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Supporting Safe, Efficient and Sustainable Maritime Transport Systems

Improving Ports and Maritime Shipping

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GTIDR

EAST ASIA AND PACIFIC

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ABBREVIATIONS

ACP	Africa Caribbean and Pacific Region
ADB	Asian Development Bank
AGTD	Applied Geosciences and Technology Division
CPPL	Central Pacific Producers Ltd
CPSC	Central Pacific Shipping Commission
CSO	Central Statistics Office, Samoa
DFAT	Department of Foreign Affairs and Trade, Australian Government
DMPS	Department of Marine and Ports Services Tuvalu
DPM	Department of Ports and Marine Vanuatu
ECDIS	Electronic Chart Display and Information Systems
EEZ	Exclusive Economic Zones
FTC	Fisheries Training Centre Kiribati
FATS	Framework for Action on Transport Services
IMO	International Maritime Organisation
ISPS	International Ship and Port Facility Security
IWS	Ifira Wharf & Stevedoring
KDP	Kiribati Development Plan
KPA	Kiribati Port Authority
KSSL	Kiribati Shipping Services Limited
LRD	Secretariat of the Pacific Community's Land Resources Division
MCTTD	Ministry of Communications and Transport Sector Development, Kiribati
MFEM	Ministry of Finance and Economic Management, Vanuatu
MIPU	Ministry of Infrastructure and Public Utilities, Vanuatu
MLHRD	Ministry of Labour and Human Resources Development, Kiribati
MPD	Marine and Ports Division, Tonga
MTC	Marine Training Centre, Kiribati
MTI	Maritime Training Institutions
MWTI	Ministry of Works, Transport and Infrastructure, Samoa
NISCOL	Northern Island Stevedore Company Limited, Vanuatu
NZAid	New Zealand Aid Programme
OCO	Oceania Customs Organisation
PAT	Port Authority of Tonga
PDL	Pacific Direct Line
PICPA	Pacific Island Centre for Public Administration
PICTs	Pacific Island Countries and Territories
PIDSS	Pacific Islands Domestic Ship Safety Programme
PIFS	Pacific Islands Forum Secretariat
PIM	Pacific Islands Maritime Laws
PIPIs	Pacific Infrastructure Performance Indicators
PIPSO	Pacific Islands Private Sector Organisation
PMTA	Pacific Maritime Transport Alliance
PRIF	Pacific Regional Infrastructure Facility
RCC	Rescue Coordination Centres
SAR	Search and Rescue
SDS	Strategy for the Development of Samoa
SIS	Small Island States
SMT	School of Maritime Training, Samoa
SOLAS	International Convention for the Safety of Life at Sea
SPREP	Secretariat of the Pacific Regional Environment Programme
SPA	Samoa Port Authority
SSC	Samoa Shipping Corporation
SSS	Shipping Support Scheme
SSS	Samoa Shipping Services
STCW	Standards of Training, Certification and Watchkeeping for Seafarers
TMTI	Tuvalu Maritime Training Institute
TMPI	Tonga Maritime Polytechnic Institute
TSP	Transport Sector Plan, Samoa
TSCP	Transport Sector Consolidation Project, Tonga
UNCLOS	United Nations Convention on the Law of the Sea
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
VMC	Vanuatu Maritime College
VMSA	Vanuatu Maritime Safety Administration
VPMU	Vanuatu Project Management Unit

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It is hoped that this report and its recommendations will contribute to the sustainable development of Pacific Island countries and territories.

EXECUTIVE SUMMARY

Pacific Island Countries and Territories (PICTs) are geographically remote and fragmented; they face a major development challenge in achieving safe, reliable, and efficient connectivity within the region and with the rest of the world. The maritime sector plays a key role in supporting economic growth and development in PICTs by facilitating trade and commerce and by improving people's ability to travel for health, education, employment, and to interact with other communities. While the sector has made progress in the last few years, there are still many challenges. Solving these challenges will present new opportunities, especially for more private sector involvement. As the region grapples with the challenge of promoting inclusive growth in a very competitive but uncertain global environment, it will increasingly need to rely on a responsive and efficient maritime sector to support and sustain economic growth.

The purpose of this report is to identify and examine key maritime challenges that are common across the Pacific Region and specific to Kiribati, Samoa, Tonga, Tuvalu, and Vanuatu (henceforth, the "study countries"), identify gaps constraining the contribution of the maritime transport sector to development outcomes, and propose specific sustainable measures and action plans to strengthen port and maritime operations. It is envisaged that this report will be the basis for coordinated actions to identify funding needs in the sector and will inform current and future development efforts to effectively address issues impeding safe, efficient, competitive, and sustainable regional maritime transport systems and operations. The five countries selected serve as a pilot for mainstreaming coordinated efforts throughout the Pacific Region. This report focuses on three pillars of the maritime sector: (1) institutional arrangements; (2) port infrastructure and port operations; and (3) shipping services (international, intra-regional and domestic) and trade.

The maritime sector has been the focus of several studies over the years by agencies including the Asian Development Bank (ADB), United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) and Pacific Islands Forum Secretariat (PIFS) (ABD 2007; PIFS 2004). These studies showed that many challenges in the maritime sector in PICTs are ongoing and persistent, while the sector has also had to respond to emerging challenges. Many measures proposed in earlier studies remain to be implemented. This report builds on these studies but specifically focuses on issues affecting the safety of maritime transportation. These safety issues are a primary concern for PICTs, particularly given the 2009 maritime tragedies in Kiribati and Tonga. The report also highlights Pacific solutions and donor-supported projects to improve safety. To promote the sustainability of action plans, this report documents lessons from good practices in PICTs, which can be replicated.

The report presents situation analyses of the maritime sectors in the study countries and the region within the framework of these three pillars. These form the basis of a gap analysis that identifies the outstanding issues and challenges and their underlying causes, as well as opportunities to be leveraged. These gaps are ranked in order of importance, with greater weight given to gaps with higher safety risks. The report then outlines key recommendations to address the gaps and presents action plans for the short-, medium-, and long-term with indicative costs. The report further identifies several gaps that are shared across the study countries and that can be addressed through regional solutions and/or a regional approach. The report proposes regional interventions to address these common gaps.

This report is primarily a desktop exercise that draws on available information. In many instances, available data was insufficient to support rigorous analysis or to make good cross country comparisons. The costs estimated for the recommended investments are indicative, and detailed feasibility studies will be needed before financing agreements can be concluded. In some cases, only limited time has elapsed since the good practices highlighted in the report were implemented, and they have not, therefore, been empirically tested.

Institutional Arrangements

The current Framework for Action on Transport Services (FATS), 2011–2020, endorses regional maritime transport architecture and links national and regional approaches. This framework provides guidance for donor support in the sector and for private-sector involvement. However, coordination and communication need to be strengthened to improve service delivery and increase effectiveness.

The five study countries have similar maritime organisational structures under the leadership of maritime divisions. These countries are compliant with key International Maritime Organisation (IMO) and United Nations Convention on the Law of the Sea (UNCLOS) maritime conventions and standards that promote safety and efficiency in the sector and facilitate trade. A number of issues are faced at the country level, including difficulties in attracting and retaining professional staff, challenges in translating international conventions into national legislation, and lack of capacity and resources to implement and enforce maritime laws. These issues are exacerbated by limited fiscal space. The lack of reliable and up-to-date statistical information, which is made worse by fragmented administrative arrangements, impedes effective planning and decision making.

Safe domestic shipping remains a key challenge for PICTs. The absence of a safety culture, as well as the unsuitability of vessels built and/or donated for the Pacific Island region, passenger and cargo overloading, ship-to-shore transfer of passengers, ferry accidents, limited search and rescue (SAR) response assets and capability, poor asset maintenance and lack of adequate maintenance facilities, and lack of passenger and cargo terminal facilities, are major challenges to improving maritime safety.

Seafarer qualification is essential for safe, efficient, and sustainable transport. Having well-prepared seafarers is important to make domestic shipping safe, and enables PICT seafarers to take advantage of opportunities beyond their boundaries and succeed on foreign ships, with the added benefit of remittances. A major challenge in this area is that maritime training institutions (MTIs) are not responsive to local, regional, and global industry needs.

Recent domestic accidents have shown that there is a need to improve the domestic maritime safety culture among passengers, as well as to ensure that MTIs and other training providers have the resources to effectively train seafarers and non-seagoing professional maritime workers in areas such as ship safety inspection and enforcement, safety instructions, engine operation and maintenance, safety equipment repair, and manifest and record keeping. Growing international competition and industry trends will require PICTs to review the training courses offered at their MTIs to focus on new niche areas, such as serving as crew on cruise ships, tankers, and fishing vessels, as well as in the non-seagoing maritime sector areas. Restructuring training programs would also enable PICTs to embrace opportunities in the competitive and dynamic international seafaring industry, including training of seafarers to officer levels and higher. These efforts can involve greater private-sector engagement and regional approaches.

At the national level, the maritime sector faces major challenges in acceding to international conventions and even greater difficulty in the timely translation of international conventions into national legislation and regulations. This arises primarily from a limited pool of legislative drafters, particularly those with maritime expertise. Due to financial constraints, most PICTs rely on short-term consultant drafters, many of whom lack Pacific experience. As a result, most countries have a backlog of legislation and regulations. For instance, Kiribati has four major legislative initiatives that have remained unimplemented, and its maritime security regulations are pending government approval. Similarly, Tuvalu's *Pilotage*, *SAR*, *non-convention vessels*, and *FAL Regulations* are yet to be developed. This exacerbates safety risks because it undermines the enforcement of regulations.

A sustainable up-to-date maritime legislative regime is needed in the study countries. This goes beyond addressing capacity issues to requiring complementary actions at the national and regional levels. These include developing conventions relevant to the Pacific context, securing political commitment to expedite the legislative approval process, and increasing sector financing to recruit legal personnel. Countries will further require ongoing capacity supplementation for timely legislative development and enforcement through short-term attachments to the maritime administrations and, at the regional level, maintaining a network of maritime lawyers who can be consulted easily. It also requires the adoption of the region's model set of maritime legislation, or variants thereof. Development and regional agencies can support and facilitate these actions by providing technical expertise and financing.

Port Infrastructure and Port Operations

Ports in the study countries are located in major population centres. Built in the colonial era, these ports have undergone periodic infrastructure improvements and expansion over the years to ensure they keep pace with development demands. In some countries, such as Kiribati and Tuvalu, major improvements were made within the last five years, while major infrastructure development is proposed for Samoa and Vanuatu.

The report finds that, to date, all international ports are compliant with the International Ship and Port Facility Security (ISPS) Code. Existing international port conditions do not pose major constraints to ongoing operations. However, secondary and ancillary improvements are needed, including to pavements, fenders, and access roads, as well as to planning for maintenance and implementation. There is a stark disparity between conditions at international ports and outer island domestic ports. Outer island ports generally have only basic infrastructure, which compromises passenger safety and the efficient handling of cargo. To help ensure safer and more reliable shipping, aids to navigation and channel dredging should be provided. Furthermore, wharves and/or jetties should be built, but these should be demand-driven and plans for their sustainable management developed. The amount of these investments will depend on each country's needs, but could range from about $2 million in Samoa to more than $17 million in Tonga.

Port efficiency varies from country to country and depends on the physical characteristics of ports, the availability of port and cargo handling equipment, and the organisational structure of stevedoring services. Due to the unique nature of each port, it is not possible to establish a single regional port efficiency benchmark. Generally, ports with some degree of private-sector involvement in stevedoring and equipment maintenance, such as those in Samoa and Tonga, are more efficient in container

movement per hour than ports in Tuvalu and Kiribati where the government or state-owned enterprises (SOEs) provide stevedoring services.

Shipping Services and Safety

Shipping and internal connectivity play a key role in facilitating trade among PICTs. While international shipping has become more reliable, even to very remote countries, such as Tuvalu and Kiribati, freight rates are still relatively high. Shipping companies have also become more responsive to emerging country and market demands. However, domestic shipping and safety remain key challenges, particularly due to aged and poorly maintained domestic vessels, difficulty accessing finance for vessel procurement and maintenance, and inadequate servicing of less profitable shipping routes. Despite these persistent challenges, there are some noteworthy initiatives in the region that have improved the reliability and safety of domestic shipping services, including:

- Samoa Shipping Services' success in achieving goals that include Lloyds certification of its ships, the operation of a slipway and maritime academy, and compliance with United States Coast Guard safety requirements, enabling it to operate in American Samoa;
- The promulgation in RMI of the *Government Shipping Vessels Maintenance Fund Act, 2011* to ensure that funds will be available for routine repairs and maintenance; and
- JICA's requirements for SOE's in Tonga receiving domestic vessels to maintain infrastructure replacement and maintenance funds.

At the regional level, much effort has been made to ensure that vessels comply with basic safety standards and that national authorities do not hesitate to order the detention of vessels pending compliance with regulations. One such effort to address the issue of domestic ship safety is the Pacific Islands Domestic Ship Safety (PIDSS) Programme, piloted initially in Tonga and Kiribati in 2010 and now extended to several PICTs (see Box 1). Funded by the Australian Department of Foreign Affairs and Trade (DFAT) and managed by SPC, the PIDSS programme was introduced in 2010, triggered by two tragic marine accidents in Tonga and Kiribati that occurred almost simultaneously in 2009.

Box 1: Key Objectives of the PIDSS Programme

1. Review the status of domestic ships in the Pacific Island region.
2. Develop a framework to improve safety standards in the domestic shipping sector.
3. Review and update SPC-produced resource material and instruments relating to safe management systems.
4. Conduct a series of in-country workshops on domestic ship safety among maritime administrations, maritime training institutes, shipping companies, masters and crew.
5. Establish and implement a safety monitoring and compliance system based on a system of maritime safety audits.
6. Provide safety advice, technical support, and safety audit services.
7. Actively engage maritime administrations, shipowners, surveyors and maritime institutions in a participatory approach to promote and improve maritime safety in the region.
8. Encourage ship designs appropriate to the geographic and infrastructure conditions in PICTs.

This programme is part of a holistic approach toward creating a sustainable maritime safety culture in the Pacific enshrined in a three-year roadmap as part of the 2012 Suva Action Plan, which has been endorsed by the IMO.

All of these initiatives involved PICTs working with development partners, demonstrating the leverage that donors can have in promoting the adoption of sustainable practices.

A couple of regional initiatives to encourage private sector participation in the delivery of less profitable shipping routes are ongoing and have scope to be replicated. The section on "Private Sector Involvement and SOE Reform" in Part II details one such example for Fiji.

Sustainability

Inadequate maintenance is one of the critical gaps highlighted throughout this report that severely limits the sustainability of infrastructure investments by causing the premature deterioration of assets. The maintenance gap in PICTs is due to a combination of issues ranging from limited funding to factors related to ownership of assets and arrangements for carrying out maintenance. In some instances where SOEs are responsible for managing infrastructure that should be self-financing, such as ports, approved tariffs are held low due to political expediency. In some extreme cases, such as Pohnpei and Kosrae, SOEs must transfer earnings to the national treasury, limiting funds available for maintenance. Generally, there is a lingering preference among governments and development partners to build new infrastructure, as opposed to maintaining existing assets.

As an estimate, it is assumed that PICTs would need to spend an average of around five percent of the value of investments annually to sustain existing maritime infrastructure (PRIF 2013). It is important to note that this figure will vary from country-to-country, and the variance could be significant, depending on a number of factors, including the extent and number of port facilities and maritime assets, and their condition. In addition, for assets that depreciate over long periods of time, the amount might be too high, while for assets with shorter life spans, the figure might be too low. Dedicating five percent of the value of investments each year can be significant, but it needs to be done. What is clear is that properly maintaining maritime assets is a challenge for most PICTs, and even more so for those that rely on financial support from donors.

This report notes several initiatives to improve the sustainability and maintenance culture in PICTs with development partners' assistance, which can be replicated in the maritime sector. Of note are the establishment of trust funds in Palau and Solomon Islands, the creation of a national road fund in Papua New Guinea to ensure that funds will be available for routine repairs; ADB's support of reforms in Solomon Islands and PNG to improve programming and funding of preventative maintenance programs. Despite efforts to improve maintenance, the study countries have a long way to go before they spend optimally on maintenance. Improving sustainability in PICTs is complex and will take time to achieve. The experiences of PNG and Solomon Islands illustrate that governments in PICTs are prepared to exercise strong political will in the interest of sustainability. This is particularly required when it comes to ensuring revenues are earmarked for critical maintenance.

Increasing the involvement of the private sector must also be considered as a means to sustain investments in the sector. Most governments have articulated the importance of private-sector-led growth, yet, this has not translated into the development of private-sector strategies. The majority of PICTs still have low World Bank "Ease of Doing Business" Indicators. They also have limited capacity and experience with public procurement. Private businesses also face high costs of finance, difficulties accessing credit, and is crowded out by the dominance of SOEs. Nonetheless, this report notes several initiatives in PICTs to involve the private sector in the delivery and management of infrastructure and maritime services. In Samoa and Tonga, the World Bank and DFAT have provided technical assistance to build private-sector capacity to participate in road maintenance projects, as part of budget support programs, and to integrate these into national budgets. Consultations in both countries indicated

private-sector confidence in the integrity of the tendering process. The integration of maintenance into budgets will provide assurance of future opportunities and encourage private-sector participation in future bidding.

Trade-Offs

The report presents action plans to transform the maritime sector and maximize safety on a sustainable basis taking into consideration such criteria as national ownership, political will, economies of scale, and feasibility. It is, however, acknowledged that the cost of the recommendations might exceed available resources. In moving forward, the study countries will need to decide how the recommendations fit with other priorities such as available resources from national funds (also potential revenue hypothecation) and donor funding, the optimal level of investment needed to maximize safety, and appropriate benchmarks for the sector. This will no doubt involve several trade-offs including: the implications of reducing government influence and increasing private-sector involvement on public service obligations; whether to invest more in main commercial ports or in outer-islands; and funding from general revenue and introduction of dedicated revenue streams. Hard decisions will need to be made concerning the application of limited funds and appropriateness of investments including technology and infrastructure appropriate to the local context, and to match demand and financial realities. It would also require identifying those lead investments whose success would engender a virtuous cycle of good practices in the sector.

Key Gaps and Recommendations

Based on the assessment of the three pillars (institutional arrangements, port infrastructure and operations, shipping services and trade), gaps that require action were identified and prioritized, and recommendations were proposed to ensure safe, efficient and sustainable maritime services at both national and regional levels.

Table 1 identifies key national gaps in the maritime sector for the five study countries. Some of these gaps are common across all five countries, and form the basis of the regional recommendations. Table 2 presents prioritizes national recommendations associated with the ranked gaps. This analysis reveals that safety is a paramount issue in the Pacific Region, and addressing this issue will require significant investment in physical infrastructure and equipment along with supporting technical assistance to strengthen regulatory frameworks and enforce compliance.

Table 1: Summary of National Gaps

Kiribati	Samoa	Tonga	Tuvalu	Vanuatu
Institutional Arrangements				
1. Backlog of legislation and poor enforcement 2. MTC not responsive to industry needs 3. Poor performing SOE 4. Weak statistical systems	1. Limited budget 2. Delays in approving maritime legislation 3. Ad hoc communication arrangements in the maritime sector 4. Inconsistency of information from various sources 5. No clear strategy in place to promote private-sector participation in the maritime sector due to SOE dominance in the sector	1. Absence of maintenance plans at PAT a 2. Severe under resourcing of MPD given its wide-ranging responsibilities 3. Limited statistical and analytical capacity and challenges in preparing timely and reliable publication 4. Dominance of SOEs and absence of strategy to involve private sector 5. Ad hoc communication arrangements exacerbated by the involvement of multiple development partners	1. Limited technical staff commensurate with responsibilities 2. Inadequate budgets (60% spent on operating domestic fleet) 3. Backlog of legislation and poor enforcement 4. Absence of MTI strategic plan 5. Limited statistical and analytical capacity	1. Critical capacity deficiencies in DPM, and low retention of staff. 2. Poor stakeholder consultation and donor project coordination. 3. Fragmented administrative arrangements and difficulty enforcing Port State Control and other maritime functions 4. Poor collection and analysis of maritime data 5. VMC not responsive to industry demands
Port Infrastructure and Operations				
1. Absence of supporting infrastructure in Port Betio including passenger/cargo terminal, waste facilities, and pollution response capabilities 2. Lack of adequately-sized tug boat 3. Wrecks and derelicts 4. Absence of outer island infrastructure, and dangerous entry channels 5. Outdated navigational surveys and charts	1. Lack of minor infrastructure improvements and maintenance plans at Apia Port 2. Absence of procedures and reception facility for hazardous waste 3. Shallow and silting port access and turning basin area in outer island ports 4. Aged pilot and tug boats	1. Inadequate port and channel dredging. 2. Port reception facilities are not provided. 3. Fragmented and inefficient stevedoring arrangements (multiple players) 4. Limited, deteriorating and/or absent port superstructure and complementary infrastructure in outer islands.	1. Poor pavement conditions at Funafuti port 2. Port infrastructure and passenger facilities are absent or need major improvement in outer islands. 3. Absence of weighbridge and aged forklift, trucks and trailers 4. Poor storage cargo arrangements (hazardous items on the wharf at Funafuti) 5. Outdated navigational surveys and charts	1. Ship wrecks and armaments in ports pose safety risks. 2. Lack of navigational aids, communications emergency system. 3. Absence of a weighbridge 4. Unmounted and unoperational lighthouses 5. Port and access road congestion experienced on cruise ship visit days. 6. No standards for pilotage training or specifications for certification in place.
Shipping Services and Trade				
1. Use of unsafe and poorly maintained vessels 2. Underservicing of uneconomical routes 3. Limited private-sector participation in the maritime sector 4. Poorly functioning slipway	1. Ad hoc regional shipping development plan	1. Use of unsafe and poorly maintained vessels 2. Poor service to remote outer islands 3. Limited ship repair facilities 4. Limited intra-regional connectivity with smaller island countries 5. Limited SAR assets and capability	1. Unreliable conditions at ship channels in the outer islands 2. Poor ship maintenance and lack of ship repair facilities 3. Limited private-sector capacity and participation in the maritime sector 4. Limited SAR assets and capability	1. Inadequate and unaffordable slipway 2. Non-compliance of domestic ship operators with ship safety standards. 3. Ship safety inspections are carried out only in Port Vila and Luganville. 4. Hefty interest rates faced by shipping companies to access bank financing. 5. Absence of domestic ship financial data to regulate tariff 6. Limited intra-regional connectivity with smaller island countries

Table 2: Summary of National Recommendations in Order of Priority

	Institutional Arrangements	Port Infrastructure and Operations	Shipping Services and Trade
Kiribati	1. Undertake MTC curriculum reform to expand training to include safety, higher Classes and new niche areas, and staff development 2. Undertake legislative reform program including development of legislative action plan, capacity supplementation, building enforcement capacity 3. Continue SOE reforms with an end goal to better involve the private sector in delivery of service 4. Build maritime data repository and integrate with national statistics system	1. Implement wreck and derelicts removal program, including review of regulatory framework for derelicts removal and disposal 2. Design safe ship-to-shore procedures and develop code or practice for safe transfer of cargo and passengers 3. Update hydrographic surveys and publish charts including in electronic format 4. Build outer island infrastructure based on a medium- to long-term feasibility study 5. Procure new tug boat 6. Prepare a port masterplan that addresses issues including passenger/cargo terminal, waste facilities, and pollution response capabilities	1. Establish vessel maintenance and replacement fund 2. Introduce maintenance plans 3. Introduce incentive-based shipping scheme involving the private sector 4. Expand slipway 5. Develop private-sector policy, including re-assessing subsidies/other incentives to ensure a level playing field
Samoa	1. Increase MWTI's budgets over time based on approved staff development plans 2. Undertake legislative reform program including development of legislative action plan, capacity supplementation, and building enforcement capacity 3. Formalize stakeholder consultations in the maritime sector, consistent with the aid coordination role of the Ministry of Finance 4. Provide economic incentives to foster increased private-sector involvement consistent with SOE reforms 5. Build maritime data repository and integrate with national statistics system	1. Implement agreed recommendations of ADB/PRIF operational assessment of SPA 2. Rationalize operations of small domestic ports and wharfs to guide planned dredging 3. Procure pilot and tug boats and introduce preventative maintenance 4. Integrate waste reception and pollution response into future port development projects	1. Evaluate options to expand intra-regional trade

Tonga	**Institutional Arrangements** 1. Increase budget allocation by 25% over the medium-term and increase staff levels in line with staff development plans 2. Introduce preventive maintenance program for infrastructure, slipway and equipment, and increase maintenance budgets 3. Build maritime data repository and introduce protocols to improve collection and analysis of maritime data 4. Provide economic incentives to foster increased private-sector involvement consistent with SOE	**Port Infrastructure and Operations** 1. Introduce and implement a planned dredging program 2. Consider fully outsourcing stevedoring operations 3. Provide passenger and cargo facilities on outer islands based on rationalisation plan (Construct/upgrade and provide port equipment and assets at Vavau and Ha,Hapi; Construct port at Niuas and Haafevelmonuka) 4. Construct waste reception facility consistent with regional strategies 5. Develop Green Port Strategy	**Shipping Services and Trade** 1. Introduce vessel preventative maintenance and replacement program 2. Establish vessel maintenance and replacement fund 3. Procure dedicated SAR vessel and communication equipment, complemented by staff training 4. Undertake route review study (including introduction of route licensing program) and introduce ship-to-shore project 5. Upgrade slipway to cater to minor repair needs, consider options for private sector participation 6. Assess options to increase intra-regional trade and establish regular shipping links with smaller island countries 7. Upgrade ATONs in Niuataputapu 8. Extend hydrography project to comply with ECDIS requirements
Tuvalu	**Institutional Arrangements** 1. Increase budget allocation to DMPS based on historical spending patterns 2. Increase number of staff and introduce staff development plan 3. MTI curriculum reform to expand training to include safety, higher classes and new niche areas, and staff development 4. Undertake legislative reform program including development of legislative action plan, capacity supplementation, building enforcement capacity 5. Build maritime data repository and integrate with national statistics system	**Port Infrastructure and Operations** 1. Construct pavement at Funafuti port 2. Improve cargo management, including constructing shelves in existing warehouse and ventilated storage area for hazardous cargo 3. Procure equipment and introduce preventive maintenance 4. Update hydrographic surveys and publish charts including in electronic format 5. Procure landing craft for use in outer Islands 6. Build outer island infrastructure based on medium to long-term feasibility study	**Shipping Services and Trade** 1. Establish vessel maintenance and replacement fund 2. Develop maintenance plan 3. Expand ongoing ship-to-shore project and develop code or practice for safe transfer of cargo and passengers 4. Develop private-sector policy, including incentives to encourage participation

Vanuatu	**Institutional Arrangements** 1. Increase budget and introduce competitive salaries 2. Consolidate maritime functions as part of plans to establish MSA 3. Clarify roles and responsibilities of stakeholders within MSA legislation 4. Build maritime data repository and introduce protocols to improve collection and analysis of maritime data 5. Undertake VMC curriculum reform to expand training to include safety, higher Classes, new niche areas, staff development, and infrastructure and equipment improvements	**Port Infrastructure and Operations** 1. Implement wreck and derelicts removal program, including review of regulatory framework for derelicts removal and disposal. 2. Provide/upgrade navigational aids and telecommunications emergency system 3. Develop standards and certification specifications for pilotage training 4. Introduce vessel preventative maintenance and replacement program 5. Establish vessel maintenance and replacement fund 6. Procure weighbridge and introduce preventive maintenance 7. Re-design access roads to create designated taxi waiting area	**Shipping Services and Trade** 1. Build enforcement capacity and establish stricter procedures of enforcement 2. Expand inspections to outer islands 3. Provide economic incentives for the procurement and maintenance of vessels 4. Raise public awareness on maritime safety standards and requirements 5. Expand slipway and regulate tariff/ encourage entry of competitors 6. Create a concessional lending window in commercial or development bank(s) for vessel maintenance and replacement 7. Establish and enforce requirement to submit periodic financial statements 8. Assess options to increase intra-regional trade and establish regular shipping links with smaller island countries

Recurrent Cost Implications and Indicative Funding Arrangements

Future operation and maintenance liabilities associated with investments should be estimated taking a whole life-cycle approach. This will determine the affordability and sustainability of the investments. These investments should be aligned with national budgets and budget support programs agreed with development partners. Based on the World Bank and PRIF recommended benchmarks for sustainable maintenance and recurrent costs, the report estimates annual recurrent costs to be around five percent of the value of the investments. The annual recurrent costs associated with the investments are shown in Table 3. These recurrent costs are however in addition to the financing required to cover the existing back-log of maintenance in the study countries.

Table 3: Recurrent Costs for Recommended Investments

Country	Investment (USD)	Recurrent Cost (USD)	Recurrent (% of GDP)
Kiribati	16,200,000	510,000	0.32%
Samoa	2,910,000	230,000	0.03%
Tonga	18,400,000	755,000	0.17%
Tuvalu	13,400,000	732,500	1.64%
Vanuatu	8,280,000	217,500	0.05%

Generally, all of the study countries need to increase spending in the maritime sector. The sum of the recommended investments across the five study countries is estimated at about US$59 million, which could be provided incrementally. The proposed investments broadly cover the three pillars of the maritime sector. Progressively increasing budget allocations to maritime administration is a key requirement to improving safety. Doing so would enable countries to attract and retain staff, better enforce safety requirements, and have resources to carry out core responsibilities, such as maintenance. Investments in aids to navigation (ATONs) feature prominently in all countries as a basic requirement to improving the safety of shipping services. Furthermore, investments in outer island infrastructure, which vary in scope among the study countries, are also required. Such investments would address economic inequalities and allow countries to seize opportunities to promote tourism development and exports of niche agricultural products.

Ensuring that investments are sustainable requires that future recurrent costs are identified prior to proposed investments. The annual recurrent cost of the proposed investment ranges from about US$217,500 in Vanuatu to US$755,000 in Tonga. Generally, recurrent costs are estimated to be less than 1 percent of GDP, with the exception of Tuvalu where it is closer to 1.65 percent, due to its small GDP base relative to the investment required.

Recurrent costs could be financed through a couple of sources, including national government and/or agency budgets, the introduction of user charges, or through donor funding. Where services are improved or new services introduced that solely benefit the private sector (e.g. provision of slipways), the report suggests recurrent costs, to the extent possible, should be recovered from users. In instances where investments take place in poorer outer islands, a slight increase in user fees, along with support from national budgets could meet the needs. However, the distribution of these costs will differ based on the type of investment, the ownership/financing arrangements, and other contextual considerations that are country specific. Details on the distribution of costs are provided in the country sections.

Several of the maritime gaps illustrated in Table 1 are common to all the study countries. Cognizant of national responsibility for providing safe, secure, and efficient maritime transport, the report determined that some of these gaps could be addressed through a regional solution and/or approach implemented at the national level if the solution satisfies one or more key criteria. The assessment of possible solutions to the common gaps according to these criteria formed the basis of the regional recommendations provided in Table 2. The full set of criteria is provided in Part III of the report, but some of the key criteria stipulated that the solution should:

- provide an efficient way of delivering services that may be beyond the resources and skills of individual PICTs;
- realise economies of scale through reducing the cost of providing a service while increasing the number of people benefiting from the service (both private and public sector);
- create larger markets to overcome national capacity constraints; and
- promote learning and sharing.

Table 4 presents the proposed regional recommendations in the three pillars, with associated timeframes provided to guide future action. These recommendations are framed as programs with one or more corresponding projects.

Safety emerged as a paramount issue in all study countries. Certain immediate measures can be taken in each country to improve the safety of passengers and crew. Removing the wrecks from Port Betio in Kiribati, for instance, would be a relatively straightforward task with obvious safety benefits. Vessel and port infrastructure maintenance should be a funding priority to improve safety across the region. Other solutions involve institutional reforms that are more complex, and will take time and cooperation between government institutions to solve, but which could have far-reaching benefits. In some cases safety legislation is in place, but enforcement needs to be improved. In others, safety legislation has been delayed by a lack of legal capacity, and donor support could be used to improve legal capacity to facilitate the implementation of legislation. Improving search and rescue operations will require regional cooperation, and regional programs, such as the PIDSS, could provide a model for improvements in this area. Reliable data, including updated hydrographic surveys, will be an important tool for safer navigation as current data is outdated or unavailable. Finally, education of both passengers and crew will be a critical part of any domestic ship safety program. In addition, maritime training institutions should expand or introduce safety-focused courses, and public media campaigns can be used to promote a safety culture among PICT communities. PICTs will need to review the options and weigh the challenges and potential outcomes of the recommendations presented here to determine how they can move forward toward achieving a safer, more efficient maritime sector.

Table 4: Regional Recommendations

Pillar	Measure	Timeframe
Institutional Arrangements	**1. Maritime Sector Capacity Development Program**	Short- to medium-term
	- Review MTI curriculum to expand training levels and to include non-traditional and safety-focused courses	
	- Review MTI Strategic plans to facilitate responsiveness	
	- Explore niche employment areas and improve marketing capacity	
	- Develop succession planning and staff retention program	
	2. Regional Legislation Program	Short-term
	- Institute legal capacity supplementation to review, draft, and update maritime legislation	
	3. Data Collection and Analysis Program	Short- to medium-term
	- Establish maritime data repository and asset registry	
	- Implement recommendations out of the Pacific Infrastructure Performance Indicators (PIPIs) Benchmarking Study	
	4. Regional Safety Program	Short- to medium-term
	- Institute domestic Ship Safety Program (crew training, SOPs, stringent inspections and enforcement, crowd control, preventative maintenance)	
	- Increase awareness by promoting a safety culture (radio publications, school education programs, manifest reporting)	
	- Provide SAR assets	
	5. Private-Sector Development and Corporate Governance Program	Medium- to long-term
	- Develop maritime-specific private-sector strategy	
	- Assess private-sector financing options, including flexible collateral requirements	
	- Privatise and/or reform and improve autonomy of SOEs	
Port Infrastructure and Operations	**1. Ancillary (Main) Port and Outer Island Port Development**	Medium- to long-term
	- Investigate the feasibility of a complementary system of national and regional slipway, dry dock, and life-saving equipment servicing facilities in collaboration with the private sector	
	- Develop and implement a Green Port Program (energy efficiency, pollution response, disaster risk management, and infrastructure recovery strategies to cope with natural disasters)	
	- Prioritize and prepare port master plans for outer islands	
	2. Port Equipment Replacement Program	Medium- to long-term
	- Replace aged equipment	
	- Standardize port equipment procurement and replacement	
	- Introduce equipment maintenance and replacement planning	
	3. Regional Aids to Navigation Program	Short-term
	- Replace aids to navigation and communication equipment	
	- Update hydrographic surveys to comply with ECDIS	
	- Remove wrecks and armaments	
	- Provide regional private-sector dredge boat	
Shipping Services and Trade	**1. Domestic Shipping Improvement Program**	Short-term
	- Implement vessel design, retrofitting and surveying requirements	
	- Institute vessel replacement planning	
	- Establish vessel maintenance and replacement fund through private-sector lending facilities such as IFC, implemented by national development banks	
	- Introduce shipping franchise scheme for uneconomical routes	
	2. Export Development Program	Short- to medium-term
	- Assess export opportunities for niche products from outer islands, including value-addition	
	- Improve intra-regional trade opportunities through sub-regional shipping arrangements and port improvements, SME development	

PART I: INTRODUCTION

For the purpose of this report, Kiribati, Samoa, Tonga, Tuvalu, and Vanuatu will be referred to as the study countries, while PICTs will be used in reference to all the countries of the region.

PICTs are dispersed across more than 30 million km^2 of the Pacific Ocean, making them and the region heavily dependent on the maritime sector to provide and support domestic, intra-regional, and international transport of cargo and passengers, as well as cruise tourism. The sector also serves as the backbone of domestic inter-island transport, often providing the only access to and from smaller outer islands to meet key socioeconomic needs for these island communities, such as education, healthcare, and emergency services for catastrophic events (cyclones, droughts, tsunami, etc.). The sector also provides training and employment opportunities for Pacific Islanders, whose remittances contribute significantly to some PICTs' economies and support families and communities.

Safe, affordable, efficient, and sustainable maritime transport systems that comply with international conventions, codes, and standards, are central to national development objectives and strategies. A safe, efficient, and sustainable transport system should: (i) ensure the safety of passengers and cargo while transiting port facilities and on vessels; and (ii) facilitate timely movement of ships at least cost and be consistent with conditions in PICTs to allow reliable service delivery.

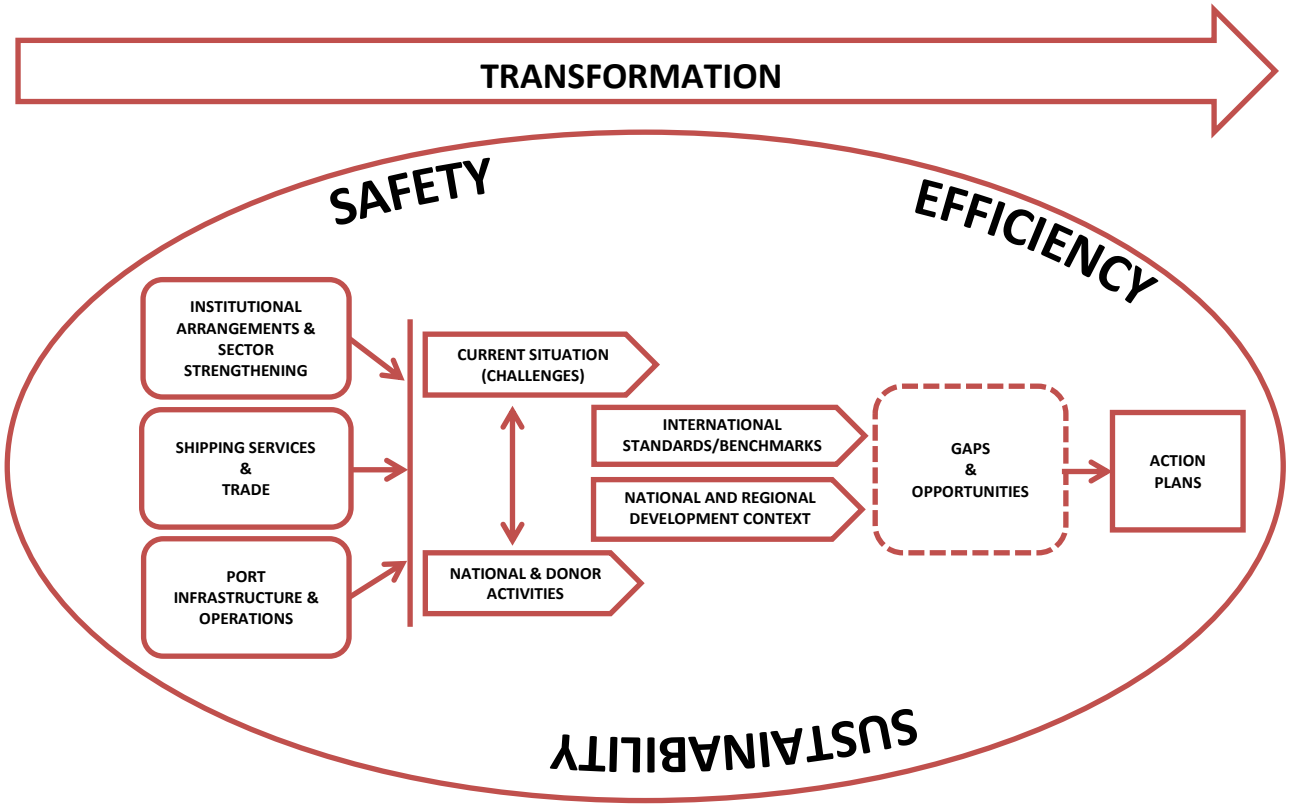
Achieving these goals depends on several factors, including: (i) functioning institutions that are adequately resourced and have clearly defined responsibilities; (ii) appropriate policies, legislation and regulations that are enforced; (iii) ports that operate efficiently and support wider development objectives; and (iv) adequate safety and security systems that protect life, cargo and the environment. Despite recent progress, PICTs face many challenges in developing their maritime sectors. Some are a result of geography and vast distances, while others are institutional and operational, or involve poor infrastructure and services.

Box 2: Components of a Transformation Agenda

- Improving safety enforcement, and mainstreaming public awareness of safety standards and requirements
- Improving the conditions and sustainability of port infrastructure
- Enhancing the efficiency of port operations
- Assessing appropriateness of international conventions
- Strategic capacity building/supplementation
- Data collection for evidence-based planning
- Improving development planning and coordination
- Limiting government influence and creating conditions for increased private-sector involvement
- Improving access to financing
- Increasing maintenance to break the build-neglect-rebuild cycle
- Improving domestic vessels, shipping arrangements, and safety
- Mitigating climate change and natural disaster impacts and making shipping more sustainable

The report focuses on three maritime sector pillars: (1) institutional arrangements; (2) port infrastructure and operations; and (3) shipping services (including international, intra-regional and domestic). The report identifies the current maritime challenges facing the study countries individually and the region generally, taking into account national and donor activities already targeted at these issues. Assessing these against international requirements, benchmarks and standards and taking into account underlying national and regional development contexts and constraints, the report identifies opportunities for national and regional actions (Figure 1).

Figure 1: Structure of Transformation Proposed in the Report



This report was carried out in consultation with country delegates and officials, private service providers, regional development agencies and partners, and civil society, as well as desk reviews (for details see Annex 1).

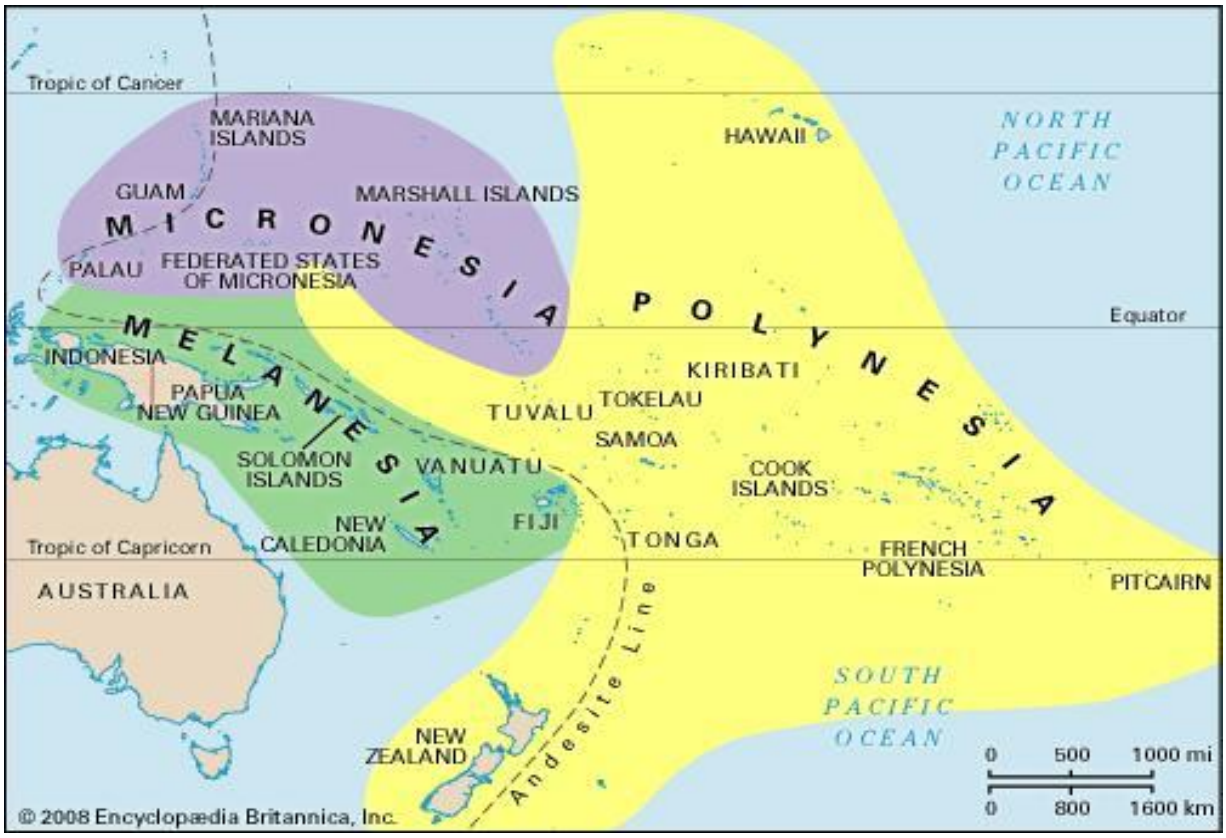
PART II: REVIEW OF REGIONAL MARITIME SECTOR

PICTs are unique and diverse, but they share many characteristics including their remote location, large distances, small populations, limited resource base, and undiversified economies. This has implications for their economic development, poverty reduction and integration into the global economy.

Overview of Pacific Island Countries and Territories

The 22 PICTs are spread over an ocean area of approximately 36 million km^2, covering about 11 percent of the world's water surface and 7 percent of the total surface area of the earth. Only 1.5 percent of this total area is land (551,483 km^2). The area comprises three ethnogeographic groupings—Melanesia, Micronesia and Polynesia (Figure 2). The Melanesian countries are larger, volcanic islands and include Vanuatu, Solomon Islands, Fiji and Papua New Guinea (PNG). The Micronesian countries tend to consist of small atolls, such as Kiribati and Marshall Islands, while the Polynesian countries include volcanic islands such as Tonga, Samoa, and Tuvalu. The total geographical area of PICTs, including land and ocean area, is twice that of Europe.

Figure 2: Ethnogeographic Map of the Pacific



Source: www.britannica.com (2015)

Political Economy of PICTs

The total population of the region is less than 10 million with significant variations between countries. PNG and Fiji have populations of approximately 7.3 million and 856,000 respectively, accounting for over 80 percent of the region's population. In contrast, Tuvalu has a population of about 10,000. Population densities also vary among PICTs. The Marshall Islands and Tuvalu, for instance, have limited land mass which contributes to high population densities, placing them among the most

densely populated countries in the world. On the other hand, several PICTs with larger land areas, in particular PNG, Solomon Islands, and Vanuatu, have very low population densities, placing them in the bottom 25 percent of global country rankings by population density.

The archipelagic characteristics of PICTs mean that they are very dependent on the maritime sector for trade, commerce, and economic growth. Some countries with small land areas have very extensive Exclusive Economic Zones (EEZs), providing a basis for lucrative fisheries exports and fishing license revenues. For instance, Kiribati, with a land area of only 811 km^2, has an EEZ of 3.5 million km^2 of ocean—more than twice that of PNG. The combined EEZ of the Pacific Africa Caribbean and Pacific (ACP) region is 20 million km^2 and constitutes the world's largest tuna fishery. Additionally, seafaring is a very important longstanding competitive economic activity in most PICTs.

Systems of government and administration generally reflect inherited colonial arrangements.[1] Historic ties have significant bearing on current trade and other economic relations in the region. For instance, trade and development partnerships with Europe under the ACP Treaty are important for PICTs in the southern Pacific, while development assistance under compact arrangements with the United States is important in northern Pacific PICTs.

PICTs have open economies and, with the exception of a few countries, they are undiversified. PICTs are dependent on exogenous factors for economic growth, which makes them vulnerable to economic shocks. PICTs are characterised by high import dependence, with significant trade imbalances being the norm. For example, the ratio of exports to imports during the period 2008 to 2012 averaged 1:17 and 1:5 in Kiribati and Samoa respectively. Trade imbalances also contribute to generally high freight rates in the region, as ships need to travel long distances to recover costs from one leg of a voyage.

Trade in the study countries is primarily conducted with only three countries: Australia, New Zealand, and Fiji. Recently new opportunities and partners have been developed with Korea, Taiwan, China, and Japan—mostly for fish and niche products (e.g., squash from Tonga to Korea, seaweed from Kiribati to Japan, and tuna from Tuvalu to Taiwan). Intra-regional trade is not well developed as PICTs have similar primary products and very limited value-added products.

Development Challenges in PICTs

The small and remote island economies of PICTs share similar challenges. Physical isolation and geographic fragmentation inhibit intra-regional and international trade. Small populations prevent the development of economies of scale. High transport and communication costs, limited and expensive intra-regional transport links, inadequate infrastructure, and protection of key sectors undermine competitiveness and private-sector development and constrain trade and tourism in the region.

PICTs, generally classified as middle-income countries, have medium to high human development and are among the highest per capita aid recipients in the world. However, none of the PICTs are on track to achieve all the MDGs by 2015 (UNDP 2014). Poverty, hardship, vulnerability, inequality and exclusion are on the rise in many PICTs, and the most vulnerable people are likely to be women, youth, the disabled and the elderly, as well as those living in the outer islands and rural areas (UNDP 2014). The most recent national household income and expenditure surveys revealed that one in four

[1] From the United Kingdom in the case of southern Pacific PICTs and the United States in the case of the northern Pacific PICTs. French and Japanese influences are also evident in Vanuatu and the northern Pacific PICTs respectively

people in the Pacific are now living below national poverty lines and do not have enough income to meet their daily needs (SPC, NMDI).

Unemployment, especially among youth, is an ongoing concern in PICTs. Some of the highest unemployment rates recorded in the region include 30.6 percent in 2010 in Kiribati, 32.6 percent in 2012 in RMI, and 39.6 percent in 2012 in Tuvalu (SPC, NMDI). Seasonal and permanent migration to richer neighbouring countries, such as Australia and New Zealand, as well as to the United States, reduce unemployment pressures in PICTs. Outside of the public sector, PICTs typically depend on seafaring for employment. Remittances from seafaring and migration are major sources of income and provide social safety nets. In fact, remittances, along with development aid, account for as much as 40 percent of GDP in some PICTs. Governments tend to dominate national economies, accounting for as much as 50 pecent of GDP in northern PICTs. The private sector is nascent in many economies, with its growth being constrained by remoteness and generally challenging business environments in some countries (for example: limited access to capital and difficult land tenure arrangements). PICTs have generally low World Bank 'ease of doing' business rankings; with Fiji having the best score among PICTs, ranked 60 out of 185 countries.

PICTs are among the most vulnerable countries in the world to the impacts of climate change and natural disasters. Based on a recent report from the World Bank of the 20 countries in the world with the highest average annual disaster losses scaled by GDP, eight are Pacific Island Countries (World Bank 2014). The effects of climate change and disasters are widespread and affect PICTs' economic, environmental, and social livelihoods. In the maritime sector, natural disasters and climate change cause coastal flooding and erosion from tidal surges, while the increased frequency of cyclones has resulted in destruction of key infrastructure.

Economic Outlook

Pacific Island Countries suffered adverse impacts from increases in global fuel and food prices in 2008 and the global financial crisis of 2009, which still linger. Growth and remittances flows were disrupted, and development aid declined. Growth as a whole in the region fell from 5.0 percent in 2007 to 2.2 percent in 2009; these positive growth rates were however largely driven by high growth rates in PNG (6.7 percent and 5.5percent respectively), as most of the small island states recorded zero or negative growth during this period (UNESCAP 2014). Most economies contracted, with many governments recording persistent budgetary imbalances. Recent government expansionary policies following the global economic crisis, and greater aid dependency, have resulted in national debt levels becoming increasingly unsustainable, with debt-to-GDP ratios in the study countries ranging from 58 percent in Tuvalu, and nearly 31 percent of GDP in Tonga, to 65 percent in Samoa (IMF-WB Debt Sustainability Analysis, 2014). Basic-needs poverty is increasing and is associated with high unemployment, especially among youth. Overall, governments have limited fiscal space or options to restore growth to pre-crisis levels.

Countries are implementing structural reforms to address constraints related to weak governance, policy making, regulation, and investment policies, fragile macroeconomic environments, and limited access to finance. These constraints, to different degrees across PICTs, create high costs for businesses, hamper trade, and prevent integration into the world economy. The Pacific Aid for Trade Strategy for 2014-2017 is the regional response to these issues. The Strategy aims to provide PICTs an

efficient and effective way of delivering regional trade-related assistance in a timely manner to promote economic diversification, inclusive growth, and employment, especially among youth.

Despite the Pacific Aid for Trade Strategy and tariff-free access to major markets already in place, growth in trade has not been easy to generate and sustain in all countries. This is due to several factors, including the economic geography of the region, lack of consistency in production and supply, and limited public and private-sector capacity to effectively take advantage of trade agreements. The situation is further compounded by weak or absent maritime transport infrastructure and shipping services, especially in fishing and agricultural production areas in remote outer islands in several PICTs.

Reports from the Asian Development Bank (ADB) and United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) suggest that regional economies are rebounding. The region enjoyed more rapid growth of 4 percent in 2013, which was forecast to increase to 4.9 percent in 2014, largely driven by expected growth of 6.2 percent in PNG (UNESCAP, 2014). The long-term outlook depends on continuation of fiscal consolidation and structural reform programs and implementation of the Aid for Trade Strategy. However, uncertain global economic recovery prospects, which resulted in the World Bank and International Monetary Fund (IMF) lowering global growth forecasts for the next five years remains a concern for PICTs. This will dampen demand for their already limited exports.

Maritime Sector Developments and Trends

Maritime transport plays an important role in connecting PICT economies and communities; it supports tourism, commerce and domestic inter-island travel for social, educational and medical needs. Maritime transport is also vital for deepening integration with the global trade system through exports and will complement the regional Aid for Trade Strategy.

With support from donors, the study countries have formulated national development plans with stated objectives for the transport sector and in some instances developed complementary transport sector strategies/investment plans (as is the case in Samoa, Tonga, Tuvalu and Vanuatu). For example, the Kiribati National Development Plan (2012-2015) recognises as a national priority, the need to *"facilitate economic growth, trade, industrialisation and well-being for technological and social transformation through the development of new/upgrade of physical infrastructure such as sea passages…by the year 2015"* (KDP, 2012). While these are welcome developments, there remain concerns about the funding of these plans.

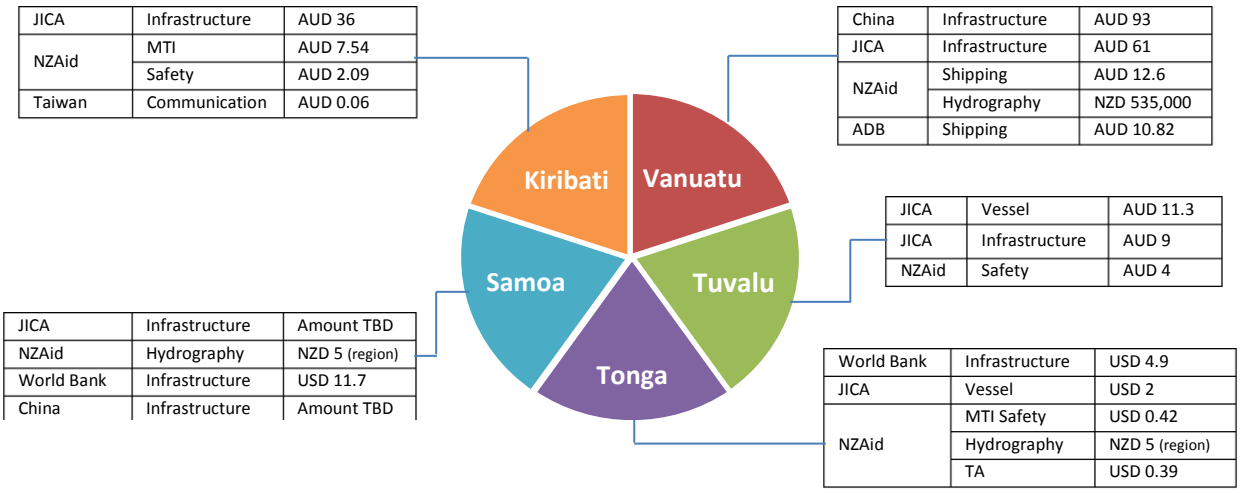
Sector Planning and Donor Support

Several of the study countries have made positive strides toward improved planning and coordination of development aid. For example, in 2012, the government of Vanuatu set up the Vanuatu Project Management Unit (VPMU) to coordinate, oversee, and manage major public infrastructure projects supported through development partner finance. The VPMU is currently managing two maritime projects, including the: ADB-financed Vanuatu Inter-island Shipping Support Project, and JICA-financed Lapetasi International Multi-purpose Wharf Development Project.

The study countries have made progress in improving aid effectiveness by allocating professional staff to aid coordination. The establishment of the Pacific Regional Infrastructure Facility (PRIF) by

development partners in 2008 to enable its members to improve development effectiveness and donor coordination is also an important development.

Figure 3: Main Donor Activity in the Study Countries by Investment Area (Millions)



Growth and Retraction in the Sector

Cruise tourism is of increasing importance in the region. In Vanuatu for instance, cruise tourism constitutes the bulk of the 40 percent of GDP that the tourism industry accounts for, with almost 70 percent of the annual tourist visitors arriving via cruise ships (TRIP, 2011). Several countries including Vanuatu, Fiji, Samoa, and Tonga have completed or planned construction of port infrastructure in anticipation of increased cruise ship frequency and sizes. This development will have implications for port congestion, as well as for international compliance (e.g., the countries would need to be compliant with the Electronic Chart Display and Information Systems (ECDIS) regulation under the International Convention for the Safety of Life at Sea (SOLAS) that requires ports to have electronic charts for ships over 500 gross tons).

Seafaring remains a vital industry for PICTs, providing employment and contributing to national income. In Kiribati, for instance, seafaring is by far the most important source of private-sector employment for I-Kiribati, with remittances contributing to about 6 percent of GDP. The recent global trend in the industry has been an oversupply of *ratings* (the highest level certified by MTIs in most PICTs) and an undersupply of certified officers, as well as growing competition in the industry around labour costs, discipline, and adaptability. These have contributed to the decline in demand for seafarers from several PICTs. For instance, the number of I-Kiribati and Tuvaluan seafarers employed on merchant vessels was 1366 and 241 in 1999, respectively (Firth, 2006), and has since fallen to 1200 and 100 in 2013, with both seafarer wages and remittances declining quite significantly. This has implications for PICTs seafarer competitiveness and quality standards, requiring changes in maritime training institutions to allow for greater responsiveness to emerging issues and trends. All the study countries are evaluating options to revive seafaring; these should be coordinated and should include greater private-sector involvement and regional approaches.

Maritime Legislation and Conventions

International maritime conventions regulate the maritime industry and facilitate trade among nations. The study countries are party to UNCLOS and are members of IMO. They seek to ensure safe, reliable, efficient, and affordable maritime services in accordance with international conventions and standards. Compliance requires enactment and enforcement of local legislation to give effect to international conventions. Pacific Islands Maritime Laws (PIMLaws), which are model legislation specific to the Pacific context, have been developed to address this challenge. These have particularly assisted Small Island States (SIS) with limited capacity, including Kiribati and Tuvalu, to adapt national legislation in a timely manner while countries such as Samoa and Tonga have used sections of PIMLaws to supplement their national legislation, where gaps existed. The study countries have made progress in acceding to key international conventions but still experience challenges with translation of the international conventions into domestic legislation and lack of capacity to implement and enforce them, although sectoral laws and regulations are readily available online in most of the study countries.

Box 2: Pacific Islands Maritime Laws (PIMLaws)

PIMLaws are a set of up-to-date generic instruments that PICTs can easily incorporate into their national legal systems, consistent with international maritime conventions, and customary laws and practices. Several sections can be updated as maritime conventions are amended or as practices change. PIMLaws have been developed to cover non-convention vessels less than 500 GT, as well as small vessels under 15 metres - two areas not covered by international maritime conventions.

PIMLaws are generally seen as a very efficient mechanism to allow PICTs to update their legislation and regulations. Continuous and ongoing review of PIMLaws helps PICTs to remain current with international standards.

Infrastructure Investments

The main international ports in PICTs have benefited from major infrastructure improvements within the last decade that can facilitate trade growth. For instance, in Solomon Islands and Federated States of Micronesia, major improvements were made within the last five years; while major infrastructure developments are being proposed for Vanuatu, Fiji, and Samoa. These have been lopsided toward investments in wharves and pavement expansions and equipment replacement, with little or no investment in ancillary infrastructure such as roads and passenger and cargo facilities. Infrastructure improvements have not been accompanied by preventive maintenance programs, scheduled dredging, or plans for future equipment replacement. This has resulted in a backlog of dredging, ageing pilot boats, poor maintenance of facilities and assets, and poor access roads. These ongoing maintenance concerns undermine the impact and sustainability of recent infrastructure investments.

International and Intraregional Shipping

Reflecting worldwide trends, the maritime sector in PICTs has had success in transitioning to containerised shipping. Consolidation of services is taking place with the merger of shipping lines and emergence of hub ports and slot-sharing arrangements. As a result, most trade from Tuvalu, Samoa and Tonga depends on transhipment via Fiji, and commodities from Tonga are transhipped via Samoa.

There are relatively good north-south and east-west shipping connections with major trading partners for all categories of cargo, such as bulk, break bulk, and reefer cargo. Freight rates in the region are stable but high due in part to PICTs long and thin routes, cost of ship operation (including high fuel

costs), small markets, and limited exports, among other reasons. Domestic and intraregional shipping improvements have been achieved through regional approaches such as the formation of shipping commissions, including the Central Pacific Shipping Commission (CPSC), to address the perennial challenge of irregular, uncertain, and very costly shipping services in smaller Small Island States (SIS).

In many instances, only the main international ports in PICTs can cope with containerised shipping, while cargo has to be devanned and broken down to be shipped to outer islands. This disrupts supply chains and undermines the efficiency gains from containerisation. It suggests that even the highest performing ports among the study countries are not as efficient as ports in Fiji and other regions (Table 5).

Table 5: Port Efficiency in Selected PICTs Compared to Other Island-Based Countries, 2014

Country	Fiji	Kiribati	Tonga	Samoa	Tuvalu	Singapore	Mauritius	Jamaica
Efficiency rate (hourly average)	20 containers per hour	4 containers per hour	14 containers per hour	12 containers per hour	4 containers per hour	73 moves per hour	25 moves per hour	32 moves per hour

Source: JOC Group (2014)

Domestic shipping services are provided by the public sector in Tuvalu, a mix of public and private sector in Kiribati, an SOE in Tonga, and solely by the private sector in Samoa and Vanuatu. The study countries continue to face challenges with providing regular and safe passenger services. Services to outer and remote islands are often irregular; vessels are often overloaded and lack lifesaving and/or emergency communications equipment. Servicing remote routes is often unprofitable, yet they constitute very important public service obligations for these countries. Some of the study countries (Tonga and Tuvalu) have acquired new ships, with donor support, to improve frequency and safety of domestic shipping services, while Vanuatu has introduced a shipping franchise scheme to improve connectivity with outer and more remote islands. The Pacific Islands Domestic Ship Safety Programme (PIDSS) has been a regional response to addressing lingering issues in domestic shipping by advocating legal, institutional, and cultural changes to promote safety. PIDSS has been piloted in Kiribati, Tonga, and Vanuatu, which are among those countries that experienced major recent maritime accidents. A lack of funding has, however, limited the expansion of PIDSS to other PICTs.

Private-Sector Involvement and SOE Reform

PICTs recognize the need to increase the efficiency and profitability of their main international ports. Consequently, many countries have established autonomous SOEs to manage these ports, which were previously the responsibility of the public sector. However, according to a recent ADB Study (2014), despite large government capital injections and monopoly power, these SOEs achieve low or negative returns on their investments and contribute very little to GDP.

Facilitating private-sector involvement in employment creation, small business development, tourism, and trade is an integral component of structural reform being implemented in PICTs to promote inclusive growth and fiscal sustainability. Many PICT governments have formulated supportive strategies and action plans for incorporating private-sector investments in the maritime sector, and several have improved their procurement systems by transferring functions traditionally undertaken by the central government or SOEs to the private sector. For example, in Samoa and Tonga, private-sector involvement in stevedoring has resulted in timely and reliable services.

One effective initiative is the Fiji Shipping Franchise Scheme, which was started in 1996 to ensure adequate and reliable shipping services on uneconomical island routes (see Box 3). The scheme is a form of competitive auction for subsidies among shipping companies based on a cost model developed by the Fiji Commerce Commission. A three- to five-year contract is negotiated subject to annual reviews. The subsidy amount granted to successful bidders is approximately 40 percent of the assessed operations cost, and contractors are allowed to keep any revenue collected. The subsidy is not provided to reduce fares and freight costs but to make the routes commercially viable and encourage reliable service (ADB 2008). As part of the scheme, franchise observers travel on the vessels to monitor and report on safety and shipping conditions. This enables settlement of franchise accounts within 48 hours upon receipt of verified reports. Vessel operators are also required to publish monthly voyage schedules in advance for approval by the ministry. These are then published in the outer islands. All these requirements allow shipping companies to maintain effective cash flows and enable businesses and passengers to better plan their shipping demands. Customer satisfaction surveys indicate more reliable service and increased connectivity among the main and outer islands, and there is a strong correlation between reliable shipping service and economic growth/export trade from the outer islands.

Box 3: Key factors contributing to the success of the Fiji Shipping Franchise Scheme

1. There is a high level of national political commitment to providing access to transport as a right, enshrined in Fiji's Constitution.
2. The cost model and consultations with stakeholders to determine subsidies provides an objective basis to assess tenders from vessel operators.
3. The government's cost commitments are fixed and properly reflected in the budget, which promotes transparency.
4. Vessel operators are incentivised to improve operations since the subsidy only covers 40 percent of their cost, allowing risk transference to the private sector.
5. The annual reviews of the contracts promote accountability.
6. The use of franchise observer reports to verify and ensure timely payments to vessel operators.
7. The use of customer satisfaction surveys empowers citizens and facilitates reliable service delivery.

The Solomon Islands, Vanuatu and Kiribati have, or plan to implement similar subsidy schemes for some of their uneconomic routes.

Opportunities exist for deeper private-sector participation in maritime service delivery in areas such as infrastructure construction and maintenance, and ship operation and maintenance. Service needs, such as port dredging, could be provided by the private sector at a regional level, offering economies of scale.

While privatisation may be an effective mechanism for long-term productivity and efficiency, it may not always be politically or economically feasible, given the financial and regulatory capacity

constraints in PICTs. Partial privatization, however, through joint ventures and public–private partnerships (PPPs), can also improve performance in the sector. Nonetheless, private-sector participation will vary across PICTs. For instance, participation in Tuvalu is and may continue to be limited due to poor access to financing resulting from inadequate collateral. On the other hand, in Samoa and Vanuatu, where the private sector has been involved in stevedoring, port efficiency has improved. Generally, budgetary and fiscal limitations are a big reason for increasing levels of private-sector involvement in these countries. Such involvement will most likely be through a mix of models that cater to PICTs' local contexts.

PART III COUNTRY SITUATION AND GAP ANALYSIS

This section presents the situation, gap analysis, recommendations, and action plans for each of the study countries. An analysis of the three pillars of the maritime sector (Institutions, Port Infrastructure, Shipping and Trade) for each country identified key gaps in the sector for each pillar and ranked them according to their societal impact (Table 6). Recommendations of measures to address these gaps were then formulated for each country. Finally those gaps which could best be addressed on a regional level were identified. The recommendations were prioritized based on their potential to contribute to significant and robust transformation of the sector. The feasibility and ease of implementing these recommendations were further assessed and considered in the prioritization process. The action plan proposing the time frame for implementation and indicative costs of these measures was prepared for each country.

Table 6: Criteria for Ranking Gaps

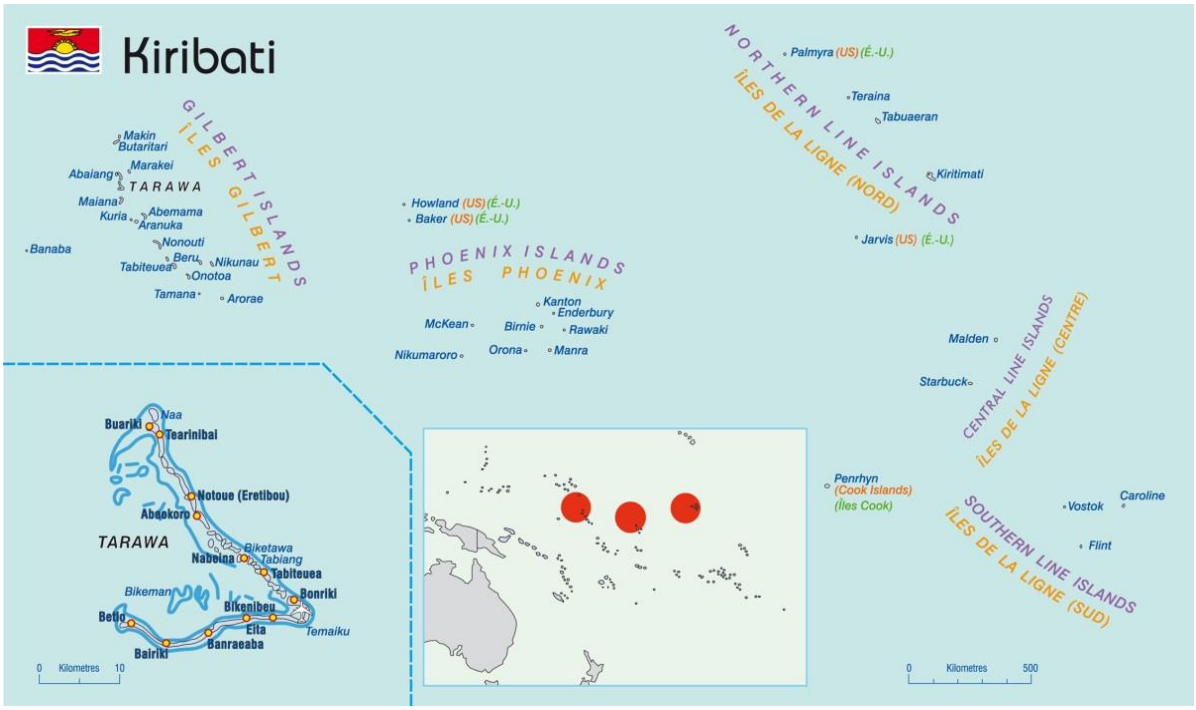
Impacts	Weight
Compromises Safety (e.g., passenger and cargo safety, loss of lives)	40%
Inhibits Connectivity (e.g., threatens food security, social welfare, transhipment or trade opportunities)	25%
Impedes Good Governance, Accountability and Compliance (e.g., poor compliance with international obligations)	20%
Hinders Private-sector Involvement and Sustainability (e.g., reduces efficiency and competitiveness)	15%

Source: compiled by SPC 2015

Kiribati

The Republic of Kiribati consists of 33 low-lying islands that form three island groups, the Gilbert, Phoenix, and Line Islands, and has a total population of 110,000 spread over a total land area of 810 kilometers. It is a lower-middle-income country, one of the most isolated in the world, and is highly vulnerable to external economic and environmental events. Kiribati's narrow resource base and lack of arable land and freshwater limit its domestic production, although it has an EEZ of 3.5 million km^2. With limited local economic opportunities, over half of Kiribati's income and revenues originates externally, making Kiribati highly vulnerable to external economic shocks. Growth is largely supported by fishing license revenues and joint fishing operations. Long-term resilient economic growth in Kiribati will depend on political will to continue reform programs outlined in the Kiribati Development Plan (KDP, 2012–2015), including tax reform that commenced in April 2014, SOE reforms, and creating an enabling environment for the private sector to thrive.

Figure 4: Map of Kiribati



Source: Authors

Table 7: Socio-Economic, Political and Maritime Context of Kiribati

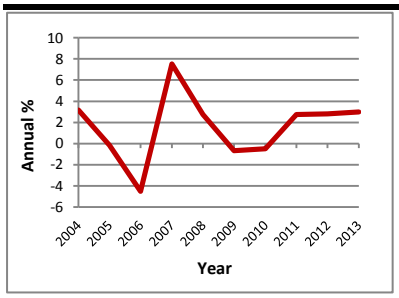
General Information

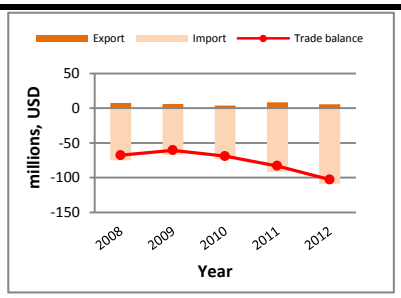
Capital City:	Bairiki, Tarawa	**Land Surface Area:**	811 sq. km
Population (2013 est.):	108,800	**Exclusive Economic Zone:**	3,437,345 sq. km
Population density (2013):	134 persons per sq. km	**Official Currency:**	AUD (Australian Dollars)
Urban population (2010):	54 per cent	**Language(s):**	I-Kiribati and English (official)
Dependency ratio (15-59 years):	71	**Local government system:**	*mwaneaba* and island councils

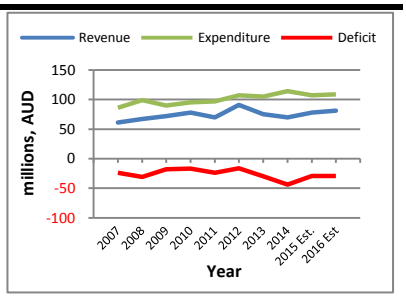
Recent economic and social indicators

Gross Domestic Product (2013):	USD 172 million	**Poverty rate (2010):**	35 per cent
GDP per capita (2013):	USD 1,570	**Youth population (15-24):**	20.4 percent
Real GDP growth (2013):	2.9 per cent	**Infant mortality rate (2010):**	45 per 1000
Inflation (% change, 2013):	2.0 per cent	**Av. life expectancy (2010):**	62 years
Current account balance (2013):	USD -81 million	**MDGs:**	Mixed progress

Real GDP Growth, 2004 - 2013	Trade Balance	Government Revenue and Expenditure







Trade – major exports and imports, and trade value (USD thousands)

Major imports						**Major exports**					
Imports, 2008-2012	**2008**	**2009**	**2010**	**2011**	**2012**	**Exports, 2008-2012**	**2008**	**2009**	**2010**	**2011**	**2012**
All products	75,161	67,004	73,093	91,747	108,558	All products	7517	6,276	3,894	8,598	5,816
Food	30,459	28,334	29,752	41,383	36,590	Food	6,004	4372	2,607	6,931	5,098
Manufactures	22,429	26,579	23,393	26,754	50,965	Manufactures	1182	1,455	1,074	908	619
Fuel	20,598	10,894	18,099	17,684	17,863	Mach. & Tran. Equip.	584	1303	828	681	198
Mach. & Tran. Equip.	8,824	13,973	10,204	10,885	21,822	Agric. Raw materials	137	281	52	447	30.55
Chemical	4,397	2,839	3,523	3,499	3,971	Ores and Metals	84	2.34	0	5.16	18.63

Trade – principal merchandise trade partners/relationships

Import sources, 2010-12

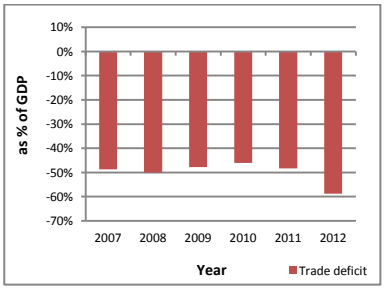
2010		2011		2012	
Country	**(%)**	**Country**	**(%)**	**Country**	**(%)**
Australia	28.08%	Australia	36.05%	Australia	24.36%
Fiji	26.79%	Singapore	17.74%	Japan	21.09%
Singapore	10.66%	Fiji	13.40%	Singapore	15.40%
USA	8.73%	USA	7.04%	Fiji	13.93%
Japan	7.38%	China	7.04%	New Zealand	6.59%

Export destinations, 2010-12

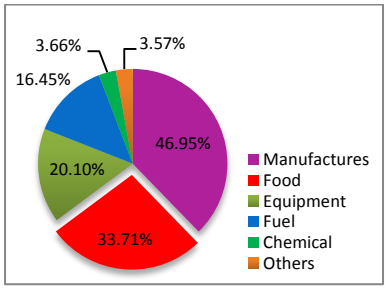
2010		2011		2012	
Country	**(%)**	**Country**	**(%)**	**Country**	**(%)**
Other Asia	37.10%	Other Asia	57.67%	Morocco	47.04%
Australia	20.43%	Morocco	14.11%	Other Asia	20.39%
Hong Kong	18.30%	Australia	13.22%	Hong Kong	10.67%
New Zealand	4.26%	Hong Kong	6.74%	Vietnam	6.22%
Vietnam	3.62%	Vietnam	5.87%	Fiji	5.84%

Trade as % of GDP

Trade deficit as a % of GDP



Product share as a % of total imports, 2012



Maritime Sector data

Seafarer data, as of 2014:		International Port:	Port Betio (Tarawa Island)
Total Number of Graduates	≈ 5000	# international vessels/year	≈ 51
Graduates per year	≈ 70-90	Container throughput:	#7225 TEU
# employed on merchant vessels	≈ 1200	Hourly average:	3 – 4 moves per hour
# employed on foreign fishing vessels	≈ 300-400	International Memberships:	ILO, IMO, WCO, WTO

Source: SPC SDD Data, PRISM; World Bank WDI and WITS; Kiribati National Census 2010; IMF World Economic Indicators, April 2013; UN MDG Indicators, 2014

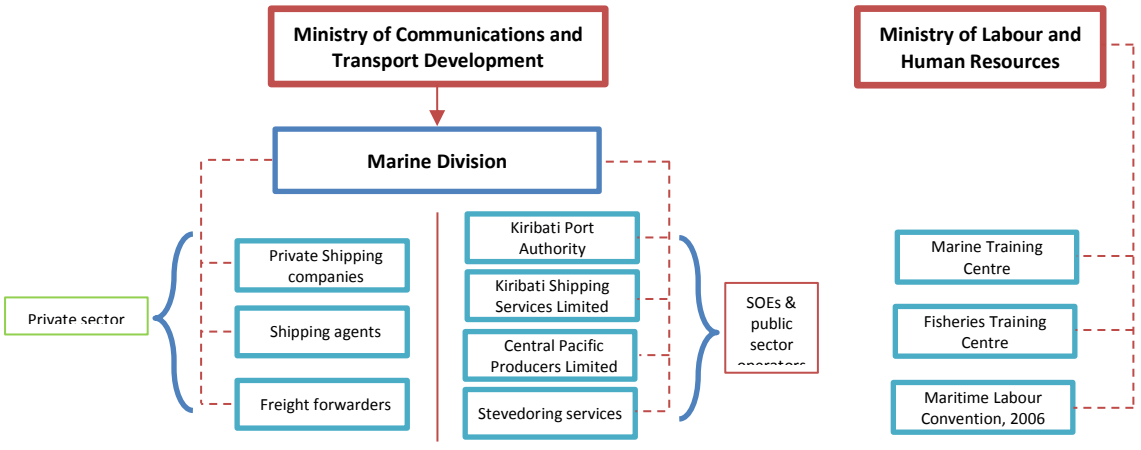
Kiribati Maritime Sector Situation and Gap Analysis

Given the geographic, environmental and economic pressures and challenges Kiribati faces, a well-functioning maritime transport sector is critical to provide access to affordable goods, services and employment for I-Kiribati. Reliance on imports places a huge demand on ensuring timely and efficient international and domestic shipping services. The sector also supports trade, tourism, and mobility to enable access to key socioeconomic needs, such as education and healthcare, and provides training and employment opportunities for I-Kiribati. Key related outcomes for the sector in the KDP 2012–2015 include: improved water passages, asset maintenance and replacement, professional local capacity, private-sector development, tourism, SOE performance; and development of value-added products. Achieving these largely hinges on effective planning and coordination of actions among the government, private sector, and development partners.

Institutional Arrangements

Pending the 2015 World Bank-funded *Transport Sector Strategic Development Plan*, the maritime sector is guided by the Kiribati Development Plan (KDP), 2012–2015. This plan recognises the maritime sector as a facilitator of economic growth, trade, industrialisation, and well-being. Under this plan, the Ministry of Communications and Transport Sector Development (MCTTD) oversees the strategic development and regulation of the maritime sector to ensure safety and security, as mandated by national maritime legislation and the minister (Figure 5). Within MCTTD, the Marine Division is responsible for maritime administration, provides technical advice to the ministry on maritime policies and legislation, and drafts and administers legislation and regulations. This division operates under a recurrent budget of AUD 422, 311, a capital budget of AUD 4,000, and has no maintenance budget. The Marine Division has only four technical staff, highlighting a major capacity challenge. Kiribati Port Authority (KPA), a statutory body mandated under KPA Act 1990, is an SOE responsible for managing and operating the ports (Betio, English Harbour and Christmas Island Ports).

Figure 5: Organisational Structure of the Maritime Sector in Kiribati



Source: Authors

Kiribati Shipping Services Limited (KSSL), an SOE, provides affordable domestic shipping services, mainly to remote islands. Central Pacific Producers Ltd (CPPL), also an SOE, was established to develop tuna-fishing operations and manage rural fishing centres to facilitate fish trade but now also

provides domestic shipping services. The few private-sector actors include private domestic shipping companies, private shipping agents, and freight forwarders.

The Ministry of Labour and Human Resources Development (MLHRD) manages the two maritime institutions (the Marine Training Centre (MTC) and the Fisheries Training Centre (FTC)) and the implementation and compliance with the Maritime Labour Convention, 2006. MTC trains students to become qualified seafarers and professional seamen (to achieve the level of rating) for employment in deck and engineering positions on international vessels. FTC provides training to enhance the fishing knowledge and skills of I-Kiribati to enable them to work on foreign fishing boats. Under New Zealand Aid Programme (NZAid) funding, FTC is being merged into MTC in 2014.

To date, Kiribati is party to 26 IMO conventions, but most have not been incorporated into national legislation. The Marine Division experiences challenges in timely passage of maritime legislation, and a number of regulations are pending government approval. Several safety-related laws and regulations, including the Marine Pollution Act, Pilotage, SAR and Merchant Shipping Regulations, are yet to be developed. Major technical capacity gaps faced by the Marine Division largely hinder effective enforcement of adopted national legislation and regulations.

Kiribati lacks current and reliable maritime transport data, including information on infrastructure and facilities, vessels, schedules and fares, and maritime sector actors, all of which form the basis for effective planning, benchmarking, assessing progress and decision making in the sector.

Seafaring Training

Kiribati MTC has produced almost 5,000 graduates since its establishment in 1967 to meet domestic and international demands in the shipping industry (UN, 2014; DFAT, 2014). About 1,200 I-Kiribati men are employed as seafarers mainly on German merchant ships, while around 300 to 400 are employed as fishermen on board local and foreign fishing vessels, and a growing number are also employed on cruise ships. MTC trains up to *ratings* level, and most I-Kiribati seafarers work in low-skilled positions as able-bodied or ordinary seamen (ILO, 2010). NZAid is funding an ongoing large-scale renovation and expansion of MTC to upgrade the school's facilities and facilitate the school's merger with FTC.

Gap Analysis

Table 8 identifies key institutional challenges to creating a safer, more efficient maritime sector in Kiribati.

Table 8: Key Institutional Gaps in Kiribati Maritime Sector

Gap	Principal Causes
1. Backlog of legislation and regulations and poor enforcement due to legal, financial, and technical capacity gaps in the Marine Division and KPA.	This persistent challenge arises from difficulty in retaining qualified professional staff due to retirement, resignation, and reshuffling of key personnel, resulting in loss of institutional knowledge. The division operates within a very limited budget and is therefore unable to afford a dedicated maritime lawyer to draft legislation

	and regulations, and to employ experienced and qualified staff (which are in limited supply) to effectively carry out its enforcement functions.
2. MTC training not responsive to industry demands	The cause of this gap is two-pronged: lack of higher-level training and cost-competitiveness. Very few students are willing or able to train to officer levels where major global demand lies. Due to high flight costs, graduate *ratings* from MTC are also unable to effectively compete with *ratings* from major global seafarer suppliers like the Philippines, which are easier and cheaper for shipping companies to recruit and manage.
3. Poor performing SOE: loss-making KSSL	This is caused by high cost of operations due to poor vessel design and aging and poorly maintained vessels that in turn result from budgetary constraints. KSSL charges lower than market rates, and faces difficulty securing the earmarked subsidies to cover its subsidisation costs. Having gone bankrupt a number of times, previous KSSL reform and restructuring attempts have met with limited success.
4. Weak national statistical systems	Underlying this is insufficient funding required to procure and maintain a centralised database system and associated software, and to employ full-time staff dedicated to collating maritime sector data.

Port Infrastructure and Operations

Kiribati's two international ports are government owned and managed by KPA: Port Betio, the primary international port, is located in Tarawa, and Port London is located on Christmas Island. Both ports service international and domestic cargo, passenger and fishing vessels, and are main transhipment ports for domestic and international cargo. Port London receives few cruise ship visits.

Port Infrastructure

Port Betio was recently expanded and renovated under an AUD 36 million Japanese grant. This project has addressed a number of key infrastructure issues and has improved turnaround times (GoK, 2014), but several issues still hamper port access, connectivity, and operations. Numerous wrecks and derelicts restrict the available anchorage and navigable space in the already small harbor as well as the size of vessels that can use the facility. The narrow access road leading to the port creates vehicle congestion that interferes with access and hinders efficient cargo delivery.

Betio and London Ports have no domestic passenger and cargo terminal facilities to facilitate assembly and dispersion of passengers and freight, and to protect cargo prior to vessel loading. Entry into Port London is limited due to high tide and swells, and the land access bridge to the jetty is too narrow, which slows down the workflow of cargo operations. Operations are further slowed by the aging mobile cranes and other cargo machinery. Port infrastructure and other maritime assets are poorly maintained in both ports, leading to rapid deterioration and often to premature

replacement. Limited financial capacity prevents KPA from providing the ongoing maintenance and repairs required to provide efficient and effective port services.

The most important domestic ports across the country's 21 inhabited islands are Canton, Fanning and Washington ports. Conditions at these ports range from very basic and often highly inadequate jetties and support infrastructure, to no physical port infrastructure. Some ports have only boat channels, which need to be dredged and maintained to keep them deep enough for transfer of passengers and cargo from ships to shore using small boats during low tides. Some channels are exposed to weather and prevailing winds, making them dangerous; there have been several fatal accidents resulting from motorboats being washed over by high swells during manoeuvres in the channel. Most domestic ships do not wait for calm conditions to backload, and copra is often spilled in the process, with most being damaged and rendered unsaleable.

Port Operations

Betio Port receives about 51 international commercial vessels per year (single ship visits by different ships), including cargo ships and tanker vessels. In late 2014, the average turnaround time of international container ships was under 24 hours, an improvement from the 2 to 3 days experienced in 2013 and early 2014. Annual container throughput is 7225 TEUs, comprising 3917 TEUs In and 3309 TEUs Out. The port efficiency rate of 3 to 4 containers per hour, on average, is low compared to a rate of 14 containers per hour achieved in Tonga in 2013. Cargo-handling equipment is operational, but machinery is old, requiring maintenance or replacement, which slows down port operations. The domestic wharf lacks adequate lighting, which is needed for domestic ships to be able to operate effectively at night. Nautical charts in Kiribati are significantly outdated, and it would require concerted effort to update the country's hydrographic surveys to comply with current SOLAS and ECDIS requirements.

Gap Analysis

Principal challenges in Kiribati's port infrastructure and operations are listed in Table 9.

Table 9: Key Port Infrastructure and Operations Gaps in Kiribati

Gap	Principal Causes
1. Absence of supporting infrastructure in Port Betio including passenger/cargo terminal, waste facilities, and pollution response capabilities	This gap is mainly due to insufficient funding, but also to poor planning and prioritization of capital expenditures - no port development plan in place leading to ad hoc infrastructure upgrades and expansion projects.
2. Lack of an adequately-sized tug boat	This is due to KPA's limited budget.
3. Numerous wrecks, derelicts and abandoned vessels; unleveraged opportunity to engage the private sector in salvage and wreck removal	This primarily arises due to unclear legislative requirements regarding removal of wrecks; high cost of their disposal; and lack of awareness of regional private-sector players for salvage and removal operations.
4. Absence of outer-island infrastructure, dangerous entry channels, and passenger safety and cargo handling deficiencies in the Line and Phoenix Islands Groups	This is primarily due to poor planning and prioritization of capital expenditures—no port development plans in place; lack of adequate funding to build and maintain infrastructure

	and navigation aids in outer islands
5. Outdated navigational surveys and charts	This gap is due to inadequate funding to undertake this highly technical and costly task.

Shipping Services and Trade

Kiribati's reliance on imports places a huge demand on ensuring timely and efficient international and domestic shipping services. Unreliable shipping services not only affect food security and livelihoods, they also hinder growth in exports.

International and Domestic Shipping Services

Kiribati has been experiencing more stable and better international shipping freight rates, much lower than tendered rates, and more reliable shipping services since its membership in CPSC. Compared to an average of three vessel calls per month prior to CPSC, Betio Port now receives about 4 calls per month. Christmas Islands is now serviced by two vessels: a vessel operated by Pacific Direct Line (PDL) under CPSC-arrangements which was once every three months, and is now once every two months; and a Kyowa Shipping vessel out of Asia once a month.

In contrast, domestic shipping has been a much bigger challenge due to the wide dispersion of the country's 21 inhabited islands. For instance, Fanning, Washington, and Christmas Islands are all more than 1,600 nautical miles from Tarawa. This geographical challenge means than most outer-island shipping routes are not commercially viable, yet sea transport is the only means of trade, mobility, and access to basic social services for a significant proportion of Kiribati's population. Kiribati's ability to fully benefit from several of its preferential and regional trading agreements hinges on improving domestic shipping services and providing domestic port infrastructure since most production takes place on the outer islands.

Accounting for 35 percent of gross tonnage (GT), KSSL dominates the domestic shipping sector. This is followed by CPPL, with 8 percent, and a number of private shipping companies. Of the 40 or more domestic multi-purpose (cargo/passenger) trading vessels operating in Kiribati, averaging 10 years old, the majority are small in size (15GT or less) with minimal freight and passenger capacity, mostly operated by small-scale operators. Only three domestic ships are currently certified to service the entire country—one operated by KSSL and two private vessels—while the rest are restricted by shipping regulations to short-distance routes. Service by the private sector and KSSL are reliable on all short lucrative routes, but remote outer islands remain underserviced, resulting in cargo shortages affecting about 60 percent of the population. KSSL is mandated to service all islands, but is unable to charge tariffs to reflect true operating costs and depends on subsidies. As a result KSSL is unprofitable and a major financial liability for the government, prompting calls for its reform.

Domestic ship safety, especially among fishermen, is a major challenge in Kiribati. Recent accidents have often been related to fishermen ignoring safety instructions on appropriate gear to take to sea, or not accounting for weather conditions. Within the first eight months of 2013, the Marine Division recorded eleven missing vessels, and all but one has been found (RadioNZ, 2013). The Marine Division drafted a new marine law under the Shipping Act in 2013, covering fishing distance specifications, licensing and maintenance requirements, to ensure the safety of all vessels, which

was submitted to Cabinet in 2013. Responding to maritime emergencies is also a challenge due to the lack of a dedicated fast response SAR boat; the sector relied on hired craft in the event of maritime incidents. As part of its Pacific Maritime Safety Programme initiatives, in February 2015, New Zealand donated a new police rescue boat capable of a speed in excess of 45 knots, along with training to the Kiribati police to run the vessel; and provided financing for a 60-metre high navigation tower and beacon, an extension of Kiribati's new 3G mobile phone network, and the installation of a VHF repeater network (RadioNZ, 2015). These recent measures are expected to promote greater safety in the sector, particularly in the area of search and rescue.

Vessel Maintenance

Vessel maintenance is a major challenge. Since most domestic ships are old, they require extensive maintenance that shipping companies often fail to conduct, citing high costs of service and parts. KSSL's vessel is 18 years old, and Kiribati's private domestic trading vessels have an average age of 10 years. Delayed maintenance has led to the deterioration of ships, higher maintenance and operational costs, and the use of unsafe ships that are at a greater risk of accidents. Basic ship repair services are provided by Betio Shipyard Limited (BSL), an SOE. BSL's slipway and shipyard repair facility is capable of handling maintenance work on small vessels but is in need of crucial rejuvenation and is insufficiently sized to service all domestic vessels. BSL has been recording a loss since 2009 and has significant debt, which the government has often been required to take over. In view of a suggested PPP strategy for BSL developed by ADB in 2012, in 2014, the government expressed interest in establishing a PPP for the existing shipyard and slipway facility at Betio via a contestable bidding process. While no progress has been cited on this, if the initiative is undertaken, it should result in the repair and upgrade of the existing slipway and/or construction of a new larger slipway.

The need for a life raft, and facilities to fight fires and service other life-saving equipment in Kiribati was cited during consultations. Based on the report's assessment, due to the limited number of domestic vessels for these services, there is insufficient demand to make such investments viable. The report recommends that Kiribati consider forming an agreement for future servicing arrangements with one or more of the existing facilities in the sub-region, including those in nearby Samoa, Tonga and Vanuatu, or Fiji.

Trade

The agricultural sector mainly consists of subsidized copra production and subsistence agriculture. Consultations revealed opportunities for the private sector in small-scale manufacturing to produce value-added and niche agricultural and fisheries products, including virgin coconut oil, noni oil and chips, niche fish cuts through Kiribati's onshore fish factory (Kiribati Fishing Limited (KFL)) and expansion of handicraft exports. Opportunities to expand trade, particularly to and from Christmas islands, the only island in Kiribati with arable land, are limited by poor entry access and the low frequency of vessel calls.

Private Sector Engagement and Sustainability

As the KDP indicates, the government of Kiribati has expressed its intention to facilitate private-sector development to promote robust and sustainable growth, and it strives to engender an

enabling environment for private-sector development to address the country's low Doing Business Ranking. Yet, progress in this area has been very limited, as evidenced by very weak private-sector engagement in the maritime sector. The government has shown interest in PPPs and reforming SOEs, with limited progress. Aside from the few aforementioned private-sector actors, major private-sector activities in the maritime industry are largely limited to fisheries, tourism, and copra production. Stakeholders cited promising opportunities for Christmas Island's private sector to be driven by tourism, especially in light of the popularity of ecotourism and game fishing on the Island. There is also unleveraged potential for private-sector involvement in small-scale manufacturing for value-added and niche products, and tourism and trade expansion, with associated increase in maritime activities. Limitations to private sector involvement emanate from a number of factors including: non-competitive business environment and lack of incentives; high cost of finance and lack of access to credit; bureaucratic investment procedures; lack of commercial regulatory capacity for consistent enforcement and to spur dynamic entrepreneurial growth; the state's price-distorting subsidies for some agricultural products; and land ownership limitations for domestic and foreign investors.

Gap Analysis

The gap analysis identified four key gaps in shipping services and trade in Kiribati (Table 10).

Table 10: Key Gaps in Shipping Services and Trade in Kiribati

Gap	Principal Causes
1. Use of unsafe and poorly maintained vessels due to delayed maintenance	Consultations revealed that this is due to high costs of maintenance services and parts as well as inadequate dry docking facilities in Kiribati. Ship owners often must travel to alternate maintenance facilities in Fiji or other nearby PICTs, which is often unaffordable or impossible as some aged vessels are unable to travel those distances.
2. Underservicing of uneconomic routes	This arises because of the thin traffic volumes and long distances on these routes, making them costly for private-sector operators. KSSL, charges a highly subsidised rate, which inhibits private-sector operators from charging competitive rates to cover the cost of plying these routes. There are no economic or other incentives available to the private sector to service uneconomical routes, and KSSL is only able to make a limited number of trips to these islands due to its limited number of vessels.
3. Limited private-sector participation in the maritime sector	This relates to the dominance of SOEs and the small maritime services market that often requires a monopoly player. This results from an absence of attractive markets due to unfair competition, especially in shipping services, and the inability of public institutions to organise competitive subsidy systems to enable private participation.
4. Poorly functioning slipway, lack of planned maintenance program; unleveraged opportunities for	This primarily arises from the government's inability to attract a private-sector operator despite recent progress in developing a PPP Strategy for the existing

private-sector involvement in ship repair and maintenance	slipway and shipyard facility.

Key Priorities and Next Steps

Based on the prioritization of key actions, the following three measures were identified as priority actions to support a culture of maritime safety in Kiribati. These include: (i) Introducing a shipping support scheme for unprofitable services to remote outer islands; (ii) designing safe ship-to-shore procedures, developing a code or practice for safe transfer of passengers and cargo, and upgrading port facilities; and (3) reviewing the curriculum for MTC. Collectively, these measures have the potential for multiplier effects, including employment creation, trade facilitation, increasing remittances, and potentially reducing internal migration pressures.

It is important for Kiribati to be able to sustain these measures in the medium- to long-term, primarily through increases in national or agency budgets and/or user charges. As part of this process, it is important that the sector's prominence is raised among key policy makers. Integrating maritime sector plans and policies with those of associated sectors, particularly trade and tourism, is also warranted.

Table 11: Ranking of Identified Gaps in Maritime Sector, Kiribati

Gap		Ranking	Rationale
Institutional Arrangements			
Gap 1	Backlog of legislation and poor enforcement	2	Risk of non-compliance with international obligations and enforcement issues due to *safety* and other regulations not being in place. Acts as a governance and accountability measure
Gap 2	Underperforming MTC	1	Compromise safety enforcement and undermines employment opportunities; risk of being blacklisted
Gap 3	Poor performing SOE	3	Crowds out private-sector investment; poor efficiency and competitiveness
Gap 4	Weak statistical systems	4	Leads to poor planning and decision-making due to lack of data
Port Infrastructure and Operations			
Gap 1	Absence of supporting infrastructure in Port Betio including passenger/cargo terminal, waste facilities, and pollution response capabilities	5	Compromises passenger safety and undermines security of port operations; risk of damage to cargo; risk of environmental pollution
Gap 2	Tug boat lacking	4	Existing small tug boat compromises safe and efficient movement of vessels
Gap 3	Wrecks and derelicts	1	Compromises safe vessel movement and port operations, with a higher risk of accidents; port approach to avoid wrecks reduces efficiency
Gap 4	Absence of outer island port superstructure and ancillary infrastructure, and dangerous entry channels	3	Undermines passenger safety during vessel loading and unloading, causes cargo damage and results in inefficiencies and shipping service disruptions
Gap 5	Outdated navigational surveys and charts	2	Risk of non-compliance with international obligations (IMO ECDIS requirement under SOLAS).
Shipping Services and Trade			
Gap 1	Use of unsafe and poorly maintained vessels	1	Compromises passenger safety and increases risk of loss of lives; frequent break-downs and increased operating costs.
Gap 2	Underservicing of uneconomical routes	2	Food security and hardship risks; increased governance issues regarding subsidies and essential PSOs.
Gap 3	Limited private-sector participation in the maritime sector	4	Inhibits efficiency, competitiveness, and innovation; strains the government budget, and encourages political patronage
Gap 4	Poorly functioning slipway	3	Infrequent and costly maintenance of vessels compromises safety

Source: Authors

Table 12: Ranked Recommendations, Feasibility, and Time Frames for Maritime Sector, Kiribati

Institutional Arrangements				
Gap in Order of Priority	**Measures/Recommendations**	**Feasibility**	**Ease of Implementation**	**Timeframe**
1. Underperforming MTC	1. Undertake MTC curriculum reform to expand training to include safety, higher Classes and new niche areas, and staff development	– Will help implement existing Strategic Plan – Possible budget expansion to address additional costs	– National commitment in place – Strengthens already successful MTI	Short-term
2. Backlog of legislation and poor enforcement	2. Undertake legislative reform program including development of legislative action plan, capacity supplementation, building enforcement capacity	– Can leverage existing pool of maritime lawyers and regional model legislation	– Recognised as a national priority	Short-term
3. Poor performing SOE – KSSL	3. Continue SOE reforms with an end goal to better involve the private sector in delivery of service	– Previous reforms have had limited success	– Limited political will – Government recognises the importance of private-sector participation	Medium- to long-term
4. Weak statistical systems	4. Build maritime data repository and integrate with national statistics system	– Fairly reliable national statistics and capacity in place – Regional repository agreements in place	– National commitment evidenced by signed data repository MOU	Short-term
Port Infrastructure and Operations				
Gap in Order of Priority	**Measures/Recommendations**	**Feasibility**	**Ease of Implementation**	**Timeframe**
1. Wrecks and derelicts	1. Implement Wreck and Derelicts removal program, including review of regulatory framework for derelicts removal and disposal.	– National legislation already in place – Private-sector experience in this area	– Strong political will	Short-term
2. Out-dated navigational surveys and charts	2. Update hydrographic surveys and publish charts including in electronic format	– Complements recent port improvements, but limited expertise and budget – IMO requirement to have electronic charts by July 2015 for vessels >500 GRT	– Leverages regional experience in Vanuatu and Tonga	Short- to medium-term
3. Absence of outer island infrastructure, and dangerous	3. Design safe ship-to-shore procedures and develop code or practice for safe transfer	– Maritime safety legislation drafting ongoing	– Strong national commitment – Leverages successful regional	Short-term

entry channels	of cargo and passengers 4. Build outer island infrastructure based on medium to long-term feasibility study	– Experiences from regional ship-to-shore projects can be replicated and tailored to the Kiribati context	ship-to-shore project, e.g., in Tuvalu	 Medium- to long-term
4. Tug boat lacking	5. Procure new tug boat	– Complements recent port improvements	– Consistent with nationally-approved port strategic plan	Short-term
5. Absence of supporting infrastructure in Port Betio	6. Prepare a port masterplan that addresses issues including passenger/cargo terminal, waste facilities, and pollution response capabilities	– Builds on recent port improvements	– Consistent with nationally-approved port strategic plan	Short-term
Shipping Services and Trade				
Gap in Order of Priority	**Measures/Recommendations**	**Feasibility**	**Ease of Implementation**	**Timeframe**
1. Use of unsafe and poorly maintained vessels	1. Establish vessel maintenance and replacement fund 2. Introduce maintenance plans	– Limited budget availability – Involves buy-in from several government agencies and private-sector stakeholders	– Issue has persisted for over a decade – Leverage recent studies on the need for maintenance	Long-term Short-term
2. Underservicing of uneconomical routes	3. Introduce incentive-based shipping scheme involving the private sector	– Regional experience in this area can be leveraged	– Strong national support	Short-term
3. Inadequately-sized slipway	4. Expand slipway	– Complements recent port improvements	– Existing regional slipway designs are available	Short-term
4. Limited private-sector participation in the maritime sector	5. Develop private-sector policy, including re-assessing subsidies/other incentives to ensure a level-playing field	– Vested interests involved – Can draw on regional experiences	– Strong national support – Leverage national commitment to private sector development	Short-term

Note: Short-term is defined as 1-2 years, medium-term as 3-5 years, and long-term more than 5 years.

Table 4: Kiribati Maritime Sector Action Plan

Measure/Recommendation	Time-Frame	Indicative Cost (US$)	Recurrent Cost (US$ p.a.)	Recurrent Cost Funding (est. %)[2]
Institutional Arrangements				
1. Expand MTC curriculum training to include safety, higher Classes, niche areas, and staff development.	Short-term	750,000	one-off	Budget: n/a User: n/a
2. Legislative reform program, develop legislative action plan, supplement capacity, build enforcement capacity.	Short-term	250,000	5,000	Budget: 100 User: n/a
3. Continue SOE reforms to increase private-sector involvement in the delivery of services.	Medium- to long-term	100,000	2,500	Budget: 100 User: n/a
4. Build maritime data repository and integrate with national statistics system.	Short-term	50,000	2,500	Budget: 100 User: n/a
Port Infrastructure and Operations				
1. Program to remove wrecks and derelicts vessels, including review of regulatory framework for removal and disposal.	Short-term	500,000	25,000	Budget[3]: 100 User: n/a
2. Design safe ship-to-shore procedures, develop code or practice for safe transfer of passengers and cargo, and upgrade facilities.	Short-term	2,000,000	150,000	Budget: 80 User: 20
3. Update hydrographic surveys and publish charts, including in electronic format.	Short- to medium-term	1,000,000	one-off	Budget: n/a User: n/a
4. Build outer island infrastructure based on medium- to long-term feasibility study.	Medium- to long-term	5,000,000	250,000	Budget: 90 User: 10
5. Procure new tug boat.	Short-term	250,000	25,000	Budget: 75 User: 25
6. Prepare port master plan to address passenger/cargo terminal, waste facilities, and pollution response capabilities.	Short-term	100,000	one-off	Budget: n/a User: n/a
Shipping Services and Trade				
1. Establish vessel maintenance and replacement fund.	Long-term	5,000,000	one-off	Budget: n/a User: n/a
2. Develop plans to maintain maritime assets.	Short-term	50,000	one-off	Budget: n/a User: n/a
3. Introduce incentive-based shipping scheme involving the private sector.	Short-term	100,000	one-off	Budget: n/a User: n/a
4. Expand slipways.	Short-term	1,000,000	50,000	Budget: n/a User: 100
5. Develop private-sector policy, re-assess subsidies and other incentives to ensure level-playing field.	Short-term	50,000	one-off	Budget: n/a User: n/a
Totals:		**16,200,000**	**510,000**	

Note: Short-term is defined as 1-2 years, medium-term as 3-5 years, and long-term more than 5 years.

[2] While donors are likely finance some of the proposed improvements, reliable long-term funding for recurrent costs will need to come from government budgets and/or user fees.

[3] KPA Budget.

Samoa

Samoa is located south of the equator, about halfway between Hawaii and New Zealand in the Polynesian region of the Pacific Ocean. The total land area is 2,842 km² (1,097 sq. miles), and consists of the two large islands of Upolu and Savai'I, which account for 99 percent of the total land area, and eight small islets. Samoa is a lower-middle-income developing country, and the economy has traditionally been dependent on development aid, remittances, agriculture, and fishing. Efforts are underway to promote inclusive growth and sustainable development by diversifying the economy. The focus is on promoting manufacturing, tourism, and exports of niche agricultural products, which are the main drivers of demand for transport services, including in the maritime sector. Samoa recorded stable economic growth until disruptions caused by the global recession. Samoa experienced tsunamis in 2009 and 2012 that disrupted agriculture and tourism, and damaged critical infrastructure.

Figure 6: Map of Samoa

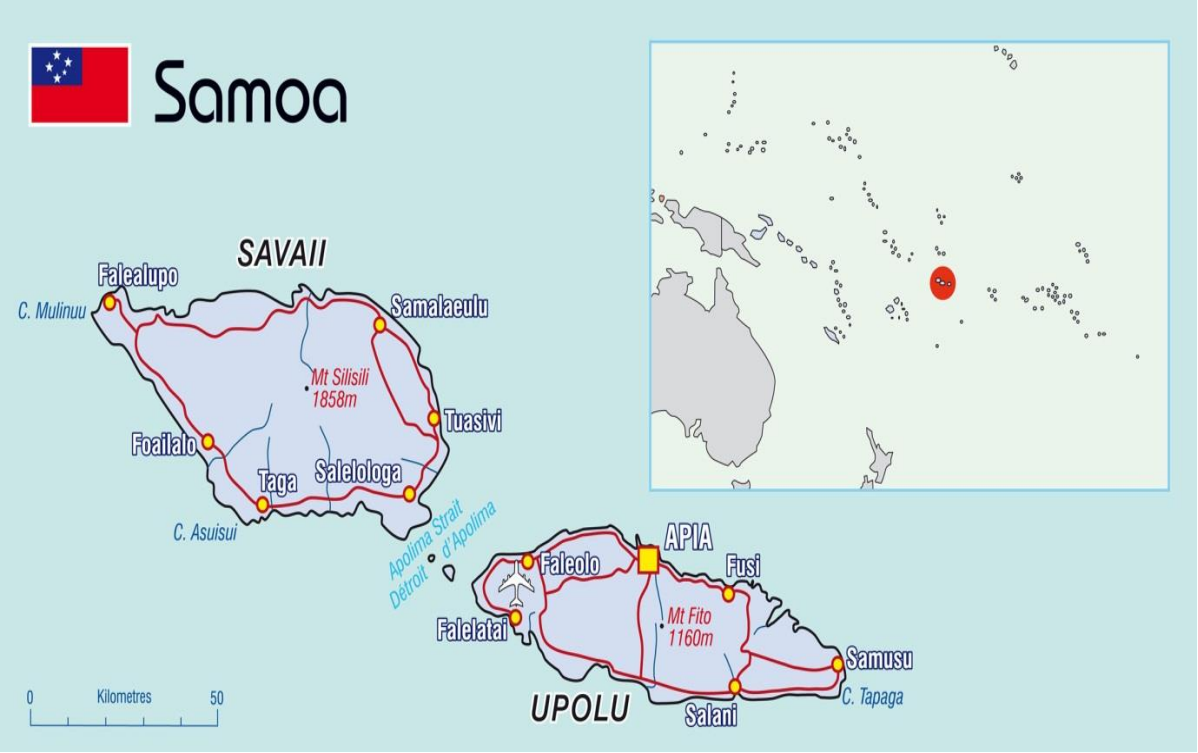


Table 54: Socio-Economic, Political and Maritime Context of Samoa

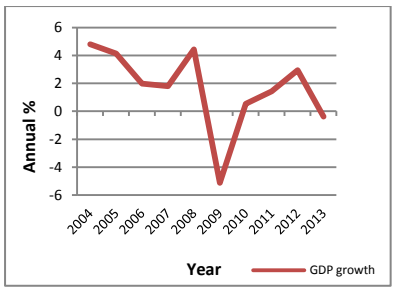
General Information

Capital City:	Apia	**Land Surface Area:**	2934 sq. km
Population (2013 est.):	187,400	**Exclusive Economic Zone:**	120,000 sq. km
Population density (2013):	64 persons per sq. km	**Official Currency:**	Tala (WST)
Urban population (2011):	20 per cent	**Language(s):**	Samoan (Polynesian), English
Dependency ratio (15-59 years):	87	**Local government system:**	*fonos*

Recent economic and social indicators

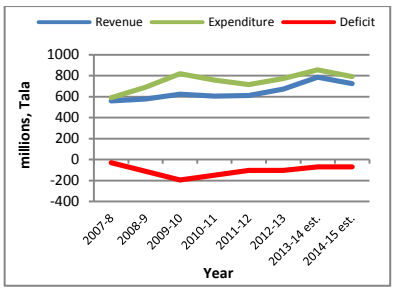
Gross Domestic Product (2013):	USD 705 million	**Poverty rate (2008):**	26.9%
GDP per capita (2013):	USD 3,832	**Youth population (15-24):**	18.7 percent
Real GDP growth (2013):	-0.35 per cent	**Infant mortality rate (2011):**	15.6 per 1000
Inflation (% change, 2013):	-0.207 per cent	**Av. life expectancy (2011):**	74.15 years
Current account balance (2011-2):	USD -32.38 million	**MDGs:**	Mixed/On Track

Real GDP Growth, 2004 - 2013



Trade Balance

Government Revenue and Expenditure



Trade – major exports and imports, and trade value (USD thousands)

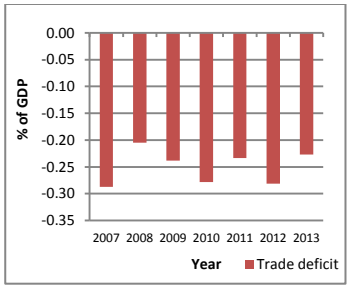
Major Imports						Major Exports					
Imports, 2008-2012	**2008**	**2009**	**2010**	**2011**	**2012**	**Exports, 2008-2012**	**2008**	**2009**	**2010**	**2011**	**2012**
All products	75,161	67,004	73,093	91,747	108,558	All products	7517	6,276	3,894	8,598	5,816
Food	30,459	28,334	29,752	41,383	36,590	Food	6,004	4372	2,607	6,931	5,098
Manufactures	22,429	26,579	23,393	26,754	50,965	Manufactures	1182	1,455	1,074	908	619
Fuel	20,598	10,894	18,099	17,684	17,863	Mach. & Tran. Equip.	584	1303	828	681	198
Mach. & Tran. Equip.	8,824	13,973	10,204	10,885	21,822	Agric. Raw materials	137	281	52	447	30.55
Chemical	4,397	2,839	3,523	3,499	3,971	Ores and Metals	84	2.34	0	5.16	18.63

Trade – principal merchandise trade partners/relationships

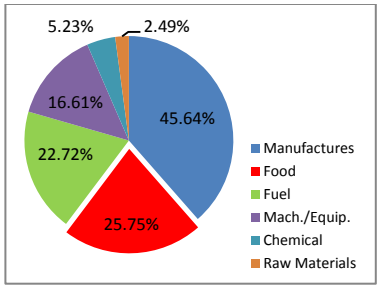
Major Imports						Major Exports					
Imports, 2008-2012	**2009**	**2010**	**2011**	**2012**	**2013**	**Exports, 2008-2012**	**2009**	**2010**	**2011**	**2012**	**2013**
All products	230,539	309,847	345,906	345,515	366,588	All products	45,976	70,250	66,264	76,102	62,109
Manufactures	74,034	167,425	169,590	157,686	168,933	Manufactures	32,006	46,582	35,539	38,294	30,433
Food	69,362	76,019	90,212	88,957	100,029	Mach. & Tran. Equip.	31,533	45,453	33,911	36,911	28,537
Fuel	42,828	54,402	73,461	78,506	80,636	Fuel	33	10,738	11,876	17,633	15,124
Mach. & Tran. Equip.	20,349	74,236	74,251	57,391	58,238	Food	9834	12,518	17,173	17,888	15, 035
Chemical	12,322	15,115	16,778	18,075	19,397	Chemical	58	38	155	170	382

Trade as % of GDP

Trade deficit as a % of GDP



Product share as a % of total imports, 2013



Maritime Sector data

# of seafarers, as of 2014:	530	# International vessels/year:	101
International memberships:	ILO, IMO, WCO, WTO	Container throughput; hourly avg:	13,217 TEUs (11/hr.)
International Port:	Apia Port		

Source: SPC SDD Data, PRISM; World Bank WDI and WITS; Samoa Ministry of Finance; IMF World Economic Indicators, April 2013

Samoa Maritime Sector Situation and Gap Analysis

The maritime sector is integral to Samoa's medium-term development plans to revive growth and ensure sustainable revenue collection. The sector is viewed as part of an integrated transport network that is '*Sustainable, safe, secure and environmentally responsible which supports Samoa's economic and social development and contributes to improving the quality of life for all Samoans*' (Transport Sector Plan 2014–2019). The key strategic areas within the maritime sector are to upgrade and maintain ports and related services and to improve safety and security systems for all ports. Achieving these objectives requires soft and hard infrastructure investments such as capacity building, improved maintenance, planning and constructing infrastructure consistent with growth objectives while embracing environmental sustainability. This hinges directly on the fiscal space available to the country. It is also contingent on effective development planning and complementary actions between the government, private sector and development partners.

Institutional Arrangements

Several sectoral development plans are in place to guide the development of the sector. For example, Key Outcome 10 of the Strategy for the Development of Samoa 2012–2016 (SDS) is *'Efficient, safe, and Sustainable Transport System and Network*.' The key strategic areas for the maritime sector are to upgrade and maintain ports and related services and improve safety and security systems for all ports.

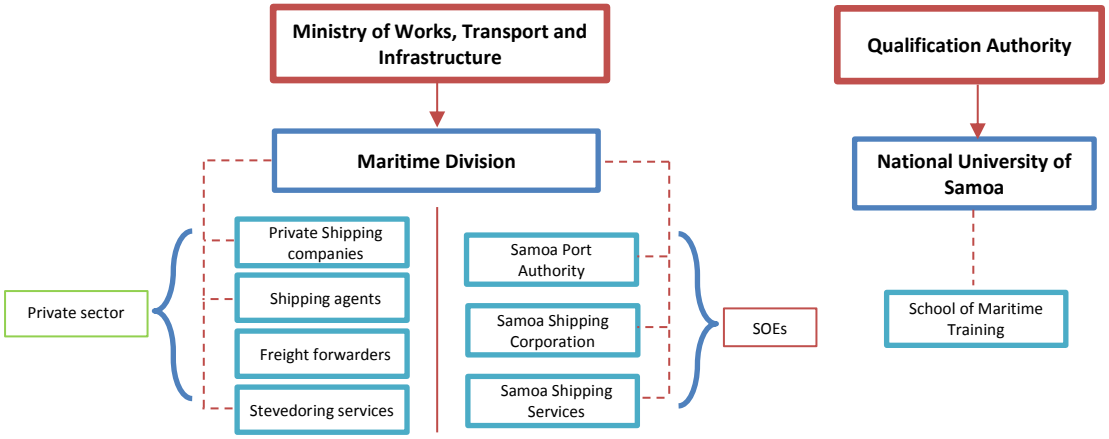
The Ministry of Works, Transport and Infrastructure (MWTI) headed by a chief executive officer is responsible for maritime sector policy development and sector leadership (Figure 7). The Maritime Division within MWTI is responsible for day to day administration of the sector (regulation, ship registry oversight, port and flag state control, ship surveys and safety inspections, and ensuring enforcement with international conventions) and providing technical advice to the minister. It has 13 staff, most of whom are technically qualified and divided in functional work areas as follows: Certification – 2 staff; Surveys – 2 staff; Registration – 1 staff and safety Inspectorate (hydrographical) -8 staff. General staff training is undertaken on an as-needed basis through regional training programs. Maritime officials in Samoa note that international conventions and codes are dynamic which requires increasing local awareness and introduction of new standards from time to time. This in turn demands new staff competencies, at all levels of the sector, including among private-sector port workers.

The Samoa Port Authority (SPA) manages the main port with services such as stevedoring provided by the private sector. Competition among the private sector to provide key services has been instrumental in the port developing a good reputation for efficiency and service delivery. SPA also operates five other ports in Samoa. SPA recently incurred substantial financial losses resulting in the need for a government bailout of WST 10 million to refinance debts. The ADB/PRIF (2014) undertook an organization review of SPA covering issues such as: tariff setting and asset management; optimum staff levels; staff training, development and retention; and maintenance planning and implementation. The results of the review have been accepted and will form the basis of SPA's new corporate plan.

Samoa Shipping Corporation (SSC) and Samoa Shipping Services (SSS) are SOEs that provide domestic shipping services and international seafaring and shipping services respectively. The School of Maritime Training (SMT) is the main entity responsible for training seafarers. SMT is part of the National University of Samoa, which reports to Samoa Qualification Authority.

The Ministry of Finance with assistance from the World Bank is in the process of finalizing a public private partnership policy (PPP) which will provide guidance to such arrangements. This should result in increased private sector participation in the economy.

Figure 7: Organisational Structure of the Maritime Sector in Samoa



Source: Authors

Samoa is generally compliant with international maritime conventions and codes. Consultative approaches are used to inform preparation of laws, including those in the maritime sector. Key maritime sector legislation is available online. Despite recent progress, Samoa still experiences challenges in obtaining timely passage of maritime legislation such as the STCW Manila Amendment, which has been under consideration for over a year. Such delays are due in part to absence of legal officers (with experience in maritime conventions) to instruct the Attorney General's Office.

Samoa has Memoranda of Understanding (MoU) with New Zealand and Australia concerning ship survey. Port State Control is managed in accordance with the *Shipping Act*. Samoa is not a member of the Tokyo MOU.

Data Collection and Management

Statistical data is readily available from SPA, including reports on monthly ship movements, container throughput, and cargo volume. Data for trade facilitation is also readily available from the Ministry Revenue's Customs Department's ASYCUDA World software. The Ministry of Revenue also produces general and specialised trade statistical reports on a regular basis; as does the Central Bank of Samoa.

Seafaring Training

Seafaring continues to be a very important source of employment in Samoa. SMT recently graduated 127 seafarers and currently has an enrolment of 100, plus 75 remedial students. However as with other PICTs, Samoa is facing competition in the sector. As part of reviving seafaring the government is strengthening SMT to ensure its compliance with STCW to retain its IMO White List status. A new campus is being built and outfitted with assistance from China. It is due to open late in 2015. New competency-based training programs in niche areas (for service on fishing and cruise vessels) and for domestic non-seagoing maritime sector workers are being introduced and staffing is also being strengthened through attachments in New Zealand. SSS also operates an academy which is aimed at training seafarers for the domestic market.

Gap Analysis

Table 15: Gaps in Institutional Arrangements in Samoa

Gap	Principal Causes
1. Limited budget	Samoa's economy is still recovering from recent economic slowdown which has affected the government's fiscal space; this has in turn required adjustment in the public sector including budget restraints which affected the maritime division's ability to expand staffing and other programs.
2. Delays in approving maritime legislation	This gap arises primarily because of the absence of technical staff to assist the Attorney General's Officein the drafting of technical maritime sector legislation. It is also due to a crowded legislative agenda.
3. Communication arrangements in the maritime sector are ad hoc	This gap arises because communication and coordination among stakeholders in the maritime sector including with the private sector in the sector is largely informal.
4. There is a need to ensure consistency of information from various data sources.	This is due to timing issues and the fact that multiple agencies collect data and report for their own purposes, which leads to data inconsistencies.
5. No clear strategy in place to promote private-sector participation in the maritime sector.	Samoa is keen to develop the private sector, but SOEs still dominate the maritime sector in a very small domestic market; the focus seems to be on propping up and expanding existing SOEs. (note: the World Bank is providing assistance to finalize a PPP policy, which should impact the maritime sector as well).

Port Infrastructure and Operations

Samoa has adopted the landlord port model to manage its main port in Apia which has contributed to Samoa achieving one of the highest port-efficiency rates in the region, as well as very good maintenance of port equipment. That said, Samoa Port Authority (SPA), an SOE, is highly indebted, due to past non-core investments. An organisational review of SPA was undertaken in early 2014 by PRIF. This will provide a basis for future corporate plans, designed to improve its performance. Samoa is also contemplating several major port infrastructure projects to address congestion issues and allow for growth in cruise tourism. These need to be carefully appraised given the tight fiscal conditions in the country.

Port Infrastructure

Apia Port serves both general international cargo ships and visiting cruise ships. The port complex is properly fenced and well lit. Entry and exit to the port is controlled from a guard house. General port security is provided 24 hours and operations security is provided when vessels are in the port.

There appears to be no road congestion issues on the access road leading to the port, but substantial sections of the road pavement are eroded and rain water accumulates in the area. Flooding occasionally impedes access to the port and nearby offices. The port has two berths. Berth 1 was constructed in 1966 with funding from New Zealand and is in need of major structural repairs. Berth 2 is fully operational. Surfaces at the berths are generally in a good state of repair, although there are some minor drainage issues. The structural problems at Berth 1 adversely affect port operations since cruise ships are given priority at Berth 2, resulting in the occasional need to transfer some port operations to an alternate location. Given the increasing importance of cruise tourism, the government has recently announced plans to construct a new port on the Island of Upolu. JICA has recently approved funding for major infrastructure improvements at Apia port that will address many of its structural issues. Apia port currently does not have reception facilities for hazardous waste or procedures to handle waste oils and sludge. The ADB is also providing technical assistance to the government to prepare a Ports Masterplan for Apia port which should also address these issues.

Storage for general containers is adequate. There is currently capacity for 72 reefer containers, and SPA plans to provide space for an additional 24 reefer containers to take advantage of increasing transhipment of reefer containers to neighbouring countries such as Tonga and Tokelau. Several warehouses that are leased to the private sector are located within the port complex. These facilities are in a good state of repair. The port has a weighbridge, which has reopened following recent maintenance.

A domestic and regional ship and passenger terminal and a yacht berthing area are also located at a secure area, within the Apia Port complex. These facilities are in a good state of repair. The terminal is well lit and ventilated and has some shopping areas. It has its own dedicated wharf, which is also used for trade with Tokelau and American Samoa.

An international wharf (and slipway) is located at Aleipata in the village of Satitoa on the east end of the island of Upolu. It was conceived to become a major connection with American Samoa, to

facilitate export of fish to the United States. Infrastructure at the port is in reasonable state of repair, although periodic dredging is required. A small international port which is seldom used is also located at Asau on the north-west coast of the island of Savai'i. Several domestic ports are uneconomic (TSP 2014-2019[Volume 11, page 31]).

Domestic ports are located in Muilifanua on the north-west of the island of Upolu and at Salelologa on Savai'i Islands. These ports are used for domestic passenger, cargo, and vehicle transport ferries. They are in good condition, requiring only periodic dredging. The ownership of these ports was transferred from SPA to SSC to ensure efficient inter-islands ferry service while the Aleipata slipway and wharf is leased to SCC according to a Cabinet decision in 2014. SSC has also assumed responsibility for periodic dredging of domestic ports. These changes are consistent with the implementation of the ADB/PRIF Organizational review of SPA

Port Operations

Stevedoring is managed by the private sector, which owns major assets such as warehouses, cranes and forklifts. These assets are reported to be in a good state with no major maintenance issues. Currently, five shipping agents and six freight forwarders are registered with MTWI.

SPA's single pilot boat recently underwent major repairs, while its two aging tug boats are in need of major maintenance (JICA recently signed a contract to rehabilitate the tugs and pilot boats). Navigational charts and maps are manual but were recently updated as part of an NZAP regional hydrography project. Further assistance is anticipated in this area, which should enable Samoa to comply with ECDIS requirements.

Private-Sector Involvement

Under the landlord port model the private sector owns and operates container handling equipment, which are generally in a good state of repair due to regular maintenance and replacement. Competition among private-sector operators has resulted in good service delivery to customers. The government is also reforming those SOEs that are performing badly (ADB 2014) which offers further opportunities for private-sector involvement in the maritime sector. In addition to opportunities arising from SOE reforms, specific areas for greater private-sector involvement in the maritime sector in Samoa include provision of maintenance services and operation of the slipway.

Gap Analysis

Four key gaps in Samoa's port infrastructure and operations have been identified (Table 16).

Table 16: Gaps in Port Infrastructure and Operations in Samoa

Gap	Principal Causes
1. No minor infrastructure improvement and maintenance plans are in place at Apia Port to address drainage issues, periodic dredging and replacement of fenders, equipment and pilot boats.	This gap arises due to lack of capacity to plan maintenance, as well as an under appreciation of the importance of maintenance for it to be accorded the priority status it deserves.
2. Shallow and silting port access and turning	The responsibility for port dredging falls under

basin area in outer island ports	two SOEs (SPA for undertaking dredging and SSC as main users of the ports), which causes challenges for planning and coordinating this function, especially as budgets are tight. [This responsibility was transferred to SSC in July 2014]
3. No reception facility for hazardous waste or procedures in place to handle waste oils and sludge.	This gap arises as only recently this matter has been given attention internationally and within PICTs and due to limited funding to address it in a timely manner.
4. Aged pilot and tug boats	This arises due to limited funding being available to replace these vessels; also replacement funds have not been established to allow funds to be accumulated over time. [JICA recently agreed to fund the rehabilitation of pilot and tug boats]

Shipping Services and Trade

Samoa has generally good shipping connectivity (Table 17). However, freight rates to Samoa are high due to its geography and demographics, as well as its high import–export imbalance, but shipping companies are keen to be responsive to changing demand. This is a boon for development of international shipping into Samoa. Recently there has been a drop in the number of ship arrivals due to consolidation and use of larger vessels (from 174 arrivals in 2009 to 75 in 2012) (Ministry of Finance, 2014). Transhipment of goods (especially refrigerated cargo) to Tonga, Tokelau, Niue, and Cook Islands is increasing due to consolidation. This presents an opportunity for Samoa and needs to be factored into future port infrastructure development plans.

Table 6: Container Services to Port Apia, Samoa

Origin	Frequency
North and East Asia	every 20 days
New Zealand (Consortium Lines)	twice per month
New Zealand (Independent Line)	monthly
US West Coast	every 15 days
US & China (PFL)	monthly

Source: TSP 2013-2018

The SSC, regulated by MTWI under the *Shipping Act*, provides domestic shipping services. Reliable ferry passenger/cargo service is provided between domestic ports several times a day. Voyage schedules and tariffs are published online. SSC has six vessels, leased from the government, and aged between 4 to 16 years, with cargo and passenger capacity ranging from 299 to 1,045 GT and 60 to 740 passengers respectively. SPA owns a 1,000 ton capacity slipway which is leased to SSC and provides shore power, painting machines and accessories, water and sand blasting, and scissor lift. The company is profitable, and pays annual dividends to the government. SSC vessels operate in American Samoa and are therefore subject to United State Coast Guard safety inspection. This has increased the company's reputation for safety and has proved a point of pride. The SCC has also

instituted good preventative maintenance and ship replacement regimes through the establishment of a dedicated fund.

As part of the government's structural reforms it is keen to foster greater private-sector involvement in the economy. The private sector is very active in the shipping sector as freight forwarders and shipping agents, often as part of international partnerships.

Gap Analysis

While shipping services are generally in good shape in Samoa, regional shipping would benefit from a better strategy, as briefly outlined in Table 18.

Table 7: Gaps in Shipping Services and Trade in Samoa

Gap	Principal Causes
1. Plans to develop and expand regional shipping appear to be ad hoc.	Until recently no specific strategies (trade fairs, marketing, networking) were pursued to promote regional shipping. Regional trade may be slow to grow since trade and supply chains tend to follow traditional patterns.

Key Priorities and Next Steps

Samoa has made good progress in providing safe, efficient and reliable shipping services, which provides a basis for maximizing the maritime sector's contribution to the country's economic development, which center on promoting tourism and export promotion. Samoa's efforts to improve shipping safety provides good practices that could be replicated in other PICTs. This report recommends the following three measures as priorities for Samoa: 1) slowly increasing the budget of the Maritime Division to support staff development and retention plans, which are critical to enforcing safety requirements; 2) implementing the agreed recommendations of the ADB/PRIF Organizational Review of SPA to improve effectiveness of core functions, including maintenance planning and implementation; and 3) evaluating options to expand intra-regional trade.

To ensure the sustainability of the measures proposed in this report, Samoa will need to progressively increase the budget of the Maritime Division, and ensure that SSC is able to implement an optimal tariff in line with improvements in service delivery. Opportunities to increase competition and private sector involvement should also be promoted. This report presents a framework of complementary actions to address key issues in the sector. To ensure its adaptation, maritime sector officials are encouraged to meet at the earliest opportunity with stakeholders in the Ministries of Finance and Planning, as well as the private sector, to raise awareness of issues in the sector.

Table 19: Ranking of Identified Gaps in Maritime Sector, Samoa

Gap		Ranking	Rationale
Institutional Arrangements			
Gap 1	Limited budget	1	Compromises safety enforcement, and other maritime functions are not fully carried out
Gap 2	Delays in approving maritime legislation	2	Risk of non-compliance with international obligations and enforcement issues due to *safety* and other regulations not being in place. Governance and accountability measure; risk of being blacklisted
Gap 3	Ad hoc communication arrangements exacerbated by the involvement of multiple development partners	4	Poor implementation of strategies and plans and exacerbates capacity gap
Gap 4	Inconsistency of information from various sources.	5	Poor planning and decision-making due to lack of data
Gap 5	No clear strategy in place to promote private-sector participation due to dominance of SOEs in the maritime sector	3	Crowding out private-sector investment; poor efficiency and competitiveness strains the government budget, and encourages political patronage
Port Infrastructure and Operations			
Gap 1	Lack of minor infrastructure improvements and maintenance plans at Apia Port	1	Undermines effectiveness of investments in port infrastructure and equipment, increasing operational costs, risk of damage to ships and shipping service disruption
Gap 2	Absence of procedures and reception facility for hazardous waste	4	Risk of environmental pollution
Gap 3	Shallow and silting port access and turning basin area in outer island ports	2	Compromises safety of navigation
Gap 4	Aged pilot and tug boats	3	Compromises safety of navigation
Shipping Services and Trade			
Gap 1	Ad hoc regional shipping development plan	1	Undermines trade development plans and transhipment opportunities and employment creation

Table 20: Recommendations and Priority Actions

Institutional Arrangements				
Gap in Order of Priority	**Measures/Recommendations**	**Feasibility**	**Ease of Implementation**	**Timeframe**
1. Limited budget.	1. Increase budget over time based on approved staff development plans	– Limited budget space	– Awareness of this issue is high	Short-term
2. Delays in approving maritime legislation.	2. Legislative reform program, develop legislative action plan, supplement capacity, build enforcement capacity	– Leverage existing pool of maritime lawyers and regional model legislation	– Recognised as a national priority	Short-term
3. No clear strategy to promote private-sector participation in the maritime sector due to dominance of SOEs.	3. Formalize stakeholder consultation in sector consistent with aid coordination role of MoF	– Private-sector policy in place	– Ongoing private-sector capacity development programs – Strong private-sector capacity	Short-term
4. Ad hoc communication arrangements exacerbated by involvement of multiple development partners.	4. Provide economic incentives to foster increased private-sector involvement consistent SOE reforms	– Previous reforms have had limited success	– Limited political will – Government recognises the importance of private-sector	Short- to medium-term
5. Inconsistency of information from various sources.	5. Build maritime data repository and integrate with national statistics system (led by Samoa Bureau of Statistics)	– Reliable national statistics/capacity exists – Regional repository agreements in place	– National commitment evidenced by signed data repository MOU	Short-term
Port Infrastructure and Operations				
Gap in Order of Priority	**Measures/Recommendations**	**Feasibility**	**Ease of Implementation**	**Timeframe**
1. Lack of minor infrastructure improvements and maintenance plans at Apia Port.	1. Implement agreed recommendations of ADB/PRIF operational assessment of SPA	– Leverage assessments done by ADB/PRIF	– National commitment in place – SPA Corporate Plan in place based on ADB/PRIF assessment	Short-term
2. Shallow and silting port access and turning basin area in outer island ports.	2. Rationalize operations of small domestic ports and wharfs to guide planned dredging	– Consistent with the TSP 2014 - 2019	– Government has endorsed plan – Consistent with tourism development plan	Short- to medium-term
3. Aged pilot and tug boats.	3. Procure pilot and tug boats, and introduce preventative maintenance	– Complements ADB/PRIF recommendations	– Major impact which will engender buy-in and support	Short-term
4. Absence of procedures and reception facility for hazardous waste.	4. Integrate waste reception/pollution response in future port projects.	– Will complement recent investments in the port	– Consistent with regional PACPOL plan	Medium-term
Shipping Services and Trade				
Gap in Order of Priority	**Measures/Recommendations**	**Feasibility**	**Ease of Implementation**	**Timeframe**
1. Ad hoc regional shipping development plan.	1. Evaluate options to expand intra-regional trade	– Regional experiences can be leveraged	– National support for regional shipping and trade development	Short- to medium-term

Table 81: Samoa Maritime Sector Action Plan

Measure/Recommendation	Time Frame	Indicative Cost (US$)	Recurrent Cost (US$ p.a.)	Recurrent Cost Funding (est. %)[4]
Institutional Arrangements				
1. Increase MWTI's budgets over time based on approved staff development plans.	Short-term	Government-funded	50,000	Budget: 100 User: n/a
2. Legislative reform program, including develop action plan, supplement capacity, build enforcement capacity.	Short-term	200,000	5,000	Budget: 100 User: n/a
3. Formalize stakeholder consultations consistent with aid coordination role of Ministry of Finance.	Short-term	Government-funded	one-off	Budget: n/a User: n/a
4. Provide economic incentives to increase private-sector involvement consistent with SOE reforms.	Medium-term	50,000	one-off	Budget: n/a User: n/a
5. Build maritime data repository and integrate with national statistics system.	Short-term	50,000	one-off	Budget: n/a User: n/a
Port Infrastructure and Operations				
1. Implement agreed recommendations of ADB/PRIF operational assessment of Samoa Ports Authority.	Short-term	500,000	one-off	Budget: n/a User: n/a
2. Develop dredging plans based on rationalized operations of small domestic ports and wharfs, carry out dredging.	Medium-term	500,000	25,000	Budget: 90 User: 10
3. Procure pilot and tug boats, and introduce preventative maintenance of port facilities and vessels.	Short-term	1,500,000	150,000	Budget: 75 User: 25
4. Integrate waste reception and pollution response in future port development projects.	Medium-term	100,000	one-off	Budget: n/a User: n/a
Shipping Services and Trade				
1. Assess options to expand intra-regional trade.	Short- to medium-term	10,000	one-off	Budget: 100 User: n/a
Totals:		**2,910,000**	**230,000**	

Note: Short-term is defined as 1-2 years, medium-term as 3-5 years, and long-term more than 5 years.

[4] While donors are likely finance some of the proposed improvements, reliable long-term funding for recurrent costs will need to come from government budgets and/or user fees.

Tonga

Tonga is a constitutional monarchy and an archipelagic country consisting of 172 islands, 36 of which are inhabited. Tonga is located 2,000 km from New Zealand and 3,000 km from Australia. Tonga is a middle-income country. The main economic sectors are tourism and agriculture, accounting for 10 percent and 20.9 percent of GDP, respectively. The economy was severely affected by the 2008–2009 global financial crisis and recession. The situation in Tonga was further exacerbated by tropical cyclones Lin and Ian in 2009 and 2014 respectively. These adversely affected agriculture production and damaged infrastructure. To improve economic growth and resilience the government is implementing a structural reform program as part of a Budget Support agreement with key development partners. Key elements of the reform agenda include fiscal consolidation and promoting niche agricultural exports and tourism (including cruise tourism). These elements will increase the demand for an efficient transport sector.

Figure 8: Map of Tonga

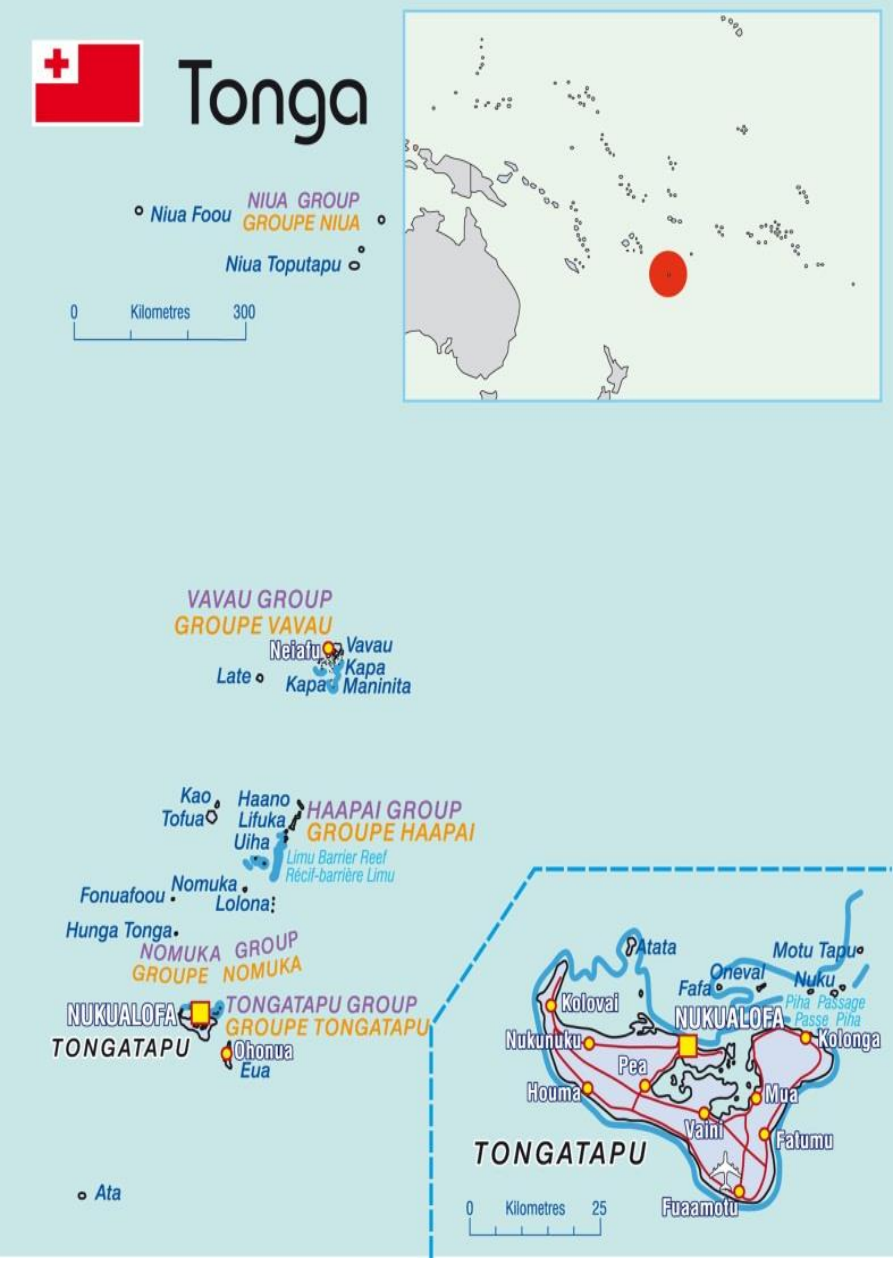


Table 92: Socio-Economic, Political and Maritime Context of Tonga

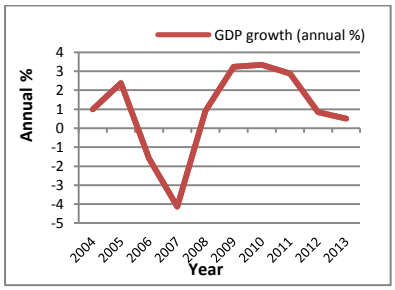
General Information

Capital City:	Nuku'alofa	**Land Surface Area:**	747 sq. km
Population (2013 est.):	104,000	**Exclusive Economic Zone:**	700,000 sq. km
Population density (2013):	159 persons per sq. km	**Official Currency:**	(TOP)
Urban population (2010):	23 per cent	**Language(s):**	Tongan, English (official)
Dependency ratio (15-59 years):	84	**Local government system:**	*fonos*

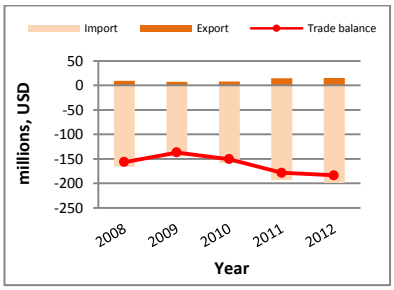
Recent economic and social indicators

Gross Domestic Product (2013):	USD 477 million	**Poverty rate (2010):**	22.5 percent
GDP per capita (2013):	USD 4,605	**Youth population (15-24):**	19.1 percent
Real GDP growth (2013):	0.99 per cent	**Infant mortality rate (2010):**	17 per 1000
Inflation (% change, 2013):	3.20 per cent	**Av. life expectancy (2010):**	67 years
Current account balance (2011-2):	317,287,000 TOP	**Av. labour force participation rate (2011):**	52.5 percent

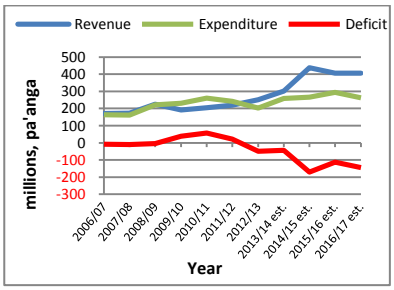
Real GDP Growth, 2004 - 2013



Trade Balance



Government Revenue and Expenditure



Trade – major exports and imports, and trade value (USD thousands)

Major Imports

Imports, 2008-2012	2008	2009	2010	2011	2012
All products	165,923	144,621	158,777	192,929	199,169
Manufactures	64,008	57,150	71,090	84,847	89,704
Food	47,433	48,850	46,260	57,506	57,791
Fuel	43,178	29,475	36,178	45,451	47,293
Mach. & Tran. Equip.	29,706	27,096	30,519	31,472	36,794
Chemical	6886	6,427	6,934	8,564	8,610

Major Exports

Exports, 2008-2012	2008	2009	2010	2011	2012
All products	9,292	7,798	8,257	14,392	15,583
Food	6,031	6,702	7,311	9,236	10,528
Manufactures	809	792	625	1,603	4,007
Mach. & Tran. Equip.	177	119	2	42	1,762
Agric. Raw materials	602	159	169	3,197	675
Ores and Metals	1,758	121	124	314	361

Trade – principal merchandise trade partners/relationships

Import sources, 2010-12

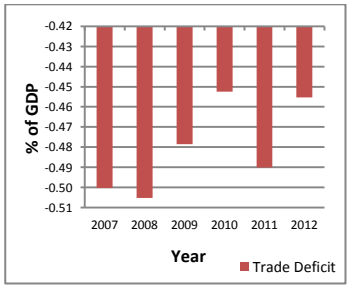
2010		2011		2012	
Country	(%)	Country	(%)	Country	(%)
New Zealand	31.89%	New Zealand	30.25%	New Zealand	29.96%
Singapore	20.44%	Singapore	22.36%	Singapore	22.96%
USA	12.97%	USA	12.09%	USA	12.93%
Fiji	10.13%	Fiji	8.86%	Fiji	8.01%
Australia	9.20%	China	6.72%	China	6.35%

Export destinations, 2010-12

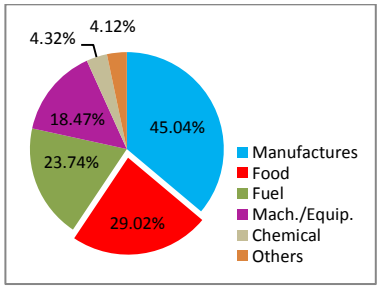
2010		2011		2012	
Country	(%)	Country	(%)	Country	(%)
Hong Kong	44.06%	Japan	36.05%	New Zealand	26.06%
New Zealand	16.47%	New Zealand	17.74%	USA	13.43%
USA	16.24%	Hong Kong	13.40%	Hong Kong	12.98%
Japan	10.60%	USA	7.04%	Japan	12.66%
Samoa	3.93%	Other Asia	7.04%	Australia	12.02%

Trade as % of GDP

Trade deficit as a % of GDP



Product share as a % of total imports



Maritime Sector data

# of seafarers, as of 2014:	250	International Port:	Port Nuku'alofa
International memberships:	IMO, WTO, IHO, WMO, FAO	# International vessels/year:	148
Regional Membership:	OCO, PIFS, PacMA, PMTA, SPC	Container throughput; hourly average:	13,412 (11/hour)

Source: SPC SDD Data, PRISM; World Bank WDI and WITS; ; IMF World Economic Indicators, April 2013

Tonga Maritime Sector Situation and Gap Analysis

In the aftermath of MV Princess Ashika accident in 2009, Tonga is making efforts to improve domestic maritime safety as part of the donor-funded Transport Sector Consolidation Project (TSCP). The maritime sector is also critical for expanding cruise passenger arrivals, which is integral to the government's tourism development and structural reform strategies. Additionally, the government is making efforts to expand the involvement of the private sector in the maritime sector; services such as stevedoring and maintenance are being outsourced to private companies. The success of these plans requires ongoing soft and hard investments and entrenchment of a safety culture, particularly in domestic shipping. It also depends on effective internal communications between local stakeholders and with development partners.

Institutional Arrangements

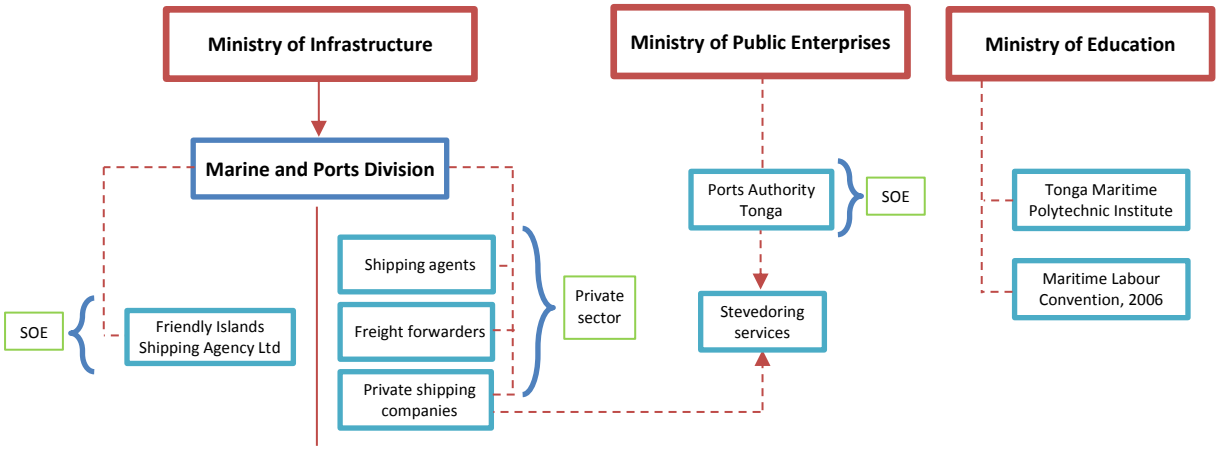
The main actors in the maritime sector in Tonga are the Marine and Ports Division (MPD), Port Authority of Tonga (PAT), Ministry of Education, Tonga Maritime Polytechnic Institute (TMPI) and a number of private-sector actors. The MPD is located within the Ministry of Infrastructure (MOI) and is responsible for oversight of the maritime sector (regulation of domestic shipping, ship registry operation, port and flag state control, auditing of PAT and TMPI, maintenance of ATONs) and provides policy advice to the responsible minister. MPD also manages and operates six domestic ports. MPD's capacity was strengthened under the World Bank funded TSCP I. International consultants were engaged to supplement the capacity of the department, several maritime legislation and regulations were revised and or introduced and improvements in aids to navigations were undertaken. Additionally staff development and maintenance plans were prepared for MPD under TSCP i. MPD also provides secretariat support to several specialized maritime committees such as the Maritime Safety Committee, Marine Pollution Committee and Hydrography Committee. Notwithstanding these gains, MPD still has budget constraints due to the overall difficult fiscal position of the government. These constraints limit MPD's ability to fully enforce its responsibilities and the amount of resources which can be allocated to programs such as essential maintenance. As part of recent government ministerial changes the MOI was renamed to include responsibility for Tourism. This is an important development which reflects synergies between infrastructure and tourism which is a major driver for infrastructure development.

PAT, an SOE, is responsible for management of Port Nuku'alofa, the main (international) port in the country. PAT has 98 permanent staff and 50 causal staff. Its revenue was TOP$ 7.3 million in 2013, while net profit after tax was TOP$ 723,305. PAT operates in accordance with the Port Authority Act. It is accountable to the government for its operations through the Ministry of Public Enterprises, which approves its annual work plan and budget. It also depends on government for approval of major decisions. PAT does not have formal equipment and maintenance plans in place. However, it has plans to adopt a 'trainer of trainees' plan to improve equipment maintenance and is planning to undertake essential (minor) infrastructure improves and equipment replacement from its retained earnings.

The Ministry of Education is responsible for overseeing TMPI. Friendly Islands Shipping Agency Limited (an SOE) provides domestic shipping to major outer islands. Like other SOEs it accounts to the government for its operations through the Ministry of Public Enterprises, which approves its

annual work plan and budget. These SOEs are also accountable to DMP through compliance with Shipping Act. Friendly Islands Shipping Agency Limited is highly dependent on and is the beneficiary of subleased vessels from the government (these were procured with assistance from JICA). Private-sector actors include shipping agents, freight forwarders and domestic vessel owners. Private shippers also provide biosecurity services, which have been certified by New Zealand Ports.

Figure 9: Organisational Structure of the Maritime Sector in Tonga



Source: Authors

Tonga has enacted most important maritime conventions and codes. Public awareness and stakeholder consultations are required for preparation of major legislation and regulations. Under TSCP I the then existing Shipping Act and Regulations were revised and a new Shipping Act and related Regulations prepared. The new Shipping Act has been prepared by Crown Law Office pending consideration by the parliament; while the new Regulations have been brought into force.

Capacity building and training programs are carried out on a limited basis.. Representatives of the private sector suggested that training is required at all levels of the sector: managerial, technical, computing, and maintenance planning. Some private shippers indicated they maintain asset registers and have set aside reserve funds for major asset replacement. Most agencies recognise the need for more strategic and integrated approaches to training and maintenance.

Seafaring Training

The government's plan to revive seafaring centres on the reopening of TMPI and maintaining STCW compliance. This initiative is being supported by NZAid. As part of the reopening of TMPI, training programs to develop competitiveness in niche areas such as serving on fishing and heavy lifting ships, and domestic training for crane and forklift operators will be introduced.

Data Collection and Management

Data management is fragmented with responsibilities shared among PAT, the central statistics office, and customs administration. The private sector also collects important trade performance information.

Gap Analysis

Six key institutional challenges to a safer, more efficient maritime sector in Tonga are identified in Table 23.

Table 10: Gaps in Institutional Arrangements in Tonga

Gap	Principal Causes
1. Severe under resourcing of MPD given its wide ranging responsibilities	This gap is due to limited government fiscal space due to recent poor economic performance and has had to curtail public sector spending; furthermore there is limited availability of expertise within the country.
2. Absence of maintenance plans at PAT	This gap is largely due to lack of capacity to plan maintenance, as well as an under appreciation of the importance of maintenance for it to be accorded priority status.
3. Dominance of SOEs and absence of strategy to involve the private sector	Tonga seems keen to promote private-sector development generally, but there is no clear strategy for this in the maritime sector. This arises because SOEs aided by the state dominate the sector. The government seems keen to protect these SOEs as it presumes that the private sector has limited capacity, and some of these functions have national sensitivities attached to them.
4. Limited statistical and analytical capacity and challenges in collating and preparing timely and reliable publication	Maritime related data is collected and disseminated by multiple agencies for various purposes. This is primarily related to the absence of a proper protocol for this information to be sent to a single repository such as the Central Statistics Office in a timely manner to ensure consistency checks before publication.

Port Infrastructure and Operations

The Port of Nuku'alofa comprising four facilities—Queen Salote Wharf, Faua Wharf, Vuna Wharf and Toulike oil terminal—is the main international port for Tonga and is managed by PAT. Smaller international ports, which are managed by MPD, are located at Pangai and Neiafu. All international ports in Tonga are compliant with ISPS and IMO operating requirements. PAT recently prepared a master plan for the future development of the Nuku'alofa port, which has been approved by the cabinet.

The access road leading to the port of Nuku'alofa is sealed and there are no traffic congestion or drainage issues. The port is fully secured. The general state of pavements is good since PAT recently undertook minor improvement works (expansion of pavements) from its retained earnings. Some further pavement expansion and replacement of fenders is required. The reefer container storage

area is functioning, using modern portable electrical systems to expand storage space. A mechanical workshop is located within the port complex. This is associated with some potential environment hazards, related to drainage of waste water and handling and storage of fuel and oil. The port does not currently have reception facilities for hazardous waste or procedures in place to handle waste oils and sludge.

There is a clear demarcation between international and domestic shipping areas (berths 3 and 4). However, the domestic port area is congested as it confined to a limited section of the port which constrains the space available for operation equipment such as forklifts. The domestic passenger facilities are basic consisting of a covered waiting area which is well lit and ventilated. Domestic shipping also takes place from Faua wharf, which reduces pressure on berths 3 and 4 at the main port. JICA is being approached to undertake these improvement works, which should commence during 2015. Once this project is completed all domestic shipping will also be transferred from berths 3 and 4 at the main port. However, periodic dredging and slipway repair are required at Faua wharf. Due to limitations at domestic slipway vessels have to be taken to Fiji for major ship repairs. In February 2015, PAT commenced the cleaning-up operation of old abandoned vessels, laid up vessels and wrecks on the reef of Nuku'alofa, which will continue until all the vessels have been removed. This process, which was previously stalled by legal issues and unpaid tariffs by the vessel owners, is fully funded and implemented by PAT and is expected to cost over TOP$ 200,000.

The last major upgrade to ports in outer islands in Tonga took place in 2013. Harbours are located in main ports in the island groups with basic infrastructure that requires upgrading. Passenger and cargo storage facilities are basic, where they are provided. A number of minor jetties and channels serve smaller islands in each group. Generally, outer-island ports suffer from limited infrastructure and insufficient emphasis on maintenance. Some improvement of ship channels and other aids to navigation were made as part of TSCP I.

Stevedoring services at the main port are provided jointly by PAT and several private shippers. A container offload rate of 12 to 14 per hour was achieved in 2013. This is good by regional standards, where the normal rate is about 4 to 8 depending on the size of the port and available port equipment. The port does not have an industrial-sized x-ray scanner for use by the customs administration. A small x-ray scanner is used, which limits the ability to effectively examine large and reefer containers.

Aids to navigation lights at the main port are maintained by PAT and are generally in good state. MPD maintains aids to navigation in domestic ports. This responsibility is adversely affected by it budget constraints. PAT's tug boat and pilot boat are 20 years old and 60 years old respectively. There are maintenance challenges with both vessels. Hydrographic surveys and nautical charts were upgraded as part of the NZAid regional project. These still need to be digitized to comply with ECDIS requirements, which most likely will take place as part of the continuation of the NZAid project. SAR is overseen by the Police and Navy.

Gap Analysis

Table 24 lists four key gaps in port infrastructure and operations in Tonga.

Table 11: Gaps in Port Infrastructure and Operations in Tonga

Gap	Principal Causes
1. Inadequate port and channel dredging	This gap arises in Tonga primarily from limited funds being available to allocate to this function. It is noted that recently under TSCP I some improvements were made, but more work has to be done due to the archipelagic nature of the country with many ports in the island groups.
2. Port reception facilities are not provided	This gap exists because this matter has only recently been given attention internationally and within PICTs that have been unable to effectively address this issue due to limited funding. It is however, being proposed that this matter would be addressed as part of a wider regional response under the PACPOL Plan.
3. Fragmented and inefficient stevedoring arrangements (multiple players)	Currently this function is split between PAT and the private sector. The private sector has the capacity to carry out the service but is prohibited from doing so by existing regulations which favour the position of the SOEs.
4. Limited, deteriorating and/or absent port superstructure and complementary infrastructure in outer islands	There is awareness of the important contribution outer islands can make towards national development once adequate infrastructure is in place, however the country does not have resources to do so; and has prioritized available funds towards meeting requirements at the main international port.

Shipping Services and Trade

Tonga is import dependent. Exports of watermelon, fish and sandalwood and some live fish to Asia are increasing in importance. It has good international shipping access with its main international trading partners. Shipping companies have been responsive to changing demand conditions. Trade growth is not currently constrained by port infrastructure. Reefer container shipping is via Samoa due to consolidation within the sector. Tonga has limited intra-regional trade, except with Fiji and Samoa. It is keen to expand exports of niche agriculture products to neighbouring countries as part of its trade development policy. This will create demand for intra-regional shipping and refrigerated port container storage areas. To facilitate intra-regional trade, Tonga has expressed interest in participating in the proposed Eastern Pacific Shipping Commission. It is also considering establishing a National Shipping Council to provide a formal basis for all stakeholders to inform shipping developments in the country.

As part of its Australian government supported reform program a new electronic customs declaration and data processing system— Customs Management Software— was procured. This should reduce declaration processing times (to 90 minutes compared to 2 days previously) and improve efficiency and customer satisfaction.

Domestic shipping is regulated by MPD and is provided by an SOE and a variety of private-sector parties including: private shipping companies (Uata shipping, Tafa Ramsey Shipping Co. Ltd. South Seas Shipping Co.Ltd) churches, small vessel operators and a community cooperative (in the case of the Islands of Eua). Service to major islands in each of Tonga's main island groups is reliable and routes are organised and published. However, shipping to remote islands within the groups is precarious, being undertaken by open vessels that travel long distances and do not have basic safety equipment and communication systems in place.

SAR-related responsibilities are implemented by the Tonga Police, complemented by Rescue Coordination Centres (RCC) arrangements with the Maritime Safety Authority of New Zealand. Three SAR operations on average are conducted annually involving small commercial crafts used by local fishermen. Tonga has limited SAR assets and capabilities, which require upgrading, particularly in light of the serious maritime accident that involved the sinking of MV Princess Ashika in 2009.

Gap Analysis

The gap analysis identified six key gaps in shipping services and trade in Tonga (Table 25).

Table 12: Gaps in Shipping Services and Trade in Tonga

Gap	Principal Causes
1. Use of unsafe and poorly maintained vessels	This persistent issue is due mainly to limited availability of funding (in particular no dedicated funding) and inability of the private sector to meet lending requirements, causing a dependence on second-hand vessels from other regions of the world.
2. Poor service to remote outer islands	There is a limited supply of domestic vessels due to underfunding. This results in service being focused on main islands, with service to more remote outer islands being largely unregulated, and safety standards unenforced.
3. Limited ship repair facilities	This gap arises due to the small market and limited demand for ship repair facilities, but also there is limited capacity of the private sector to provide the service as they cannot access funding. This is not likely be a profitable operation so the current arrangement of dependent on Fiji might be most effective.
4. Limited intra-regional connectivity with smaller island countries	Until recently regional shipping development was considered alongside shipping development generally without deliberate strategies (trade fairs, marketing and networking) being put in place to foster this objective which will take time to develop since trade and the supply chain follow traditional patterns..
5. Limited SAR assets and capability	This is due to insufficient funding, and the time required to coordinate local and RCC SAR response, given the different agencies involved.

Key Priorities and Next Steps

Tonga's recent experience in improving safety of domestic shipping was largely in response to a MV Princess Ashika accident in 2009. Subsequently the country has made progress in improving domestic ship safety culture under the TSCP I. Recent gains need to be consolidated as the country seeks to embrace opportunities to expand cruise tourism (encouraging calls to outer islands) and export of niche agricultural exports. A primary issue for the maritime sector in Tonga is the severe underfunding of the MPD. Overall, this report estimates that the budget should be increased by at least 25 percent over the medium-term. This budget increase should be accompanied by staff development to ensure the efficiency and effectiveness of operations. Tonga's many small islands put a strain on port maintenance budgets, and many of these ports and channels are in need of dredging, creating unsafe conditions for navigation. The lack of funding impedes vessel maintenance and replacement, and consideration should be given to establishing a dedicated fund for maintenance to provide the necessary improvements to vessel operation.

The following three measures should be accorded priority in Tonga: (1) increase the budget of the MPD overtime to implement staff development plans; (2) develop infrastructure in government owned international ports and outer islands in line with plans to development cruise tourism and agricultural exports; and (3) expand domestic ship safety culture programs (improve vessel maintenance, shipping routes and ship to shore and ATONs in outer islands.

This Report presents a framework of complementary actions to address key issues in the sector. To ensure its adaptation, maritime sector officials are encouraged to meet with stakeholders in the Ministries of Finance and Planning and in the private sector to raise awareness of issues in the sector and secure support the Report to be used a basis for future budgets and development cooperation programs. Ultimately the Cabinet should be requested to endorse and approve of the Report to guide the development of the sector.

Table 136: Ranking of Identified Gaps in Maritime Sector, Tonga

Gap		Ranking	Rationale
Institutional Arrangements			
Gap 1	Absence of maintenance plans at PAT	2	Undermines effectiveness of investments in port infrastructure and equipment, increasing operational costs, risk of damage to ships/shipping service disruption
Gap 2	Severe under resourcing of MPD given its wide ranging responsibilities	1	Compromises safety enforcement as some functions are not carried out
Gap 4	Limited statistical and analytical capacity and challenges in collating and preparing timely and reliable publication.	3	Poor planning and decision-making due to lack of data
Gap 5	Dominance of SOEs and absence of strategy to involve private sector	4	Crowding out private-sector investment; poor efficiency and competitiveness strains the government budget, and encourages political patronage
Port Infrastructure and Operations			
Gap 1	Inadequate port and channel dredging.	1	Increased risks of ship grounding and accidents; compromises passenger safety
Gap 2	Port reception facilities are not provided.	4	Risk of environmental pollution
Gap 3	Fragmented and inefficient stevedoring arrangements (multiple players)	2	Engenders miscommunication, risk of delays; undermines effectiveness and efficiency of stevedoring operations; increases transactions costs to the public
Gap 4	Limited, deteriorating and/or absent port superstructure and complementary infrastructure in outer islands.	3	Undermines passenger safety during vessel loading and unloading, causes cargo damage and results in inefficiencies and shipping service disruptions; undermines employment in outer islands and food security
Shipping Services and Trade			
Gap 1	Use of unsafe and poorly maintained vessels	1	Compromises passenger safety and increases risk of loss of lives; frequent break-downs and increased operating costs
Gap 2	Poor service to remote outer islands	3	Encourages use of small vessels in open water conditions which compromise passenger safety
Gap 4	Limited ship repair facilities	4	Infrequent and costly maintenance of vessels compromises safety
Gap 5	Limited intra-regional connectivity with smaller island countries	5	Promotes employment opportunities and food security, reduces import costs
Gap 6	Limited SAR assets and capability	2	Compromises safety; increases risk of loss of life; undermines effectiveness of RCC response.

Table 14: Recommendations and Priority Actions

Institutional Arrangements				
Gap in Order of Priority	**Measures/Recommendations**	**Feasibility**	**Ease of Implementation**	**Timeframe**
1. Severe under resourcing of MPD.	1. Increase number of staff introduce staff development plans 2. Increase budget allocation by 25% over the medium-term	– Will maximise interventions from TSCP I	– Existing capacity from the World Bank and DFAT – Existing momentum to drive the sector forward	Short-term
2. Absence of maintenance plans at PAT.	3. Introduce preventive maintenance for infrastructure, slipway and equipment, and increase maintenance budgets	– Builds on recent investments and existing donor funded projects	– Recognised as a national priority	Short-term
3. Limited statistical and analytical capacity, challenges in collating and preparing timely/reliable publication.	4. Build maritime data repository and introduce protocols to improve collection and analysis of maritime data	– Fairly reliable national statistics and capacity – Builds on regional repository agreement	– National commitment evidenced by signed data repository MOU	Short-term
4. Absence of strategy to involve private sector.	5. Provide economic incentives to foster increased private-sector involvement consistent with SOE reforms	– Previous reforms have had limited success	– Limited political will – Government recognises importance of private investment	Medium- to long-term
Port Infrastructure and Operations				
Gap in Order of Priority	**Measures/Recommendations**	**Feasibility**	**Ease of Implementation**	**Timeframe**
1. Inadequate port/channel dredging.	1. Introduce and implement a planned dredging program	– Consistent with TSP	– Awareness of problem – National commitment in place	Short- to medium-term
2. Fragmented/inefficient stevedoring arrangements (multiple players).	2. Consider fully outsourcing stevedoring operations	– Can draw on regional experience	– No firm government policy in this area	Short-term
3. Limited, deteriorating and/or absent port superstructure and complementary infrastructure in outer islands.	3. Provide small jetties, passenger and cargo facilities on outer islands based on rationalisation plan (upgrade port equipment and assets at Vavau and Ha,Hapi; construct ports at Niuas and Haafevelmonuka)	– Complements trade and tourism policy	– Strong national support	Medium- to long-term
4. Absence of energy efficiency strategies and port reception facilities.	4. Construct waste reception facility consistent with regional strategies	– Builds on recent port improvements	– Consistent with regional PACPOL plan	Medium-term
	5. Develop Green Port Strategy			Short-term

Shipping Services and Trade				
Gap in Order of Priority	**Measures/Recommendations**	**Feasibility**	**Ease of Implementation**	**Timeframe**
1. Use of unsafe and poorly maintained vessels	1. Introduce vessel preventative maintenance and replacement program	– Included in TSP but limited budget availability	– Persistent issue – Leverage recent studies on the need for maintenance	Short-term
	2. Establish vessel maintenance and replacement fund			Medium- to long-term
2. Limited SAR assets and capability	3. Procure dedicated SAR vessel and communication equipment, complemented by staff training	– Builds on existing RCC arrangements	– Strong national support	Short-term
3. Poor service to remote outer islands	4. Undertake route review study and introduce ship-to-shore project	– Builds on improvements from TSCP I – Can leverage experiences from Tuvalu's ship-to-shore projects	– Strong national support	Short-term
4. Limited ship repair facilities	5. Upgrade slipway to cater to minor repair needs	– Consistent with PAT port masterplan	– National support	Medium-term
5. Limited intra-regional connectivity with smaller island countries	6. Assess options to increase intra-regional trade and establish regular shipping links with smaller island countries	– Builds on regional experience in sub-regional shipping (e.g., CPSC)	– Strong national and regional support	Medium-term

Table 158: Tonga Maritime Sector Action Plan

Measure/Recommendation	Time Frame	Indicative Cost (US$)	Recurrent Cost (US$ p.a.)	Recurrent Cost Funding (est. %)[5]
Institutional Arrangements				
1. Increase budget by 25% and staffing in-line with development plans.	Short- to medium-term	Government-funded	50,000	Budget: 100 User: n/a
2. Introduce port asset maintenance, increase maintenance budgets.	Short-term	500,000	25,000	Budget: 50 User: 50
3. Build maritime data repository and improve collection and analysis.	Short-term	50,000	one-off	Budget: n/a User: n/a
4. Provide economic incentives to increase private-sector involvement consistent with SOE reforms.	Medium- to long-term	50,000	one-off	Budget: n/a User: n/a
Port Infrastructure and Operations				
1. Introduce and implement a planned dredging program.	Short- to medium-term	500,000	25,000	Budget: 90 User: 10
2. Develop plan to fully outsource stevedoring.	Short-term	50,000	one-off	Budget: n/a User: n/a
3. Provide passenger and cargo facilities to outer islands based on rationalization plan, and construct/upgrade and provide port equipment.	Medium- to long-term	8,000,000	400,000	Budget: 90 User: 10
3. Construct waste reception facility consistent with regional strategies.	Medium-term	500,000	25,000	Budget: n/a User: 100
4. Develop Green Port Strategy.	Short-term	50,000	one-off	Budget: n/a User: n/a
Shipping Services and Trade				
1. Introduce preventative maintenance/replacement program for vessels.	Short-term	50,000	one-off	Budget: n/a User: n/a
2. Establish vessel maintenance and replacement fund.	Medium- to long-term	5,000,000	one-off[6]	Budget: n/a User: n/a
3. Procure dedicated SAR vessel, communication equipment with training.	Short-term	500,000	25,000	Budget: 80 User: 20
4. Review routes and improve ship-to-shore facilities.	Short-term	2,000,000	150,000	Budget: 90 User: 10
5. Upgrade slipways to cater to minor repair needs.	Medium-term	500,000	25,000	Budget: 90 User: 10
6. Assess options to increase trade/regularize shipping with PICTs.	Medium-term	50,000	one-off	Budget: n/a User: n/a
7. Upgrade ATONs in Niuataputapu.	Short-term	100,000	5,000	Budget: 100 User: n/a
8. Extend hydrography project to comply with ECDIS requirements.	Medium-term	500,000	25,000	Budget: 100 User: n/a
Totals:		**18,400,000**	**755,000**	

Note: Short-term is defined as 1-2 years, medium-term as 3-5 years, and long-term more than 5 years.

[5] While donors are likely finance some of the proposed improvements, reliable long-term funding for recurrent costs will need to come from government budgets and/or user fees.

[6] Finances for preventative maintenance will come from this fund.

Tuvalu

Tuvalu is a Polynesian island nation located in the Pacific Ocean, midway between Hawaii and Australia. It is an archipelagic country comprising three reef islands and six true atolls. It is an expansive country with EEZ covering an oceanic area of approximately 900,000 km^2. With a population of less than 12,000, the UN (2009) describes Tuvalu as the most "economically vulnerable country in the world". However, it is still classified by the World Bank (2014) as an upper-middle-income developing country, reflective of its high per capita income, driven by high levels of development aid and remittances.

Figure 10: Map of Tuvalu

Source: Authors

Table 169: Socio-Economic, Political and Maritime Context of Tuvalu

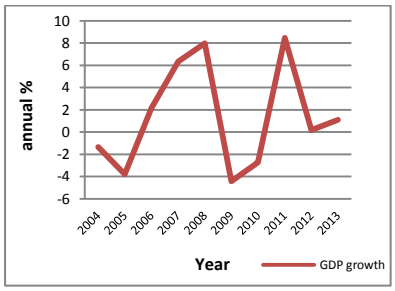
General Information

Capital City:	Funafuti	**Land Surface Area:**	26 sq. km
Population (2013 est.):	11,260	**Exclusive Economic Zone:**	719, 174 sq. km
Population density (2013):	420 persons per sq. km	**Official Currency:**	Australian dollar
Urban population (2010):	54 per cent	**Language(s):**	Tuvaluan and English
Dependency ratio (15-59 years):	69	**Local government system:**	*Falekaupule*

Recent economic and social indicators

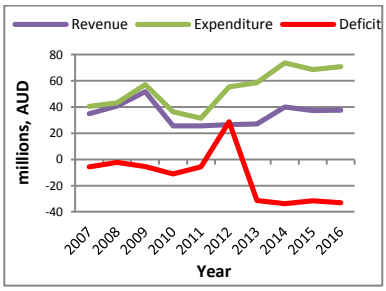
Gross Domestic Product (2013):	USD 38 million	**Poverty rate (2012):**	39.6 percent
GDP per capita (2013):	AUD 3,405	**Youth population (15-24):**	20.4 percent
Real GDP growth (2013):	1.08 per cent	**Infant mortality rate (2007-11):**	45 per 1000
Inflation (% change, 2013):	2.58 per cent	**Av. life expectancy (2011):**	62.15 years
Trade balance (2011):	USD -19.85 million	**Av. labour force participation rate (2011):**	**58.75** percent

Real GDP Growth, 2004 - 2013



Trade Balance, 2008 – 2012

Government Revenue and Expenditure



Trade – major exports and imports, and trade value (USD thousands)

Major Imports

Imports, 2004-2008	**2004**	**2005**	**2006**	**2008**
All products	11,481	12,902	12,709	26,395
Food	3,423	3,960	3,206	5,683
Manufactures	3315	2,814	2,693	4,089
Fuel	1649	2,704	2471	4,423
Mach. & Tran. Equip.	1665	1,667	872	2,150
Ores and Metals	30	31	450	732

Major Exports

Exports, 2004-2005	**2004**	**2005**
All products	133.60	62.43
Manufactures	111	24.70
Mach. & Tran. Equip.	107	13.17
Food	4.30	-
Fuel	4.14	4.47

Trade – principal merchandise trade partners/relationships

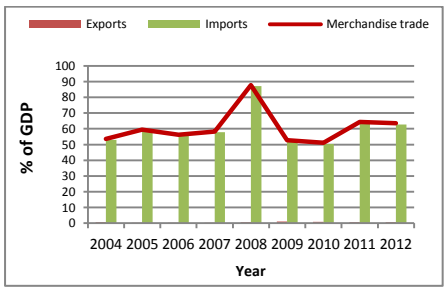
Import sources, 2005-08

2005		2006		2008	
Country	(%)	Country	(%)	Country	(%)
Australia	33.73%	Australia	21.96%	Fiji	23.82%
Fiji	19.71%	Fiji	18.50%	Australia	18.29%
Singapore	17.52%	Singapore	18.03%	New Zealand	17.22%
New Zealand	9.93%	New Zealand	14.64%	China	5.41%
China	5.13%	China	6.06%		

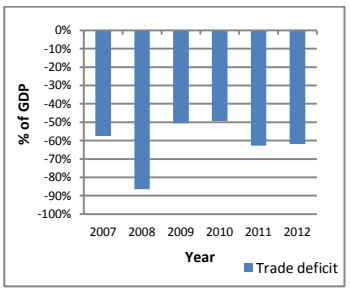
Export destinations, 2005-06

2005		2006	
Country	(%)	Country	(%)
Fiji	98.54%	Fiji	77.77%
Australia	0.44%	New Zealand	17.77%
New Zealand	0.30%	Indonesia	2.44%
USA	0.28%	Australia	2.02%

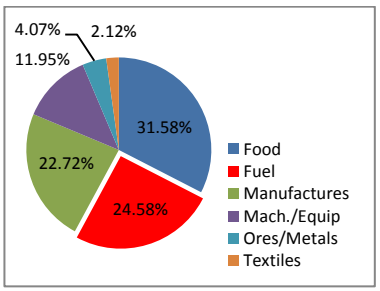
Trade as % of GDP



Trade deficit as a % of GDP



Product share as a % of total imports, 2008



Maritime Sector data

# of seafarers, as of 2014:	800 to 1000 (peak)	International Port:	Funafuti Port
International memberships:	ILO, IMO	# International vessels/year:	20
Regional Membership:	OCO, PIFS, PacMA, PMTA, SPC	Container throughput; hourly average:	720 (4/hour)

Source: SPC SDD Data, PRISM; World Bank WDI and WITS; IMF World Economic Indicators, April 2013

Tuvalu's narrow resource base and lack of arable land limits its primary economic activities to subsistence agriculture. Economic opportunities are limited. Tuvalu therefore relies on the public sector as the main driver of growth and source of employment. Tuvalu's national strategy for sustained growth focuses on fiscal consolidation, strengthening public sector management, and structural reforms to improve the role of the private sector as a key driver of change (IMF, 2013). Plans also call for increasing private retail sector activity by addressing infrastructure gaps such as airport and sea port improvements.

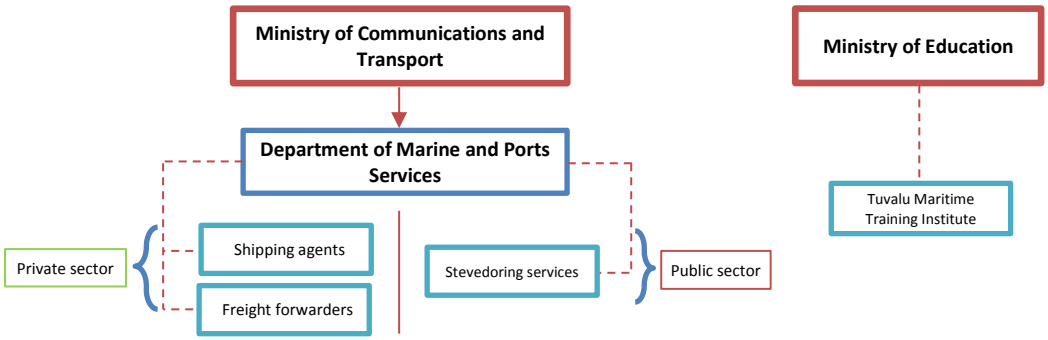
Tuvalu Maritime Sector Situation and Gap Analysis

The maritime sector plays a vital role in the Tuvaluan economy and community. The country's restricted air transport services, limited to two flights per week from Fiji, means that maritime transport serves as the primary means of supporting international and regional trade, and outer island travel for social, educational and medical needs. With unemployment above 35 percent, the maritime sector also provides vital employment opportunities for Tuvaluans as seafarers, whose remittances accounted for close to 7 percent of GDP during 2013 (down from 15 percent in 2009). Tuvalu has several development plans and strategies in place to promote the maritime sector. Key maritime sector objectives including consolidating safety recent safety improvements made at outer islands ports, expanding infrastructure at all port and better maintenance of domestic vessels.

Institutional Arrangements

The maritime sector in Tuvalu is overseen by the Department of Marine and Ports Services (DMPS), which is located in the Ministry of Communication and Transport. The Department is responsible for administrative matters, management and operations of the ports and management of domestic shipping vessels, including maintenance responsibilities. DPMS is also responsible for technical and policy advice in the sector and certification of the TMTI (Figure 11). It comprises 60 staff, including 2 technical staff, 10 crane operators and 50 vessel crew members for the 2 state-owned domestic vessels. DMPS' budget is limited by the available national fiscal space amidst competing demands. Budgetary over-expenditure, on account of high vessel operating costs, is the norm. The limited staff cope by addressing most pressing emerging issues, which leaves little time to adopt strategic approaches to development of the maritime sector.

Figure 11: Organisational Structure of the Maritime Sector in Tuvalu



Source: Authors

Tuvalu has limited number of private shipping agents and freight forwarders; these actors reported having good communications and operation relations with the government. To improve

accountability, the government is considering separating the regulatory and operational functions of the maritime administration.

Tuvalu ratified UNCLOS in 2002 and has acceded to 24 IMO conventions as of May 2014. It has also benefited from PIMLaws to expedite the adoption of international conventions into their national legal system. However, Tuvalu still experiences delays in passing maritime sector legislation.

Data Collection and Management

Data collection is shared between the Central Statistics Office, Customs Department, DMPS and private operators. Data is checked for consistency by the Central Statistics office before publication. Data collection arrangements should improve as the Customs Department recently upgraded its administration software (PC Trade was introduced).

Seafaring Training

Seafarer training is provided at the Tuvalu Maritime Training Institute (TMTI), which reports to the Ministry of Education. TMTI is integral to Tuvalu's plans to train seafarers for employment on domestic and international ships. The government is in the process of seeking a loan from ADB to undertake general improvements at TMTI to address emerging issues such as procurement of training simulators and training vessel replacement. Plans also call for introducing new training programs to expand domestic employment opportunities, establishing greater relationships with the shipping industry, developing niche employment areas and providing support to overcome logistical issues to reduce the cost of deploying seafarers to international ships (subsidising the airfare to Fiji to connect with ships).

Gap Analysis

The gap analysis identified five key gaps in the institutional arrangements in Tuvalu (Table 30).

Table 30: Gaps in Institutional Arrangements in Tuvalu

Gap	Principal Causes
1. DMPS has limited technical staff commensurate with its responsibilities	This arises from limited budgets, and lack of available qualified technical staff.
2. DMPS spends 60% of its budget to operate the domestic vessel fleet, has persistent annual budget overruns and cannot address core issues such as maintenance	This is primarily due to poor budgeting, planning and prioritization.
3. Backlog of legislation and poor enforcement	This gap arises primarily because of the absence of technical staff to instruct the Attorney General's Chambers in the drafting of technical maritime sector legislation; and also due to a crowded legislative agenda within the country which takes up legal drafters' time on other priority legislation so there is delay in considering maritime sector legislation.
4. Absence of MTI strategic plan	The cause of this gap is two-pronged: lack of higher-level training and lack of cost-

	competitiveness. This arises from very few students being willing and able to train to officer levels, which is where major global demand lies. Due to high flight costs, graduate *ratings* from MTI are also unable to effectively compete with *ratings* from major global seafarer suppliers like the Philippines, which are easier and cheaper for shipping companies to recruit and manage.
5. Weak Statistical system	This gap arises due to limited capacity within the government and the absence of protocols requiring information from data sources to be sent to a central repository.

Port Infrastructure and Operations

Recent infrastructure improvements at the international port in Funafuti under a JICA project, as well as the NZAid funded Ship-to-Shore project in the outer islands have improved safety and operations throughout the maritime sector, though many challenges still hamper efficiency.

Port Infrastructure

All the ports are owned by the Tuvalu government. Tuvalu benefited from a USD 9 million JICA grant during 2006–2009 to construct a new wharf and warehouse in Funafuti. The Funafuti port is compliant with ISPS Code. Physical conditions at the main port are reasonable. The access road leading to the port and parameter fencing are in very good state. The access road is paved and has no congestion or drainage issues. However, a number of empty containers appear to be permanently stored on the road outside of the port. This can become a hazard which needs to be addressed by the authorities. The port is fully secured, with good general and security lighting.

The main wharf and warehouse are in very good states of repair. There are no obvious structural issues at the berth, and fenders seem adequate. The main issue appears to be storage of offloaded cargo (construction blocks, steel, empty gas cylinders, and kerosene containers) on the wharf, reducing the working area and impeding movement of equipment. The warehouse is well lit and ventilated. No fees are charged for storage of cargo in the warehouse.

The pavement areas between the wharf, mechanical workshop and warehouse are unsealed, resulting in pot holes and shallow water pools, which slows the movement of heavy equipment such as forklifts. These lower operational efficiency and increase wear and tear of the equipment, contribute to further deterioration of the pavement surfaces and create a safety hazard and resulting in a ship offload rate of only 4 TEUs per hour in 2013. The main container storage area does not appear to be congested, but as with other areas of the port, this area is unsealed, and subject to drainage issues.

VSAT satellite is used within the port. There is satellite communication on the outer islands, which is occasionally non-operational, compromising safety.

Port Operations

Stevedoring services are provided by DMPS using casual labour with 40 stevedores employed at the Funafuti Port on an as-needed basis. DMPS has a trailer, cranes, and one 25-tonne capacity forklift that needs ongoing maintenance. A second 25-tonne capacity forklift has been ordered and should be in service early in 2015. The port receives about 20 ship calls per year, and has a container throughput of 720 TEUs per year. The port efficiency rate for ship offloading is only about 4 containers per hour. Importers have to collect imports in their personal vehicles because the access road is not classified for use by heavy equipment.

Nautical charts in Tuvalu are significantly outdated and would require concerted effort from Tuvalu and development partners to update the country's hydrographic surveys to comply with current SOLAS and ECDIS requirements.

Domestic Port Infrastructure and Operations

The seven outer Islands of Tuvalu rely on Funafuti Port for transhipment of imports (and exports). Port infrastructure on the outer islands consists of small jetties, landings, and shipping channels; a small port is located on Vaitupu. Passenger and storage facilities are not provided, and cargo and passengers still have to be offloaded from the domestic ships to smaller vessels for transport to the shore. As a result, cargo and passengers are still off-loaded from ships to lighters for transportation to shore. This compromises the safety of passengers and cargo security. Shipping channels and aids to navigation were improved under the NZAid funded Ship-to-Shore Project. However, port infrastructure on the outer islands is generally poor, if not non-existent.

Gap Analysis

The analysis identified five key gaps in the port infrastructure and operations in Tuvalu (Table 31).

Table 31: Gaps in Port Infrastructure and Operations in Tuvalu

Gap	Principal Causes
1. Poor pavement conditions hamper stevedoring and increase wear and tear of the equipment	Although this issue is included in port development plans how it has not been addressed due to the funding limitations.
2. Port infrastructure and passenger facilities in outer islands are absent or need major improvement	This gap arises from resource limitations.
3. Absence of weighbridge and aged forklift, trucks and trailers; reliance on Fiji to verify container weights	Although there is awareness of this issue, which have been included in port development plans it has not been addressed due to funding limitations.
4. Storage of cargo and hazardous items on the wharf impedes safety and limits the work area of equipment	This gap arises as there seems to be lack of awareness of the potential hazard posed by current storage arrangements and difficulty with officials' ability to enforce safety requirements.
5. Out-dated navigational surveys and charts	This is mainly due to limited funding, which may be best addressed on a regional level due to economies of scale. However, new IMO

	requirements bring this matter to the fore but the country still will have limited funding and capacity to address this matter which is best addressed as part of a regional response.

Shipping Services and Trade

Tuvalu is a member of CPSC, and international ships visit Funafuti Port every three weeks. Cargo is mostly containerized. Freight rates are very high, though stable. For example the basic freight rate for a 20-foot container from New Zealand via Fiji is about NZD 2,500; with additional charges for fuel surcharge, documentation; total cost is close to NZD 5,000. There are about 36 containers per ship voyage. Some yachts and cruise ships also call on the port on an irregular basis.

Tuvalu has three local vessels listed on its shipping registry totalling 1646 GRT, all owned by the Ministry of Communication and Transport and operated by DMPS. *MV Nivaga II* and *MV Manu Falau* are 26 and 13 years old respectively and are both passenger-cargo vessels. The other is a small fishing vessel. It was reported that a new vessel will likely be provided by the government of Japan in early 2015. Although one of these ageing domestic ships will be replaced soon, this new vessel will have maintenance cost implications for DMP.

Shipping service is provided from Funafuti to the seven outer Islands, with a 21-day turnaround time to the farthest islands. Domestic ships carry both imported cargo and passengers, with adequate separation. The freight is entirely subsidized by the government. Service level is basic, with adequate safety arrangements in place: no major accidents have been reported recently. The government prioritizes improving domestic shipping operations and providing frequent services to outer islands. The government plans to undertake a technical study to assess options to improve domestic shipping such as commercialization and/or full privatisation.

Tuvalu encounters challenges in responding to calls for search of missing vessels, often involving small boats used by fishermen that lack emergency equipment. Local SAR assets and resources are very limited, and there is no dedicated SAR boat. Depending on their availability, the two domestic vessels can be deployed for SAR. However, the coverage capability is very limited. Alternatively, Tuvalu's Police Maritime (Pacific) Patrol Boat, when available, is also deployed for SAR. Tuvalu has RCC arrangements with Fiji and other RCCs in the region when extensive SAR assistance is required.

Gap Analysis

The gap analysis identified four key gaps in the shipping and trade in Tuvalu (Table 32).

Table 172: Gaps in shipping and trade in Tuvalu

Gap	Principal Causes
1. Unreliable conditions at ship channels in the outer islands disrupt service and compromise safety	This is due to limited funds. However, under the ship-to-shore project, some improvements were made, but more remains to be done due to the archipelagic nature of the country.
2. Poor ship maintenance and lack of ship repair facilities; reliance on Fiji for	This gap arises due to small markets and limited demand for ship repair services which are not likely

major ship repairs	be a profitable; therefore the current arrangement of dependence on Fiji seems to be most effective.
3. Limited private-sector capacity inhibits their involvement in the domestic shipping sector	This gap arises due to the small size of Tuvalu's domestic market and population which limits opportunities to accumulate resources and in turn supply funds for on-lending, but also the limited ability of private sector to meet collateral requirements for major loans.
4. Limited SAR assets and capability	This is largely due to insufficient funding, and the time required to coordinate local and RCC SAR activities, given the different agencies involved.

Key Priorities and Next Steps

With the support of JICA funded improvements at the Funafuti port and NZAid funded ship-to-shore facilities in outer islands, Tuvalu made significant gains in addressing key challenges in its maritime sector. These present a good basis for deepening the development of the sector and maximizing its contribution to the country's development. However, Cyclone Pam destroyed many ATONs and increased silting of shipping channels in outer islands, thereby reversing some of the notable improvements made to date.

A primary issue for the maritime sector in Tuvalu is the severe underfunding of the DMPS. With 60 percent of the budget spent on operating the domestic vessel fleet, there are insufficient funds remaining to fund maintenance of ports and vessels. The budget should be increased to match historical spending, but any budget increase should be accompanied by staff development to ensure the efficiency and effectiveness of operations. One specific issue that impedes port operations is poor pavement conditions, which hamper stevedoring and increase wear and tear of the equipment. Dedicated funding to improve pavement conditions will improve the effectiveness of recent port investments. Vessel maintenance will also require dedicated funds to increase safety of the sector as a whole.

The following three measures should be accorded priority in Tuvalu: (1) a on**e**-off increase in the budget allocation to DMPS; (2) construct pavements at Funafuti port; and (3) continue improving vessel maintenance and seek to address damages to ATONs and silting shipping channel in outer islands. Tuvalu should also continue efforts to improve its competitiveness in the international seafaring industry.

Given Tuvalu's limited population and inherent vulnerabilities, there is limited scope to introduce user charges. However, measures to enhance sustainability include a one-off increase in DMPS's budget. Going forward, recurrent costs to maintain the measures included in the action plan should be absorbed into the recurrent budget, augmented by small increases in user charges. As for the other countries included in this report, it is recommended that maritime officials meet with key government stakeholders in the Ministries of Finance and Planning and the private sector to raise awareness of issues in the sector and secure necessary support.

Table 33: Ranking of Identified Gaps in Maritime Sector, Tuvalu

Gap		Ranking	Rationale
Institutional Arrangements			
Gap 1	Limited technical staff commensurate with responsibilities	2	Poor implementation of safety inspections and enforcement functions.
Gap 2	Inadequate budgets (60% spent on operating domestic fleet)	1	Hinders ability to address several core issues such as effective maintenance; undermines effectiveness of investments in equipment and infrastructure; compromises implementation of safety inspections/enforcement functions.
Gap 3	Backlog of legislation and poor enforcement	4	Risk of non-compliance with international obligations; compromises enforcement of safety functions, risks of forgoing employment opportunities.
Gap 4	Absence of MTI strategic plan	3	Lack of safety training undermines safety culture and compliance and enforcement; undermines employment opportunities in the industry.
Gap 5	Weak Statistical system	5	Poor planning and decision-making due to lack of data.
Port Infrastructure and Operations			
Gap 1	Poor pavement conditions at Funafuti port	1	Hampers stevedoring operations, decreases port efficiency, increases wear and tear of equipment.
Gap 2	Port infrastructure and passenger facilities are absent or need major improvement in outer islands.	5	Undermines passenger safety during vessel loading and unloading, causes cargo damage; results in inefficiencies and shipping service disruptions.
Gap 3	Absence of weighbridge and aged forklift, trucks and trailers	4	Compromises port worker safety during container handling, risk of damage to equipment, loss of revenue, potential for shipping service disruption.
Gap 4	Poor storage cargo arrangements (hazardous items on the wharf at Funafuti)	2	Poses safety risks to passengers and workers; risk of explosion and environmental pollution, limits the working area of equipment.
Gap 5	Out-dated navigational surveys and charts	3	Risk of non-compliance with international obligations (ECDIS requirement under SOLAS).
Shipping Services and Trade			
Gap 1	Unreliable conditions at ship channels in the outer islands	3	Compromises safety during loading and offloading of vessels, risks of service disruption.
Gap 2	Use of unsafe and poorly maintained vessels, and lack of ship repair facilities	1	Risk of service disruption; food security and hardship risk in outer islands, increases operational costs.
Gap 3	Limited private-sector capacity and participation in the maritime sector	4	Inhibits efficiency, competitiveness and innovation; strains the government budget.
Gap 4	Limited SAR assets and capability	2	Compromises safety and increases risk of loss of lives; undermines effectiveness of RCC response.

Table 34: Recommendations and Priority Actions for Tuvalu

Institutional Arrangements				
Gap in Order of Priority	**Measures/Recommendations**	**Feasibility**	**Ease of Implementation**	**Timeframe**
1. Inadequate budgets (60% spent on operating the domestic vessel fleet)	1. Increase budget allocation to DMPS based on historical spending patterns	– Limit budget space	– Awareness of this issue is high	Short- to medium-term
2. Limited technical staff	2. Increase number of staff and introduce staff development plan	– Limited budget space	– Awareness of this issue is high	Short- to medium-term
3. Absence of MTI strategic plan	3. MTI curriculum reform to expand training to include safety, higher classes and new niche areas, and staff development	– Will build on current initiatives to revive seafaring	– National commitment in place – Strengthens already successful MTI	Short-term
4. Backlog of legislation and poor enforcement	4. Legislative reform program, including development of legislative action plan, capacity supplementation, building enforcement capacity	– Can leverage existing pool of maritime lawyers and regional model legislation	– Recognised as a national priority	Short-term
5. Weak statistical systems	5. Build maritime data repository and integrate with national statistics system	– Fairly reliable national statistics and capacity in place – Regional repository agreements in place	– National commitment evidenced by signed data repository MOU	Short-term
Port Infrastructure and Operations				
Gap in Order of Priority	**Measures/Recommendations**	**Feasibility**	**Ease of Implementation**	**Timeframe**
1. Poor pavement conditions at Funafuti port	1. Construct pavement at Funafuti port	– Will improve the effectiveness of recent port investments – Reports and plans already prepared	– Political will exists – Small investment with high return	Short-term
2. Poor storage cargo arrangements (hazardous items on the wharf at Funafuti)	2. Improve cargo management, including constructing shelves in existing warehouse and ventilated storage area for hazardous cargo	– Will complement recent investments in the port – Studies and plans already prepared	– Political will exists – Small investment with high return	Short-term
3. Absence of weighbridge, and aged forklift, trucks and trailers	3. Procure port equipment, pilot and tug boats and introduce preventive	– Will complement recent investments in the port	– Small investment with high return	Short-term

	maintenance		– Simple project	
4. Out-dated navigational surveys and charts	4. Undertake hydrographic surveys and update and publish charts including in electronic format	– Included in TSIP but limited expertise and budget – IMO requirement to have electronic charts by July 2015 for vessels >500 GRT	– Leverages regional experience in Vanuatu and Tonga	Short- to medium-term
5. Outer Islands port infrastructure and passenger facilities are absent or need major improvement	5. Procure landing craft for use outer islands 6. Build outer island infrastructure based on medium to long-term feasibility study	– Maritime safety legislation drafting ongoing	– Strong national commitment	Medium- to long-term
Shipping Services and Trade				
Gap in Order of Priority	**Measures/Recommendations**	**Feasibility**	**Ease of Implementation**	**Timeframe**
1. Use of unsafe and poorly maintained vessels and lack of ship repair facilities	1. Establish vessel maintenance and replacement fund	– Included in TSIP but limited budget availability	– Greater awareness of importance of maintenance	Long-term
	2. Develop maintenance plan			Short-term
9. Limited SAR assets and capability	3. Procure dedicated SAR vessel and communication equipment, complemented by staff training	– Builds on existing RCC arrangements	– Strong national support	Short-term
2. Unreliable conditions at ship channels in the outer islands routes	4. Expand ongoing ship-to-shore project and develop code or practice for safe transfer of cargo and passengers	– Experiences from Tuvalu ship-to-shore projects can be replicated	– Strong national support – Leverages successful Tuvalu ship-to-shore project	Short-term
3. Out-dated navigational surveys and charts	5. Undertake hydrographic surveys and update and publish charts including in electronic format	– Included in TSIP but limited expertise and budget – IMO requirement to have electronic charts by July 2015 for vessels >500 GRT	– Leverages regional experience in Vanuatu and Tonga	Short- to medium-term
4. Limited private-sector participation in the maritime sector	6. Develop private-sector policy, including incentives to encourage participation	– Limited private-sector capacity	– Strong national support – Can draw on regional experiences	Medium- to long-term

Note: Short-term is defined as 1-2 years, medium-term as 3-5 years, and long-term more than 5 years

Table 35: Tuvalu Maritime Sector Action Plan

Measures/Recommendations	Time Frame	Indicative Cost (US$)	Recurrent Cost (US$ p.a.)	Recurrent Cost Funding (est. %)[7]
Institutional Arrangements				
1. Close US$50,000 budget gap and increase budget allocations to DMPS based on historical spending patterns.	Short- to medium-term	Government-funded	25,000	Budget: 100 User: n/a
2. Increase number of staff at DMPS and introduce staff development plan.	Short- to medium-term	50,000	one-off	Budget: n/a User: n/a
3. Reform MTI curriculum to include safety, higher classes and niche areas, and staff development.	Short-term	500,000	10,000	Budget: 100 User: n/a
4. Legislative reforms, develop action plan, supplement capacity, build enforcement capacity.	Short-term	250,000	7,500	Budget: 100 User: n/a
5. Build maritime data repository and integrate with national statistics system.	Short-term	50,000	one-off	Budget: n/a User: n/a
Port Infrastructure and Operations				
1. Construct pavement at Funafuti port.	Short-term	250,000	12,500	Budget: 90% User: 10%
2. Improve cargo management, construct shelves in existing warehouse and ventilate storage area for hazardous cargo.	Short-term	3,000,000	150,000	Budget: 90 User: 10
3. Procure port equipment, pilot and tugs boats and introduce preventive maintenance.	Short-term	1,700,000	127,500	Budget: 75 User: 25
4. Undertake hydrographic surveys, update and publish charts, including in electronic format.	Short- to medium-term	1,000,000*[8]	one-off	Budget: n/a User: n/a
5. Procure landing craft for use in outer Islands.	short to medium term	2,000,000	200,000	Budget: 90 User: 10%
6. Build outer island infrastructure based on medium- to long-term feasibility study.	Medium- to long-term	2,000,000	100,000	Budget: 100 User: n/a
Shipping Services and Trade				
1. Establish vessel maintenance and replacement fund.	Long-term	1,000,000	one-off	Budget: n/a User: n/a
2. Develop vessel maintenance plan.	Short-term	50,000	one-off	Budget: n/a User: n/a
3. Procure dedicated SAR vessel and communication equipment, and training.	Short-term	500,000	25,000	Budget: 100 User: n/a
4. Expand ongoing ship-to-shore project, develop code/practice for safe transfer of cargo and passengers, and upgrade facilities.	Short-term	1,000,000	75,000	Budget: 80 User: 20
5. Develop private-sector policy, including incentives to encourage participation.	Medium- to long-term	50,000	one-off	Budget: n/a User: n/a
Totals:		**13,400,000**	**732,500**	

Note: Short-term is defined as 1-2 years, medium-term as 3-5 years, and long-term more than 5 years.

[7] While donors are likely finance some of the proposed improvements, reliable long-term funding for recurrent costs will need to come from government budgets and/or user fees.

[8] If undertaken regionally, individual country costs would be reduced due to economies of scale.

Vanuatu

Vanuatu is a lower-middle-income developing country. It is scheduled to shed its LDC status in 2017, a status it has maintained due to being the most vulnerable country in the world to natural disasters based on the Commonwealth Vulnerability Index (UNCTAD, 2014; ADB, 2014). Geographically located along the Pacific Ocean's Ring of Fire and cyclone belt, Vanuatu is at a constant risk of natural disasters and climate change. These impacts are not limited to continuous erosion or destruction of key infrastructure, including maritime transport infrastructure, often requiring major capital re-investments. Spread over 83 islands in the South Pacific, 65 of which are inhabited, Vanuatu has a land area of 12,281 km^2. Its estimated population of 264,700 grows at a high average rate of 2.6 percent, with the second highest youth bulge in the Pacific at 20 percent of the population (NMDI, 2013). Almost 80 percent of Vanuatu's population reside on isolated outer islands, where the majority of its primary production (agriculture, fishing, and cattle rearing) takes place.

Figure 12: Map of Vanuatu

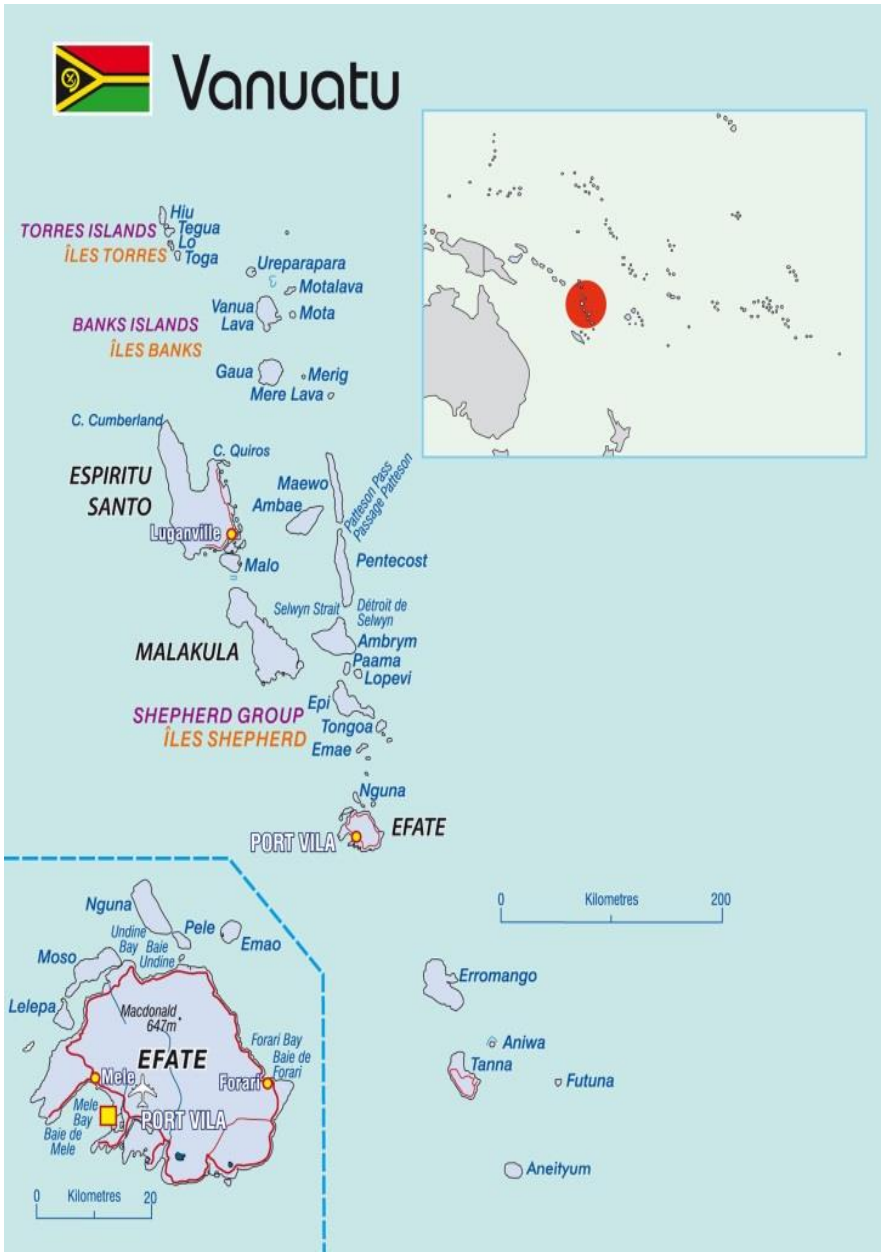


Table 186: Socio-Economic, Political, and Maritime Context of Vanuatu

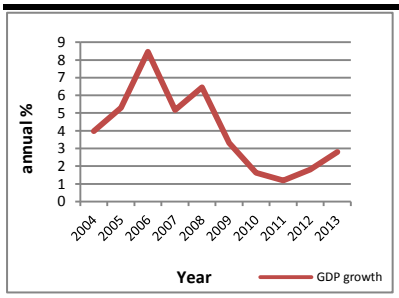
General Information

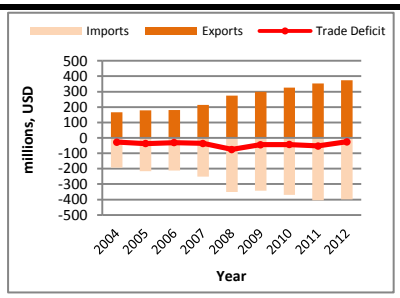
Capital City:	Port Vila	**Land Surface Area:**	12,281 sq. km
Population (2013 est.):	264,700	**Exclusive Economic Zone:**	3,120,000 sq. km
Population density (2013):	22 persons per sq. km	**Official Currency:**	Vatu
Urban population (2009):	24 per cent	**Language(s):**	Bislama, English, French
Dependency ratio (2013):	75	**Local government system:**	*Island councils*

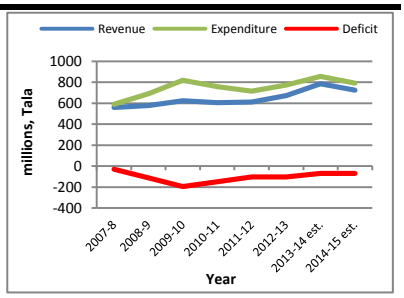
Recent economic and social indicators

Gross Domestic Product (2013):	USD 507.45 million	**Poverty rate (2010):**	12.7%
GDP per capita (2012):	USD 3,183	**Youth population (15-24):**	20.4 percent
Real GDP growth (2013):	2.3 per cent	**Infant mortality rate (2011):**	21 per 1000
Inflation (% change, 2013):	1.5 per cent	**Av. life expectancy (2011):**	71.15 years
Current account balance (2011-2):	USD -32.38 million	**MDGs:**	Mixed/On Track

Real GDP Growth, 2004 - 2013	Trade Balance	Government Revenue and Expenditure







Trade – major exports and imports, and trade value (USD thousands)

Imports, 2006-2011	2006	2007	2009	2010	2011
All products	159111	201714	277511	276007	280647
Consumer Goods	92055	116263	154763	166575	182077
Fuels	18945	36538	35579	37246	51169
Capital goods	35159	41618	63038	50745	41469
Food products	17591	23033	29080	33207	37458
Intermediate goods	21624	29319	39193	35829	34741
Machinery and Elec.	27216	29612	49728	42574	32459

Exports, 2006-2011	2006	2007	2009	2010	2011
All products	36698	29906	37746	46174	63532
Food	17,121	18,403	27,250	38,652	54,187
Manufactures	2,987	2,446	6,241	4,978	5,220
Chemical	447	317	1,188	2,111	3,415
Agric. Raw materials	2,897	632	749	799	1,797
Mach. & Trans Equip.	492	869	1,668	1,706	1,043
Ores and Metals	157	0.86	269	69	1672

Trade – principal merchandise trade partners/relationships

Import sources, 2009-11

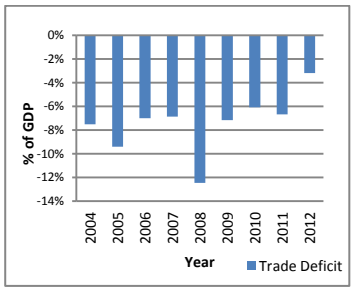
2009		2010		2011	
Country	**(%)**	**Country**	**(%)**	**Country**	**(%)**
Australia	29.57%	Australia	30.89%	Australia	29.67%
New Zealand	13.62%	New Zealand	13.97%	Singapore	18.20%
China	10.03%	Singapore	12.76%	New Zealand	12.69%
Singapore	10.01%	China	7.88%	Fiji	7.98%
Fiji	9.09%	Fiji	7.91%	China	6.92%

Export destinations, 2009-11

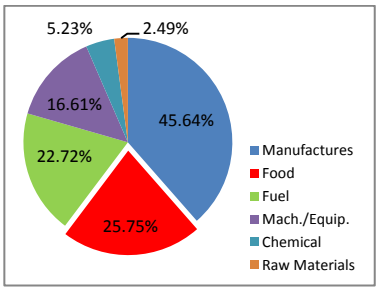
2009		2010		2011	
Country	**(%)**	**Country**	**(%)**	**Country**	**(%)**
Philippines	12.06%	Indonesia	16.10%	Malaysia	20.45%
France	11.67%	Philippines	12.82%	Philippines	18.03%
New Caledonia	10.68%	Australia	12.20%	New Zealand	11.41%
Japan	7.23%	New Caledonia	8.26%	Australia	11.30%
New Zealand	6.87%	New Zealand	6.86%	Fiji	8.09%

Trade as % of GDP

Trade deficit as a % of GDP



Product share as a % of total imports, 2013



Maritime Sector data

of seafarers, as of 2013: 150
International memberships: ILO, IMO, WCO, WTO
Regional Membership: OCO, PacMA, PIFS, PMTA, SPC
International Ports: Port Vila & Port of Luganville
International vessels/year: 295
Container throughput; hourly av.: 289,800 TEUs/yr. (11/hr.)

Source: SPC SDD Data, PRISM; World Bank WDI and WITS; Vanuatu Ministry of Finance; IMF World Economic Indicators, April 2013

Vanuatu enjoys a fast-growing shore-based and cruise tourism industry and a thriving agricultural sector as a result of its geographic characteristics. Due to Vanuatu's proximity to Australia and New Zealand, Vanuatu receives more cruise ship visitors than any other South Pacific country, with almost 70 percent of its tourists arriving via cruise ships annually (TRIP, 2011). Vanuatu hosted over 242,000 cruise ship visitors in 2013, an increase of almost 200 percent from 2006, averaging an annual increase of 16 percent since 2009 (SPTO, 2014). By 2016, the number of tourists arriving on cruise ships is forecasted to double to over 500,000 (MOFA, March 2014). The maritime sector is integral to expanding and sustaining Vanuatu's thriving cruise tourism industry, which in recent years, has been a major driver of the country's economic growth. Cruise tourism constitutes the bulk of the 40 percent of GDP that the tourism industry's accounts for, and is a significant source of foreign exchange and employment. In line with this, the Vanuatu Strategic Tourism Action Plan 2014-2018 lists the upgrade of the Luganville tourist wharf and facilities as a high priority for 2014.

The maritime sector is also vital to Vanuatu's trade deepening strategy to promote greater international trade through increased commodity exports, and leveraging its party to several beneficial trade agreements and its accession to WTO in 2012. With such growth comes increasing requirements for the development of adequate port infrastructure and facilities and more effective management and operations of the ports to meet this demand.

Vanuatu Maritime Sector Situation and Gap Analysis

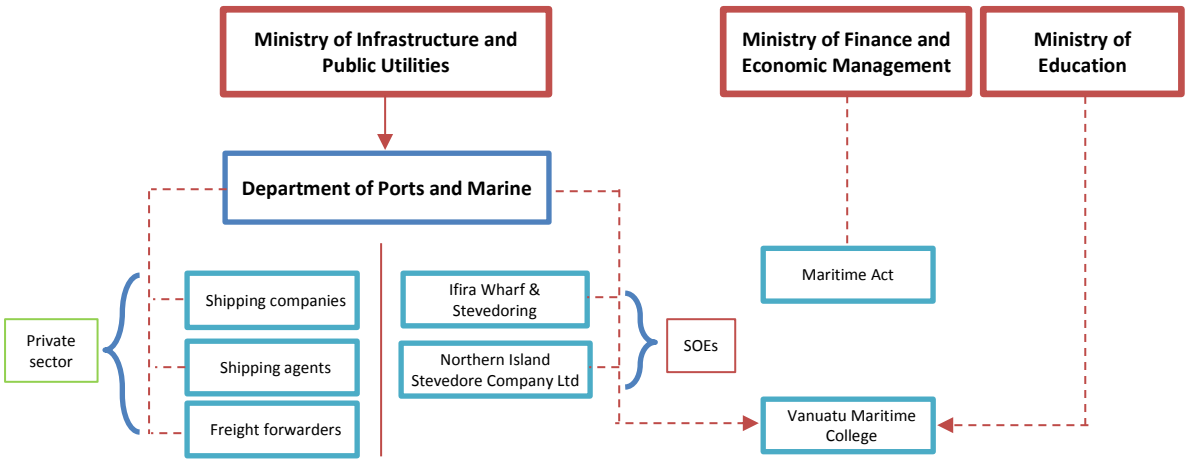
The maritime sector plays a paramount role in Vanuatu's economy; it supports inter-island and international trade, tourism, and domestic travel for social, educational and health needs. To this end, the Ministry of Infrastructure and Public Utilities (MIPU) Corporate Plan, 2014–2016 sets key strategies and policy priorities for the maritime sector, including: developing and maintaining shipping infrastructure to facilitate domestic and international trade; improving port operational efficiency and safety standards through regulatory measures; and lowering transportation costs, especially for rural populations. Poor and high costs of transport services and poor maintenance of infrastructure assets, particularly in rural areas, have been identified by communities as major constraints to development, as highlighted in the Vanuatu National Development Plan (PAA, 2006-2015). In view of this, the government of Vanuatu is undertaking several reforms in the sector, including the separation of regulatory and operational functions in the maritime sector, upgrade of wharves across the country, and establishment of an inter-island shipping support scheme (VPMU, 2013).

Institutional Arrangements

Two different government ministries administer Vanuatu's shipping and maritime Acts and legislation. In 2014, the Maritime Act was transferred to the Ministry of Finance and Economic Management (MFEM), which includes the Shipping and Port Acts, all of which are under the Ministry of Infrastructure and Public Utilities' (MIPU). Vanuatu Maritime College (VMC) is administratively placed under MIPU and the Ministry of Education. Guided by the MIPU Sector Strategy and Corporate Plans 2014–2016, DPM, which is under MIPU, is responsible for implementing the Ports and Shipping Acts, other maritime administrative matters, and regulating the main ports at Port Vila and Luganville, while provincial governments manage and operate designated domestic ports.

Since the dissolution of the Vanuatu Maritime Authority (VMA) in 2008, DPM has served as both maritime sector regulator and administrator, and will continue to do so until the new VMSA or Office of the Maritime Regulator (OMR) is set up in 2015 or 2016. DPM operates under a recurrent budget of VUV 1.5 billion, and recorded revenues of VUV 385.6 million in 2013. Several legislative and institutional reforms in the sector are in progress under a joint ADB, NZAid and government of Vanuatu funded 'Interisland Shipping Support Project (IISSP), 2012–2016', including review and drafting of maritime legislation with a view to setting up an independent regulatory authority – VMSA. As part of this reform program, the OMR Bill has been drafted and is awaiting approval. DPM's use of the State Law office to review and approve maritime laws and regulations, instead of the parliamentary approval process, which is lengthy, has accelerated its legislative approval process.

Figure 13: Organisational Structure of the Maritime Sector in Vanuatu



Source: Authors

The private sector plays a primary role in maritime service delivery in Vanuatu. Domestic shipping is fully privatised. Ifira Wharf & Stevedoring (IWS) and Northern Island Stevedore Company Limited (NISCOL) are private companies and statutory bodies that provide stevedoring/ dock-worker services in Port Vila and Port of Luganville respectively, while the former also manages Port Vila under a 50-year concession. VMC, also a statutory body, provides training for local and international seafarers and fishermen. Other private-sector actors include private shipping agents and freight forwarders.

Data Capacity

Data management is shared between Vanuatu National Statistics Office, Customs and Inland Revenue, and private-sector operators. Trade data collection will continue to improve due to planned introduction of ASYCUDA World in Customs administration, subject to funding availability. Reliable and up-to-date trade data and statistics are available from the above sources. DPM has no documented information on maritime and shipping assets, or cargo and passenger data, and relies on information made available by maritime sector actors, which is often difficult to obtain. A key strategic plan for MIPU in 2014–2016 is the development of an asset management registry system linked to the national central asset registry. In line with this, the creation of a maritime database system is in its early stages, and should be operational by 2016.

Seafaring Training

Located in Santo, VMC trains about 300 seafarers each year, producing about 20 graduates annually. Most seafarers work on domestic ships as fishermen, while a few are employed as officer cadets, ratings and hospitality crew for SOLAS vessels. Presently, more than 80 I-Vanuatu seafarers work in the hospitality sector on cruise ships (NTDC, 2014). With the large and steadily increasing number of cruise ship visits, Vanuatu could potentially carve a niche in the cruise shipping industry for its seafarers. Accordingly, Vanuatu's national development plan (PAA 2006–2015) calls for the expansion of seafarers' training and employment, by strengthening VMC's training capabilities and encouraging vessels registered in Vanuatu to employ Ni-Vanuatu seafarers.

Gap Analysis

Five key gaps in Vanuatu's institutional arrangements were identified in Table 37.

Table 37: Gaps in Institutional Arrangements in Vanuatu

Gap	Principal Causes
1. Critical capacity deficiencies in DPM, and low retention of staff	Primarily due to low maritime sector budgets and lack of competitive salaries that have led to high migration of staff to higher-paid private-sector jobs.
2. Fragmented maritime administrative arrangements and difficulty implementing Port State Control and other maritime functions	Results from the dissolution of VMA, which led to the distribution of maritime responsibilities across several ministries, creating coordination and implementation challenges.
3. Poor stakeholder consultation and donor projects coordination	Lack of a cooperation amongst the stakeholders within the maritime sector. There is also a language barrier, as several ship operators are unable to communicate in English, creating a challenge with consultations.
4. Lack of maritime data, appropriate information systems, and analytical capacity	Numerous factors including insufficient departmental funding, absence of a database, difficultly enforcing data requirements of shipping companies, and lack of capability to collate and analyse the data.
5. VMC not responsive to industry needs	Insufficient funding to finance infrastructure and equipment for higher training levels; lack of placements on boat domestic and international operating vessels, including- Cruise ships and other companies' policy for seafarer selection..

Port Infrastructure and Operations

Vanuatu has adopted the landlord port model. DPM is responsible for provision of major port infrastructure while the private sector provides major services largely as monopolies. This has contributed to Vanuatu achieving relatively strong port efficiency results, good maintenance and upkeep of port equipment; but the monopoly arrangements encourage very high port operations charges. Ports vary in terms of availability and conditions of infrastructure. Requirements range from expansion of capacity, especially in outer islands to encourage and keep up with cruise tourism and trade growth, to capital replacements and small and large scale repairs.

International Port Infrastructure

Port Vila is the primary international port, and is ISPS compliant. The port generally has good fixed infrastructure, but improvements and expansion are needed in several key areas, particularly in light of recent significant growth in international cargo and cruise ship calls. The international wharf in

this port is shared by cruise and cargo vessels. Due to limited wharf space, cruise ships are given berthing priority, often causing massive delays to container-ship operations. This is being addressed by the JICA-funded Lapetasi International Multi-purpose Wharf Project, 2014-2016 (VPMU, 2014).

The port complex is properly fenced and well lit, with port security provided when vessels are in the port. The access road leading to the port is adequately sized and paved. However, there are serious congestion issues when cruise ships visit. A maintenance shed is available, though in poor condition.

Port of Luganville, located on Espiritu Santo Island, serves as an important transhipment point for most of Vanuatu's exports, including copra, cacao, and kava. It is also used by visiting cruise ships. Port of Luganville has two untarred access roads. The port is poorly lit, making berthing at night very difficult. Makeshift vehicle lights are presently used to assist ships with berthing at night. Container and loose cargo storage sheds, the weighbridge and maintenance shed are dilapidated. The port has neither waste reception facilities nor a passenger terminal. There are buried fuel and gas pipeline outlets at the international wharf where tankers connect ship fuel or gas lines directly and pump to shore storage tanks. These fuel lines are at times used for ship bunkering as well.

Despite being Vanuatu's commercial export base, Port of Luganville has markedly worse infrastructure conditions than Port Vila, requiring urgent and major asset replacement of two wharves and repair of ancillary infrastructure. The situation was exacerbated by a recent tropical cyclone. Issues affecting the port of Luganville are now in the early phases of being addressed through a project to renovation and extend the international wharf funded by a USD 93.4 million soft loan which Vanuatu government recently secured from China.

Located in Luganville, Dinh Slipway, owned by a private entity, is the largest of the three functioning slipways in Vanuatu. Dinh Slipway is about 2 m deep with a 200 ton capacity and unable to accommodate big ships. This slipway is old and considered highly expensive (costing about VUV 614,541 (USD 6,500) for average repair/maintenance services) and unsafe for use, which results in most shipping companies going to Solomon Islands, New Caledonia and Fiji for ship repairs. Two smaller privately-owned slipways are available in Port Vila (Port Vila board yard) and on the island of Aore (owned by the Seventh Day Adventist church), both with a maximum capacity of 20 tons. Located on the west end of the international wharf, Port Vila board yard is being renovated and upgraded to accommodate up to 100 ton vessels. Additionally, these slipways are inadequately sized to accommodate the needs of several of the 200 vessels plying Vanuatu's waters. Life raft servicing and repair is provided by a private company – Massv (Bodiam Engineering) located in Port Vila, which provides services to Vanuatu and other PICTs.

Domestic Ports

Only three domestic ports in Vanuatu have some physical port infrastructure and capacity to support domestic ship operations for passenger and cargo handling, although coastal anchorages and landings are used in islands where wharves and jetties are unavailable. These are Port Vila (Lapetasi Wharf) and Port of Luganville (Simonsen Wharf) that serve as major transhipment points from which international cargo are distributed to outer islands, and Port Litzlitz in Malekula Island. Beyond these

ports, cruise vessels are virtually the only large-size vessel users of domestic ports. Generally, domestic port infrastructure is inadequate and poorly maintained.

A hub for Vanuatu's central and southern islands, Lapetasi wharf is dilapidated and lacks adequate physical infrastructure for domestic vessels berthing and cargo operations, and has a very shallow entrance channel that makes ship loading very difficult. With no physical wharf, vessels have to anchor to the strongest trees on the shore. With the new international terminal being built at Lapetasi wharf's current location, a temporary wharf has been constructed to host domestic vessels in the interim. The new domestic wharf is scheduled for construction to the east of Lapetasi under IISSP. Simonsen wharf at Port of Luganville, one of the wharves in Luganville port accommodating cargo transhipment and passenger disembarkation and embarkation (others are BP wharf, and Melcofe wharf), is a domestic hub for the northern and central islands. This wharf is also being upgraded under the IISSP project. Several other outer-island ports/harbours receive cruise vessels, but the jetties in these ports are missing, many of which were destroyed by cyclone damage in 2011. Some of these jetties are scheduled for repair or replacement as part of the IISSP project. However, beyond the scope of IISSP there is need for several more jetties/bays in the outer islands that are adequately located to better shelter them from swells during adverse weather conditions and in the event of a cyclone.

Port Operations

The private sector provides all maritime support services. Stevedoring services in the international ports are provided by IWS and NISCOL. These companies also own major assets such as warehouses, cranes, forklifts and trailers in these ports, which are in generally good state with no major maintenance issues. IWS' stevedoring services and operations in Port Vila are reported to be quite efficient. Vessel turnaround time is estimated at about 6 hours. In contrast, NISCOL has very few forklifts, and often has problems with its machinery, which slows down port operations in Port of Luganville, particularly with the wharf becoming increasingly congested. Operational issues in Port of Luganville include inadequate stevedoring services, inappropriate stocking of containers on the wharves, and use of wrong equipment. Five international shipping agents provide agency services.

DPM is responsible for hydrographic services, maintenance of aids to navigation, and pilotage (two pilots are located in Port Vila and one in the Port of Luganville). Port Vila has one tug boat and a pilot boat, both operational and in good condition. Port of Luganville lacks a tug boat and a proper pilot boat, and upon demand either hires the Port Vila tug boat (which takes 2–3 days to arrive, is very costly, and causes serious ship delays) or could hire available tug boats to support movement of international ships to or from berth. A new pilot boat provided by the government of Vanuatu is scheduled to arrive in 2015. SAR activities are designated to the Police Maritime Wing (Mala Base) which has an adequate SAR boat. The location of waste disposal facilities in both Port Vila and Luganville ports are inadequate. The current communication systems need to be upgraded to enable twenty four hours manning of the coastal radio station.

On the domestic front, Lapetasi Wharf is the busiest domestic wharf in Vanuatu in terms of volume of cargo handled. This wharf provides berthing for about 25 percent of domestic shipping calls at Port Vila, while primarily serving as a harbour side Container Freight Station (CFS) and Container Yard (to wash and store empty containers prior to being exported) (Soros, 2010). Lacking adequate

port facilities, port operations at Lapetasi are quite challenging, particularly loading of domestic vessels. Early phases of addressing this issue have commenced, including the reclamation of land for container stowage and upgrade of Lapetasi wharf to accommodate container and cargo vessels.

Hydrographic Surveys

In response to concerns of Carnival Australia's intention to withdraw its cruise ships from visiting key island destinations in Vanuatu, a NZD 535,000 grant under the new NZAid's Regional Pacific Navigation Initiative, assisted Vanuatu in carrying out hydrographic surveys of Luganville, Champagne Bay, Wala and Pentecost, to provide updated data for new charts and Electronic Navigation Charts (MFAT, 2014). Vanuatu has committed to invest FJD 665,000 to fund the second phase of the survey that will extend the hydrographic survey work to other islands after the NZAid programme ends.

There are about six unexploded World War II munitions discovered at the entrance of both Port Vila and Port of Luganville's busy cruise and cargo shipping lane (ABC, 2013; MTI, 2013). These pose serious safety risks for both cargo and commercial vessels, and there is the need for the ongoing bathymetric and hydrographic surveying services to help properly identify these to aid safe removal. However, these may have been unfused after the end of WWII by allied forces and then dumped into the sea as done elsewhere in the Pacific. Results from a recent diving exercise carried out by the Australia and New Zealand Navy in 2014 will reveal risks posed these munitions.

Gap Analysis

Six gaps in port infrastructure and operations were identified in Vanuatu (Table 38).

Table 198: Gaps in Port Infrastructure and Operations in Vanuatu

Gap	Principal Causes
1. Ship wrecks and armaments in main outer island ports pose safety risks.	This primarily arises from insufficient funding.
2. International and domestic ports lack navigational aids, such as cardinal marks, buoyage and beacons, and emergency communication systems.	This is mainly due to insufficient funding to procure replacement navigation aids and other equipment.
3. Port and access road congestion are experienced on cruise ship visit days.	Land availability in port vicinity for supporting access roads and financial support.
4. Unmounted and non-operational lighthouses.	This arises from inadequate budgets and lack of maintenance planning.
5. No standards for pilotage training and specifications for certification in place.	This relates to lack of a maritime administration that develops, enforces and verifies training standards and certification. This will need to be considered under the new Maritime regulator or administration.
6. International ports lack weighbridges	This is primarily due to insufficient funding.

Source: Authors

Shipping Services and Trade

Like other PICTs, Vanuatu faces high international freight rates, but appears to have relatively reliable and regular international shipping services. Most primary sector activity, including agriculture, fishing and cattle rearing, take place on the outer islands, creating demand for reliable domestic shipping services to bring these goods to market. This is however inhibited by lack of shipping support infrastructure and formal service schedules which creates passenger uncertainty, and prevents outer island inhabitants from planning their farming and export activities. Furthermore land ownership and transfer issues hinder the development of shipping support infrastructure. Outer islands also lack appropriate post-harvest and storage facilities in the ports, such as cooler systems, to store produce before they are transported and while on board the ships.

Shipping Services

Port Vila receives 200 international cargo vessels a year, averaging 17 a month (Batie, 2013), and 124 cruise ships in 2013 projected to increase to 138 during 2014. Port of Luganville receives about 95 ship calls a year, and 21 cruise ship visits in 2013, projected to increase to 33 during 2014. Neptune Pacific Line, Pacific Direct Line and Swire Shipping service Vanuatu on a regular basis.

Vanuatu's domestic shipping industry is fully privatised, with about 239 passenger and cargo (including coastal) vessels servicing the main and outer islands, ranging from 20 to 500 GRT (Table 39). Currently 14 of these vessels are detained for failure to meet safety standards (Batie, 2013). MIPU estimates an average of 202 domestic ship calls and 10,535 passengers to Port Vila, and 780 domestic ship calls and 5200 passengers per year to Port of Luganville.

Table 39: Fleet Information Vanuatu

Type of Vessel	Total (est.)	Trade Engaged In	Remarks
All types	243	Passenger, cargo, fishing, tug operations, pilotage operations	Registered as domestic operating vessels
Landing crafts	10	Cargo and passenger	Engage in inter-island operations
Flair Bow vessels	54	Cargo and passenger	Engage in inter-island operations
Other vessels	175	Coastal cargo/passenger	

Source: Batie, 2013

Despite having several domestic ships that could service all parts of the country, due to long distances and remoteness of several outer islands and limited passenger and cargo volumes, most outer island shipping routes are not commercially viable. As a result, majority of ships operate on lucrative routes, with more frequent and reliable shipping services provided to the central provinces. Conversely, uneconomical routes towards the southern and northern islands remain largely underserviced. A new Shipping Support Scheme (SSS) and Shipping Coordinator Scheme (SCS) under IISSP to improve reliability of shipping, safety and data collection (on vessel movement, passenger number and cargo volumes) on routes has been implemented. The SSS scheme provides subsidies to support service provision on uneconomical routes based on a least-cost tender process. Under the SCS, appointed personnel are placed on each island to promote and aggregate passenger and cargo demand and communicate needs for voyages to vessel operators.

DPM carries out inspections on ship loading limits mainly in Port Vila and Luganville, and due to lack of data, is unable to monitor this issue on outer islands. DPM noted that domestic vessel operators are often reluctant to comply with ship safety standards, an issue exacerbated by lack of vessel maintenance. In late 2014, for instance, three local passenger and cargo ships – LC Saravenua, MV Makila, and MV Island Claws – were detained due to failure to meet their licensing requirements, involving endorsement of their safety certificates (DailyPost, 2015). Vanuatu participates in the PIDSS program, which since 2013, has assisted three ships in Port Vila with developing safe operational plans.

Trade

Trade is a key driver of growth in Vanuatu. Compared to other study countries, Vanuatu has arable land and a thriving agricultural export industry. Its primary exports include kava (39 percent), cocoa (18 percent), beef (12 percent) and live fish (5 percent) (MFAT 2014; VSO, 2012) and its principal export markets are Australia, New Caledonia and New Zealand. In 2012, its exports netted VUV 5,073 million (VSO, 2012). Vanuatu mainly imports basic manufactured goods from China, while other goods or equipment are also imported from, Australia and New Zealand. In 2012, its imports netted VUV 27,454 million (VSO, 2012). American Samoa, the United States and Fiji also are important trading partners. Despite its strong export industry, Vanuatu still has a high trade imbalance. As part of its Trade Policy Framework's key priority of mainstreaming trade, Vanuatu is placing more emphasis on expansion of domestic production of tradeable and value-added commodities and improving marketing of potential export products, especially those from outer islands, such as Santo. Vanuatu is party to several preferential trade agreements, including the Melanesian Spearhead Group, which it actively trades under.

Gap Analysis

The gap analysis identified six key gaps in shipping and trade in Vanuatu (Table 40).

Table 200: Gaps in Shipping and Trade in Vanuatu

Gap	Principal Causes
1. Lack of a safe, adequate and affordable slipway for hull and major ship maintenance	This gap is related to the absence of a deliberate effort of the government to attract a private investor for this venture.
2. Non-compliance of domestic ship operators with ship safety standards	This gap results from lack of attendance to slipways or application of necessary enforcement precedence.
3. Poor monitoring of ship safety standards, and ship safety inspections are only carried out in Port Vila and Luganville	This is primarily due to inadequate budgets, limited technical staff and absence of data from ship operators.
4. Domestic vessel operators do not keep records of passenger and cargo volumes, and passenger and cargo tariffs are not regulated	This is due to a lack of financial support for placement of operational mechanisms with standards required
5. Shipping companies pay a hefty 15–18% average interest rate to access bank financing	Related to the absence of generally favourable borrowing conditions in Vanuatu, and mostly aged domestic vessels.
6. Limited intra-regional connectivity with	This is due to exporters having limited ability

smaller island countries	to meet international biosecurity requirements, and lack of good shipping links with smaller island countries in the Pacific.

Key Priorities and Next Steps

A key institutional issue in Vanuatu is a critical capacity deficiency in the DPM, which stems in large part from low retention of staff due to lower salaries than in the private sector. Introducing competitive salaries would help, but this should be accompanied by staff development programs. Better enforcement of regulations, as well as education of ship operators and passengers is necessary to ensure safer maritime transportation. Economic incentives to ship operators for better maintenance would be one strategy for motivated enforcement of standards. Safety in ports and channels is severely compromised by derelict vessels as well as armaments left from WWII and other conflicts. Regulations for removal of these threats need to be put in place and should be accompanied by dedicated funding and a specific plan of action. In spite of regulations regarding ship safety, vessels in Vanuatu are often poorly maintained and are a potential safety hazard.

It is recommended that Vanuatu implement the following measures: (1) increasing DPM's budget and introducing competitive salaries; (2) building enforcement capacity and establishing stricter procedures of enforcement; and (3) removing wrecks and derelict vessels from key waterways. These measures would support safer maritime services, but would also expand employment opportunities, retain institutional knowledge in the sector, and facilitate the effectiveness of private sector service delivery. The sustainability of these measures will require an increase in funding for the sector. User charges should also be explored.

Table 41: Ranking of Identified Gaps in Maritime Sector, Vanuatu

Gap		Ranking	Rationale
Institutional Arrangements			
Gap 1	Critical capacity deficiencies in DPM, and low retention of staff.	1	Compromises effective delivery of enforcement functions and leads to loss of institutional knowledge
Gap 2	Poor stakeholder consultation and donor project coordination.	3	Undermines the effectiveness of strategies and plan implementation, and exacerbates capacity gaps
Gap 3	Fragmented administrative arrangements and difficulty enforcing Port State Control and other maritime functions	2	Leads to confusion and difficulties in coordination of activities and could compromise safety; risk of non-compliance with international obligations
Gap 4	Poor collection and analysis of maritime data	4	Poor planning and decision-making, absence of benchmarking leading to persistence of inefficiencies
Gap 5	VMC not responsive to industry demands.	5	Hinders effective safety training, particularly simulations, and ability to meet industry needs.
Port Infrastructure and Operations			
Gap 1	Ship wrecks and armaments in ports pose safety risks.	1	Compromises safe vessel movement and port operations, with a higher risk of accidents; port approach to avoid wrecks reduces efficiency
Gap 2	Lack of navigational aids, emergency communications system.	2	Compromises safety of navigation; poses higher risk of and delays in locating ships lost at sea; difficulty in carrying out rescue operations;
Gap 3	Absence of a weighbridge	5	Compromises port worker safety during container handling, risk of damage to equipment, loss of revenue, potential for shipping service disruption
Gap 4	Maintenance backlog due to inadequate budget	4	Increasing operational costs and risk of damage to ships
Gap 5	Port and access road congestion experienced on cruise ship visit days.	6	Compromises safety of cruise passengers, reduces cruise tourism expenditure due to frustrated passengers
Gap 6	No formal procedure for pilotage training or specifications for certification.	3	Compromises safety of navigation; risk of accidents and ship grounding
Shipping Services and Trade			
Gap 1	Inadequate and unaffordable slipway	3	Infrequent and costly maintenance of vessels compromises safety
Gap 2	Non-compliance of domestic ship operators with ship safety standards.	1	Poses safety risks to passengers and cargo; poor targeting of safety inspections and strategic planning
Gap 3	Ship safety inspections only carried out in Port Vila and Luganville.	2	Poses major passenger safety risks in outer islands, if unsafe vessels are used
Gap 4	Hefty interest rates faced by shipping companies to access bank financing.	4	Deters private-sector investments and results in compromise of safety due to the high cost of covering maintenance and other costs
Gap 5	Absence of domestic ship financial data to regulate tariff	5	Risk of overloading and unaffordable freight rates
Gap 6	Limited intra-regional connectivity with smaller island countries	6	Promotes employment opportunities and food security, reduces import costs

Table 42: Recommendations and Priority Actions, Vanuatu

Institutional Arrangements				
Gap in Order of Priority	**Measures/Recommendations**	**Feasibility**	**Ease of Implementation**	**Timeframe**
1. Critical capacity deficiencies in DPM, and low retention of staff.	1. Increase budget and introduce competitive salaries	– Consistent with plans to set up new MSA	– National support	Short-term
2. Difficulty enforcing/implementing Port State Control	2. Consolidate maritime functions as part of plans to establish MSA	– Consistent with plans to set up new MSA	– National support	Short-term
3. Lack of clear delineation of maritime-related responsibilities across government ministries.	3. Clarify roles and responsibilities of stakeholders within MSA legislation	– Complement plans to set up new MSA	– National support	Short-term
4. Poor collection of domestic passenger and cargo information, and non-regulation of domestic freight rates.	4. Build maritime data repository, introduce protocols to improve collection & analysis of maritime data.	– Regional repository agreements in place – Need system for price control.	– National commitment evidenced by signed data repository MOU	Short-term
5. VMC not responsive to industry demands.	5. VMC curriculum reform to expand training to include safety, higher Classes, new niche areas, staff development and infrastructure improvements	– Complements existing VMC improvement plans – Establish agreements with ship owners/companies for guaranty of job opportunities for trained and qualified seafarers.	– National support and commitment	Short-term
Port Infrastructure and Operations				
Gap in Order of Priority	**Measures/Recommendations**	**Feasibility**	**Ease of Implementation**	**Timeframe**
1. Ship wrecks and armaments in ports pose safety risks	1. Remove wreck and derelicts, including review of regulatory framework for their removal/disposal.	– National legislation already in place – Private-sector experience in this area	– Strong political will	Short-term
2. Lack of navigational aids, telecommunications emergency system	2. Provide/upgrade navigational aids and telecommunications emergency system	– Consistent with new MSA's mission to improve safety – Vessel owners to insure vessels for removal when wrecked	– Small investment with high return – Strong political support to improve safety	Short-term
3. Low standards for pilotage training, and specifications for certification are not verified	3. Develop standards and certification specifications for pilotage training	– Consistent with new MSA's mission to improve safety – Provide a formal standard	– Easy integration into VMSA development	Short-term
4. Maintenance backlog due to inadequate budget	4. Introduce vessel preventative maintenance/replacement program.	– Limited budget availability – Involves buy-in from several	– Issue persisted over a decade – Leverage recent studies on	Short-term

	5. Establish vessel maintenance and replacement fund	government agencies and private-sector stakeholders	the need for maintenance	Long-term
5. Absence of a weighbridge	6. Procure weighbridge and introduce preventive maintenance	– Only necessary for exported commodities	– Small investment with high return – Simple project	Short-term
6. Congestion along the access road and at port gates experienced on cruise ship visit days	7. Re-design access roads to create designated taxi waiting area	– Fits within tourism strategy, builds on successful tourism track record – Alternate sites and routes be constructed/adopted	– Strong national support	Short-term
Shipping Services and Trade				
Gap in Order of Priority	**Measures/Recommendations**	**Feasibility**	**Ease of Implementation**	**Timeframe**
1. Non-compliance of domestic ship operators with ship safety standards.	1. Build enforcement capacity, establish stricter procedures of enforcement 2. Provide economic incentives to procure and maintain vessels 3. Raise public awareness on maritime safety standards and requirements	– Fits within new MSA mission	– Strong national support for promotion of safety	Short-term
2. Ship safety inspections are carried out only in Port Vila and Luganville	4. Expand inspections to outer islands	– Fits within new MSA mission – May only be applicable if financial support provided	– Strong national support for promotion of safety	Short- to medium-term
3. Inadequate and unaffordable slipway	5. Expand slipway capacity and regulate tariff/ encourage entry of competitors	– Fits within new MSA mission	– Strong national support	Short- to medium-term
4. Hefty interest rates faced by shipping companies to access bank financing.	6. Create concessional lending window in commercial or development bank restriction of imported vessel age to 10 years	– Fits within investment and private-sector strategy	– Political will, but little action	Medium-term
5. Absence of domestic ship financial data to regulate tariff	7. Establish and enforce requirement to submit periodic financial statements standard rates be set for various vessel net tonnages	– Fits within new MSA mission	– National support	Short-term
6. Limited intra-regional connectivity with smaller island countries	8. Assess options to increase regional trade, establish regular shipping links with smaller island countries.	– Builds on regional experience in sub-regional shipping (e.g., CPSC)	– Strong national and regional support	Medium-term

Table 213: Vanuatu Maritime Sector Action Plan

Measure/Recommendation	Time Frame	Indicative Cost (US$)	Recurrent Cost (US$ p.a.)	Source of Recurrent Costs (est. %)[9]
Institutional Arrangements				
1. Increase budget and introduce competitive salaries.	Short-term	Government-funded	50,000	Budget: 100 User: n/a
2. Consolidate maritime functions as part of plans to establish MSA.	Short-term	Government-funded	one-off	Budget: n/a User: n/a
3. Clarify roles and responsibilities of stakeholders within MSA legislation.		Government-funded	one-off	Budget: n/a User: n/a
4. Build maritime data repository and introduce protocols to improve collection and analysis of maritime data.	Short-term	50,000	one-off	Budget: n/a User: n/a
5. Expand VMC curriculum to include safety, higher Classes, niche areas, staff development.	Short-term	750,000	15,000	Budget: 100 User: n/a
Port Infrastructure and Operations				
1. Program to remove wrecks and derelict vessels, including review of regulatory framework for removal and disposal.	Short-term	500,000	one-off	Budget: n/a User: n/a
2. Provide/upgrade navigational aids and telecommunications emergency system.	Short-term	250,000	12,500	Budget: 70 User: 30
3. Develop standards and certification specifications for pilotage training.	Short-term	30,000	one-off	Budget: n/a User: n/a
4. Procure weighbridge and introduce preventive maintenance.	Short-term	200,000	10,000	Budget: n/a User: 100
5. Re-design access roads to create designated taxi waiting area.	Short-term	200,000	10,000	Budget: 80 User: 20
Shipping Services and Trade				
1. Build enforcement capacity and establish stricter procedures of enforcement.	Short-term	250,000	10,000	Budget: n/a User: n/a
2. Provide economic incentives for the procurement and maintenance of vessels.			one-off	Budget: n/a User: n/a
3. Raise public awareness on maritime safety standards and requirements.			10,000	Budget: 100 User: n/a
4. Expand safety and regulatory inspections to outer islands.	Short- to medium-term	Government-funded	50,000	Budget: 90 User: 10
5. Expand slipways and encourage entry of competitors.	Short- to medium-term	1,000,000	50,000	Budget: 90 User: 10
6. Create concessional lending window for vessel maintenance and replacement.	Medium-term	5,000,000	one-off	Budget: n/a User: n/a
7. Establish and enforce requirement to submit periodic financial statements.	Short-term	Government-funded	one-off	Budget: n/a User: n/a
8. Assess options to increase trade, establish regular shipping links with smaller PICTs.	Medium-term	50,000	one-off	Budget: n/a User: n/a
Totals:		**8,280,000**	**217,500**	

Note: Short-term is defined as 1-2 years, medium-term as 3-5 years, and long-term more than 5 years.

[9] While donors are likely finance some of the proposed improvements, reliable long-term funding for recurrent costs will need to come from government budgets and/or user fees.

PART IV: REGIONAL SITUATION AND GAP ANALYSIS

While each of the study countries has unique challenges and opportunities in the ongoing development of their maritime sector, the geographic, historical, and economic similarities between these countries create a number of shared opportunities and concerns that may best be addressed at a regional level. The sharing of expertise and experience between the PICTs will strengthen the region as a whole and provide economies of scale that a single small country cannot hope to meet. Although these solutions may be implemented at a national level, they can be coordinated within a regional perspective. By identifying common challenges to the study countries' maritime sector, this report seeks to find common solutions that may increase the efficiency of the sector as a whole.

Institutional Arrangements

The maritime sector has a similar institutional structure in each of the study countries (the prototype is described below and further elaborated in Figure 3.1 in Annex 3). Management of the sector falls under a central Ministry, such as a Ministry of Works or Infrastructure, which is responsible for developing sector policies, plans and formulating legislation. Within the ministry is typically a division responsible for maritime matters (known as the maritime administration), charged with administration and regulation of the sector with a safety and security focus (including ISPS and seafaring matters, ship registry, flag state and port state implementation), providing professional and technical advice to the responsible government minister, and managing ports.

Maritime officials reported that day-to-day operations are beset by many challenges, but they strive to operate as effectively as possible under existing conditions. However, some of these challenges, such as maritime legislative bills awaiting to be passed by the legislature due to the limited resources within the judicial system, poor enforcement of regulations, particularly those pertaining to safety (e.g., overloading, life vest availability) and limited or no maintenance of vessels and/or port assets and facilities create risks and dangerous situations. Another key challenge is recruiting and retaining qualified staff. Maritime administration capacity varies greatly among the study countries, ranging from two technical staff in Tuvalu to about ten in Samoa and Tonga, and 15 in Fiji. In other regions of the world, administrations are able to recruit and retain specialist technical staff, which increases safety and port efficiency. Recognizing that technical staff are performing similar tasks globally, PICTs need to address the imbalance between generalists and specialist technical staff observed in the study countries. These challenges are exacerbated by tight fiscal conditions in the countries.

Private-sector operators in the maritime sector provide services such as shipping agency services, ship crewing, freight forwarding and stevedoring, often in partnership with international shipping companies. In some countries, such as Vanuatu, the private sector provides services to maintain port infrastructure, vessels and life boats. In the case of Tonga, private-sector shipping agents also provide biosecurity services.

With the exception of Tuvalu and Vanuatu, separate SOEs have been established to manage and operate the main international ports. Port models vary in terms of the degree of private-sector involvement. For example, the Port of Apia operates under a landlord port model, where the private sector provides most port services while the SOE (Samoa Port Authority) provides and maintains major infrastructure. In Tonga and Kiribati, a mixed model is used where the provision of port

services, such as stevedoring, is shared between the public and private sectors. In Tuvalu, the public sector is fully responsible for port infrastructure and services (Table 44). The separation of operations and regulation in the maritime sector in several of the study countries might in fact have exacerbated the aforementioned existing capacity gaps in the sector because SOEs and the private sector offer better remuneration and conditions of employment than do PICT Governments.

Table 44: Comparison of Service Delivery in Study Countries

Country/Service	Kiribati			Samoa			Tonga			Tuvalu			Vanuatu		
	Private	Public	SOE	Private	Public	SOE	Private	Public	SOE	Private	Public	SOE	Private	Public	SOE
Stevedoring	✔		✔	✔		✔	✔		✔		✔		✔		
Port			✔			✔			✔		✔				✔
Freight Forwarding	✔			✔			✔			✔			✔		
Shipping agents	✔			✔			✔			✔			✔		
Biosecurity		✔		✔			✔				✔			✔	
Dredging		✔				✔			✔		✔		✔		
Slipway			✔			✔			✔		✔		✔		
Port Infrastructure maintenance			✔			✔			✔		✔		✔		
Domestic shipping services	✔		✔			✔	✔		✔		✔		✔		

Source: compiled by SPC (2015)

While separation of port operations and regulatory oversight provides greater transparency, the capacity to carry out these functions separately is necessary for the benefits to be realised. However, in some instances, it may not be practical in countries with small populations, such as Tuvalu, because of the limited capacity to carry out these different functions.

Maritime Legislation

Most PICTs have acceded to a large number of international treaties and IMO conventions, but many have yet to fully incorporate the provisions of these conventions into national law. This is due to: (i) lack of financial and human (technical) resources; (ii) technical complexity of international instruments; (iii) the time needed to enact legislation; (iv) parliamentary processes; and (v) lack of awareness of the importance of implementing the provisions contained in the international instruments. The enforcement of maritime legislation often stretches the capacity and exacerbates budgets in relevant government departments.

Data Capacity

Data collection and management systems in the study countries are fragmented, with responsibilities shared between several government departments and SOEs. Trade information is often collected by Customs Departments using different types of software, which makes intra-regional comparisons of trade data difficult. For example, Ayscuda World is used in Samoa and Vanuatu, PC Trade in Tuvalu and Kiribati, and Customs Management Software (CMS) in Tonga. This also poses a challenge to developing standardised capacity development initiatives and back up support among countries. The analysis of trade information is done by central statistical offices based on file transfer arrangements with Customs. This process is systematic, and can be time consuming. In turn, this can affect the reliability and timeliness of available data, which is essential for evidence-based planning and decision making. In response, a regional data sharing agreement was developed and endorsed by PICT Ministers in 2014.

Seafaring Training and Overseas Employment

Seafarer qualification is essential for safe, efficient and sustainable transport. Having well-prepared seafarers is important to make domestic shipping safe as well as to enable the countries to embrace opportunities beyond their boundaries and to succeed on foreign ships, with the secondary benefit of remittances.

Several PICTs have MTIs that train seafarers to meet domestic and international demand. Most MTIs were established by and maintain relations with overseas shipping companies, which generate demand for seafarers. Domestically, seafarers are employed primarily on fishing vessels. MTIs offer a variety of training programs, consisting of cadet, and various deck and engineering classes based on regional training modules development by SPC. Higher level training programs are only offered in Fiji and PNG or outside of the region. MTIs generally have good facilities, qualified staff for current programs. A number of improvement programs are underway in the study countries. For instance Kiribati's MTC is being renovated with funding from NZAid; Tonga is getting a new facility with funding from NZAid; while Samoa is constructing a new facility with funding from China. Detailed information on MTIs in the study countries is presented in Annex 4.

Recent domestic accidents have shown that there is need to improve the domestic maritime safety culture through ensuring that MTIs and other training providers have the resources to properly train seafarers and non-seagoing professional maritime sector workers in areas such as ship safety inspection and enforcement, safety instructions, engine operation and maintenance, safety equipment repair, manifest and record keeping, etc. There will be additional benefits from a focus on domestic training. For example: training of port workers in areas such as crane or forklift operation will create greater safety at the ports and improve port efficiency, but will also create a greater variety of private-sector employment opportunities in the maritime sector outside of seafaring.

Growing international competition for seafarers has reduced the demand for PICTs seafarers. MTIs have not been responsive to these changing industry trends, which is affecting countries' ability to embrace opportunities in the competitive and dynamic international seafaring industry. Countries therefore need to reform MTIs. This will require the study countries to continuously review the training courses offered at their maritime training institutions to focus on new niche areas such as serving as crew on cruise ships and fishing vessels, to enable the countries to remain competitive in the sector.

Most MTIs in PICTs are SOEs under the responsibility of Ministries of Education. This creates an additional challenge in that MTIs offer technical vocational programs to meet STCW compliance (which is certified by the maritime administrations), while Ministries of Education tend to focus on academic training. This is a fragmented arrangement, as illustrated in Figure 3.1 in annex 3, which could potentially undermine the responsiveness of MTIs to domestic maritime sector training demands; to the development of new competitive niche areas, and adaptability to changing STCW requirements and industry trends. This has given rise to calls by national maritime administrations for MTIs to be transferred to those ministries responsible for maritime matters.

Port Infrastructure and Operations

International Ports

Most of the study countries have established SOEs to manage international ports, which are regulated by the maritime divisions. The study countries have relatively well-functioning international ports with varying infrastructure conditions and improvements.

For instance, Tuvalu and Kiribati recently benefited from new international ports that support basic operational requirements, funded with grant assistance from the Japan International Cooperation Agency (JICA). However, these port projects did not include improvements to pavements and fenders or address key maintenance issues. Ports in the study countries, including the newer ones in Kiribati and Tuvalu still lack many essential modern port requirements such as reception facilities. Other challenges include on-going port dredging, pilotage and maintenance of aids to navigation. These services are mainly carried out by SOEs or the state, but given the fiscal issues in the sector and the country, there is scope to further involve the private sector in the provision of these services to improve efficiency and reduce costs.

Port facilities are generally not well-maintained. In many instances, repairs to buildings, wharf aprons, fenders, pilings, equipment, and lights are not carried out, but should be done on a regular basis to expand their useful life and delay the need for early replacement. Maintenance arrangements are sporadic, with maintenance plans, funds and asset registries absent, contributing to the build-neglect-rebuild paradigm. Addressing maintenance gaps would improve reliability of service, enhance efficiency and is also integral to passenger and cargo safety.

Road access to the international port is generally good for all the study countries, contributing to ease of movement and transport logistics. However, Kiribati and Vanuatu have major congestion challenges. Availability of land could become a major constraint for 'major' port expansion in Kiribati and Samoa, and the ability of the study countries to pursue maritime-related development opportunities including transhipment and tourism development.

Countries experience significant economic losses from damages to key port infrastructure related to the increasing frequency of natural disasters, exacerbated by climate change impacts, many requiring huge capital investments for repair or replacement. In the case of Vanuatu, the wharf structure in the Port of Luganville continues to deteriorate due to the impacts of natural disasters. Similarly, tsunamis in Samoa and Tonga in 2012 and 2013 respectively caused significant damage to key infrastructure and also damage in the agricultural sectors, contributing to increasing food prices.

Several of the study countries (Samoa, Tonga, and Vanuatu) are contemplating major port developments to address congestion due to cruise tourism and export developments. Tonga recently invested USD 20 million to construct a new cruise ship wharf; the AUD 61 million JICA-funded construction of Lapetasi Wharf in Port Vila (Vanuatu) is intended to free up the existing wharf to be dedicated to cruise ships, in addition to the AUD 93 million being provided by the Chinese government to rehabilitate and expand the international wharf in the Port of Luganville in part to encourage more cruise visits; and Samoa is proposing investing USD 190 million to construct a cruise ship wharf. Plans for these projects are at various stages of appraisal.

Nautical charts and maps have been updated in Tonga, Samoa and Vanuatu with assistance from the NZAid. This is mainly to assist countries to comply with IMO's SOLAS Convention, that starting in July 2014, will require the use of the Electronic Chart Display and Information System (ECDIS) on new and existing passenger, tanker and dry cargo vessel. This assistance is likely to continue in Polynesian countries, but not in Kiribati, Tuvalu or other non-Polynesian PICTs, although the latter also have to comply with the new ECDIS regulation.

Domestic Ports

Domestic ports are usually managed by provincial governments and operated by the maritime authorities. With the exception of Samoa, physical infrastructure conditions at domestic (outer islands) and international ports differ sharply. Infrastructure in the outer islands is often basic and inadequate, and consists of ship channels and simple jetties, which in some cases need major dredging, refurbishment or replacement. For instance, in Vanuatu, while there is a port, harbour or anchorage on virtually all of its 65 inhabited islands, only 3 have some physical infrastructure and/or capacity to support major cargo operations. Passenger and post-harvest port facilities to store agriculture and fisheries products are largely absent in the study countries. In some instances, passengers and cargo are still offloaded to smaller boats before transportation to the shore. Access roads and equipment also need improvement to address passenger safety concerns.

Some improvements to domestic shipping safety have been made (for instance in the case of Tuvalu through the New Zealand funded 'Ship to Shore' project and in Tonga through the World Bank and Australian government-funded Transport Sector Consolidation Project (TSCP I)). However, these do not address the major infrastructure improvement needs at outer island ports.

Port efficiency varies from country to country depending on available port equipment, organisation of stevedoring and physical characteristics of ports (e.g., condition of pavements and approach channels). As such, it is difficult to establish a single regional port efficiency benchmark. However, one key observation is that ports with some degree of private-sector involvement in stevedoring and maintenance of equipment, such as those in Samoa and Tonga, have better efficiency in terms of containers offloaded to the wharf per hour of about 12 TEUs per hour in both cases, compared with ports where the government or SOEs provide stevedoring services, such as those in Tuvalu and Kiribati with average container movement rates of 4 and 3-4 TEUs per hour.

Shipping Services and Trade

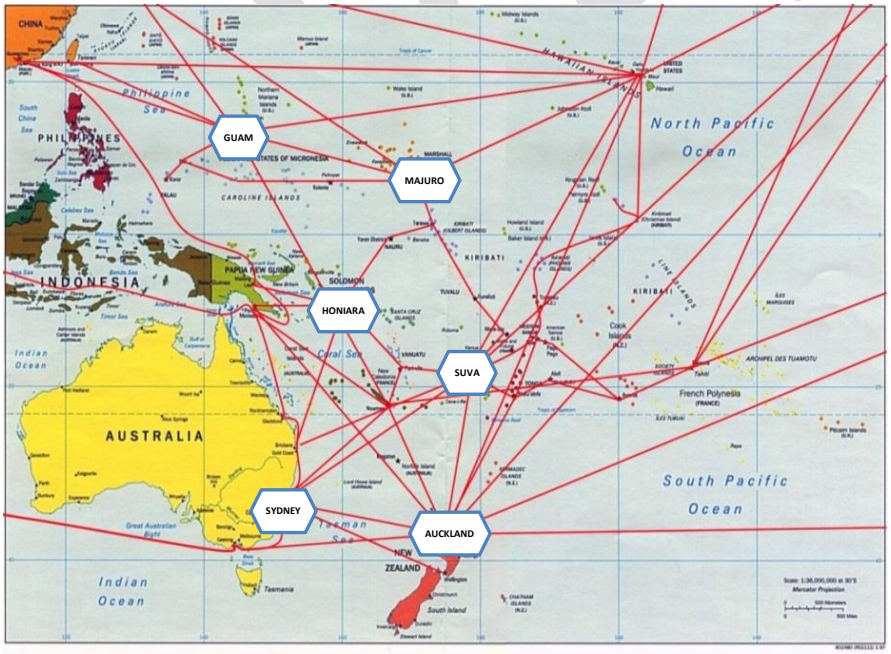
Shipping in the Pacific is essential to trade, tourism, mobility and basic livelihoods of Pacific Islanders. Accessible, affordable, efficient, and sustainable shipping services are integral to economic, social and human development in PICTs. Due to lack of arable land, most PICTs, especially the smaller countries, rely almost entirely on imports for food and other essential goods. Generally, international shipping in the region is competitive and has developed in response to demand and the patterns of import and export trade relations.

International and Intra-Regional Shipping

While shipping reliability in several of the study countries has improved due to the benefits of a sub-regional shipping commission, freight rates are still high due to limited exports. For example, it currently costs NZD 2,500 FOB to ship a 20 foot container from New Zealand to Tuvalu, transhipped via Fiji (approximately 1714 nautical miles), as compared to NZD 645 to 1285 for shipping an equivalent container from Mainland China to South Africa (8700 nautical miles), a distance more than 5 times that of Tuvalu-New Zealand (Private Shipping Agent – Tuvalu, 2014; Alibaba, 2014). Despite the much larger distance between Mainland China and South Africa, the much higher freight rates on the Tuvalu-New Zealand largely reflects the fact that unlike South Africa, Tuvalu has virtually no exports and competitive freight rates that result from higher traffic volumes. However as shown in Figure 14, there are relatively good north-south and east-west shipping connections into the region allowing good connectivity with major shipping partners in Asia, Europe, the United States, New Zealand and Australia. Samoa has also emerged as a transhipment hub for refrigerated cargo to nearby countries including Tonga, Cook Islands, Niue and Tokelau. This has generated demand for expansion of the Apia port to accommodate 24 more reefer containers, in addition to the existing space for 72 containers. Prospects for further development of transhipment along with plans to increase cruise tourism are fuelling discussion in Samoa for a new port.

The membership of Kiribati and Tuvalu in the CPSC has resulted in more reliable international shipping services via Fiji. Service is now reliable, and freight rates have stabilized, but are still very high. For example, prior to CPSC, the sub-region was served by four shipping lines; since January 2014, six shipping lines service these routes and with greater frequency (CPSC AGM 2014).

Figure 14: Main Shipping Routes in the Pacific



Authorities from several PICTs believe that there are trading opportunities for niche products, such as virgin coconut oil, green coconuts, coconut juice and cream, noni juice and oil, fresh fish cuts, coconut fibre and furniture, seaweed and copra. Primary exports continue to be dominated by agricultural produce, which are generally not profitable, given sluggish global agricultural commodity

prices. Recent trends in trade (e.g., demand from Japan and the EU) suggest that there are additional opportunities, particularly for niche products. Tanna coffee from Vanuatu for instance, has done well as a niche product exported to Australia and New Zealand, and used on several cruise lines, including Carnival Australia P&O Cruises.

Domestic Shipping

Domestic shipping plays an essential role in the movement of passengers, imported cargo, and agricultural products between capital centres and remote communities. To ensure that services are safe, secure and efficient, there is an ongoing need to ensure high standards and safety in domestic shipping, and the timely maintenance of domestic ships and sufficient funding to carry out needed maintenance are essential. Comparative information on domestic shipping experiences of the study countries is elaborated below; while detailed information on each country is presented in the Maritime sector profiles in Annex 5.

The provision of domestic shipping services in PICTs ranges from public provision in Tuvalu to fully privatized services in Vanuatu. However, in most PICTs, domestic shipping services are provided by a government entity, e.g., through SOEs, or by the private sector, or by both. In the case of Samoa, Tonga and Kiribati, the government is involved through SOEs, in addition to a few additional private-sector providers in Kiribati and Tonga, while in Vanuatu, domestic shipping is fully privatized. In Tonga, church and community associations also operate domestic vessels. With the exception of Tuvalu, there is always some level of private provision in these countries, albeit through small private and community boats that run both short and long distances (in the case of Tonga). A key safety issue in this area is that many of these small boats are not monitored or inspected for overloading or in meeting minimum survey or safety requirements. The private sector in Tonga informed the team that some of these vessels lack safety equipment, such as life jackets, and have limited emergency communications equipment. They also do not carry insurance or have weather monitoring systems. Due to capacity constraints, countries have greater challenge enforcing safety requirements on safe loading limits of passenger and cargo vessels operating in outer islands than those operating on the main islands. In Vanuatu for instance, most inspections are only carried out in Port Vila and Luganville.

Domestic shipping routes are mostly organized and overseen by maritime divisions. All the study countries provide basic shipping access to outer islands as Public Service Obligations (PSO). However, the reliability of these services may not be in line with the expectations of residents in outer islands, some of whom require an increase in service frequency, which might not be economically viable, to ensure more secure food supplies and planned production and consistent export of their produce. This is a particular concern in Kiribati and Vanuatu where the most profitable routes are being adequately serviced, while the less profitable routes and farther outer islands remain largely underserviced.

As part of meeting their PSOs and addressing the above issue, some countries, including Vanuatu, are at the early stages of introducing a Shipping Support Scheme (SSS) similar to the shipping franchise scheme in Fiji to improve reliability of shipping services to outer islands, in addition to a Shipping Coordinator Scheme (SCS). The SSS provide subsidies for servicing otherwise commercially uneconomical routes based on a least-cost tender process, and vessels will be required to meet

safety standards and provide facilities to reduce barriers to use by women. The SCS involves appointing people on each island and charging them with the responsibility of promoting and aggregating demand and communicating needs for voyages to private-sector vessel operators. Kiribati is contemplating such a scheme to meet its PSOs. This is projected to improve services to otherwise commercially uneconomical routes. It should also improve budget transparency.

Often second-hand ships are used as domestic vessels. In some instances they have nearly reached the end of their working lives and no longer comply with operational requirements in other countries where conditions are different from those in the region. This is because shipping companies often have difficulty acquiring capital to purchase vessels due to difficulty meeting bank collateral requirements. Some of these domestic vessels are retrofitted for use in the region. Also, the age of these vessels demand high maintenance requirements, which ship operators cannot afford to undertake on a regular or preventative basis. This further compromises safety.

In some cases, vessels acquired with donor assistance do not take into consideration local operating conditions or the need for ongoing equipment maintenance. Some have highly inappropriate life raft, hydraulic and computer systems, with high-skilled maintenance requirements. These are costly and are sometimes not available.

Most of the study countries lack appropriate maintenance and shipyard facilities to accommodate the majority of domestic vessels. This results in shipping companies having to take their vessels to other Pacific countries, such as Fiji, French Polynesia, New Caledonia, Papua New Guinea, Australia and New Zealand to access full-service slipways (Table 45).

Table 225: Maintenance Facility Availability in Study Countries

Country/Facility	Kiribati	Samoa	Tonga	Tuvalu	Vanuatu
Slipway	Limited capacity	Adequate	Limited capacity	Limited capacity	Limited capacity
Maintenance Shed	Adequate	Adequate	Available	Available	Available
Life boats servicing	None	None	None	None	Available

Notes: None; Dilapidated; Available; Non-operational
Source: compiled by SPC (2015)

The number of reported overdue small boats as well as ferry accidents in the region is quite high. The sinking of MV Princess Ashika in Tonga in 2009, Uean Te Raoi II in Kiribati in 2009, and the Rabaul Queen in Papua New Guinea in 2012, are some of the recent major domestic ferry accidents in the region, in addition to the recent sinking of an overloaded passenger ferry in Vanuatu in July 2014. Despite the introduction of PIDSS, serious safety issues still confront domestic shipping, especially to remote outer islands. Maritime administrations lack resources and capacity to enforce safety requirements. Overcrowding of vessels, lack of updated ship surveys and crew certification and use of often inappropriate, poorly maintained vessels are still common occurrences. Most of the study countries have limited SAR assets – only one Pacific patrol boat on average – and tend to rely mainly on their domestic fleet, with local aircraft either unavailable or having limited range. As a result, the response for search and rescue (SAR) operations is usually delayed, not effective, and most of the time, requires further assistance from larger Rescue Coordination Centres (RCCs) abroad. The response time could be reduced if more assets are provided, response is better coordinated, and local SAR authorities are readily available for deployment. Due to the conditions in

the Pacific, including remoteness and lack of resources, mass rescue planning is needed particularly in light of the increase in cruise shipping.

Regional Gap Analysis

The foregoing analysis shows that study countries face a number of common issues and challenges. From the results of our research, consultations and situation analysis, the report determined gaps within the three pillars of the maritime sector. Information on the gaps and their causes factors are expanded below.

Institutional Arrangements

A number of institutional gaps around institutional frameworks that promote and enforce safety, legislation, coordination, private-sector participation and accountability feature prominently across the region, and major gaps exist in addressing safety and other issues around port design and operations; domestic ship design, maintenance, operations and inspection.

1. **Backlog maritime sector legislation**

   Generally, there is a significant backlog of maritime legislation and regulations. This is exacerbated by inadequate financial and human resource capacity necessary to adopt, enforce, and comply with maritime safety standards, regulations, and legislation. Although a set of harmonized regional legislation and standards tailored to the specificities of PICTs exists, very few PICTs have adopted these, and continue to struggle with acceding to international conventions that they are unable to translate into national legislation or effectively regulate.

   Causes: The lengthy legislative drafting process; insufficient funding; technical capacity constraints, usually related to the lack of a dedicated maritime lawyer.

2. **MTIs not responsive to training needs of sector**

   MTIs have not implemented strategic responses to changing industry needs, including niche areas such as in fisheries and cruise shipping, non-seagoing maritime sector professions for domestic employment in stevedoring, ship maintenance and repair works, and training to higher qualification levels to maintain competitiveness in the global seafaring industry.

   Causes: Limited funding to implement reforms necessary to embrace new opportunities.

3. **Weakness in maritime data collection and analysis**

   Notwithstanding the regional data sharing agreement, major data gaps, including consistent collation, storage, and analysis of maritime sector data, still persist.

   Causes: Absence of advanced information systems and limited budget.

4. **Limited human (technical) and financial resource capacity**

Public and private-sector actors and stakeholders highlighted the existence of significant capacity gaps, particularly limited professional and technical staff, difficulty retaining staff, and loss of institutional knowledge, which increase compliance and enforcement risks. Significant weaknesses in governance and accountability of SOEs also exist.

Causes: Inadequate budgets, limited local technical capacity and political interference and patronage.

Port Infrastructure and Operations

1. **Poor equipment maintenance and replacement planning**

Most of the study countries lack formal preventative maintenance and replacement plans and undertake these functions on an ad hoc basis with limited budgetary provisions. This shortens the useful life of equipment and infrastructure and increases operating costs, and results in difficulty in financing eventual replacement.

Causes: Inadequate financing and a general cultural under-appreciation of the need for preventative maintenance.

2. **Deficient aids to navigation and emergency telecommunications system**

In several of the study countries, existing aids to navigation have reached the end of their useful life and lack maintenance and replacement planning. Also, hydrographic surveys are generally outdated and pose a major challenge to complying with new international requirements, e.g., ECDIS. These, in addition to numerous wrecks and derelicts in harbour areas, compromise safety of navigation.

Causes: Inadequate financing, a general cultural under-appreciation of the need for preventative maintenance, difficulty keeping with changing international conventions.

3. **Absence of ancillary facilities in main ports and deteriorating/absent infrastructure in outer islands**

Despite recent major infrastructure improvement projects in several countries, ancillary facilities such as passenger and reception facilities, pavements, and fenders are absent. In some instances, poor port layout and infrastructure continue to undermine safety, especially regarding handling and storage of dangerous goods, and flow of port operations. This also has implications for port workers safety. Docking and passenger facilities on outer islands are either absent or where provided, need major rehabilitation. These deficiencies hamper port access and connectivity to supply chains and other transport modes.

Causes: Absence of adequate financing to implement transportation development plans, which some countries have prepared.

4. **Waste reception facilities and pollution prevention and response capabilities**

Generally, regional ports lack modern port requirements such as waste reception facilities, climate change and natural disaster-resilient infrastructure, and pollution response capabilities; and are not energy efficient.

Causes: Insufficient funding.

5. **Adhoc channel dredging**

Build-up of silt in port harbours and difficult entry channels, along with infrequent dredging poses risks to grounding and passenger/cargo safety in several of the study countries.

Causes: Inadequate financing, lack of expertise, and absence of dredge boats.

Shipping Services and Trade

1. **Reliance on poorly maintained/unsafe vessels**

There is generally an absence of a safety culture, including dependence on substandard and inappropriately designed ships, poor ship surveys, poor maintenance, vessel overloading, and lack of public awareness of ship certification, safety on board, at sea, and during ship to shore transfer. Regional responses to recent domestic ferry accidents in the region, such as the PIDSS program that introduced safety management systems for domestic ships, have not been extended to all countries. Port State Control and Flag State Inspection are also not conducted at high standards.

Causes: Resource constraints, including inadequate funding to expand the PIDSS pilot program; absence of dedicated private-sector financing to procure adequate vessels.

2. **Limited private-sector involvement**

Most countries lack a strategy or policy to foster private-sector involvement in the maritime sector. Preferential treatment of SOEs through subsidies and repressed interest rates, for example, creates an unlevelled playing field.

Causes: Lip service played to private-sector development; small markets with few providers; limited regulatory capacity; unfair competition on the part of subsidised SOEs.

3. **Poor organisation of domestic shipping**

Domestic shipping is generally characterised by excess supply on profitable routes and under-provision on uneconomical routes. There is also lack of transparent subsidies and other incentives to encourage servicing of uneconomical routes.

Causes: Poor regulation; absence of political will; vested interests; lack of understanding of the severity of or means to address the challenge.

4. **Limited intra-regional connectivity with smaller island countries to promote trade**

In spite of the existence of regional preferential trade agreements and policies, opportunities for greater intra-regional and international trade expansion are not well-developed, and in turn, shipping services have not been responsive.

Causes: High freight rates, lack of consistency and scale of production, poor marketing, limited South-South business-to-business networking, limited shipping services.

5. **Inadequate/absent slipway and dry docking facilities**

Despite recent major improvements in infrastructure and increase in shipping, maintenance facilities such as slipways are mostly absent or inadequate.

Causes: Insufficient funding to implement transportation development plans that some countries have prepared; lack of awareness within the private sector of opportunities, risk aversion; dominance of SOEs crowding out the private sector.

6. **Limited search and rescue capability**

Recent growth in size of cargo and cruise ships calling into ports in the Pacific pose greater safety risks, necessitating adequate contingency planning and preparation of disaster response plans for mass rescue operations.

Causes: Lack of financing to procure necessary assets; poor coordination due to SAR responsibility under different agencies.

Summary of Regional Recommendations

This section summarizes the national gaps to provide a basis for identifying common gaps. Cognizant of national responsibility for providing safe, secure and efficient maritime transport, some issues can be addressed through a regional solution and/or a regional approach implemented at the national level, if the solution satisfies several of the following criteria:

- it provides an efficient way to deliver services that may be beyond the resources and skills of individual PICTs;
- it realizes economies of scale by reducing the costs of providing a service for both the private and public sector and increasing the number of people benefiting from the service;
- it creates larger markets and overcomes national capacity constraints;
- it promotes learning and sharing;
- regional expertise is available; and
- regional frameworks are in place.

Table 46: Summary of National Gaps

Kiribati	Samoa	Tonga	Tuvalu	Vanuatu
Institutional Arrangements				
1. Backlog of legislation and poor enforcement 2. MTC not responsive to industry needs 3. Poor performing SOE 4. Weak statistical systems	1. Limited budget and lack of specialised staff 2. Delays in approving maritime legislation 3. Ad hoc communication arrangements exacerbated by the involvement of multiple development partners 4. Inconsistency of information from various sources. 5. No clear strategy in place to promote private sector participation in the maritime sector, due to dominance of SOEs in the sector	1. Absence of maintenance plans at PAT 2. Severe under resourcing of MPD given its wide ranging responsibilities 3. Limited statistical and analytical capacity and challenges in collating and preparing timely and reliable publications. 4. Dominance of SOEs and absence of strategy to involve private sector 5. Ad hoc communication arrangements exacerbated by the involvement of multiple development partners	1. Limited technical staff commensurate with responsibilities 2. Inadequate budgets (60% spent on operating domestic fleet) 3. Backlog of legislation and poor enforcement 4. Absence of MTI strategic plan 5. Weak statistical system	1. Critical capacity deficiencies in DPM, and low retention of staff. 2. Poor stakeholder consultation and donor project coordination. 3. Fragmented administrative arrangements and difficulty enforcing Port State Control and other maritime functions 4. Poor collection and analysis of maritime data 5. VMC not responsive to industry demands.
Port Infrastructure and Operations				
1. Absence of supporting infrastructure in Port Betio including passenger/cargo terminal, waste facilities, and pollution response capabilities 2. Lack of adequately-sized tug boat 3. Wrecks and derelicts 4. Absence of outer island infrastructure, and dangerous entry channels 5. Outdated navigational surveys and charts	1. Lack of minor infrastructure improvements and maintenance plans at Apia Port 2. Absence of procedures and reception facility for hazardous waste 3. Shallow and silting port access and turning basin area in outer island ports 4. Aged pilot and tug boats	1. Inadequate port and channel dredging. 2. Port reception facilities are not provided. 3. Fragmented and inefficient stevedoring arrangements (multiple players) 4. Limited, deteriorating and/or absent port superstructure and complementary infrastructure in outer islands.	1. Poor pavement conditions at Funafuti port 2. Port infrastructure and passenger facilities are absent or need major improvement in outer islands. 3. Absence of weighbridge and aged forklift, trucks and trailers 4. Poor storage cargo arrangements (hazardous items on the wharf at Funafuti) 5. Outdated navigational surveys and charts	1. Ship wrecks and armaments in ports pose safety risks. 2. Lack of navigational aids, telecommunications emergency system. 3. Absence of a weighbridge 4. Unmounted and non-operational lighthouses 5. Port and access road congestion experienced on cruise ship visit days. 6. No standards for pilotage training, and specifications for certification in place.
Shipping Services and Trade				
5. Use of unsafe and poorly maintained vessels 6. Underservicing of uneconomical routes 7. Limited private-sector participation in the maritime sector 8. Poorly functioning slipway	1. Ad hoc regional shipping development plan	1. Use of unsafe and poorly maintained vessels 2. Poor service to remote outer islands 3. Limited ship repair facilities 4. Limited intra-regional connectivity with smaller island countries 5. Limited SAR assets and capability	1. Unreliable conditions at ship channels in the outer islands 2. Poor ship maintenance and lack of ship repair facilities 3. Limited private-sector capacity and participation in the maritime sector 4. Limited SAR assets and capability	1. Inadequate and unaffordable slipway 2. Non-compliance of domestic ship operators with ship safety standards. 3. Ship safety inspections are carried out only in Port Vila and Luganville. 4. Hefty interest rates faced by shipping companies to access bank financing. 5. Absence of domestic ship financial data to regulate tariff 6. Limited intra-regional connectivity with smaller island countries

Table 47: Common Gaps

Common Gaps	Proposed Interventions	Testing/ Rationale
Institutional Arrangements		
1. Backlog maritime sector legislation	- Legal capacity supplementation to review, draft and update maritime legislation	- Economies of scale in maritime legislative drafting through regional capacity supplementation
2. MTIs not responsive to training needs of sector	- Review MTI curriculum to expand training levels and to include non-traditional and safety-focused courses	- Greater efficiency in developing modules at a regional level to leverage regional expertise - Promotes learning and sharing
	- Review MTI Strategic plans	- Promotes learning and sharing of marketing and niche strategies - Promotes coordination of program offerings, leverages synergies, and encourages specialisation
	- Explore niche employment areas and improve marketing capacity	
3. Weakness in maritime data collection and analysis	- Maritime data repository and asset registry	- Promotes learning and sharing, and benchmarking - Standardisation and consistency of methodologies
	- Implement recommendations out of the Pacific Infrastructure Performance Indicators (PIPIs) Benchmarking Study	
4. Limited human (technical) and financial resource capacity	- Increase budget allocation to finance capacity strengthening	- National responsibility
	- Succession planning and staff retention program	- Promotes learning and sharing - Economical procurement of consultancy services - Standardisation of succession/retention plans
Port Infrastructure and Operations		
5. Poor equipment maintenance and replacement planning	- Replace aged equipment	- Economies of scale - Standardisation of procurement, and replacement parts
	- Standardization of port equipment procurement and replacement	
	- Equipment maintenance and replacement planning	
6. Deficient aids to navigation and emergency telecommunications system	- Replace aids to navigation and communication equipment	- Overcomes national resource capacity constraints, - Realises economies of scale, - Standardisation of navaids, easier procurement
	- Update hydrographic surveys	
	- Removal of wrecks and armaments	
7. Deteriorating/ absent infrastructure in outer islands	- Prioritize and prepare port master plans	- Promotes learning and sharing - Ease of procurement of consultancy services - Common designs that results in ease of maintenance and replacement
8. Lack of waste reception facilities and pollution prevention response capabilities	- Develop and implement Green Port Program*	- Intra-regional coordination and economies of scale - Can leverage regional expertise in energy beyond the capacity of individual countries - Standardisation of procurement of parts
9. Adhoc channel dredging	- Regional private-sector dredge boat	- Realises economies of scale and overcomes national resource capacity constraints - Ease of mobilisation and greater efficiency

Shipping Services and Trade		
10. Reliance on poorly maintained/ unsafe vessels	- Domestic Ship Safety Program	- Promotes learning and sharing - Standardisation of systems and procedures - Overcomes national technical and resource capacity constraints
	- Domestic Vessel Design	- Overcomes national technical and resource capacity constraints - Standardisation of parts procurement for ease of maintenance and replacement
	- Vessel replacement planning	- Promotes learning and sharing and awareness building, and culture of planning
	- Vessel maintenance and replacement Fund through private-sector lending facilities such as IFC, implemented by national development banks.	- Overcomes national financial capacity constraints
	- Awareness program on promoting a safety culture	- Greater efficiency from standardised approach - Regional expertise overcomes national capacity constraints - Promotes learning and sharing
11. Limited private-sector involvement	- Develop maritime-specific private-sector strategy	- Standardisation of procurement of consultancy services - Promotes learning and sharing
	- Privatise and/or reform and improve autonomy of SOEs	
	- Assess private-sector financing options, including flexible collateral requirements	- National responsibility
12. Poor organisation of domestic shipping	- Route review and organisation	- National responsibility
	- Introduce shipping franchise scheme for uneconomical routes	- Promotes learning and sharing
	- Restructure or private domestic shipping service provision	- National responsibility
13. Limited intra-regional connectivity with smaller island countries	- Assess export opportunities for niche products from outer islands, including value-addition	- It creates larger markets and overcomes national capacity constraints
	- Improve intra-regional trade opportunities through sub-regional shipping arrangements and port improvements, SME development.	- Promotes regional integration - Creates larger markets and overcomes national capacity constraints
14. Inadequate/absent slipway and dry docking facilities	- Construct slipway and dry dock facilities, and life-saving equipment servicing facilities	- Provides efficient way of delivering services - Realises economies of scale - Overcomes size constraint of national markets
15. Limited SAR assets and capability	- Procure dedicated SAR vessel and communication equipment, complemented by staff training	- Economies of scale and standardisation of vessel procurement and replacement parts

Table 48: Summary of Regional Measures

Measure	Ease of Implementation	Timeframe
Institutional Arrangements		
1. Maritime Sector Capacity Development Program	• There is strong political support in response to changes in industry • Regional strategies such as Suva Action Plan and PIDSS are in place • Experiences from ongoing donor program can be leveraged and replicated	Short- to medium-term
- Review MTI curriculum to expand training levels and to include non-traditional and safety-focused courses		
- Review MTI Strategic plans to facilitate responsiveness		
- Explore niche employment areas and improve marketing capacity		
- Succession planning and staff retention program		
2. Regional Legislation Program	• Regional expertise and model legislation are in place	Short-term
- Legal capacity supplementation to review, draft and update maritime legislation		
3. Data collection and analysis program	• Regional commitment evidenced by signed data repository MOU	Short- to medium-term
- Maritime data repository and asset registry		
- Implement recommendations out of the Pacific Infrastructure Performance Indicators (PIPIs) Benchmarking Study		
4. Regional Safety Program	• Technical support from IMO • High awareness through Suva Action Plan • Regional strategies such as PIDSS, SAR Technical Arrangement for Cooperation (TAfC) in place • Experiences from ongoing donor program can be leveraged and replicated (e.g., NZ Ship to Shore projects) • Apply lessons from aviation sector	Short- to medium-term
- Domestic Ship Safety Program (crew training, stringent inspections and enforcement, crowd control, preventative maintenance, SOPs, SMS)		
- Awareness program on promoting a safety culture (radio publications, school education programs, manifest reporting)		
- Provision of SAR assets		
5. Private-sector development and corporate governance	• Strong regional support through Framework for Pacific Regionalism and Denarau Communique • Leverage national private-sector development plans and recent studies in this area (e.g., ADB SOE Report 2014)	Medium- to long-term
- Develop maritime-specific private-sector strategy		
- Assess private-sector financing options, including flexible collateral requirements		
- Privatise and/or reform and improve autonomy of SOEs		
Port Infrastructure and Operations		
1. Ancillary (main) port and outer island port development	• Regional model legislation and strategy (PACPOL and Suva Action Plans) in place • Strong regional support • Potential political sensitivities on location of shared regional facilities	Medium- to long-term
- Investigate the feasibility of a complementary system of national and regional slipway and dry dock, and life-saving equipment servicing facilities in collaboration with the private sector		
- Develop and implement Green Port Program (energy efficiency, pollution response, disaster risk management and infrastructure recovery strategies to cope with natural disasters)		
- Prioritize and prepare port masterplans for outer islands		
2. Port equipment replacement	• Strong regional support	Medium- to long-term
- Replace aged equipment		

- Standardization of port equipment procurement and replacement - Equipment maintenance and replacement planning	• Can leverage recent studies in this area (e.g., PRIF Study on Build-Neglect-Rebuild Paradigm 2014)	
3. Regional Aids to Navigation Program - Replace aids to navigation and communication equipment - Update hydrographic surveys to comply with ECDIS - Removal of wrecks and armaments - Regional private-sector dredge boat	• Strong regional support evidenced by Denarau Communique • Regional strategies (Suva Action Plans) in place • Can leverage recent studies in this area (e.g., SPC Vanuatu Hydrography CBA Study 2014) • Experiences from ongoing donor programs (e.g., NZ Regional Hydrogrphy Initiative) can be leveraged and replicated	Short-term
Shipping Services and Trade		
1. Domestic shipping improvement - Domestic Vessel Design, Retrofitting and Surveying - Vessel replacement planning - Vessel maintenance and replacement Fund through private-sector lending facilities such as IFC, implemented by national development banks. - Introduce shipping franchise scheme for uneconomical routes	• Strong regional support and awareness • Regional strategies and plans (Suva Action Plan) in place • Can leverage regional experiences (e.g., Fiji Franchise and Route Licensing Schemes, Palau and Samoa Maintenance Funds)	Short-term
2. Export development - Assess export opportunities for niche products from outer islands, including value-addition - Improve intra-regional trade opportunities through sub-regional shipping arrangements and port improvements, SME development.	• Strong regional support through Framework for Pacific Regionalism and Denarau Communique • Leverage regional experiences and preferential trade agreements (e.g., MSG, CPSC, SPARTECA, PACER +)	Short- to medium-term

PART V: CONCLUSION AND WAY FORWARD

The geographical remoteness and fragmentation of PICTs poses a major challenge to achieving safe, reliable and efficient connectivity within the region and to the rest of the world. The maritime sector plays a key role in supporting economic growth and development for Pacific Island Countries; safe, affordable, efficient and sustainable maritime transport systems that comply with international conventions, codes and standards, are central to PICTs' national development objectives.

PICTs have made progress in recent years in enhancing the three pillars of the maritime sector by strengthening institutions, improving infrastructure, and expanding shipping and trade. Most countries have prepared national development and sector plans, and are compliant with key IMO and UNCLOS international maritime conventions and standards that promote safety and efficiency in the sector. Main ports are generally in good condition, with major expansion either completed or planned, and sub-regional shipping commissions have made international shipping more reliable, even to very remote countries such as Tuvalu and Kiribati.

This report, however, identified some critical gaps that prevent the sector from reaching its potential. Some of these are a direct result of the vast distances that separate the countries and their outer islands, while others are institutional and operational. Institutions that train seafarers don't teach enough of the specialized skills needed in the sector, and data is not collected efficiently. Port infrastructure in the outer-island communities is generally in poor condition or non-existent, and safety is critically jeopardized by aging vessels, insufficient training, and out-of-date shipping maps. SOEs still dominate the provision of domestic shipping services. Service to remote outer islands is generally unreliable.

Despite the many challenges, this report documents good regional experiences such as the Fiji Franchise Scheme, and the PIDSS Programme, which can be replicated. Furthermore, the experiences of RMI, PNG, and Solomon Islands in establishing dedicated Funds to improve maintenance sustainability demonstrate that PICT governments can have the political will and are prepared to make difficult decisions. Development partners have supported many of these initiatives, evident of the leverage that donors can have in promoting the adoption of good practices and sustainability. This is the form of mutual accountability which should be encouraged.

The next step is for Pacific Island Countries to determine how they can best address these challenges. Some of these strategies will be country specific, and national policy makers will need to weigh the resources available and the specific needs of their communities in formulating solutions. Others will involve regional cooperation toward common solutions that can take advantage of specialised services and exploit economies of scale. The report proposes a combination of complementary hard and soft investments which can proceed together to maximise effectiveness and sustainability of these investments.

Some of the recommendations in the report are well-defined, concrete, and can be accomplished in the short term. Removing the wrecks from Port Betio in Kiribati, for instance, will be a relatively straightforward task with obvious immediate benefits. Others involve institutional reforms that are

more complex, and will take time and cooperation between government institutions to solve, but which could have far-reaching benefits. PICTs will need to review the options and weigh the challenges and potential outcomes of the recommendations presented here to determine how they can move forward toward achieving a safer, more efficient maritime sector.

Development partners can play a critical role in coordinating and harmonising the efforts needed to make these solutions a reality. Development partners can respond to region-wide concerns and stand ready to play a role in this process through the provision of technical assistance and financing investments in partnership with countries and the region as a whole. There are also ample opportunities for the private sector to be more directly involved in closing the gaps in efficiency in seafaring training, infrastructure maintenance, and shipping services.

To achieve a transformed, safe, efficient, and sustainable maritime sector, the region and the study countries have to take concerted actions now to leverage recent gains and seize new opportunities. This will require collective action, mutual accountability, and coordination among development partners and countries to implement a transformation agenda.

ANNEXES

Annex 1: Pacific regional transport policies, plans and documents

Document	Linkage to Transport
Forum Principles on Regional Transport Services (2004)	Endorsed by Forum leaders in 2004 (in Samoa), this document recognises the importance of regular, reliable, and competitive air and shipping services. It builds upon six principles: good governance, sustainable commercial shipping, compliance with aviation and maritime security, and donor support for activities.
Pacific Plan (2005)	Adopted by Forum leaders in 2005, the plan identified infrastructure (inclusive of energy, transport and ICT) as one of its priorities. The Plan calls for improved efficiency and effectiveness of infrastructure development and associated service delivery.
Cairns Compact on Strengthening Development Coordination in the Pacific (2009)	Endorsed by Forum Leaders in 2009 (in Cairns), the document identifies infrastructure as an area in which greater investment is needed to underpin greater economic development.
Framework for Action on Transport Services (2011)	Endorsed by Pacific transport ministers in 2011 (in Noumea), the framework's vision is a secure and prosperous Pacific Community through improved transport services (maritime and aviation).
Waiheke Declaration for Sustainable Economic Development (2011)	Endorsed by Forum Leaders in 2011 (in Auckland), the Declaration highlighted the importance of transport and other infrastructure in creating an enabling environment for sustainable economic development.
Framework for Pacific Regionalism (2014 recasting of the 2005 Pacific Plan)	To support progress beyond regional cooperation towards deeper forms of integration, the Pacific Plan has been remodelled into a new 'Framework for Pacific Regionalism' that does not list specific priority initiatives, but rather sets out a process for determining which initiatives should be under Leaders-level (versus Ministerial) oversight. The principal objectives for regional collective action remain sustainable development, inclusive economic growth, strengthened governance, and security.

Annex 2: Methodology

The methodology for this report was designed to meet the requirements set out in the Terms of Reference (ToR). This entailed a combination of: (i) data collection and review; (ii) desk reviews; (iii) in-country consultations with public entities, service providers, and users; (iv) third-party consultations (other development agencies and donors) and regional meetings; and (v) analysis, reporting, and policy dialogue with the governments, including through workshops. This report was undertaken through a consultative and iterative process with the local maritime community in the Pacific, and in consultation with other relevant stakeholders. This included maritime sector-wide in-country consultations with government officials; maritime sector officials, actors, and stakeholders, including private service providers; NGOs; regional development agencies and partners.

The report's key objectives were to (i) identify key maritime challenges that are common across the Pacific region; and (ii) define challenges and propose specific measures to strengthen port and maritime operations for the study countries. The report focused on three pillars including: port infrastructure and port operations; shipping services, including international (entering or leaving the Pacific region), intra-regional (within the Pacific region), and domestic, for both cargo and passengers; and institutional arrangements.

As a first step the team conducted desk reviews of relevant studies and assessments completed on ports and maritime shipping in the region and for individual countries to inform and guide the assignment. Primary data was collected during the in-country visits, which was supplemented by data from existing literature and from SPC. In order to promote national and regional ownership, as an integral part of the report, the team kept the countries involved in the report through: dissemination of key findings, verification of data; and elevating awareness for proposed reforms through short notes, policy briefs, email correspondence and workshops.

The report entailed a stock-take of sectoral activities, involving collection and assessment of primary data, desk-based literature reviews, collection, consolidation and assessment of existing maritime transport documents and literature. This allowed for an in-depth situational and gap analysis involving socio-economic, political economy, legal, and stakeholder analyses. The last part of the report involved developing practical and relevant recommendations and clear national and regional action plans for possible donor and development partner intervention based on the analyses. The following briefly describes the analytical approach taken in this report.

1. Situational and gap analyses

The team undertook a situational analysis of sectoral activities to document the current situation in the maritime sector and the study countries, which served as the basis for the subsequent gap analysis and recommendations/proposals for future interventions. This baseline analysis included identification and analysis of maritime challenges and wider development issues, and primarily entailed data collection and analysis based on desk reviews and in consultation with relevant stakeholders, supplemented by information from in-country consultations, observation of port and shipping activities, and stakeholder workshops.

- **Data collection and desk reviews:** The primary source of information was from in-country consultations from stakeholders and country publications and plans, verified and supplemented by data already collected by SPC, development partners and other relevant stakeholders. This team reviewed key/relevant documents and publications including reports on maritime sector projects, feasibility studies on shipping services, analysis of commodity trade in the Pacific region, case studies, country economic and financial reports and recent studies undertaken by international and regional organisations available online and in print, including SPC, ADB, IMO, PRIF, IMF and the World Bank.

- **In-country and other stakeholder consultations:** SPC-EDD teams comprised of at least one maritime transport expert and one economist visited each of the study countries for an average of one week to obtain first-hand information on sectoral challenges, potential solutions based on local knowledge, and the key priority areas within institutional frameworks, ports and shipping. During these visits, the teams met with officials from the Ministries of Foreign Affairs, Works and Transport (responsible for maritime affairs), Finance and National Planning and representatives of port authorities and other public and private-sector stakeholders active in the maritime sector. Utilising pre-designed templates, questionnaires and surveys, and through policy dialogues, the team collected data from relevant stakeholders. The team also directly observed maritime transport administration, operations and services while in individual countries. At the end of the consultation week, the teams facilitated public/private-sector consultations to enable joint discussion of sectoral issues and possible national and regional projects to address them. Following the in-country visits, teams also met with private and public sector stakeholders and development partners located in Fiji (including shipping agents and churches) to discuss maritime transport sector and sustainability issues and potential solutions. Details on all persons met and consultation meeting outcomes documents are provided in Appendix C.

- **Analyses**: This report employed both quantitative and qualitative analytical approaches. Qualitatively, an extensive review of maritime-related literature was carried out. Quantitatively, the team undertook specific analyses and modelling (including a SWOT analysis), and used a combination of matrices, graphs, tables and charts to illustrate key patterns, trends and gaps. In preparation for visits to the study countries, the team developed several analytical tools/ templates to guide discussions with stakeholders to ensure consistency in data collection by the individual teams visiting each subject country. These templates are presented in Appendix D. The legal assessment in this report was conducted through reviewing, interpreting and analysing documents and legislation provided by countries or found through appropriate published sources as well as through discussions with senior government officials, in-country shipping companies and by email and telephone. In some cases, the legislation and regulations made available by national administrations or accessed revealed inconsistencies, discrepancies and gaps. In those cases, only the latest version available (including draft/pending versions) has been taken into consideration. The legal assessment covers all current maritime legislation in force as well as commentary on what improvements are required to assist the study countries in ensuring a strong, relevant and comprehensive maritime legal framework is put in place. To support the analyses, internal brainstorming sessions were undertaken covering areas such as shipping, ports, training institutes, and the maritime legal environment. At the national level, the

report examined specific maritime challenges faced by each of the study countries. At a regional level, the report explored sectoral challenges that are common to small island countries throughout the Pacific region. For the individual study countries, the report examined specific maritime challenges faced by each.

2. Recommendations and action plans

Based on the analyses, as well as recommendations drawn from in-country and other stakeholder consultations, the team made national and regional recommendations, and proposed several reform projects and programs outlined in national action plans. “Good practices” drawn from the region, case studies on a number of well-designed models in the region, as well as current and future country and donor commitments through national development and sectoral plans, also informed these recommendations, and their proposed timelines.

3. Report limitations

Some limitations of the report are outlined below:

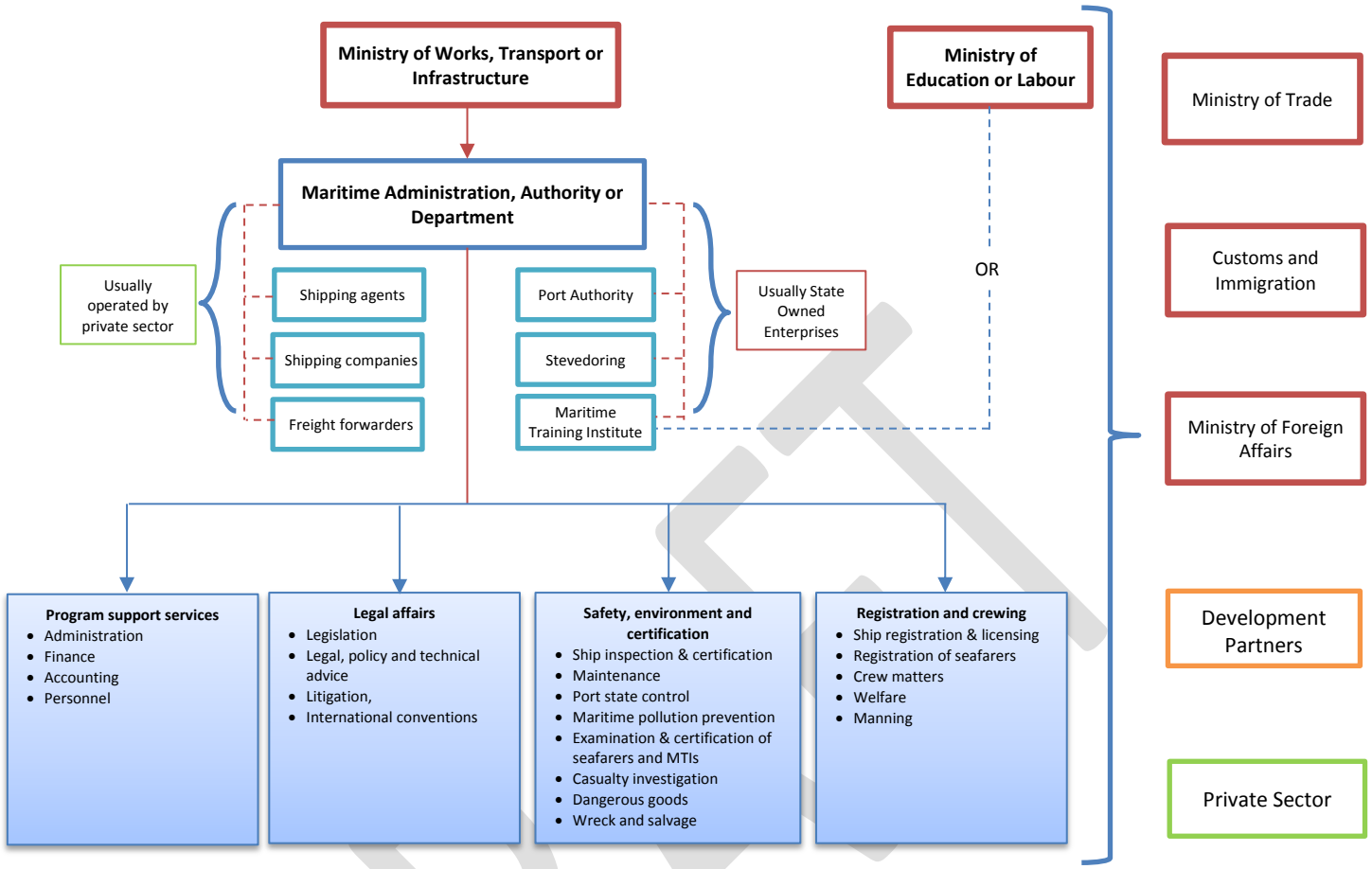
Data limitations: The analyses in this report were carried out based on the available/provided data. The team was able to collect ample data in-country as well as through printed literature. Copies of national development plans and strategies from the study countries, national budget documents, Public Sector Investment Plans; Sectoral and business plans, national statistical reports, donor policy documents, strategy papers, data and project documents, and other donor cooperation documents and frameworks; relevant SPC data and sectoral project concepts and proposal, were largely available. However, data was at times inconsistent across some of these documents and from consultations. Information on donor policies and activities in the sector were readily available in some cases, on donor websites, or from donor coordination units of the study countries. However, a number of data gaps remained, and to a degree, limited the extent of analysis that could be conducted.

Communication challenges and access to stakeholders: As part of our preparation, introductory emails were sent to each of the study countries by SPC/EDD. Whilst in-country, the Teams noted that only a limited number of stakeholders were aware of the World Bank (WB) consultation. This limited the team’s ability to meet with some of the key actors and stakeholders in the countries, and as a result, the contents of the report reflect information received from those that were available. By the end of the visit most, if not all of the key stakeholders became involved with the Team. While the team was able to maintain good communication with in-country stakeholders in the few weeks following the visits, during the latter part of the report, follow-up emails, calls and other forms of communication were not adequately responded to, which hindered the team’s ability to access key missing or partial data and confirm information integral to the report.

4. Monitoring and evaluation

The ToRs for this report outlined reporting requirements and deliverables, which guided the team's timeframe and activities. Internally a reporting schedule was drawn up and monitored to ensure the report remained on track and all deliverables were met.

Annex 3: Typical Organizational Structure of the Maritime Sector in PICTs



Annex 4: MTI Matrix

Table 4.1: Training capacity of Kiribati Marine Training Centre

Location	**Tarawa, Kiribati**	
Establishment	1967	
Accreditation	Germanischer Lloyd	
Number of lecturers (2014)	33	
Maximum number of students that can be enrolled annually	250	
Level of training offered	Class 5 Deck & Engine; Class 6 Deck & Engine; Rating Deck & Engine; Fishing Class; Catering courses	
Target markets/industry	Merchant Shipping; Fishing Industry local; Fishing Industry foreign; Foreign shipping companies; Foreign crewing – international vessels; Local crewing – domestic vessels	
Provision for female cadets	Yes, on hospitality courses	
Training modules	1. AB Course 2. MM Course 3. Marine Fitter 4. Basic Welding 5. Intermediate Welding 6. Advance Welding 7. Qualified Steward 8. Ship's Cook 9. Safety Upgrading & Refresher Course 11. Tanker Safety Familiarization 12. Elementary First Aid 13. Elementary First Aid Refresh	14. MARPOL Awareness 15. Basic Safety Training Course 16. Ship Security Officer 17. Advanced Fire Fighting 18. Bridge Resource Management 19. Engine Resource Management 20. Master Class 6 21. Marine Engineer Class 5 22. GMDSS – General ROC 23. Basic Radar Observer 24. ARPA
Training facilities	Engine simulator room; Bridge simulator room; GMDSS & Radio training room; Welding shop; Seamanship training classroom; Machine shop for engine repairs; Chart Classroom; Fire complex; Library; Survival training facility; Workshop; Cargo gear simulator; Computer training classroom	
Training equipment	Laptops; Overhead projectors; Multimedia; Cross sectioned engine models; Ship models; School dinghies; Lifeboats; Fast rescue boats	
Buildings	Student dormitory[10]; Catering facility/School mess; Administration Office; Deck Department Office; Engine Department Office; Fitness Centre/ Entertainment Centre	
Back-up power supply	Emergency generator	
Internal STCW audits (# and year)	4 audits (AMSA,2 x GL,SPC); 2007, 2010, 2011, 2013	
STCW White List Status	Yes, 1999	

Source: SPC, Sectoral Notes Maritime Transport, 2011; MTC Website: http://www.mtc-tarawa.edu.ki/

[10] This will now be a fisheries student dormitory; females no longer stay in MTC.

Table 4.2: Training capacity of NUS Institute of Technology School of Maritime Training

Location	Apia, Samoa
Establishment	1980 as Samoa Maritime Training, transferred NUS in 2006
Accreditation	Accredited by IMO
Number of lecturers	6
Maximum number of students that can be enrolled annually	Maximum of 120 per annum
Total number of graduates	158 seafarers graduated during 2012-2013
Economic impact (annual remittance)	Up to 20% of GDP
Level of training offered	Class 5 & 6 Deck & Engine, Rating Deck and Engine, Fisherman safety
Caters for the needs of	Merchant shipping, fishing industry local and foreign, foreign shipping companies
Emerging training programs	Cruise ships, bridge training
Provision for female cadets	Yes
Staff qualifications and experience	Master Class 1 and 2, ; Engineering Class 3 with adequate experience
Training modules	SPC training modules used (adapted to training level)
Training facilities	Welding shop, seamanship training classrooms, machine shop for engine repairs, library, survival training facility, workshop, computer training classroom
Training equipment	Laptop, overhead projectors, multimedia, cross-sectioned engine models, ship models, school dinghies partial enclosed lifeboat, navigation software
Buildings	Deck department office, engine department office, fitness centre
Back-up power supply	None (this will be provided at new campus)
External STCW audits	3 audits; 2001, 2006 and 2007
STCW White List status	on 'White List'

Source: SPC, July 2011, 2014

Table 4.3: Training capacity of Tonga Maritime Polytechnic Institute

Location	Nuku'alofa, Kingdom of Tonga
Establishment	1985, with German aid grant
Accreditation	Accredited by IMO
Number of lecturers (July 2011)	6
Maximum number of students that can be rolled annually	50
Graduates (2011)	180
Economic impact (1999)	60 employed overseas, remitting TOP$2.5 million
Level of training offered	Class 4, 5, and 6 Deck & Engine and Rating Deck and Engine
Catered for needs of	Domestic industry and international officers and ratings
Provision for female cadet	Schools provided for female training but there was no provision for female dormitories.
Staff qualifications and experience	Master Class 4 (experience in maritime safety, navigation, nautical knowledge, small craft handling)
Training module	SPC training modules used (adapted to training level provided by MTI)
Training facilities	Welding Shop, Machine shop for engine repairs, chart classroom, library, cargo gear simulator (done on ships), school training ship, and computer classroom (off campus)
Previous training equipment	Two laptops, overhead projectors, I multimedia, 2 life and 1 rescue boat, cargo gear, basic safety equipment
Buildings	5 classrooms, dormitory for 20 students, a galley and mess room, laundry facilities, several workshops (machine, welding), tool cribs, Does not cater for females
Back-up power supply	None
External STCW audits	2009; 2010
STCW White list status	Currently suspended

Source: SPC, July 2011; modified 2014

Table 4.4: Training capacity of Tuvalu Maritime Training Centre

Location	Amatuku Island, Tuvalu
Establishment	1979
Accreditation	Accredited by IMO
Number of lecturers	10
Maximum number of students that can be rolled annually	60
Economic Impact (annual remittance)	AUD 500,000
Level of training offered	Rating Deck and Engine
Emerging training programs	Developing cadets for Asian [Taiwanese]ships; training for fishing vessels and cruise ship
Caters for the needs of	International and domestic industry
Provision for female cadets	None
Staff qualifications and experience	Class 2, 3 Engineer; 2nd Mate certificate; AB certificate; motorman, experience (between 2 and 10 years experience)
Training modules	SPC training modules used (adapted to training level provided by MTI)
Training facilities	Two workshops (one for seamanship and one for engineering); library
Training equipment	Cargo gear, basic safety equipment, lifeboat
Buildings	2 classrooms, 2 workshops, dormitory, a galley and mess room, laundry facilities.
Back-up power supply	None
External STCW audits	2007; 2010
STCW White list status	On 'White List'

Source: SPC July 2011, modified 2014.

Table 4.5: Vanuatu Maritime Training Centre

Location	Luganville, Santo, Vanuatu
Establishment	1999
Number of lecturers (2014)	11
Maximum number of students that can be enrolled annually	48
Level of training offered	Class 4 Deck & Engine; Class 5 Deck & Engine; Class 6 Deck & Engine; Rating Deck & Engine; Fishing Classes
Target Markets/Industry	Merchant Shipping; Fishing Industry local; Foreign shipping companies; Cruise Ship Industry
Provision for female cadets	Yes
Training Facilities	Engine Simulator room; Bridge Simulator room; Seamanship training Classroom; Machine shop for Engine repairs; Chart Classroom; Fire Complex; Library; Survival training facility; Workshop; Cargo gear simulator; School's training ship; Computer training Classroom
Training Equipment	Laptops; Overhead projectors; Multimedia; Cross sectioned engine models; School Dinghies; Basic simulator
Buildings	Male Dormitory; Female Dormitory; Catering Facility/School mess; Administration Office; Deck Department Office; Engine Department Office
Back-up Power supply	No
Internal STCW audits (# and year)	1 audit; 2013
STCW White List Status	Yes

Source*: SPC, July 2011, 2014a.*

Annex 5.1: Kiribati Maritime Sector Profile

PORTS

Domestic Ports

Island	Port	Population (2010 Census)	Distance from main international port
Kiritimati (Christmas)	Port London	5791	≈ 1800 nm
Kanton (Canton)	Canton Island Port	31	≈ 960 nm
Tabuaeran (Fanning)	English Harbour Port	1991	≈ 1700 nm
Teraina (Washington)	Washington Port	1701	≈ 1650 nm

Note: The aforementioned are domestic ports occasionally visited by international ships. Several domestic ports and landings are located on the following islands: Makin, Butritari, Marakei, Abaiang, Maiana, Kuria, Abemama, Nonouti, Tabiteauea North, Tabiteauea South, Beru, Nikunau,Onotao, Tamana, Arorare, Nanaba.

SHIPPING SERVICES

Safety of navigation

Aids to Navigation	• Available with lights for night transit Betio
Navigational charts	• Manual outdated hydrographic surveys
Communication	• Tarawa Radio: VHF Ch.16 and MF/HF 6215.0 kHz • Port Betio Control: VHF Ch. 06 • Christmas Radio: VHF Ch. 16 and MF/HF 6215.0 kHz
Wrecks removal	• None

Major shipping companies

International shipping companies/agents	Domestic shipping companies	
	State owned enterprise	Private owned company
Greater Bali Hai	Kiribati Shipping Services Ltd (KSSL)	Oceanic Shipping Services
Pacific Direct Line (PDL)	Central Pacific Producers Ltd (CPPL)	Lu's Marine Shipping
Neptune Shipping Line/Pacific Forum Line (as of 1 June 2014)		UB Shipping
Swire Shipping		Timeon Shipping Line
Nippon Yusen Kaisha (NYK)		Abemama Shipping Company
Kyowa Shipping Company Ltd		Several other private shipping companies that own small vessels ranging from GRT 5 – GRT 50.

Vessels:

Domestic vessels:
- Approximately 40 domestic ships with total GRT ≈ 5,000
- Type: cargo only; cargo/passenger
- Ownership: 3 state-owned vessels are operational as at 2013: LC Butimari and MV *Moanaraoi* (KSSL); *MV Moamoa* (CPPL). The rest are all private vessels.

Inspections Regime
- Annual ship surveys are required
- Passenger and cargo manifests are inspected on leaving Betio

Maintenance
- Slipway: Betio Ship Yard Ltd; Capacity: 90 tons (GT); Vessels, 30m long by 8.2m beam
- Maintenance

Accidents:
- No major accidents recently

Search and rescue (SAR) responsibility:
- Lead agency: Marine Division (coordinates SAR) and Kiribati Police Maritime Unit (Kiribati Police provides the patrol boat).
- SAR assets[11]: Patrol boat (Police Maritime Unit). Local SAR assets are very limited; further assistance provided by RCC Fiji, New Zealand and US Coast Guard.

Source: SPC, 2014; MCTTD Recurrent Budget Expenditure Report as of: 11-Feb-2014; Kiribati 2014 Budget; KPA Data 2013.

[11] SAR assets, here, refer to the country's ability to mobilize resources/equipment from their designated regions, to respond to SAR activities. Most PICs do not have specific boats, aircrafts or other equipment on the ground, dedicated solely to SAR.

Annex 5.2: Samoa Maritime Sector Profile

PORTS

Domestic ports

Island	Port	Population	Distance from main international port
Upolu	Mulifanua	144,258	40 km/25 miles
Savai'i	Salelologa	43,142	53 km/ 33 miles

Port Services

Tug Boats	• 2 tug boats (ages 24 and 13 years old)
Pollution	• Limited Reponses Capacity • PACPOL arrangement in place

SHIPPING SERVICES

Safety of navigation

Aids to navigation	• Well-maintained throughout entire maritime system
Navigational charts	• Paper based hydrographic surveys, updated following 2005 tsunami • Further upgrading planned under NZAID funded regional project
Communications	• VHS and Satellite Radios
Wrecks removal	• Not a significant issue

Major shipping companies

International shipping agencies	Domestic shipping companies	
	State owned enterprise	Private owned company
Transam Samoa Ltd	Samoa Shipping Corporation	None
SMS Agencies	Samoa Shipping Services (crewing services)	
Betham Brother Enterprise	Forum Shipping Agencies	

Vessels:

Domestic Vessels:

- Type: 2 cargo/passenger vessels and 2 ro-ro vessels
- Year built: 1998 (3), 2010 (1)
- Ownership: Samoa Shipping Corporation

Inspections Regime

- Annual ship surveys to maintain Lloyds of London certification
- Shipping Insurance in place
- Passenger and Cargo manifest verified by vessel departure/ information is also available online

Maintenance

- Slipway: 1,000 ton capacity; welding, painting and blasting engineering services
- Maintenance Fund and Mechanical workshop operated by Samoa Shipping Corporation

Accidents

- No recent accidents reported

Comment

- Shipping safety in Samoa benefits from enforcement of US safety standards as domestic vessel trade within American Samoa waters

Search and rescue (SAR) responsibility/assets:

- Lead agency: Police, 1 Pacific Patrol boat
- SAR assets[12]: local SAR assets are very limited; further assistance provided by RCC NZ

Source: SPC, 2014; www.parliament.gov.ws.

[12] SAR assets, here, refer to the country's ability to mobilize resources and equipment from their designated regions, to respond to SAR activities. Most of these countries do not have specific boats, aircrafts or other equipment on the ground, dedicated solely to SAR.

Annex 5.3: Tonga Maritime Sector Profile

PORTS

Domestic ports

Island	Port	Population	Distance from Main International Port
Vavau	Halaevalu Port	15,100	310 km
Haapai	Taufa'ahua Port	7,100	180 km
Ha'apai	Pulotu (Haafeva island) and Pangai Port (Pangai Lifuka)	15,100	145 km
Niuafoou	Futu	650	574 km
Niuatoputapu	Pasivulangi	1,282	597 km
'Eua	Nafanua	5,206	18 km

Port services

Tug boats	• 2 tug boats (1 each operated by PAT and MPD)
Pollution	• Reception facility; No response capacity

SHIPPING SERVICES

Safety of navigation

Aids to navigation	• Recently upgraded • Available with light for night transit (some improvements needed at domestic ports)
Navigational charts	• Paper-based hydrographic surveys, recently updated, further upgrading anticipated as part of NZAID funded regional project
Communications	• VHF, HF, GMDSS
Wrecks removal	• None

Major shipping companies

International shipping companies/agents	Domestic shipping companies	
	State owned enterprise	Private owned company
Transam Dateline Shipping Agency; Pacific Forum Line Ltd; South Seas Co. Ltd; Uata Shipping Line; Vava'u Shipping; Services Shipping Corporation of Polynesia; JFM Shipping; Tofa Ramsey Enterprises; Walter Trading Company; Agency Limited; Oceantranz (Tonga) Ltd	Friendly Islands Shipping Company (MV Otuanga'ofa);	Eua Sea Transport Council (MV 'Omemato) A number of small private ferries and small boat also provide service

Vessels

Domestic vessels:
- Type: 5 Ro-Ro/Passenger Ferries; 1 Cargo/passenger vessel; 2 cargo vessels
- Year built: 1963 (1), 1973 (1), 1978 (1) 1989 (1), 1986 (2), 1996 (1), 2008 (1)
- Ownership: Friendly Islands Shipping Service; and several private operators including churches and community cooperative (Eua Sea Transport Council)

Inspections Regime
- Annual ship surveys by MPD
- Passenger and cargo manifest inspections by MPD and SPA at major ports

Maintenance
- Port Authority Slipway: 300 ton capacity; vessels, 30m long by 9m beam; Major ship repairs done in Fiji
- Friendly Islands Shipping and Eua Sea Transport Council have mandatory insurance and maintenance planning as part of their funding arrangement; otherwise maintenance regime is mixed

Accidents:
- MV Princess Ashika in 2009, Pilot country under Pacific Domestic Ship Safety Program

Comments:
- Shipping services and routes to main Islands is well organized and subject to safety inspections;
- Services to smaller islands is *ad hoc* and reliant on smaller open, private vessels which have poor communications and lack basic safety apparatus such as life vest and blazers

Search and rescue responsibility

- Lead agency: The Tonga Police
- SAR assets[13]: (Local SAR assets are very limited; further assistance provided by Tonga from RCC NZ

Source: SPC, 2014.

[13] SAR assets, here, refer to the country's ability to mobilize resources and equipment from their designated regions, to respond to SAR activities. Most of these countries do not have specific boats, aircrafts or other equipment on the ground, dedicated solely to SAR.

Annex 5.4: Tuvalu Maritime Sector Profile

PORTS

Domestic ports

Island	Port	Population	Distance from main international port (nm)
Nanumaga	Nanumaga	664	260
Nanumea	Nanumea	589	220
Niutao	Niutao	663	220
Nui	Nui	548	145
Nuilakita	Nuilakita	48	145
Nukufetau	Nukufetau	589	60
Nukulaelae	Nukulaelae	339	70
Vaitupu	Vaitupu	1,591	65

Port services

Tugs	• None
Pollution	• No Reception facility or response capacity

SHIPPING SERVICES

Safety of Navigation

Aids to Navigation	• Available with lights for all weather transits at main port • Improvements at outer Island ports under Ship to Shore Project
Navigational charts	• Paper based and dated hydrographic surveys; need updating
Communications	• VHF & HF Radio communication, Very Small Aperture Terminal (VSAT)
Wrecks removal	• Not a significant issue

Major shipping companies

International shipping companies/agents	Domestic shipping companies	
	State owned enterprise	Private owned company
PDL William and Gosling	None, domestic shipping is operated by Department of Marine and Port Services	None

Vessels

Domestic vessels:
- Type: passenger/cargo ships; *MV Nivaga II* and *MV Manu Folau*
- *Year built:*1988 and 2001, respectively; a new vessel in construction for commissioning in 2015
- Ownership: State owned vessels
- Maintenance: basis, major maintenance done in Fiji
- Accidents: No accidents reported in recent times

Inspections regime
- Annual ship surveys
- Passenger and cargo manifest verified by DMPS before sailing
- No passenger and cargo verification at Outer Island port

Maintenance
- Slipway: capacity 40 tons (GT); Vessels, 18.4 m long by 4.8 m beam, general services and minimal repairs
- Major maintenance done in Fiji

Accidents
- No major accidents recently
- Not a beneficiary country under PDSSP

Comments
- Maintenance and up keep of vessels contribute to persistent annual budget overruns
- Passenger inspections and number verification take place before voyages
- Passengers and cargo are separated on vessels

Search and rescue responsibility
- Lead Agency: Police Department
- SAR assets[14]: None; (local SAR assets are very limited; has assistance agreement with Australia and New Zealand, and further assistance is provided by RCC Fiji)

Source: SPC, 2014, Tuvalu, Central Statistics Division, 2014, Navskills Ltd, Tuvalu Ship to Shore Project 2013.

[14] SAR assets, here, refer to the country's ability to mobilize resources and equipment from their designated regions, to respond to SAR activities. Most of these countries do not have specific boats, aircrafts or other equipment on the ground, dedicated solely to SAR.

Annex 5.5: Vanuatu Maritime Sector Profile

PORTS			
Domestic Ports			
Service is between Port Vila and Port of Luganville, and several outer island ports/harbours			
Island	**Port**	**Population**	**Distance from main international port**
Torba Province		10309 (2011)	70 miles
Ureparapara Island	Lorup Bay	500 (2009)	58 miles
Vanua Lava Island	Maseunar Channel (Port Patterson)	1700 (2011)	55 miles
Vanua Lava Island	Sola	50 (2011)	53 miles
Vanua Lava Island	Ravenga Is		
Additional 20 beach landings and 30 anchorages in Torba Province			
Sanma Province		44,528 (2011)	-
Espiritu Santo Island	Big Bay	30,000 (2011)	35 miles
Espiritu Santo Island	Hog Harbour (Champagne Beach)	30,000 (2011)	25 miles
Espiritu Santo Island	Port Olry	30,000 (2011)	28 miles
Espiritu Santo Island	Luganville (Simonsen Wharf)	30,000 (2011)	500 miles
Penma Province		23,800 (2011)	
Ambae (Aoba) Island	Lolowai Bay	10,000 (2011)	31 miles
Ambae (Aoba) Island	Lolopeupue Bay	10,000 (2011)	26 miles
Pentecost Island	Loltong Bay	12,000 (2011)	37 miles
Pentecost Island	Homo Bay	10,000 (2011)	40 miles
Malampa Province		38,000 (2011)	
Ambrym Island	Craig Cove		45 miles
Malekula Island	Lambumbu old wharf		47 miles
Malekula Island	Litslits		40 miles
Malekula Island	Metenovor Bay		25 miles
Malekula Island	Norsup		35 miles
Malekula Island	Port Sandwich and Maskelyne Is		53 miles
Malekula Island	Wala Island		27 miles
10 jetties and wharves in Penma Province			
Shefa Province		78,721 (2009)	
Efate Island	Port Vila	50,000 (2011)	N/A
Epi Island	Lamen Bay	7,000 (2011)	65 miles
Shepherd Island	Tongoa Wall	3000 (2011)	40 miles
Six other wharves in Paray Bay			
Tafea Province		36,599 (2009)	
Aneityum/Mystery Island	Aneighowaht Bay (Mystery Island Port)	2000 (2011)	100 miles
Tanna Island	Lénakel	20,000 (2011)	78 miles
Tanna Island	Port Resolution	20,000 (2011)	80 miles
Tanna Island	Waisisi	20,000 (2011)	75 miles
Virtually every island has a port, wharf, jetty or an informal landing and/or anchorage area for vessels.			

SHIPPING SERVICES	
Safety of Navigation	
Aids to Navigation	• Available with lights for night transit
Hydrographic surveys and nautical charts	• Manual outdated surveys, which are currently being updated and subsequently converted into electronic charts
Communications	• VHF radio and satellite systems
Wrecks removal	• Provided by the private sector

Major shipping companies

International shipping companies/agents	**Domestic shipping companies**	
	State-owned enterprise	**Private company**
International cargo ships/agents: Matson; Carpenter's Shipping; China Navigation; PDL; MAYCON; Bali Hai; Swire; PDL/Reef; Sofrana; Neptune	None; domestic shipping solely provided by the private sector	Touaraken Shipping Company
		Marine Consultancy Services
		MV Makila II Shipping
		P R D Trading
		Roy Wilson Shipping

South Sea Shipping Ltd (international cargo ship agent; recruitment agency for P&O cruise ship staff; agency for P&O cruises; freight cruise ship agent for Carnival Cruise, P&O Cruise, and Royal Caribbean Lines) Pacific Shipping Agencies (cruise ship and international cargo ship agent) Compagnie Maritime de Iles Santo (Shipping agency for the MV Havannah and the MV Rhapsody of the Sea)		Unity Store Windward Holdings Ltd
Vessels		
Domestic vessels: ○ Over 200, including about 55 cargo/passenger vessels ranging from 20 to 500 GRT ○ Type: cargo; cargo/passenger; fishing vessels ○ Demand: 202 domestic ship call carrying about 10,535 passengers to Port Villa and 780 ship calls at Port of Luganville carrying about 5,200 passengers ○ Year built: vessels mostly second hand and built during later part of the last decade and earlier in this decade ○ Ownership: all privately owned **Inspections Regime**: ○ Annual surveys by MIPU ○ Cargo and passenger manifests inspected on leaving Port Villa and Port of Luganville, but not at outer islands. **Maintenance** ○ Slipway: Dinh Shipping Company, Luganville; Capacity: 200 (GT) ○ Slipway for yachts/fishing boats: Port Vila Boat Yard, Port Vila; Capacity: 28 tons (GT); Vessel length and beam, determined by weight **Accidents** ○ No major accidents reported recently		
Search and rescue responsibility: • Lead agency: Vanuatu Police Maritime Wing (Mala Base) • SAR assets[15]: Patrol boats; very limited local SAR assets; assistance provided by RCC Noumea		

Source: SPC, 2014; Vanuatu Budget Book 2013; MIPU Corporate and Sectoral Plans, 2014-16; Espiritu Santo Chamber of Commerce; Soros (2010); Marico Marine (2013).

[15] SAR assets, here, refer to the country's ability to mobilize resources/equipment from their designated regions, to respond to SAR activities. Most PICs do not have specific boats, aircrafts or other equipment on the ground, dedicated solely to SAR.

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