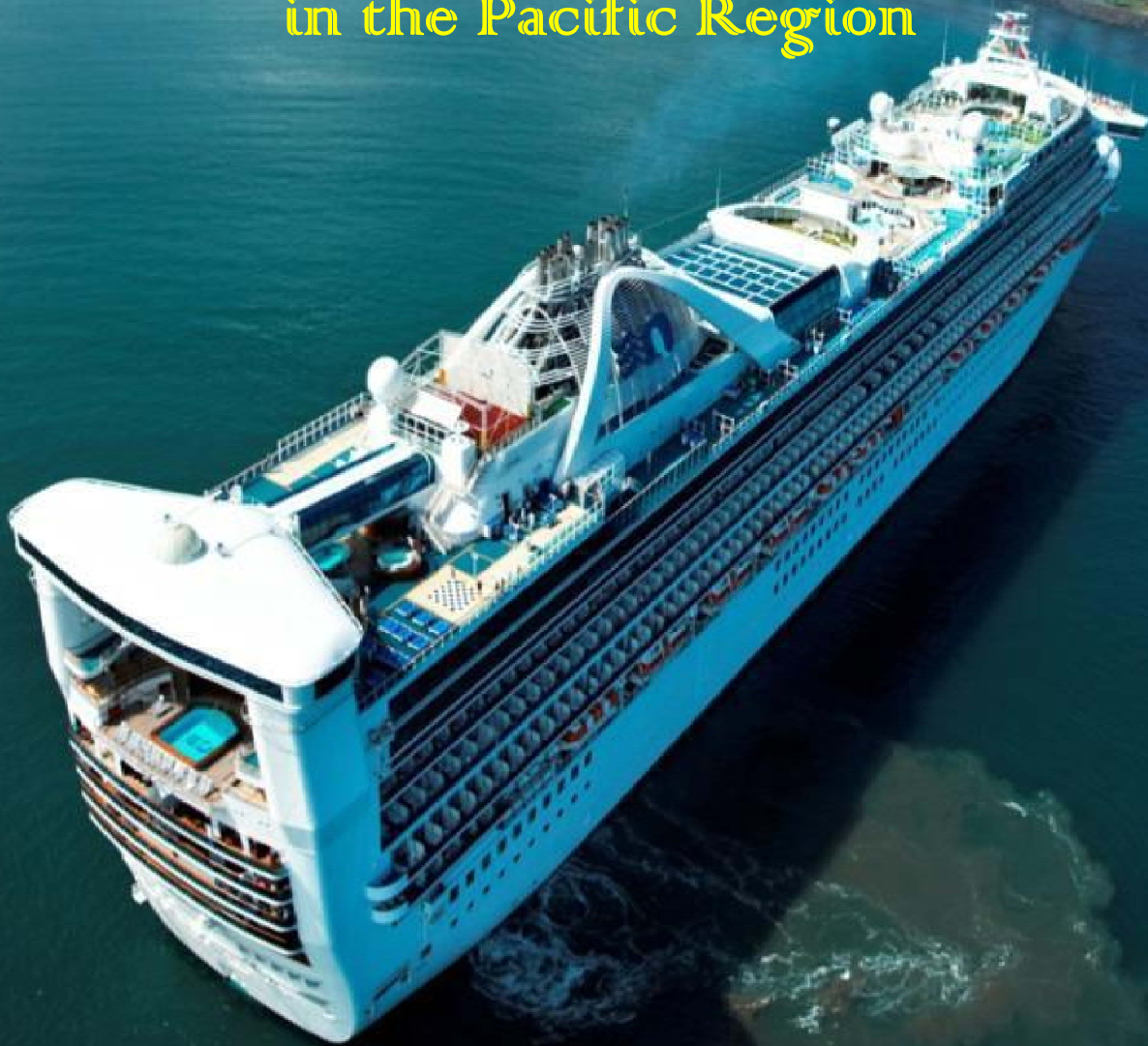


*A Regional Reception Facilities Plan  
for the  
Small Island Developing States  
in the Pacific Region*





**Australian Government**

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**Australian Maritime Safety Authority**



This report has been compiled by the Secretariat of the Pacific Regional Environment Programme, with assistance from the Australian Maritime Safety Authority and guidance from the International Maritime Organization.

Front cover: Cruise ship Apia harbour, Upolu Samoa, © Stuart Chape

## Executive Summary

The Pacific islands maintain resource access rights and management responsibilities over 30 million square kilometres of ocean - equivalent to the combined land areas of Canada, China and the United States of America. The total population of the Pacific islands is only 6.7 million people and only 2.6 million if the largely inland population of Papua New Guinea is excluded. There are at least 11 square kilometres of ocean for each and every Pacific Islander. Jurisdictionally, the sea is nearly 200 times more significant to the average Pacific islander than it is to the average global citizen.<sup>1</sup> This quote encapsulates the paramount importance of the oceans and its resources to Pacific island countries and territories (PICTs). For many PICTs the ocean is their only significant natural resource and the good governance and sustainable management of their ocean resources is the key to their economic and social well-being.

Secretariat of the Pacific Regional Environment Programme (SPREP) in partnership with the Australian Maritime Safety Authority (AMSA) conducted five analyses of international shipping hub ports, throughout the Pacific in accordance with, IMO Resolution MEPC.83(44) *Guidelines for Ensuring the Adequacy of Port Waste Reception Facilities*. The objective of this project is to carry out a gap analysis on the adequacy of waste reception facilities provided at selected ports. The ports included Port of Suva (Fiji), Port Autonome Noumea (New Caledonia), Port Autonome Papeete (French Polynesia), Port of Port Moresby (Papua New Guinea) and Apia Port (Samoa). SPREP, will in the future when funding is available, conduct gap analysis audits on all key international ports, throughout the Pacific. Table 1, identifies all of the 57 international ports located in the Pacific.

PNG	New Caledonia	Fiji	Tonga	Marshall Islands	Nauru	Kiribati
Alotau	Babouillat	Malau (Labasa)	Nuku'alofa	Kwajalein	Nauru	Betio
Anewa Bay	BaieUgue	Lautoka	Pangai	Majuro	<b>Tuvalu</b>	<b>American Samoa</b>
Bialla	Kouaoua	Levuka	Port Neiafu	<b>Wallis &amp; Futuna</b>	Funafuti	Pago Pago
Kavieng	Nepoui	Savusavu	<b>French Polynesia</b>	Leava	<b>Vanuatu</b>	<b>Samoa</b>
Kimbe	<b>Noumea</b>	<b>Suva</b>	Bora-Bora	Mata'Utu	Port Luganville	<b>Apia</b>
Lae	Poros	<b>FSM</b>	<b>Papeete</b>	<b>Guam</b>	<b>Palau</b>	
Lorengau	Thio	Chuuk	<b>Cook Islands</b>	Apra	Malakal	
Madang	<b>Solomon Islands</b>	Kosrae	Arutanga			
<b>Port Moresby</b>	Allardyce Harbour	Pohnpei	Avatiu			
Daru	Aola Bay	Yap				
Kumul Marine Terminal	Gizo					
Oro Bay	Honiara					
Rabaul	Malloco Bay					
Samarai	Noro					
Vanimos						
Wewak						

**Table 1:** International ports within the SPREP region

<sup>1</sup>Adams et al 1995 "Research on Fisheries in the Pacific Islands Region"

The International Maritime Organization has recognised that port waste management on a regional basis can provide a solution when it is undertaken in such a manner as to ensure that vessels do not have an incentive to discharge wastes into the sea. The objective of this project is to carry out a gap analysis on the adequacy of waste reception facilities provided at selected ports. This analysis is designed to provide an overview of the waste reception services currently provided at the ports and identify any gaps in this service, including recommendations on how these gaps can be addressed. In addition, this analysis can assist in the assessment of the ports as a Regional Ships Waste Reception Centre (RSWRC) for the purposes of a Regional Reception Facilities Plan for regional arrangements in the Pacific.

This plan addresses the provision of adequate reception facilities on a regional basis by identifying Regional Ships Waste Reception Centres that serve the needs of the ships visiting not only those ports, but also other ports connected by shipping traffic. The hub ports were analysed with a view to those ports being identified as RSWRCs in the Regional Reception Facilities Plan for the SPREP Region. Table 2, indicates the quantity of vessels that service the ports audited. Each individual report contains a full break down of the types of vessels visiting each port.

Port	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Suva, Fiji	76	65	63	80	61	77	73	73	72	73	69	67	849
Noumea, New Caledonia	50	47	44	37	42	45	39	43	42	49	44	51	533
Port Moresby, PNG*	145	145	145	145	145	145	145	145	145	145	150	150	1750
Apia, Samoa	18	21	15	23	16	19	16	17	17	22	20	N/A	204
Papeete, Tahiti*	46	42	50	48	43	46	38	45	58	45	37	36	534
<b>Total</b>												<b>3870</b>	

\* Data provided was for the 2013 year only. This figure has been extrapolated over the twelve months, monthly statistics may vary but the yearly total is correct.

**Table 2: Quantities of vessels visiting ports**

The analysis provides an inventory and assessment of the adequacy of reception facilities in each port. An additional outcome of the gap analyses was a series of recommendations to provide a basis for Governments to improve existing facilities. The outcomes will assist Governments to develop environmentally appropriate and effective regional waste reception facilities' arrangements that meet the needs of international ships calling at their ports and terminals. Whilst conducting the analysis the audit teams interviewed a number of stakeholders, including maritime agencies/organisations, port authorities, oil and shipping industry representatives, government agencies and other stakeholders.

The following is a summary of the waste streams that can be landed in each port along with a summary of the high level recommendations made by the gap analysis team.

## Apia Port (Samoa)

Type of Waste	Can Waste be Received? Yes or No	Type of Reception Facility (Fixed, Road Tanker or Barge)
Oil Tankers: Oily tank washings or oily ballast water	No	N/A
All ships: oily bilge water, sludge's, used lube oils	No	N/A
Chemical tankers: NLS	No	N/A
Sewage	Domestic ships only	Road tanker to landfill
Garbage - Domestic vessels	Yes	Truck to landfill
Garbage -recyclables	Yes*	Truck to landfill (sorted at landfill)
Garbage -Fishing gear	Yes*	N/A
Quarantine Waste – all garbage from international vessels	Yes	Smaller quantities -Bins taken from ship directly to incinerator on site at port Larger quantities – loaded directly onto truck for transport to deep burial.
Ozone Depleting Substances	No	N/A
Exhaust gas cleaning system residues	No	N/A

\* Subject to quarantine

**Table 3:** Summary of ships waste accepted at Port of Apia

Reception facilities for garbage, including quarantine waste, are satisfactory, and generally adequate to the needs of ships using the port. However, there are some desirable improvements, particularly related to the aspect of adequacy related to ensuring that the ultimate disposal of waste is undertaken in an environmentally appropriate way.

There are a range of improvements that could be made to the waste management system. It may be helpful to produce a ships waste management plan to collect all the relevant information in one place, however, it is not necessarily warranted if sufficient information is readily available through existing sources and documents. In terms of improving the facilities available, there are several opportunities to include ships' waste in work already underway on domestic waste planning. There is also an excellent opportunity to be prepared to consider ships' waste reception in the planning for the new port at Vai'usu Bay. It is likely that this can be best achieved through the environmental impact assessment and planning approval process. The following are the top eight recommendations made by the gap analysis team. Detailed findings can be found at Annex 1.

1. Samoa Port Authority (SPA) and SPREP to review Ministry of Natural Resources and Environment (MNRE) draft national waste strategy to ensure ships' waste is covered.
2. Include ships oily waste in the Used Oil Management System currently being developed by SPREP.
3. Include the small quantities of chemical and hazardous waste that may be expected from general shipping in current MNRE work on developing solutions for chemical waste including re-export or return to supplier.
4. Include sewage from ships, particularly cruise ships, in planning for extended sewer line to port.
5. Include information in port operations manual, including contact details on who has responsibility for waste.



6. Include information in port emergency plan on responsibilities for handling spills of waste materials.
7. Consider options for servicing gas carriers anchored in port e.g. bins or drums transported by tender etc. Alternatively consider utilising hubs in context of regional arrangements for these gas ships.
8. Consider regional arrangements for Annex VI wastes (EGCS residues and ODS).

## Port of Suva (Fiji)

Type of Waste	Can Waste be Received? Yes or No	Type of Reception Facility (Fixed, Road Tanker or Barge)
Oil Tankers: Oily tank washings or oily ballast water	Limited	Road tanker
All ships: oily bilge water, sludge's, used lube oils	Yes	Road Tanker
Chemical tankers: NLS	No	N/A
Sewage	Yes	Road Tanker
Garbage - Domestic vessels	Yes	Large bins on wharf
Domestic vessels	Limited types*	Large bins on wharf
Garbage-recyclables	Yes	N/A
Garbage - Fishing gear	Yes	Large bins on wharf.
Quarantine Waste – all garbage from international vessels	No	Large bins on wharf. Incinerator within port.
Ozone Depleting Substances	No	N/A
Exhaust gas cleaning system residues	No	N/A

\* Generally no direct collection from ships, but arrangements may be made to deposit recyclables at depot or collection point.

**Table 4:** Summary of ships waste accepted at Port of Suva

Suva is a hub port both for the Fiji islands and for the Pacific. With close to 900 ship visits annually and an agenda for acceding to MARPOL in the near future, it is imperative that environmentally responsible waste reception facilities are adequate for the needs of ships using the port. It is concluded that while reception facilities are less than satisfactory and there is a lack of a coherent ships waste management system, there are many encouraging elements that require relatively straightforward efforts and modest investment to attain adequacy. There is a legislative framework and appropriate waste disposal infrastructures in Suva, but challenges exist in enforcing requirements and facilitating the transfer of waste from ships to waste disposal sites.

The need for a coherent waste management system for the port of Suva is recognised by authorities, as evidenced by current Department of Environment (DoE) work on developing terms of reference for a port waste management plan. There is an ideal opportunity to ensure that ships waste is covered as well as port-generated waste during the development of this plan.

A summary of detailed recommendations is listed below. Detailed findings can be found at Annex 2. Importantly, there is a recommendation that the Ministry for Transport should consider how it can facilitate the implementation of the recommendations through funding and other support in the context of the Ministry's goal to provide an environmentally sustainable transport system.

1. In light of the new requirements under the Maritime Transport Decree 2013, Maritime Safety Authority of Fiji (MSAF) and Fiji Ports Corporation Limited (FPCL) should develop a communication strategy to ensure that agents and ships crews are aware that MARPOL will now apply to disposing of ships waste, and what the options are for appropriate disposal.
2. DoE should ensure that a consideration of ships waste is incorporated into Terms of Reference being developed for the Environmental Management System being commissioned for the port. In developing the port EMS, the IMO Guidelines should inform the content of the ships waste aspects of the EMS.
3. DoE should consider the need for additional resources to ensure that the appropriate handling of ships waste can be enforced.
4. Fiji Port Corporation Limited (FPCL) and DoE should consider developing a means for FPCL to restrict access to the port, based on an appropriate waste handling license.
5. Bio-security, FPCL, MSAF should work to develop a program to consider trends over time in shipping and amounts of waste being landed following commencement of Maritime Transport Decree 2013.
6. FPCL should consider including a line item for ships waste to be discharged in their berthing application form.
7. FPCL should consider providing a summary of wastes received and licensed waste service provider contact details on the FPCL website.
8. Relevant agencies should ensure that ships waste reception facilities are addressed in development of new port, and that appropriate operating procedures are developed.
9. FPCL should provide appropriate storage for quarantine waste adjacent to incinerator e.g. bunded area with covered, leak proof, lockable bins. FPCL should consider installing multi-language signage to advise wharf users not to place quarantine waste in port general waste receptacles.
10. Bio-security Authority of Fiji (BAF) should investigate contingency options for quarantine waste in excess of the incinerator's capacity, or when incinerator out of service e.g. the hospital incinerator, deep burial. BAF should also develop appropriate procedures for accessing these contingencies. FPCL & Fletcher Steel should consider temporary storage of oil in port (e.g. in small tanks provided by Fletcher Steel).
11. DoE and BAF should consider how to facilitate the greater use of Naboro landfill for ships waste that meets the landfill acceptance criteria and does not pose a bio-security risk. Water Authority of Fiji (WAF) to include in the liquid trade waste policy a standard of ships sewage and grey water waste streams that can be accepted by the WAF wastewater treatment plant.
12. FPCL and WAF to consider the case for temporary storage or pre-treatment of ships sewage or grey water within the port, prior to transfer by truck to the WAF waste water treatment plant.
13. FPCL and WAF to consider the case for installing a sewer connection to Kings Wharf to enable cruise ships and other ships to discharge sewage directly to the waste water line, provided a standard can be established for acceptable effluent quality (see Recommendation 17).
14. MSAF and FPCL to consider options for establishing a garbage and waste oil collection service for anchored ships.
15. Ministry for Transport should consider how it can facilitate these recommendations through funding or other support.

## Port of Port Moresby

Type of Waste	Can Waste be Received? Yes or No	Type of Reception Facility (Fixed, Road Tanker or Barge)
Oil Tankers: Oily tank washings or oily ballast water	Yes	Waste Service Provider
All ships: oily bilge water, sludge's, used lube oils	Yes	Waste Service Provider
Chemical tankers: NLS	No	N/A
Sewage	Yes	Waste Service Provider
Garbage - Domestic ships	Yes	Waste Service Provider
Garbage-recyclables	No	N/A
Garbage - Fishing gear	Yes	Waste Service Provider
Quarantine Waste – all garbage from international ships	Yes	Waste Service Provider
Ozone Depleting Substances	No	N/A
Exhaust gas cleaning system residues	No	N/A

**Table 5:** Summary of ships waste accepted at Port of Suva

Based on the demand for waste reception facilities at Port of Moresby (PoM) and the services provided, it can be determined that PoM is, overall, providing a reasonably adequate service to ships seeking to discharge waste at PoM. While the services required by ships calling at PoM are essentially being met, some concerns have been raised with the on land disposal of these wastes. Although National Capital District Commission (NCDC) have processes and procedures in place to ensure that service providers pay for the use of the landfill before discharging waste there and the requirement that these service providers have a license to operate as a business at PoM, there is still a large amount of illegal discharging occurring on the sides of the roads and in vegetated areas.

Under the current arrangements Papua New Guinea Port Corporation Limited (PNGPCL) are unaware of how much waste is being removed from ships; NCDC is unaware of the amount of waste being disposed of at the landfill that comes from ships; and these agencies are unaware of the quarantine waste removed from ships at PoM. As there is no visibility of the waste being removed from ships, this can create a situation where the illegal disposal of waste can occur, without any consequences to the entity undertaking the disposal, and with potentially significant environmental and economic consequences, particularly in regard to quarantine waste.

The following is a summary of the recommendations made by the gap analysis team. Detailed findings can be found at Annex 3.

1. In order to facilitate improved waste management at the port, Papua New Guinea Port Corporation Limited (PNGPCL) should instigate regular working groups between agencies that are involved in reception of ship's waste. This will allow the different agencies to understand all requirements, improve working relationships and identify any further improvements to the current system.
2. PNGPCL should establish a procedure to work with shipping agents to ensure that the ongoing demand of ships calling at PoM is met satisfactorily.



3. PNGPCL advised that the WMP is subject to regular updates, or is updated when an operational need is identified.
4. PNGPCL should consider including the management of waste from ships in the next update of the WMP. Depending on its progress through Parliament, consideration should also be given to the inclusion of the Marine Pollution (Ships & Installations) Act 2013 in the WMP.
5. An opportunity exists to erect signage at Port of Moresby to better inform shippers of requirements surrounding quarantine waste.
6. PNGPCL should work in consultation with National Maritime Safety Authority (NMSA) to ensure the correct contact details of waste service providers are in GISIS.
7. PNGPCL should investigate, in conjunction with National Agriculture Quarantine and Inspection Authority (NAQIA) and NCDC, the implementation of a waste tracking system at Port of Moresby. This could be discussed and progressed at the regular working groups to be held between agencies.
8. PNGPCL should investigate options for a barge service to ships at anchorage in order to minimise the opportunity for illegal dumping.
9. PNGPCL should develop communication tools that explain to ships what waste services are available in PoM, for example, brochures. The PNGPCL web site should also be updated with any relevant information.

## Port of Papeete

Type of Waste	Can Waste be Received? Yes or No	Type of Reception Facility (Fixed, Road Tanker or Barge)
Oil Tankers: Oily tank washings or oily ballast water	No	N/A
All ships: oily bilge water, sludge's, used lube oils	Yes	Fixed
Chemical tankers: NLS	No	N/A
Sewage	Yes*	Truck
Garbage - Domestic ships	Yes	Truck
Garbage-recyclables	Yes	Truck
Garbage - Fishing gear	Yes	Truck
Quarantine Waste – all garbage from international ships	Yes	Truck
Ozone Depleting Substances	No	N/A
Exhaust gas cleaning system residues	No	N/A

\*Sewage from international waste is currently prohibited by the Food Quality and Veterinary Action Department

**Table 6:** Summary of ships waste accepted at Port of Papeete

Based on the demand of ships calling at Papeete port and the waste reception services provided, it can be determined that Papeete is, overall, providing an adequate service to ships seeking to discharge waste at this port. This assessment is extremely encouraging, noting that French Polynesia is not a party to MARPOL, and therefore does not currently have an obligation under this convention to provide these services. In addition, despite the French Polynesian bio-security legislation only being implemented recently, the processes that have been established with the local service providers, the communications to ships and the appearance of a seamless process for managing this waste is highly commendable.

Another area of particular note is the exceptional work being carried out by the Polynesian Environment Society in the management of recyclable waste. The arrangements that have been implemented to manage recyclable waste are an innovative, proactive and an economically viable way of removing waste from the island that would otherwise be disposed of in the local landfill.

The following is a summary of the recommendations made by the gap analysis team. Detailed findings can be found at Annex 4.

1. There is currently relatively good visibility and consultation occurring between agencies within Papeete in relation to ship waste management. However, this consultation would benefit from a formalised structure potentially in the form of a working group, or similar, to ensure strong, effective communication and transparency in the processes associated with waste management.
2. During the gap analysis process, concerns were raised by shipping agents and government agencies that the costs associated with the discharge of waste, in particular, quarantine waste, could be a disincentive for ships to discharge waste at Papeete. As the costs associated with the discharge of quarantine waste are relatively new, there is an opportunity for a system to be established between relevant agencies (government agencies, shipping agents and service providers) to monitor feedback from ships calling at Papeete on the costs associated with waste reception.
3. Based on information collected during the gap analysis, it is not clear if the prohibition on the discharge of sewage in Papeete by the Food Quality and Veterinary Action Department is based on waste being discharged into the town sewage system or if this prohibition is in place due to other considerations. It is suggested that the collection of sewage and treatment at this facility is investigated to determine if this service can be provided to ships calling at Papeete.
4. It is suggested that the Port Autonome Papeete work with relevant agencies (in particular service providers) to collect the correct information on services available at Papeete and input this to the GISIS system.
5. To accurately reflect the management of ships waste at Papeete port, it is suggested that environmental management plans held by the port and service providers be reviewed to incorporate the specific handling of ships waste.

## Port of Noumea

Type of Waste	Can Waste be Received? Yes or No	Type of Reception Facility (Fixed, Road Tanker or Barge)
Oil Tankers: Oily tank washings or oily ballast water	Limited, (laboratory analysis required)	Road tanker for transport to SLN
All ships: oily bilge water, sludge's, used lube oils	Limited (laboratory analysis required by SLN)	Road tanker for transport to SLN Various reception points in marina and urban area for small quantities of used lube oils
Chemical tankers: NLS	No	N/A
Sewage	Limited	Road tanker for transport to septic treatment system at CSP transfer station
Garbage - Domestic vessels	Yes	Truck to CSP landfill
Garbage-recyclables	Limited types	Drop-off points (marina) or by direct arrangement with recycler
Quarantine Waste – all garbage from international vessels	Yes	Sealed truck to DAVAR incinerator
Ozone Depleting Substances	No	N/A
Exhaust gas cleaning system residues	No	N/A

**Table 7:** Summary of ships waste accepted at Port of Noumea

Noumea is positioned as a hub for shipping in the Pacific, both for traffic within New Caledonia and between nearby island nations such as Wallis and Futuna and Vanuatu. It is also a significant exporter of nickel ore, a major cruise liner destination and receives much cargo (e.g. food, consumer items and fuel) by sea. It also supports a fishing fleet, a resident cable-laying ship, and visiting research and naval vessels. Noumea is also a major destination for pleasure craft. It is therefore important that adequate reception facilities are available to serve the needs of ships.

The following is a summary of the recommendations made by the gap analysis team. Detailed findings can be found at Annex 5.

1. Incorporate ships' waste into Province Sud's waste management activities (other Provinces as well).
2. A system should be developed to collect and analyse information on waste aboard arriving ships and true demand for reception facilities e.g. consider asking agents for waste information on berthing application, and/or calculate theoretical estimates from shipping data and published waste generation rates.
3. Port Autonome could consider opportunities for disseminating multi-language information (e.g. French, English, Chinese) through website and/or printed information including a summary of waste types accepted, regulatory requirements, contacts for waste service providers and regulators.
4. Port Autonome or Province Sud, should consider contracting a garbage collection service for container, cargo, tankers and bulk carrier ships e.g. a truck that runs daily. Ships could then be charged by volume of waste, but would not be individually responsible for the entire cost of hiring the truck. Preferable if the service could handle domestic ships garbage and international ships garbage separately.

5. Oily waste Province Sud and Tredecdec should continue to work with SLN to determine future of waste oil use in refinery. Keep SPREP informed of outcome.
6. Consider practical ways of including ships batteries and oily waste into Tredecdec collection system (e.g. collection points on commercial wharves?).
7. In the longer term, consider the feasibility of a direct sewer connection for discharge of sewage from cruise ships.
8. Update IMO GISIS database. Inform IMO that Annex VI reception facilities are not available for the time being. Liaison with IMO may require SPREP and/or French assistance.

The IMO Guidelines allow for participation of non-SIDS provided that they are Regional Ships Waste Reception Centres and it is not intended that non-SIDS meet their reception facilities obligations through regional arrangements. To complement the Pacific RSWRCs, several Pacific Rim country ports in Australia, New Zealand, Singapore and the United States of America have been identified and considered, as part of this Regional Reception Facilities Plan (RRFP). These ports have been identified on the basis of significant shipping traffic to and from Pacific islands, and the presence of adequate reception facilities in those ports.

	Brisbane	Sydney	Auckland
<b>Annex I</b>	✓	✓	✓
<b>Annex II</b>	✓	✓	✓
<b>Annex IV</b>	✓	✓	✓
<b>Annex V</b>	✓	✓	✓
<b>Annex VI</b>	✓	✓	

Detailed reports of all the ports gap analysis conducted are annexed to this report, as follows:

- Samoa Port - Samoa (formally Western Samoa) (Annex 1);
- Port of Suva - Fiji (Annex 2);
- Port Moresby Port - Papua New Guinea (Annex 3);
- Port of Papeete - French Polynesia (Annex 4); and
- Port of Noumea - New Caledonia (Annex 5).

## Foreword

Provision of adequate waste reception facilities in ports and harbours has become a focus of international efforts to reduce ship-sourced marine pollution, since the absence of such facilities makes it harder to enforce measures to combat illegal discharges at sea from shipping. The need to establish suitable facilities in many Pacific ports and harbours is urgent, so as to provide for the responsible management of oily wastes, garbage and other materials by the various trading vessels, ferries, cruise liners, fishing boats and yachts which frequent the region. Provision of suitable reception facilities in ports and harbours is an obligation for contracting parties to the International Convention for the Prevention of Pollution from Ships 1973 (MARPOL), administered by the International Maritime Organization (IMO).

The adequacy of such facilities encompasses aspects such as the:

- sufficient capacity to meet demand (in terms of the amount and types of waste) for ships normally visiting that port, and their associated cargoes;
- ability to accept wastes without imposing other environmental impacts (such as spills or leaks, and the appropriate final disposal or treatment of accepted wastes);
- ease of use of waste reception facilities by vessel operators;
- ability to transfer wastes to shore without causing undue delay to the normal operations of a particular vessel in that port;
- reliability of equipment and procedures; and
- reasonableness of cost.

Most Pacific island countries and territories have few, if any ships' waste reception facilities at their ports. Many of those in place are inadequate to meet the needs of ships using these ports. For many Pacific island countries and territories (particularly those comprising small atolls) the provision of such facilities may, in fact, be inappropriate due to unique circumstances such as a shortage of land for disposal sites and/or infrastructure problems that can hamper effective management of wastes. It is unreasonable to expect a country that is struggling to manage domestically generated wastes to provide facilities for the reception and management of wastes generated by international shipping.

The developing status of most of the Pacific island states often compounds these difficulties in both technical and economic terms, whilst social and cultural perspectives can also influence waste management issues, priorities and practices. The layout of many Pacific island ports compounds waste reception problems, especially those comprising a simple sheltered anchorage in which containers or dry break-bulk cargo are transferred to or from lighters and barges, and/or where tankers deliver petroleum products from an isolated mooring via floating or underwater pipelines. Key regional ports which act as ferry bases and/or are frequented by cruise liners also deserve special attention as these vessels can generate considerable quantities of garbage, particularly packaging waste.

The International Maritime Organization has recognised that port waste management on a regional basis can provide a solution when it is undertaken in such a manner as to ensure that vessels do not have an incentive to discharge wastes into the sea. MARPOL provides a legal basis for such regional arrangements in unique circumstances. This plan addresses the provision of adequate reception facilities on a regional basis by identifying Regional Ships Waste Reception Centres that serve the needs of the ships visiting not only those ports, but also other ports connected by shipping traffic. It has been developed using IMO guidelines for assessing the adequacy of reception facilities and developing a Regional Reception Facilities Plan.



## Acknowledgement

SPREP would like to formally thank and recognise the five participating Pacific island countries and territories (Fiji, French Polynesia, New Caledonia, Papua New Guinea and Samoa) along with their maritime agencies/organisations, port authorities, oil and shipping industry representatives, government agencies and other stakeholders that assisted both with the feedback and their valuable time into the analyses process.

SPREP would also like to thank the Australian Maritime Safety Authority (AMSA), for their ongoing support and especially like to thank Ms. Lisa Crowle, Ms. Annalisse Sly and Ms. Alice Fenwick, whose valuable guidance and knowledge was instrumental in a successful outcome of the audits and ultimately this Regional Reception Facilities Plan (RRFP).

## Review

SPREP recommends that this RRFP be reviewed every two years by SPREP, and all stakeholders. Reviews along with all alterations to the current RRFP, will be tabled at the meeting of the contracting parties to the Convention for the protection of the natural resources and environment of the South Pacific Region and related protocols (Noumea Convention) for endorsement and if appropriate, forwarded to MEPC for comment.

## Central Points of Contact

The central point of contact for this RRFP will be:

### **Pollution Adviser**

Secretariat of the Pacific Regional Environment Programme

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Apia, Samoa

[wastemanagement&pollutioncontrol@sprep.org](mailto:wastemanagement&pollutioncontrol@sprep.org)

SPREP's responsibilities to the Pacific region under this RRFP, include:

- maintaining a current version of the RRFP;
- receiving and, where appropriate responding to or redirecting, inquiries about this RRFP;
- facilitating discussions between government, shipping and waste industry stakeholders regarding this RRFP;
- providing consistent information to government, shipping and waste industry stakeholders regarding this RRFP; and
- instigating periodic reviews of this RRFP.

## Acronyms & Glossary

**AMSA**- Australian Maritime Safety Authority

**BAF** - Bio-security Authority of Fiji

**COP** - Conference of the Parties

**DoE** - Department of Environment

**EEZ** - Exclusive Economic Zone

**FPCL** - Fiji Port Corporation Limited

**FSM**- Federated States of Micronesia

**IMO** - International Maritime Organisation

**MNRE** - Ministry of Natural Resources and Environment

**MEPC** - Marine Environment Protection Committee

**MARPOL** - International Convention for the Prevention of Pollution from Ships

**MSAF** - Maritime Safety Authority Fiji

**MWTI** - Ministry of Works, Transport and Infrastructure

**NMSA** - National Maritime Safety Authority

**Noumea Convention** - Convention on the Protection of The Natural Resources and Environment of The South Pacific Region and Related Protocols 1986

**NZ** - New Zealand

**PACPLAN** - Pacific Islands Regional Marine Spill Contingency Plan

**PICTs** - Pacific Island Countries and Territories

**PLF** - Ports with Limited Facilities

**PNG** - Papua New Guinea

**PNGPCL** - Papua New Guinea Port Corporation Limited

**POPs** - Persistent Organic Pollutants

**PoM** - Port of Moresby

**RCWRC**- Regional Ships Waste Reception Centre

**RMI** - Marshall Islands

**RRF** - Regional Reception Facilities

**RRFP**- Regional Reception Facilities Plan

**SIDS** - Small Island Developing States

**SPC** - Secretariat of the Pacific Community

**SPREP**- Secretariat of the Pacific Regional Environment Programme

**U.S.A.** - United States of America

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### Background

In 1986, the Convention for the Protection of the Natural Resources and Environment of the South Pacific Region and Related Protocols (Noumea Convention) was negotiated and adopted under the framework of UNEP's Regional Seas Programme. The Convention and its two related Protocols (Protocol for the Prevention of Pollution of the South Pacific Region by Dumping; Protocol concerning Co-operation in Combating Pollution Emergencies in the South Pacific Region) entered into force on 22 August 1990. The 12 Parties to the Noumea Convention are Australia, Cook Islands, Federated States of Micronesia (FSM), Fiji, France, Republic of the Marshall Islands (RMI), Nauru, New Zealand, Papua New Guinea (PNG), Samoa, Solomon Islands and the United States of America (U.S.A.).

IMO has recognised the unique challenges that Small Island Developing States (SIDS) experience in providing adequate reception facilities for ships waste. This was first recognised in 2000 in IMO Resolution MEPC.83(44) *Guidelines for Ensuring the Adequacy of Port Waste Reception Facilities*, then given a firm legal basis through MARPOL amendments in 2011. SIDS may satisfy waste reception facilities regulations through regional arrangements when, because of those States' unique circumstances, such arrangements are the only practical means to satisfy these requirements. Parties participating in a regional arrangement shall develop a Regional Reception Facilities Plan, taking into account the guidelines developed by the Organization. The Guidelines are set out in IMO Resolution MEPC.221(63) *2012 Guidelines for the Development of a Regional Reception Facilities Plan*.

Contracting Parties to the Noumea Convention met for their 11th Ordinary Meeting on 30 August, 2012 in Noumea, New Caledonia. At this meeting, the Secretariat of the Pacific Regional Environment Programme (SPREP) provided an overview of efforts to develop a Regional Port Waste Facilities Plan. At this meeting SPREP recalled that the International Maritime Organisation (IMO), Marine Environment Protection Committee 49th session (MEPC 49) agreed, on the basis of a paper submitted by SPREP outlining regional arrangements in the Pacific, that regional arrangements are an acceptable way to satisfy MARPOL obligations relating to adequate waste reception facilities for ships. SPREP also informed the meeting that this approach could have the potential to resolve obstacles for many countries to become party to MARPOL. Given that the MARPOL amendments had now created a firm legal basis and provided guidance on preparing a regional reception facilities plan, it was considered timely to review reception facilities in the Pacific and make a formal submission to MEPC.

NZ, Australia, USA and Fiji indicated their support for the development of the regional reception facilities plan, noting that this would address the challenges that small islands face in providing such facilities.

It was agreed to conduct a series of gap analysis audits based on the assessment template in MEPC.83(44) for ports that could be expected to function as Regional Ships Waste Reception Centres (RSWRC) i.e. Apia, Papeete, Port Moresby, Noumea and Suva,.

## Gap analysis audit team members

AMSA was engaged by SPREP to assist in leading the gap analysis audit teams. Table 8, indicates the make up of the gap analysis audit teams.

Name	Organization	Fiji	Noumea	PNG	Samoa	Papeete
Lisa Crowle	AMSA	✓	✓		✓	
Annalisse Sly	AMSA			✓		✓
Alice Fenwick	AMSA			✓		
Anthony Talouli	SPREP	✓		✓	✓	
Scott Willson	SPREP	✓	✓		✓	✓

Table 8: AMSA and SPREP audit teams

Additionally to the above teams, Table 9, identifies the additional stakeholders that provided their valuable assistance to the audit team.

Fiji		
Stakeholder	Agency	Responsibilities
John Tunidau	Maritime Safety Authority Fiji	Manager Standards and Compliance
Phil Hill	Maritime Safety Authority Fiji	Manager Port Regulatory & Emergency Response
Hakaumotu Fakapelea	Secretariat of the Pacific Community	Port Advisor (Audit Observer)
Samoa		
Stakeholder	Agency	Responsibilities
Tapaga Collins	Ministry of Works, Transport and Infrastructure	Port State Control Officer
PNG		
Stakeholder	Agency	Responsibilities
Pawa Limu	National Maritime Safety Authority	Marine Environment Manager
Robert Hondi	PNG Ports Corporation Limited	Manager of Compliance
Noumea		
Stakeholder	Agency	Responsibilities
Jean Le Den	Port of New Caledonia	Commandant De Port
Anne-Claire Goarant	Government of New Caledonia	Project Manager for Multilateral Cooperation
Papeete		
Stakeholder	Agency	Responsibilities
Maurice Lau Poui Cheung	Presidency of French Polynesia	Delegation to International Affairs

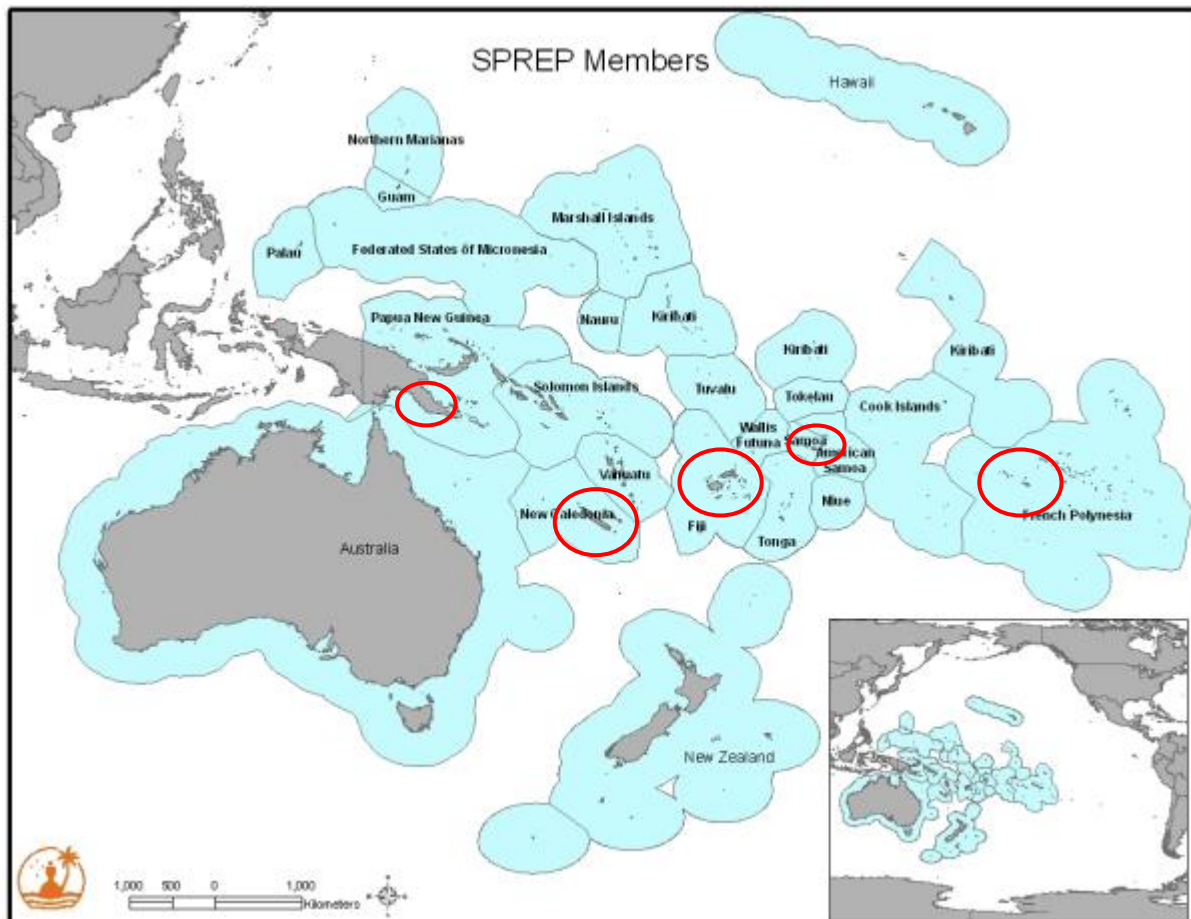
Table 9: Additional stakeholders



## SPREP Region

The Secretariat of the Pacific Regional Environment Programme (SPREP) has been charged by the governments and administrations of the Pacific region with the protection and sustainable development of the region's environment. SPREP's members are American Samoa, Australia, Commonwealth of the Northern Mariana Islands, Cook Islands, Federated States of Micronesia, Fiji, France, French Polynesia, Guam, Kiribati, Marshall Islands, Nauru, New Caledonia, New Zealand, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, United Kingdom, United States of America, Vanuatu and Wallis and Futuna.

The geographical scope of this RREP is the SPREP region as defined by the coastlines and all marine waters within the Exclusive Economic Zone (EEZs) of the 21 PICTS which are members of SPREP, as depicted in Figure 1, below.



**Figure 1 - EEZs of the 21 PICTS**

For ease of international port identification, the SPREP region has been divided and illustrated into Polynesia, Melanesia and Micronesia.

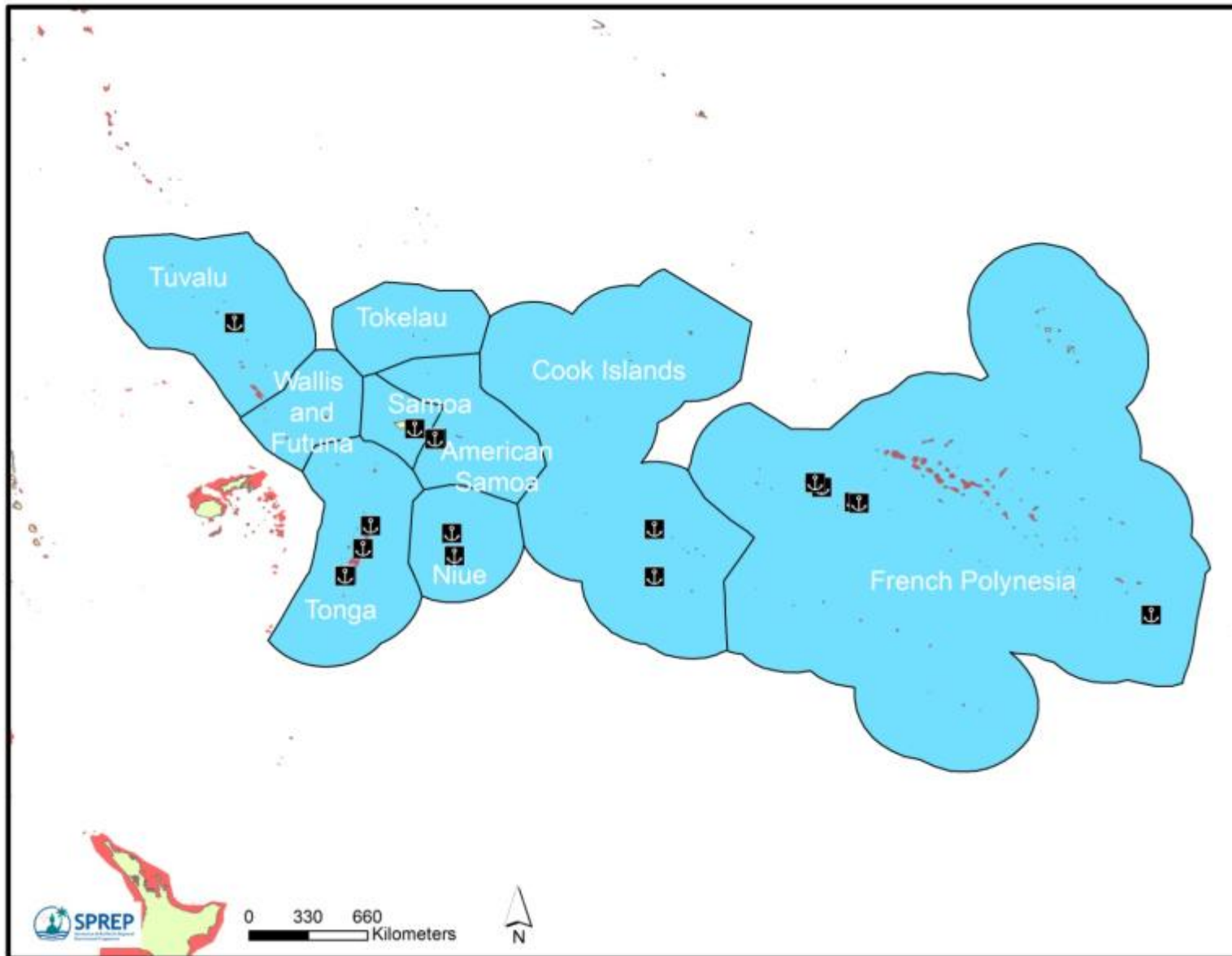


Figure 2 - Polynesia international ports

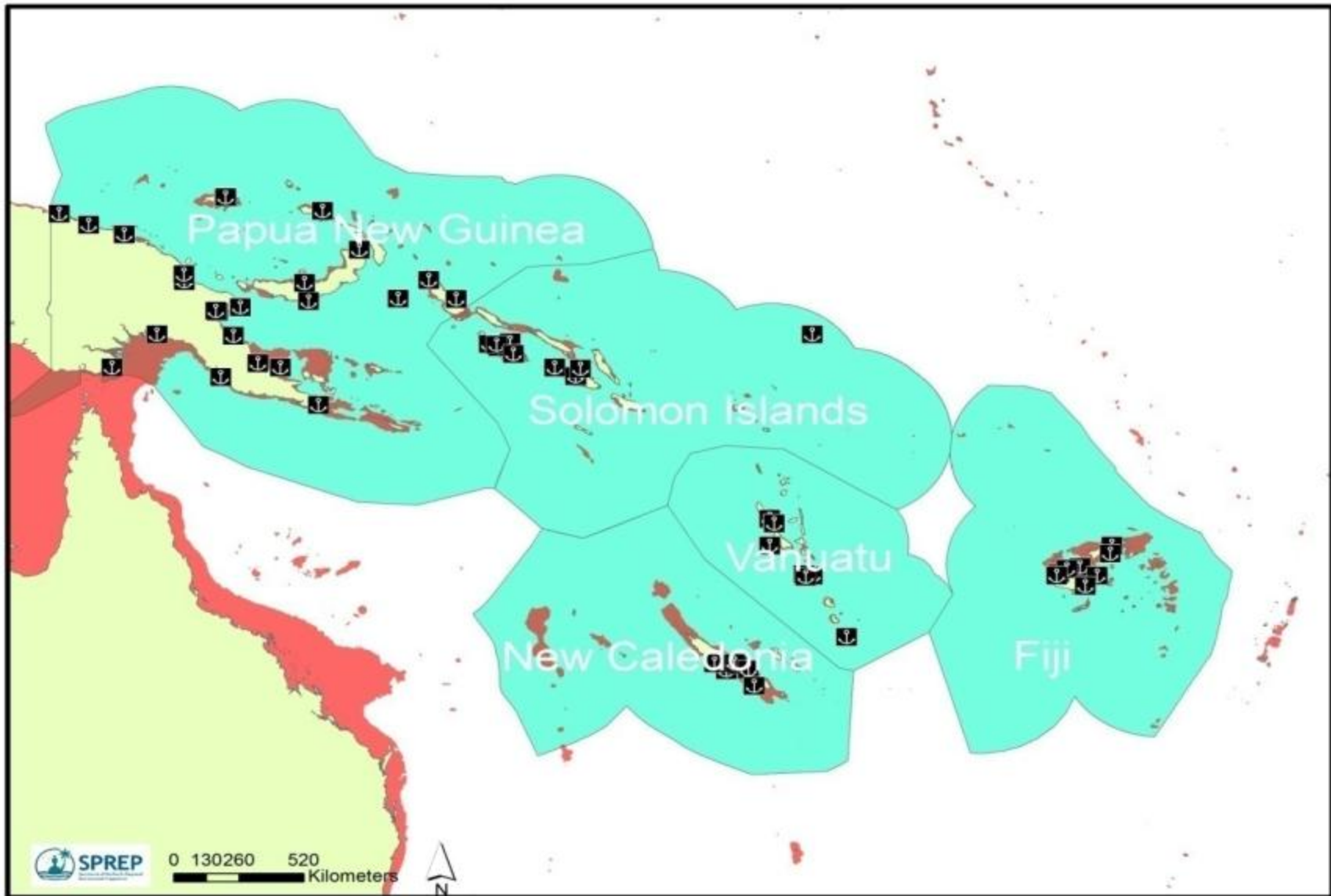


Figure 3 - Melanesia international ports

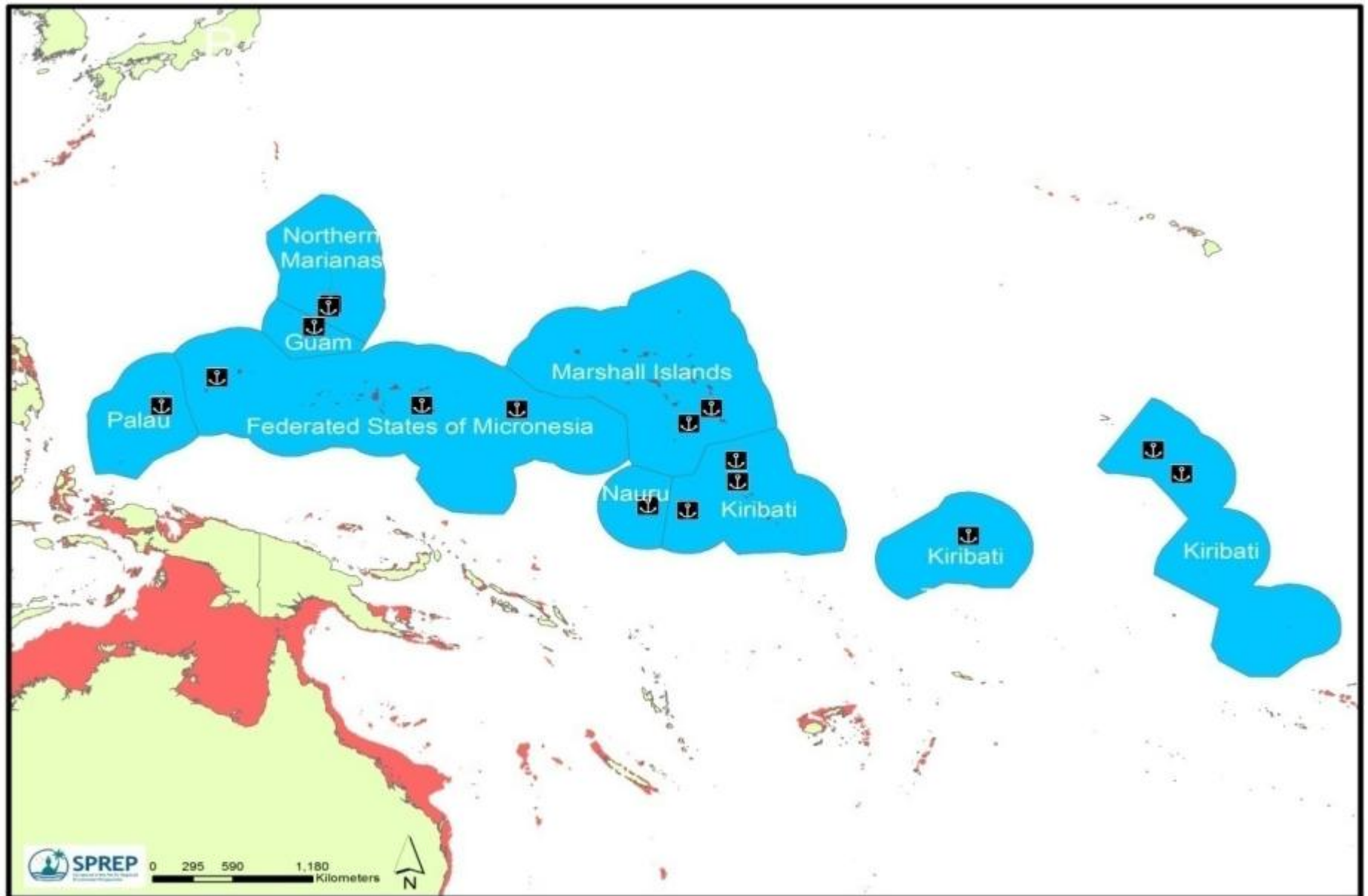


Figure 4 - Micronesia international ports

SPREP conducted gap analysis audits at five ports (highlighted in Figure 1, above) as they have been identified via the Pacific Islands Regional Marine Spill Contingency Plan (PACPLAN) as shipping hubs. Subsequently the identified ports were audited against MEPC 88 (44), to assess to what level ports can accommodate ships waste. The five ports audited are as follows:

- Samoa Port - Samoa (formally Western Samoa) (Annex 1);
- Port of Suva - Fiji (Annex 2);
- Port Moresby Port - Papua New Guinea (Annex 3);
- Port of Papeete - French Polynesia (Annex 4); and
- Port of Noumea - New Caledonia (Annex 5).

In addition to the identified ports above, Pacific Rim country ports such as Australia and New Zealand have been considered as RRF within this plan.

### Unique Circumstances

The SPREP region has a number of unique circumstances that have led to a logical approach to design regional reception facilities (RRF) arrangements that most efficiently address PICT's circumstances. It has been observed throughout the Pacific that a lack of proper waste management practices has a negative impact and serious consequences for health care, environmental quality, water resources, fisheries, agriculture, tourism, trade, food security, and sustainable development in general. Some of the unique circumstances that PICTs are currently dealing with are:

- solid waste financing and management has not kept pace with growth in waste quantities;
- increases in waste generation caused by economic and population growth;
- small and sometimes sparse populations which limit potential economies of scale;
- PICTs having difficulty in dealing with current domestic waste streams and additional ships waste would be a burden;
- limited institutional, and human resources capacity;
- limited availability of suitable land on small islands and atolls for landfills;
- geographical size; and
- remoteness of many islands resulting in high costs for imported and export of supplies and waste.

The inability to recover the costs of providing reception facilities at a reasonable rate from reception facility users, may discourage the provision of facilities at ports. Distances between ports and suitable waste processing facilities also result in prohibitive costs for transport which may increase the risk of inappropriate treatment.



SPREP currently has five major projects that are dealing with waste issues throughout the region. These projects listed below, identify the current difficulties that PICTs face when dealing with their own land based waste streams.

- Pacific Hazardous waste Management Project (PacWaste):
  - PacWaste (Pacific Hazardous Waste) is a four year project funded by the European Union to improve regional hazardous waste management across the Pacific in the priority areas of healthcare waste, E-waste, asbestos, and integrated atoll solid waste management; and
  - A series of baseline surveys will collect and collate information about the current status of hazardous waste and its management in the region whilst identify best practice options for interventions that are cost effective, sustainable and appropriate for Pacific island communities. The Majuro Atoll (Republic of Marshall Islands) has been selected to demonstrate best practice integrated solid waste management. Over the next four years, PacWaste will contribute to building a healthy, economically and environmentally sustainable Pacific for future generations.
  
- Japanese Technical Cooperation Project for the Promotion of Regional initiative in Solid Waste Management in Pacific Island Countries (J-PRISM):
  - Improving human capacity in Pacific island countries to better manage waste through implementation of 3Rs (reduce, reuse, recycle), improvements to waste collection systems and dumpsites and capacity building. Therefore, any input provided by J-PRISM must contribute to increasing their capacity and sustainable management of solid waste in the Pacific Region is enhanced; and
  - Such unique constraints as geographical isolation, limited resources, economic scale, dependence on foreign aid and imported goods have made management of solid waste more difficult for Pacific island countries (PICs). Improper waste management has potential to pose a significant negative impact on public health, water and food supply, ecosystems, tourism and trade, resources, and even climate change, which threaten the sustainable development in this region.
  
- Persistent Organic Pollutants (POPs) Release Reduction Through Improved Management of Solid and Hazardous Wastes (GEF-uPOPs):
  - This project will focus on technical assistance and capacity building for implementation of Stockholm Convention National Implementation Plans (NIP) and technologies for Persistent Organic Pollutants (POPs) reduction. The project also aims to improve the use of chemicals in an environmentally sound manner, to reduce releases of POPs and other persistent toxic substances to the environment. This will enable better management of previously contaminated sites, through an introduction of integrated whole-system approaches to the environmentally sound management of solid and hazardous wastes.



- Regional Solid Waste Management Initiative (AFD):
  - The overall goal of this project is to improve solid waste management in the Pacific islands primarily through a structured programme of technical capacity building of Pacific islanders, and through the development of a used oil management programme across Pacific island countries and territories. The project will develop a train-the-trainer programme in waste management, facilitate small grant facility for trained trainers and conduct used oil management pilot projects in Fiji, Samoa and Vanuatu.
  
- International Maritime Organisation (IMO):
  - Marine Pollution activities under PACPOL is mostly funded by the International Maritime Organisation. The SPREP/IMO relationship is detailed in a memorandum of understanding with the activities outlined in an Integrated Technical Cooperation Programme (ITCP) biannual. The current ITCP focuses on capacity building related activities to be implemented in the 14 PICs covering oil spill management, ballast water management and compensation and liability training.

The audits teams have ascertained that there are several ports throughout the SPREP region that collect waste and export it off Island as there is no environmentally sustainable means or the environmentally risks is seen to be too high to dispose of these wastes in country. However; for the majority of countries exporting of waste off of their Island is seen to be too expensive. Countries have indicated that they have researched exporting waste to Australia, New Zealand, India and South East Asia and they have found that the cost of transport is prohibitive; hence they wish not to accept additional waste from the international shipping sector. For wastes that can not be disposed of by PICTs, Pacific Rim countries Australia and New Zealand have been considered and incorporated into this RRF to assist the international shipping community and PICTs, in identifying alternative ports for disposal of waste.

## **Waste Management and Implementation of MARPOL**

The regional arrangements described in this RRF, including the Regional Ships Waste Reception Centres that have been identified and audited, are considered to provide an acceptable way for PICTs to satisfy MARPOL obligations relating to adequate waste reception facilities throughout the SPREP region. Table 10 below, indicates the current ratification of MARPOL and its annexes, for the PICTs in the SPREP region.

PICTS	MARPOL Annex I/II	MARPOL Annex III	MARPOL Annex IV	MARPOL Annex V	MARPOL Protocol 97 Annex VI
Cook Islands	✓				✓
Fiji <sup>2</sup>					
Kiribati	✓	✓	✓	✓	✓
Marshall Islands	✓	✓	✓	✓	✓
Micronesia (Fed. States of)					
Nauru					
Niue	✓	✓	✓	✓	✓
Palau	✓	✓	✓	✓	✓
Papua New Guinea	✓	✓	✓	✓	
Samoa	✓	✓	✓	✓	✓
Solomon Islands	✓	✓	✓	✓	
Tonga	✓	✓	✓	✓	
Tuvalu	✓	✓	✓	✓	✓
Vanuatu	✓	✓	✓	✓	✓

**Table 10:** Current MARPOL ratification<sup>3</sup>

These regional arrangements will contribute to the current efforts to improve the ratification of MARPOL and are seen as a way forward to assist PICTs to fulfill their waste reception obligations under MARPOL. By overcoming obstacles to the provision of adequate reception facilities in certain ports, this RRF will also assist countries who are not currently parties to MARPOL to accede to the convention.

## International and domestic shipping Patterns

Understanding shipping patterns is important in assessing the demand for waste reception in a region and in individual ports. For a successful regional approach, it is also important to understand the overall voyage pattern of ships calling at ports in the region. Below is a visual representation of the international shipping for the SPREP Region in the 2013 year. For the 2013 year, there were 92,963 tracks recorded within the SPREP region. The data has been further broken down to show the following types of shipping:

Number of tracks	Type of vessel
92,963	Total shipping
49,656	Fishing vessels
19,045	Cargo vessels, all types
8,924	Vessels carrying passengers
6,789	'not available' and is the default setting on an AIS transponder
4,069	Tankers

<sup>2</sup> Fiji has draft legislation in place for MARPOL Annexes 1,2,4 and 5

<sup>3</sup> Courtesy of - [www.imo.org](http://www.imo.org)

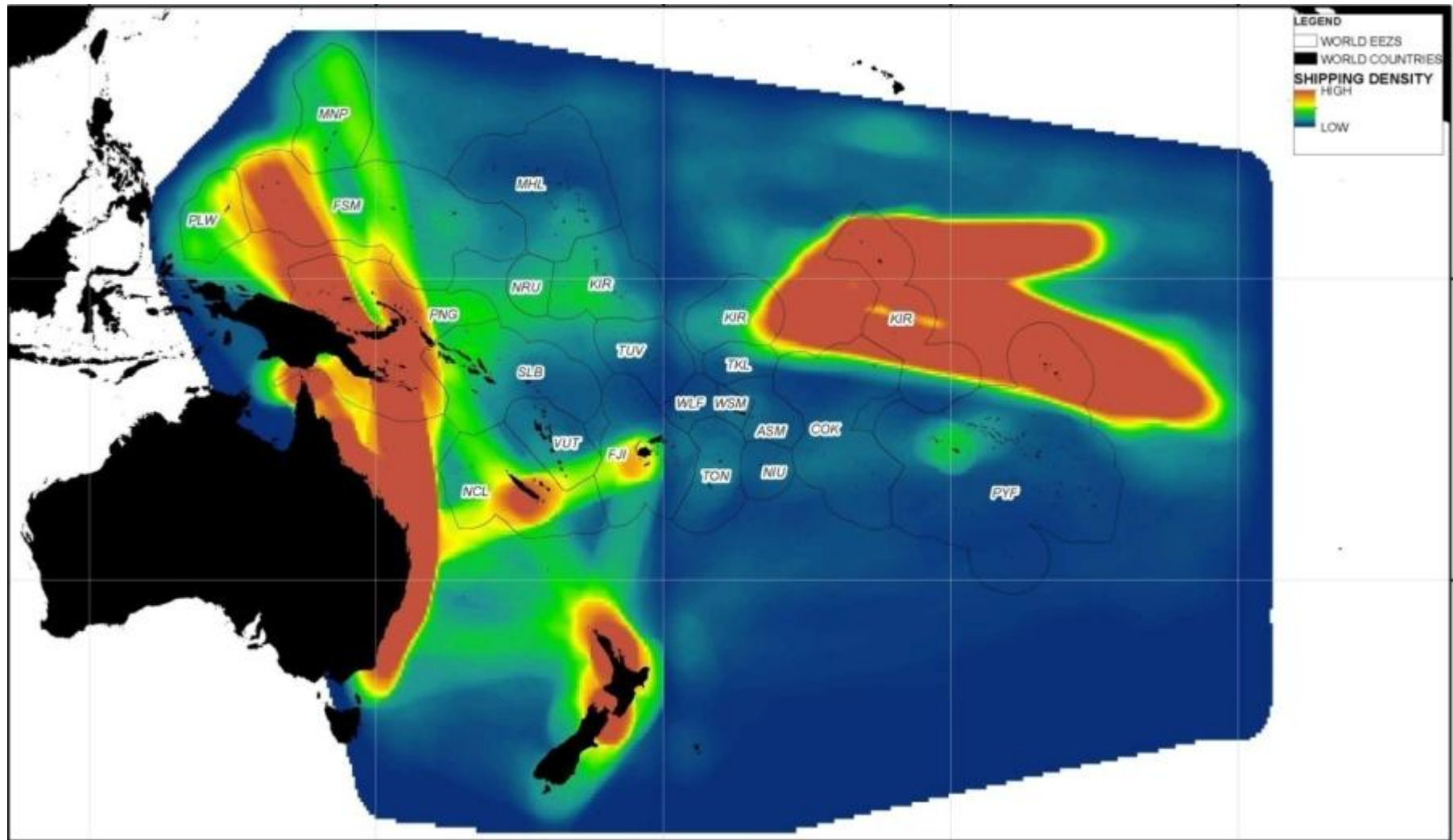


Figure 5 - Total shipping in the SPREP region

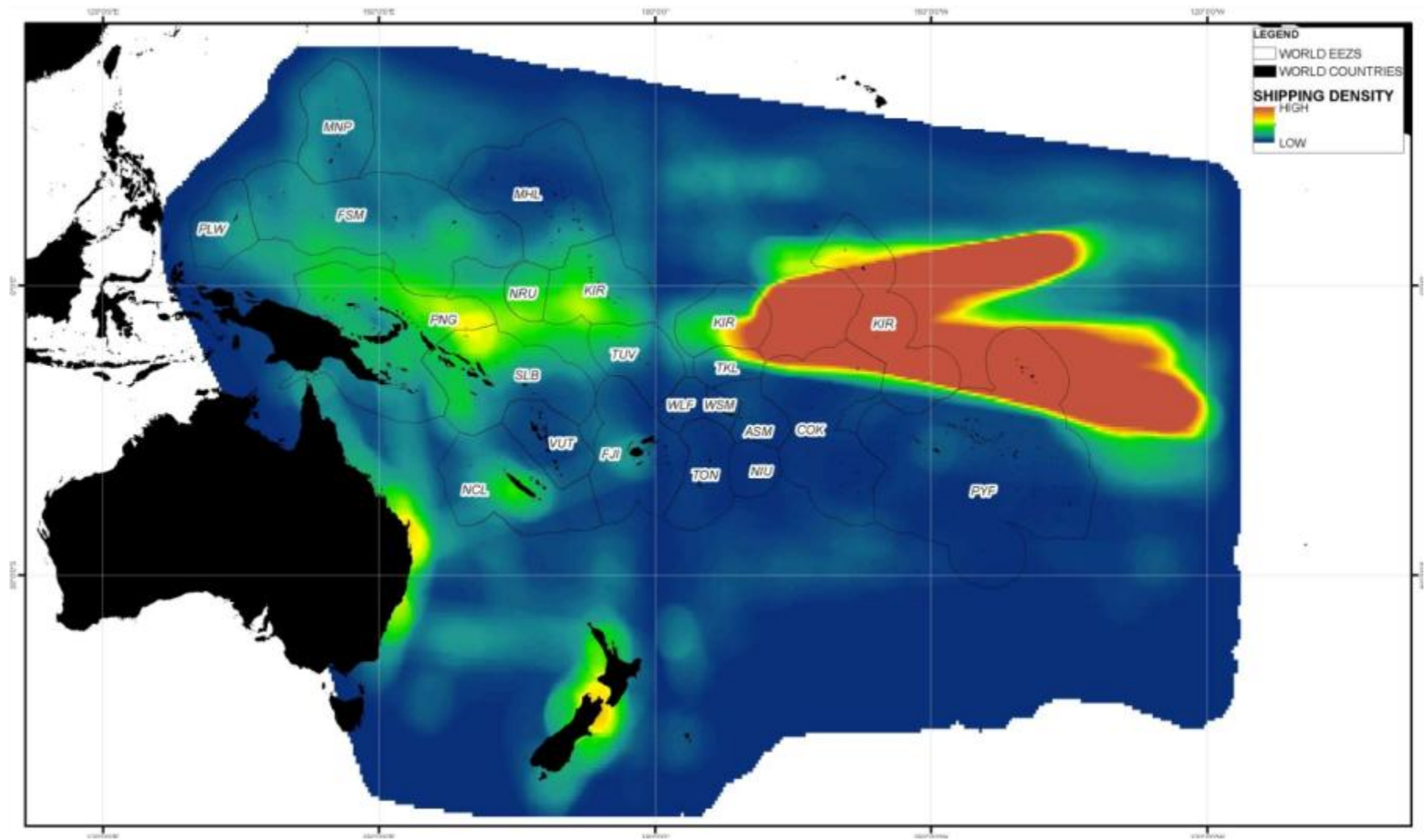


Figure 6 - Fishing vessels

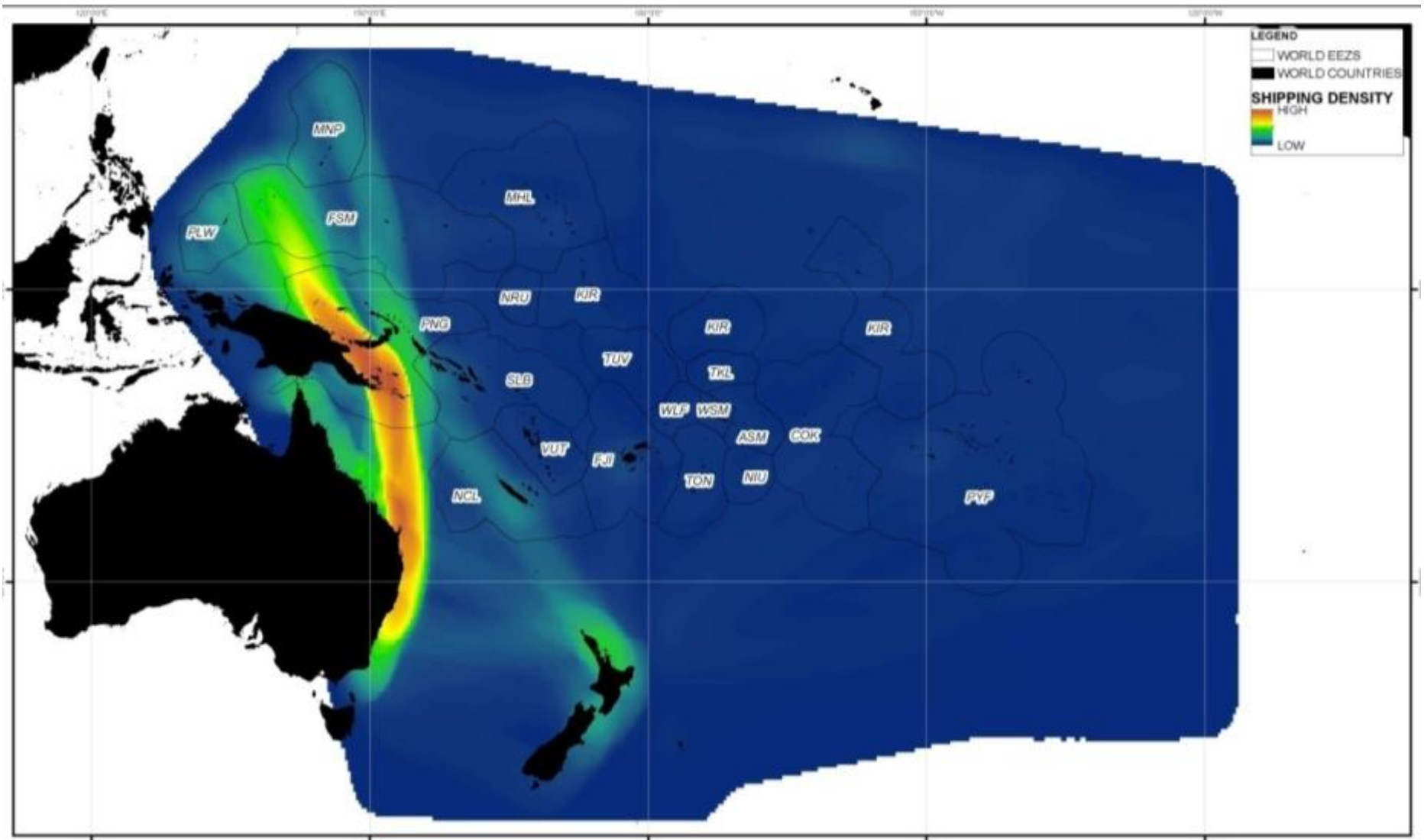


Figure 7 - Cargo vessels



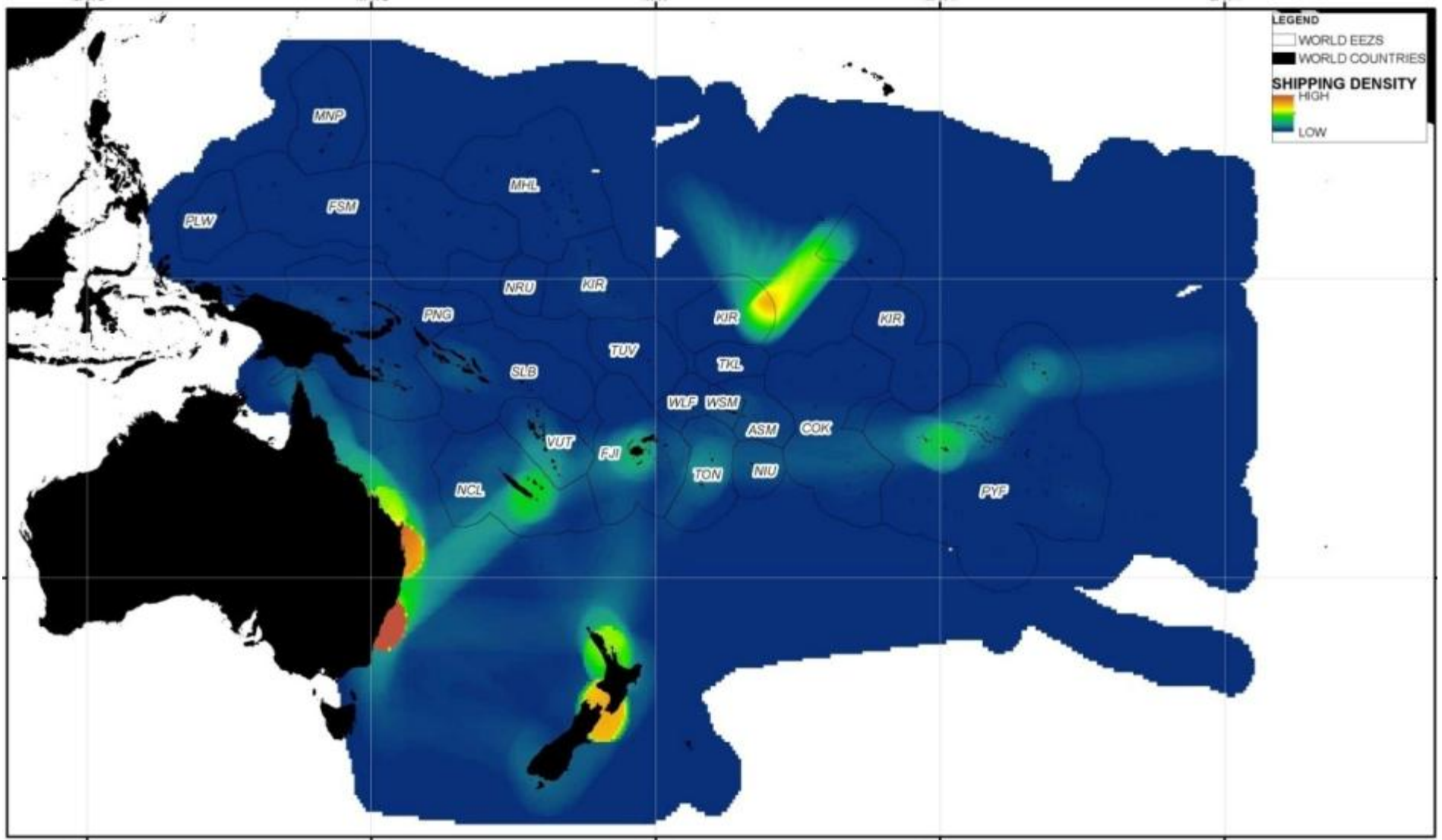


Figure 8 - Vessels carrying passengers

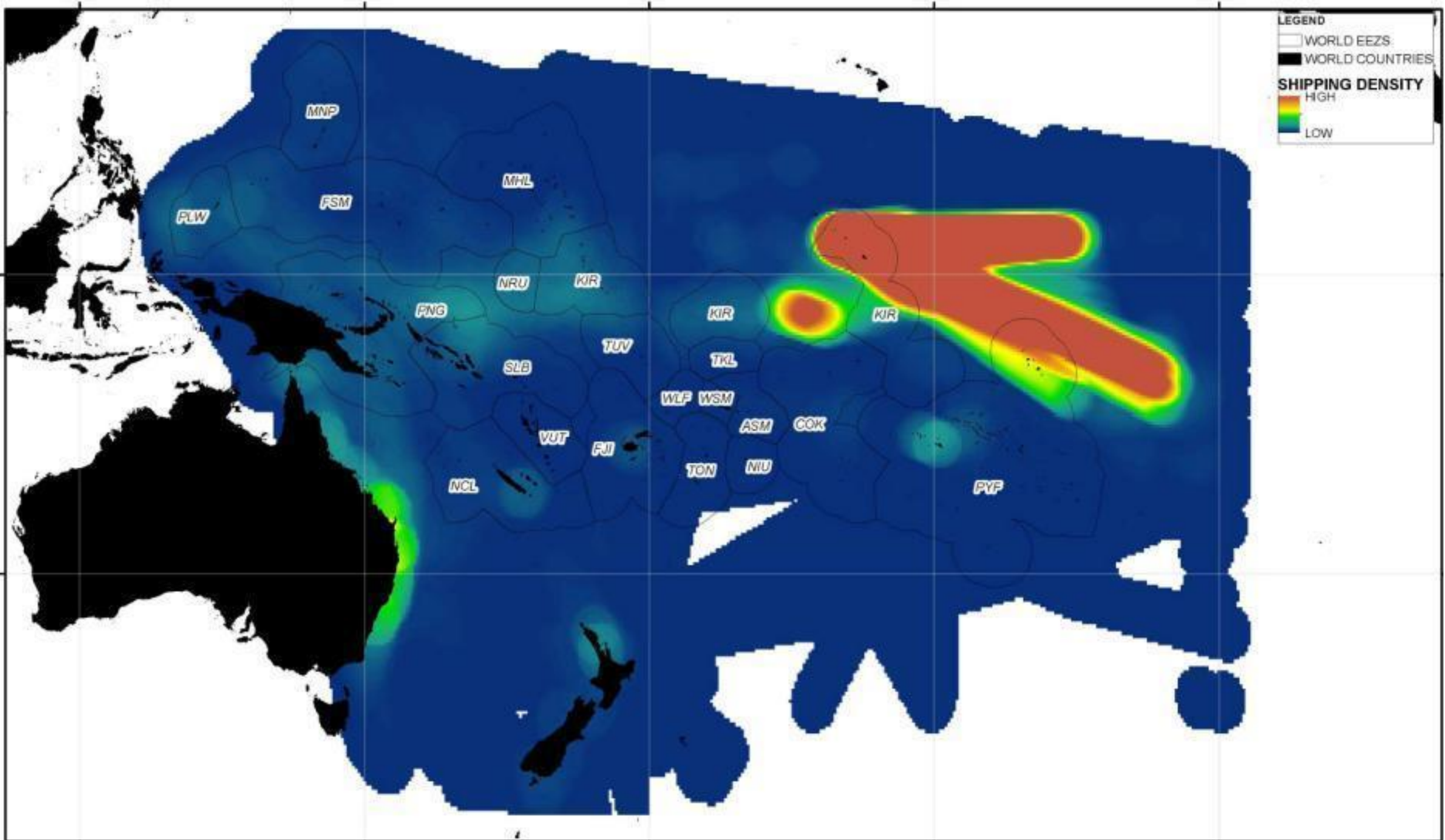


Figure 9- Not available vessels



# Regional Reception Facilities Plan

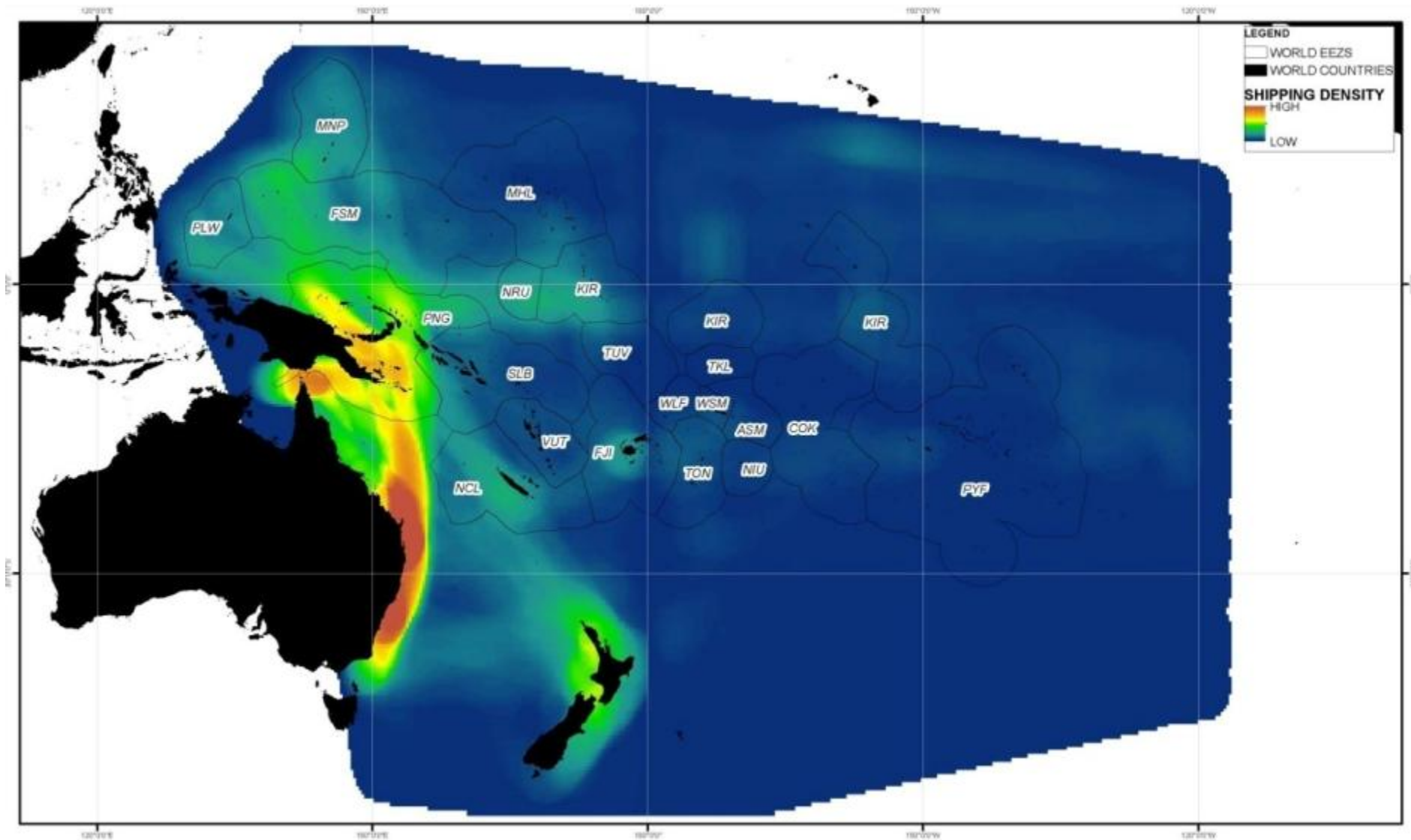


Figure 10 - Tankers

Detailed shipping data for each port that was audited is captured in the relevant annexes. A summary of the quantity of vessels to visit each port is detailed below.

Port	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Suva, Fiji	76	65	63	80	61	77	73	73	72	73	69	66	848
Noumea, New Caledonia	50	47	44	37	42	45	39	43	42	49	44	51	533
Port Moresby, PNG	145	145	145	145	145	145	145	145	145	145	150	150	1750
Apia, Samoa	18	21	15	23	16	19	16	17	17	22	20	N/A	204
Papeete, Tahiti	46	42	50	48	43	46	38	45	58	45	37	36	534
												Total	3869

**Table 11:** Summary of vessel visits

The RRFP allows for ships waste reception to be focussed in the ports that are best-equipped to handle such waste appropriately. PICTS have stringent quarantine legislation because of their isolation and relatively pristine and sensitive environment. This means that generally the discharge of international ships waste to shore reception facilities is prohibited unless it is handled appropriately and by an authorised person(s). As part of the gap analysis, the audit teams interviewed quarantine officers to gain an understanding of any additional considerations that may apply to waste streams landed. It is noted that all countries require clearance of waste for quarantine, with the cleared waste in some countries ultimately going to land fill. In some ports, there were options available for recycling and incineration, as detailed in each individual analysis report. All of the ports analysed have specific quarantine requirements for the landing of certain types of wastes with in the port.

## Regional Ships Waste Reception Centre's

In general, these should be the ports where facilities are adequate to receive all types of waste, including any wastes remaining on board a ship that has visited a port within the region where waste cannot be delivered. As has been identified in this RRFP there is no such facility within the SPREP region that can be technically classed as a Regional Ships Waste Reception Centre. The five ports that were audited are considered by the gap analysis team to be Pacific RSWRC, due to these ports being the main shipping hubs. The gap analysis team have found several short falls in these RSWRS. All of these short falls have been identified along with recommendations, in the individual port gap analysis reports. It is seen by the team that these recommendation are required to be either accepted or not-accepted, by the individual governments and a schedule for implementation be put in place.

In some regions, the cost of transport is prohibitive and the environmental risk associated with the transport of the waste is seen to be unacceptable. To enhance this RRFP, Pacific Rim country ports in Australia and New Zealand have been considered. The IMO Guidelines allow for participation of non-SIDS provided that they are Regional Ships Waste Reception Centres and it is not intended that non-SIDS meet their reception facilities obligations through regional arrangements.

	Brisbane	Sydney	Auckland
Annex I	✓	✓	✓
Annex II	✓	✓	✓
Annex IV	✓	✓	✓
Annex V	✓	✓	✓
Annex VI	✓	✓	

**Table 12:** Pacific Rim Countries waste reception facility capabilities

## Waste overview

Table 13, documents an overview of the waste streams that can be landed at each port that the gap analysis audit teams visited.

Type of Waste	Samoa	Fiji (Suva)	Port Moresby	Noumea	Papeete
Oil Tankers: Oily tank washings or oily ballast water	No	Limited	Yes	Limited	No
All ships: oily bilge water, sludge's, used lube oils	No	Yes	Yes	Yes	Yes
Chemical tankers: NLS <sup>†</sup>	No	No	No	No	No
Sewage	Domestic ships only	Yes	Yes	Yes	Yes**
Garbage - Domestic vessels	Yes	Yes	Yes	Yes	Yes
Garbage -recyclables	Yes*	Limited types <sup>**</sup>	No	Limited types <sup>**</sup>	Yes
Garbage -Fishing gear	Yes*	Yes	Yes	Yes	Yes
Quarantine Waste – all garbage from international vessels	Yes	Yes	Yes	Yes	Yes
Ozone Depleting Substances	No	No	No	Yes	No
Exhaust gas cleaning system residues	No	No	No	No	No

\* subject to quarantine

\*\*Sewage from international waste is currently prohibited by the Food Quality and Veterinary Action Department

+ Note there is currently no chemical tanker traffic into these ports, so there is no need for reception facilities.

\*\*Generally no direct collection from ships, but arrangements may be made to deposit recyclables at depot or collection point.

**Table 13:** Country capability overview

## RSWRCs and Ports with limited facilities (PLFs)

### RSWRCs

As agreed in the 11th Ordinary Meeting of the Noumea Convention, on 30 August, 2012 in Noumea, New Caledonia, details of all the ports audited are annexed to this report as follows:

- Port of Suva - Fiji (Annex 1);
- Port of Noumea - New Caledonia (Annex 2);
- Port Moresby Port - Papua New Guinea (Annex 3);
- Samoa Port - Samoa (formally Western Samoa) (Annex 4); and
- Port of Papeete - French Polynesia (Annex 5).

## PLFs

The current guideline's requires an assessment of 'all ports in the region, including type and available facilities'. As a number of the countries in the region cannot currently deal with their own generated land based waste, all ports other than the port analysed are assumed, at this stage to be recognised as Ports with Limited Facilities.

SPREP with direction from the Noumea COP, has identified the main shipping hubs in the region for analysis. However; the vessel density data in this RRF indicates that American Samoa, Guam and Tonga have a significant amount of international shipping visiting their respective ports. As discussed earlier in this RRF these countries were not considered by the Noumea COP and as such have been omitted from this plan and hence have been considered as PLF until a full gap analysis is conducted.

In 2002, a thorough assessment of waste reception facilities in the Pacific was conducted by SPREP. At this point in time it is not realistic to reassess every PICT port. Furthermore, in view of the previous work it is not considered necessary, since it is not expected that there have been significant improvements in many, if any ports.

There are 57 international ports in the SPREP region and SPREP, in the future will conduct gap analysis audits when funding is available. Only key international ports will be considered and these ports will be audited under the direction of the Noumea COP.