



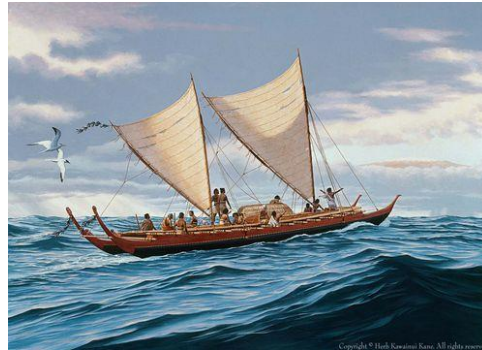
Sustainable port infrastructure development strategies and plans in the Pacific Islands

Focus on – International ports operations and services



Maritime Transport evolution in Pacific trades...

First master mariners



900 -1100 BCE

Steamships / general cargo



1870 - - 1960's

Container Gantry cranes

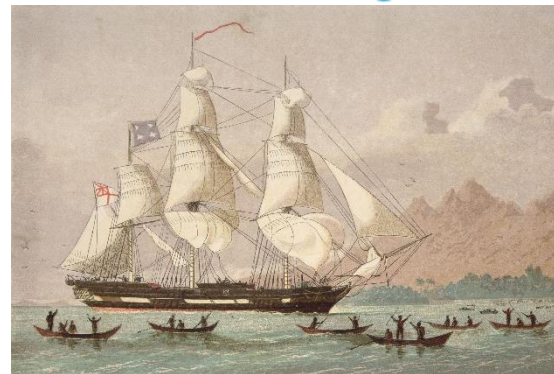


2023+

1700 - - 1800's

1970's - - 2022

Since the late 1970s containerization has become the standard for merchandise trade in the Pacific, including temperature-controlled goods. Due to the nature of port services, payloads, and road networks, around 80 percent of containers are 20-foot equivalent units (TEU).



Colonial mariners - trade



Containerization ships cranes / MHC's





The Story of Port Development in Pacific Island Trades



Original site selection and design of Pacific Island ports created the need for modernisation of infrastructure

- ***1960-1980's replacing timber structures with concrete decks and piles to allow for greater volume of general cargo trade***
- ***1980-2000's strengthening wharf structures, deepening channels and berth depths, allocating yard space for containerization***
- ***2000 – 2022+ options for port expansion, addressing increasing ship sizes, competition for land, urban encroachment and options for port relocation or expansion***

More recently, port development has emphasized the need for resilience to natural hazards and the severity of impacts due to climate change



Diagnosis of Pacific Island ports today

1. Site locations of ports and harbours
2. Legacy infrastructure designed at pre-containerization era
 - Multi-User Ports and Facilities
3. Funding for Operations & Maintenance
 - Asset preventative maintenance and renewals
4. Sector governance
 - Supporting robust systematic responses to negative impacts
5. Human Resources and capacity
 - Management skills, capability and retention
6. Port Productivity and Pricing
 - Port efficiency and appropriate funding



1. Site Locations of Pacific island Ports - Issues

Photo Source <https://lloydslist.maritimeintelligence.informa.com/LL111605/ICTSI-inks-deals-to-manage-Papua-New-Guinea-ports>

“We must make sure that we have the capacity for the future growth of trade, following the modern cities concept where eventually the cargos operation is taken out and placed out of the city” - Permanent Secretary for Industry, Trade and Tourism Shaheen Ali

“After 142 years, Port Moresby has grown and become a thriving Port City, however with success also comes challenges with population growth forcing the government to deal with expansion” Chairman IPBC PNG Paul Nerau

“This will minimize congestion and other issues. Plans are in place for cargo operations to be taken out since they are currently occupying a very prime piece of real estate” - Permanent Secretary for Industry, Trade and Tourism Shaheen Ali

Environmental Impact Statement has recommended Motukea Island as “a suitable site for the relocation of the Port of Port Moresby based on consideration of potential social, environmental and economic impacts” EIA Statement





1. Site Locations of Pacific island Ports - Opportunities

- Spatial planning – locality – in context of climate change and urbanization – most appropriate place for heavy infrastructure port- components of decision-connection with hinterland transport and specific category assessments of:
- Multi-hazard risk assessment
- Urban encroachment, domestic connectivity
- Climate change - long-term measures mitigate risk to port operations
- Available space - potential for expansion
- Future demand and profile of demand, ship types
- Future-looking - 50-year design standards
- Integrated spatial and infrastructure planning

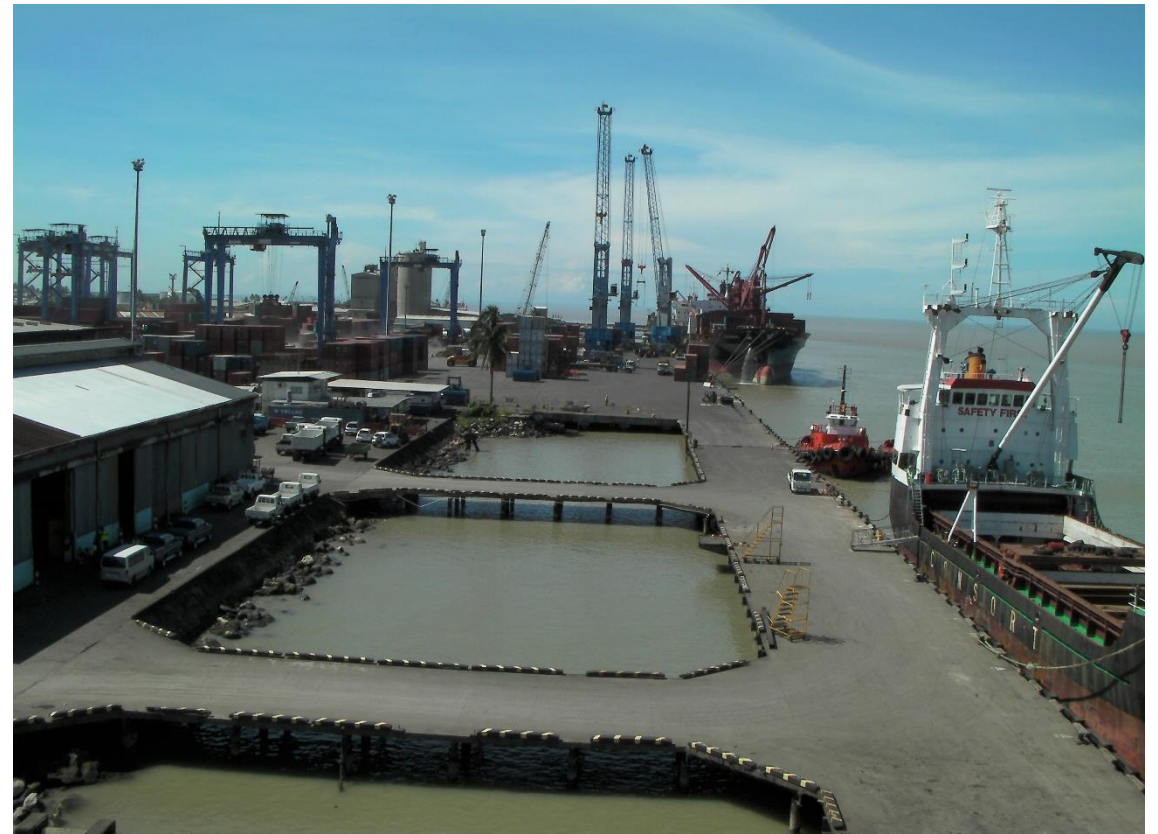




2. Legacy infrastructure designed at pre-containerization era - Issues

- Many pacific island ports have challenges related to legacy infrastructure design
- Delays to modernisation, reconfiguration and upgrades to provide capacity for larger vessels, greater payload and freight volume
- Large-scale infrastructure developments requires funding at levels that impact PIC's borrowing capability, (IMF, 2020).
- Capital values and cost benefit of port infrastructure developments require careful consideration

Photo Source AMSTEC





2. Legacy infrastructure design - Opportunities

- Climate resilient design
- New infrastructure, or major rehabilitation
- Reconfiguration of existing site
- Port layout considering open yard v's warehousing
- Port Master Planning
- Strategic policies and guidelines





3. Funding for Operations & Maintenance - Issues

- Many pacific island ports have challenges related to inadequate infrastructure maintenance
- The failure to maintain and manage infrastructure at ports leads to premature deterioration and results in infrastructure being unserviceable and in need of major rehabilitation before end of its planned life
- Maintenance of infrastructure is dependent on the availability of funding, capability of staff, forward planning capability, trained and skilled maintenance staff, and internal management systems

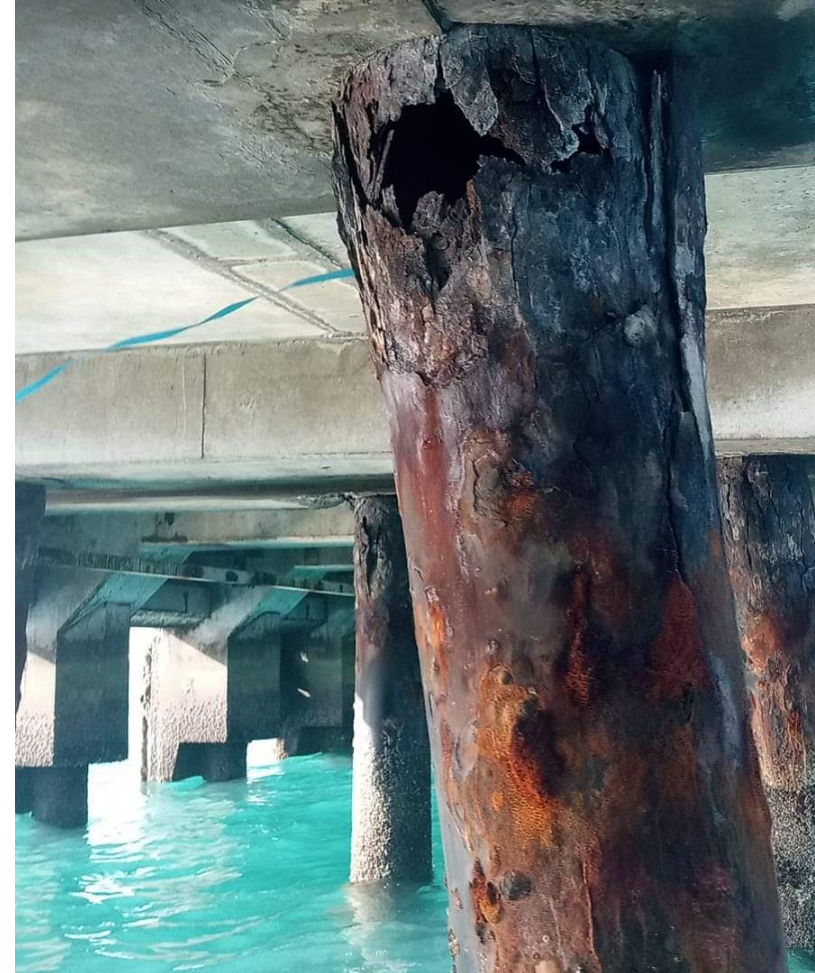


Photo Source AMSTEC



3. Funding for Operations & Maintenance - Opportunities

What are Strategic Options and Solutions?

- Long-term performance-based maintenance
- Improve budgeting at national & sub-national level
- Longer donor project lifecycles
- Longer term support
- Donors and Government alignment



4. Sector governance in Maritime areas - Issues

- Good governance on its development context, as “the way power is exercised in the management of a country’s economic and social resources for development
- The Pacific Islands maritime and ports sector can be defined as being in its secondary stage of evolution, given that port authorities in most Pacific island states commenced their mandated status in the 1980-90’s
- Laws enacting powers of autonomous authorities to act as regulators responsible for maritime safety, protection of marine environment, regulation of SAR and hydrographical services occurred in last 10-15 years at some PICs

Photo Source: AMSTEC





4. Sector governance - Opportunities

- Create a pathway and mechanism to improving performance
- Redefining organization structures
- Support for fiscal management
- Institutional capacity building
- Best practice fiscal management



5. Human Resources and capacity - Issues

- PICs are characterised by small populations and therefore limited human capital, with this constraint being particularly apparent in the micro-states
- Management skills and capability vary across PICs, largely with the size of population, economic base and proximity to education
- In the Pacific, women represent less than 10% of the estimated 16,000 people working in the maritime sector and occupy mostly administration and mid-level management roles





5. Human Resources and capacity - Opportunities

What are Strategic Options and Solutions?

- Provide career opportunities for skilled PIC managers to attract and retain
- Greater investment in, and a regional approach to supporting maritime training institutes including educators, audits, and management support
- Provide managers with opportunities to do study tours and staff exchanges with peer ports in other countries
- Consider a pool of long-term, trusted specialist advisors that can assist PIC ports management and boards with a range of issues as needed to supplement in-country capacity
- Support for regional professional associations.



6. Port Productivity and Pricing - Issues

- Port operational efficiency is often underestimated in terms of impact to the host countries economy and the cost of living to its population
- Efficiency of operations at ships side and at the terminal and cargo receipt and delivery are important elements of the supply chain
- Some ports are profitable and pay a dividend to their host national governments. Whereas some ports are break-even or have suffered from financial distress in the last 10 years

Photo Source <https://1drv.ms/u/s!AilRopuAIQXITfVEfGdR7wEj3-L?e=RcwGK>





6. Port Productivity and Pricing - Opportunities

- Landlord with subordinate private port operators taking operational control. Allows divestment of capex and recurrent opex and minimizing risks to government owned enterprises
- Landlord port also allows the private sector to drive efficiency and productivity that creates national benefit for enhancing trade
- Legacy pricing documents may well benefit from modernisation and a formula-based approach to price increases - driven by the real costs of capex and opex and inflation
- Review of port charges/ opportunities for ports revenue and establishing port charges benchmarked on a regional basis



Thank you for your attention!