# Managing the Blue Economy:

## Future of Port Management and Shipping in the Asia-Pacific

*Connectivity, sustainability and growth for PECC economies*

*A PECC international project 2015-2016*

**PROJECT OUTLINE**

Developments of ports and of new maritime routes are ways to better link economies of PECC and enhance connectivity that facilitates regional and international trade. In the past recent years, maritime trade has been growing, to and from PECC economies in the Asia- Pacific, for reasons of reliability, efficiency, and lower costs.

This PECC international project aims to contribute to regional policy dialogues on improving connectivity, sustainability and mutual growth for the PECC economies on both sides of the Pacific that are seeking to develop new routes and enhance port operations to meet the increasing demand for maritime trade through the Pacific and Indian Oceans.

Representatives from government agencies such as port authorities, relevant institutions and businesses from PECC economies, who are stakeholders of the development of maritime trade in the Asia-Pacific region such as port operators, sea transport-related logistics and service providers, will gather to exchange views and propose solutions for better connectivity in the Asia-Pacific through three seminars.

The first seminar was held on 19-20 October 2015, in Papeete, at the invitation of the Government of French Polynesia (FP). It took place immediately after the inaugural South Pacific Cruise Forum organized by the South Pacific Cruise Alliance (SPCA).

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**SEMINAR 1: Meeting the Increasing Demand for Maritime Trade**

**Papeete, French Polynesia | October 19-20, 2015**

The first seminar focused on the development of maritime trade in the Asia-Pacific region in the coming years. The following issues were addressed:

- What will the regional maritime trade look like in 2025 - what are the current trends and future projections?
- What are the main drivers of increased pressure on sea routes and ports?
- What changes in vessels – both cargo and passenger (cruise ships, ferries) - are needed to meet the increased demand while meeting safety and environmental regulations?
- What are the implications: modernization of existing ports, new hubs, chokepoints, small ports?

**SEMINAR 2: Busan, Korea | April 4-6, 2016**

**SEMINAR 3: Auckland, New Zealand | December 2016**

**SEMINAR 1: MEETING THE INCREASING DEMAND FOR MARITIME TRADE**

Papeete, French Polynesia | October 19-20, 2015

## EXECUTIVE SUMMARY

French Polynesia faces the same stakes and threats as those faced by other Pacific islands in respect to the development of new capacities and routes of international maritime transport, said Albert Solia, Minister of Public Works and Transportation of French Polynesia during his welcome address. With the opening of the new locks at the Panama Canal and thereafter the Suez, the maritime transport scene in the Asia-Pacific zone will profoundly change as the vessels of over 5,000 TEU ('twenty-foot equivalent unit' in reference to a standard container size) capacities are expected to take up a significant part of the market. While anticipating challenges, one should also seize opportunities connected to the maritime economy such as cruise tourism and fisheries, well integrated into the overall sustainable development strategy, said the Minister. It is in this context that the government of French Polynesia welcomed and supported a series of related events organized by the Maritime Cluster of French Polynesia, South Pacific Tourist Organization, South Pacific Cruise Association, the French Union of Ports, and the Pacific Economic Cooperation Council.

### The Trend: Mega Vessels

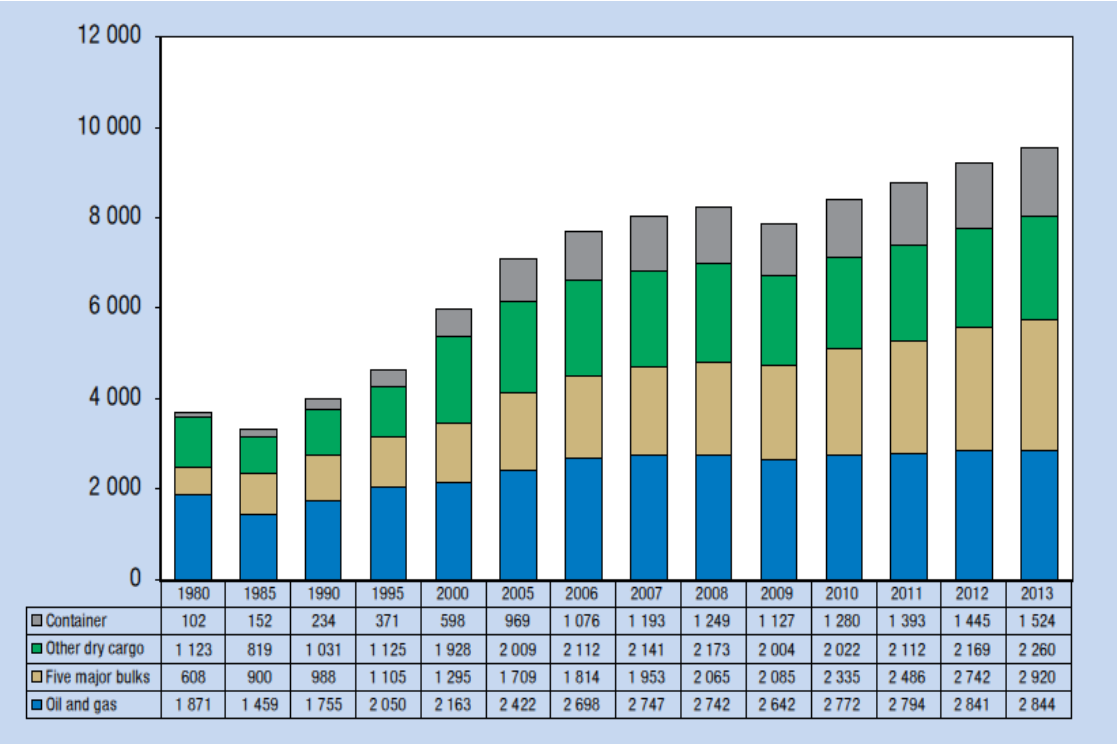
Bernard Mazuel, representing the French Union of Ports, reiterated that the increased demand in global goods exchanges has boosted the development of maritime transportation, especially since the 1990's and further since China joined the WTO in 2001.

More than 90% of all goods around the world are being transported by sea, and the total seaborne capacity has more than doubled since 1990, especially in the bulk and container carrier segments.

In such fast-changing environment where demand has been consistently on the rise while technology is becoming highly sophisticated, it is only natural that larger ships are built to benefit from economy of scale. Over the last two decades, one can clearly see that the container ships are the fastest and largest growing type of vessels in comparison with bulkers, tankers, passenger carriers, and other general cargo ships.

Over a six-year period, container ships have grown by about 100m in length. The new ships have increased length of about 400m, width of 60m, draft of 17m. Such trend induces competition among ports and decreases the number of calls per rotation, which encourages higher handling productivity, in order to reduce the time that ships spend idle at port.

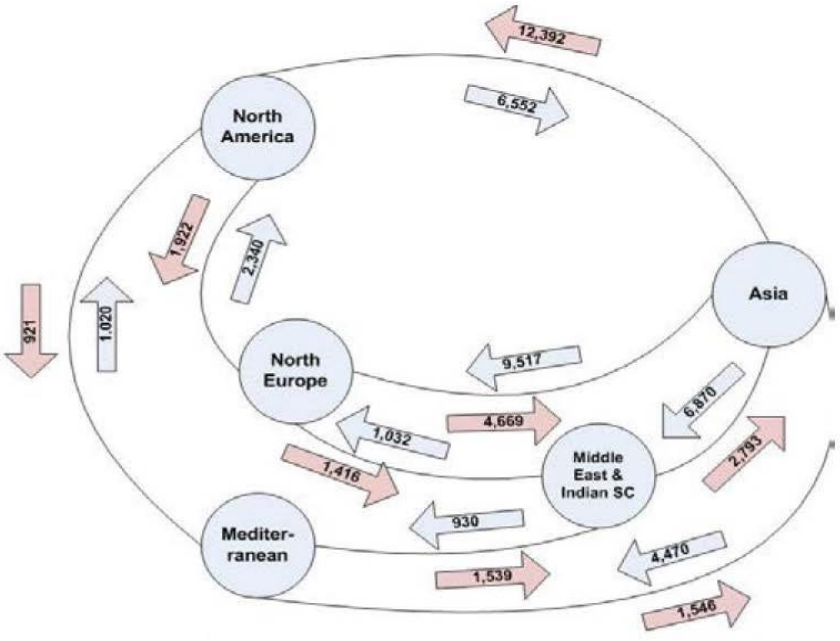
*Figure 1. International seaborne trade, selected years (millions of tons loaded)*




| | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Container | 102 | 152 | 234 | 371 | 598 | 969 | 1 076 | 1 193 | 1 249 | 1 127 | 1 280 | 1 393 | 1 445 | 1 524 |
| Other dry cargo | 1 123 | 819 | 1 031 | 1 125 | 1 928 | 2 009 | 2 112 | 2 141 | 2 173 | 2 004 | 2 022 | 2 112 | 2 169 | 2 260 |
| Five major bulks | 608 | 900 | 988 | 1 105 | 1 295 | 1 709 | 1 814 | 1 953 | 2 065 | 2 085 | 2 335 | 2 486 | 2 742 | 2 920 |
| Oil and gas | 1 871 | 1 459 | 1 755 | 2 050 | 2 163 | 2 422 | 2 698 | 2 747 | 2 742 | 2 642 | 2 772 | 2 794 | 2 841 | 2 844 |

*Source: UNCTAD Review of Maritime Transport, various issues. For 2006-2013, the breakdown by type of cargo is based on Clarkson Research Services, Shipping Review and Outlook, various issues.*

*Figure 2. Interregional Container Flows, 2011 (thousands of TEUs)*



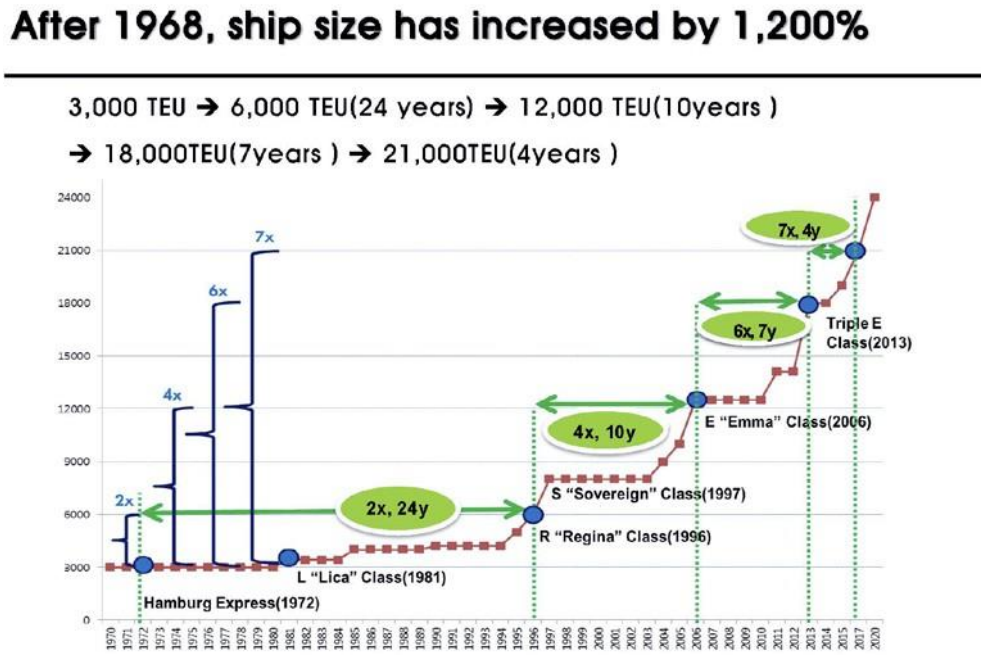

*Source: UNCTAD Secretariat, based on data provided by Lloyd's List Containerisation International, various issues.*

The reality is a fluid environment driving substantial institutional and infrastructural changes, said Brian Lynch, NZPECC. The discussions at the seminar highlighted that serious issues of resource asset allocation and risk management are at stake. For one, asset modernization involves massive investments. They require long lead-in time and financial commitments, which once made, are hard to revisit or reverse. The second challenge is the level of coordination needed domestically to ensure balanced investment across all transport modes – ports, rail, and road connections – to cope with demand shifts. Thirdly, there is the interaction among the objectives and differing ambitions of many stakeholders, operational and owner groups. These interests, expectations, and governance roles are sometimes hard to reconcile. Often there are tensions for major players such as port operators and shipping lines, between the funding needed to cover expenses and pricing to encourage efficient use of assets.

**Mega Ports for Mega Vessels**

Hyongmo Jeon from Korea Maritime Institute outlined recent developments leading to increasingly larger container ships and pointed out the impact this is having and will have on port infrastructure. While the absolute number of container ships is dropping, the trend to larger ships continues, a development necessary for competitive reasons. He mentioned that container ships of 18,000 TEU and above at length of 400 meters are already in operation while those of 24,000 TEU-capacity are expected to sail major trading route between Asia and Europe by 2020 and many more mega ships are expected to be on order by then.

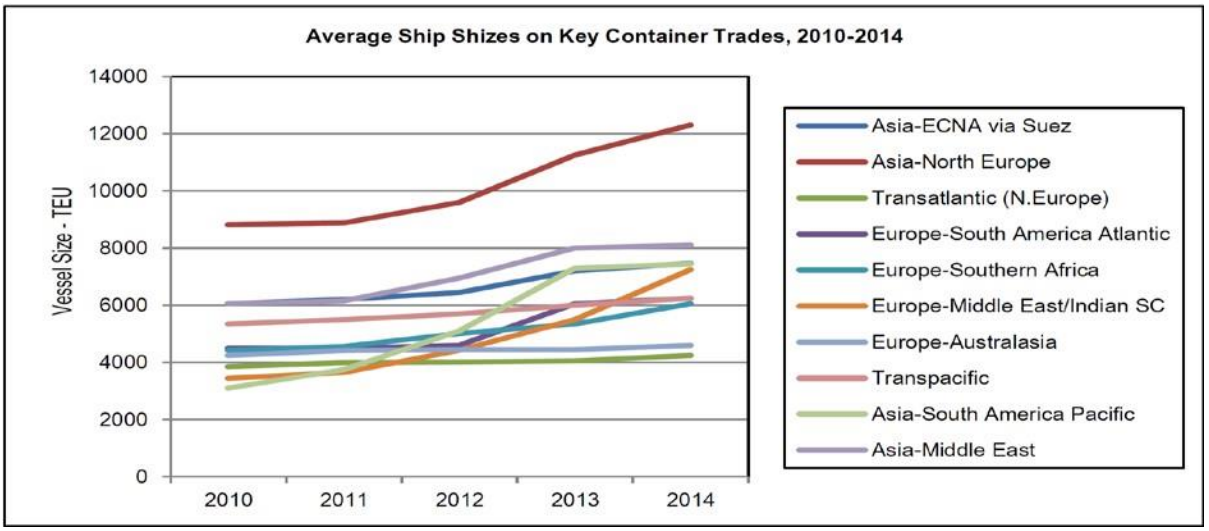
*Figure 3. Trend of Ultra Large Container Vessel*




*Source: Presentation delivered by Hyong-mo Jeon, KMI at PECC seminar, October 19, 2015 | Papeete, French Polynesia*

With the cascading effect, the sizes of vessels that commute between Asia and America are also increasingly rapidly. Thanks to improved technology, by economy of scale, bigger ships use smaller fuel after 16,000 TEU.

*Figure 4. Cascading Effect on other Trade Routes*




*Source: Ocean Shipping Consultations, TOC, Europe 2015 (Taken from a presentation delivered by Hyong-mo Jeon, KMI delivered at PECC seminar, October 19, 2015 | Papeete, French Polynesia)*

In terms of impact on ports, apart from the need for greater infrastructure and investment to make more yard space, larger ships have an impact on such issues as quay utilization, operation costs, labor and dockside transportation, and investment return since in many cases larger ships do not necessarily mean more cargo. Increased automation to handle the cargo and containers at ports can reduce operation costs and save labor time in the longer run as seen in the case of Rotterdam, Yangshan, Qingdao, and Xiamen ports.

Nine of the world's ten busiest container shipping seaports are located in East Asia including seven of them in China. Shanghai port was ranked the busiest at 32.5 million TEUs in 2012 beating Singapore which handled 31.7 million TEUs and at a distant third place, Hong Kong (China) at 23.1 million TEUs. The questions arise as to what will happen to those ports that cannot accommodate ships that exceed 13,000 TEUs. Will these become feederized ports to handle ships with smaller capacities to travel shorter distances from the hub ports? Is feederization a threat or an opportunity? How will this impact door-to-door transportation costs or delays for customers? These are some of the questions that were posed by Bernard Mazuel, Secretary General of the French Union of Ports.

**Ports in Latin America**

The shipping and ports industries in Latin America are facing huge challenges in meeting the domestic needs amidst fierce competition from elsewhere. Major shipping alliances are forming; mergers and acquisitions are taking place among shipping and related companies to secure operational profits; while large volumes of new orders are being made for bigger vessels. On top of such developments, the recent expansion of the Panama Canal is set to open a new era of maritime and port industries.

There are various projects underway throughout Latin America to meet demands for new or upgraded infrastructure that can accommodate bigger vessels, said Rodrigo Galleguillos, Zone Manager of Ultraport. In Chile, many existing ports are surrounded by cities and "social licenses to operate" are not optional. Other crucial issues for Chile include: slower global growth affecting the domestic economy, empowerment of communities which can resist or stop expansion projects, complex regulatory frameworks, union strikes, among others. The main Chilean ports are facing the same challenges emanating from multiple stakeholders and the impact from the slowdown in global economic growth and particularly in China. The Mejillones Bay project proposed by family-owned Ultraport in Chile to provide cargo terminals that handle crude minerals direct from the nearby mines was showcased to study considerations of infrastructure, technology, productivity, stakeholders including employees, environment/ community, and safety.

**Mid-size Ports: Auckland**

The many types of trend and development underway in the 'blue economy' and related industries are just as relevant for small or remote economies as they are to the larger ones that dominate regional trade. New Zealand's prosperity and well-being have always been dependent on adequate and reliable shipping services to foreign markets and efficient domestic port operations; and this will continue, according to Brian Lynch, Vice-chair of NZPECC. Export and import volumes are forecast to grow significantly as the New Zealand economy becomes increasingly interconnected with the wider region. There is strong domestic competition among New Zealand ports as well as globally. Their need to manage expanded cargo tonnages and host increasingly larger vessels has raised many issues. These include questions around the optimum number and location of ports able to handle future container traffic, the desirable infrastructure enhancement required, governance of ports and institutional decision-making, the cost and funding of asset upgrades especially at ports, and the challenge of achieving investment coordination across the national logistics network and transport modes.

New Zealand's trade volumes have increased significantly since 1990 – exports by weight have tripled. And 99 percent of NZ's annual half-billion tons of trade freight by volume is seaborne. Most NZ exports travel under half the distance they did fifty years ago. But the savings for exporters made through shorter transit times are offset by delays in moving products across the borders of some markets. One other logistic factor complicates the trade flow in New Zealand is

that import demand is focused largely in the populous northern area around Auckland while the export production is concentrated in the central North Island and the lower South Island. As a result, half total container movements are empty, which adds a significant cost.

**Smaller Ports**

The Port Authority of Papeete was a public institution created in 1962 until it was converted to industrial and commercial public undertaking in 1997. It operates with an annual budget of about EUR 29 million, according to Boris Peytermann, CEO of the Port Authority of Papeete. The Papeete Port receives 1.4 million tons or 70,000 TEUs of freight traffic per year as more than 95 percent of goods are imported in French Polynesia. The passenger traffic consists of 1.7 million people. The increasing sizes of freight and passenger ships are building pressure in regards to how Papeete port could upgrade or expand to meet the demands to possibly enlarge the quays, terminals, and servicing areas. New shipping routes made available with the opening of the third lock of the Panama Canal – and potentially a Nicaraguan canal – that can let through large container ships that have capacities of over 15,000 TEUs are also adding to the challenges. There are pressures on lower cost of freight between direct call carriers and feedering services. It is also anticipated that as a result of the cascading effect one would see an increase in the size of cargo ships calling to Papeete i.e. from 4,000 to 5,500 TEUs. Given that the existing draft and width of the pass into Papeete Port are not adequate to let in ships bigger than 2,300 TEUs, a significant scale of upgrade would be necessary in the coming decade.

There are two main options available in terms of infrastructure upgrade: 1) On-site developments to deepen the channels to allow greater access to larger vessels, and expand the terminal, at a cost of about EUR 83 million; or 2) Extend to the eastern location that would see the development of larger quays and terminal estimated to cost about EUR 210 million. A third option could be a combination of the two: some short-term upgrades and a longer term extension to the east.

Gérard Siu, the chair of Maritime Cluster, French Polynesia explained that Tahiti needs to carefully optimize its land usage given its limitations, by enhancing its efficiency amongst the many competing potential activities onshore and offshore. In addition to being the main port of international trade to bring in food, consumer goods and energy supplies, the Port of Papeete also features port facilities for passenger ships, fishing and cruising industries, serves as the naval base, maritime safety operation center, ship repair services, and waste processing facility. The recommendations at this stage would be to provide space and support for maritime activities with high economic values such as cruise ships, maga-yachts, charter tourist boats as well as build a modern naval maintenance and repair center while relocating non-maritime operations such as waste management elsewhere.

Strong competition is expected in the coming years in the South Pacific in the cruise industry that would drive investment in port infrastructures and many other areas of tourism and hospitality sectors. This trend also necessitates careful and forward-looking studies on potential environment and social impacts vis-à-vis the potential economic gains.

In the case of New Caledonia, for example, compared to 95 calls recorded in 2007 of cruise ships, 560 calls have already been booked for 2017. In anticipation of this growing trend, according to Lluis Bernabe, Chair of Maritime Cluster, New Caledonia, there are plans to develop a dedicated 'Cruise Club' to activate a public-private committee that will put in place a cruise strategy onshore to extend the opportunities offered by more number of cruise ship visits.

Ollivier Amaru, Chair of South Pacific Cruise Alliance (SPCA), addressed the issue of larger ships from a cruise industry perspective. The industry is expected to continue to grow strongly particularly in Asia which currently has only a 6 percent market share. Port capacity to receive the new, larger ships along with the capacity to integrate with air hubs can attract more revenues. Among the constraints in Papeete, apart from physical infrastructure that at the moment limits the size of ship that can be received, is the issue of handling large numbers of passengers and providing activities for them. Current capacity can cater up to ship sizes of 2,500 passengers whereas each of the new ships would have 5,000-6,000 passengers landing on French Polynesia as tourists. The forecast for 2020-2025 would see market expansions in Australia and New Zealand, 'fly & cruise hubs' and new routes developed for different size categories of ships, as well as further growth in the Chinese market.

**Cost-Benefit Analysis**

Not only do these mega ships enable ship-owners to meet the increased demand, but they also enable a huge decrease in transportation costs, supposedly benefiting the end-users or customers. The purchases of high-capacity vessels generate reduced costs per slot: from US$14,000/ slot for a 3,600-TEU to US$7,000/ slot for a 19,000-TEU vessel. On the operational side, an increase in capacity by 2.5 times generates over 30 percent decrease in slot operational cost based on 85 percent utilization rate.

These ultra large crude carriers (ULCCs) have become even more competitive since the 2008 economic crisis, when slow-steaming was implemented. The shipping lines that do not have such large vessels can hardly compete any more with those who have them. The latter must either order similar sized vessels to keep up with the pace, or withdraw from the main routes. Very few having made the second decision, the global order-book and available capacity on the seas have never before been as high.

Ports around the world share dilemma in terms of the need to invest in infrastructure if they wish to continue to attract the volume of cargo needed to remain viable amidst the intensifying global competition. The question is how much upgrade or expansion at what cost of investment.

There are various ways to finance infrastructure, as summarized by Naoyuki Yoshino, Dean of Asian Development Bank Institute (ADBI). Infrastructure investment can be subsidized by the government using money from tax, from a government bank (e.g. postal savings) that can offer loans with low interest rates, private investors (including those from pension funds and insurance schemes), and overseas investors such as the World Bank. In the long run, the economic multiplier effect from infrastructure investment, if handled well, combined with thorough risk analyses and sound management of project funds, would, based on cost-benefit analysis, determine the viability of infrastructure projects. He stressed that infrastructure development has the potential to generate considerable downstream indirect economic benefit that must be considered when making investment decisions.

An econometric analysis uses macro data to analyze economic effect of infrastructure investment that result in a wide variety of outcome across economies and across different points in time. Another approach uses micro data to study case-specific situations as seen by a highway project in the Philippines, railway in Uzbekistan, and the bullet train in Japan. While tax revenues of various regions would determine the impact of infrastructure investment, indirect or externality effects of infrastructure investment will be the key to determine the success or failure of infrastructure investment, i.e. whether or not the investment would bring private sector activities in the region.

Too much reliance on tax revenue would however lead the country to face budget deficits and thus domestic savings must be accumulated and pension funds created to finance long-term infrastructure projects. In this respect, PPP financing model enables risk sharing between private and public sectors, provide incentive to cut costs and increase revenue while avoiding political intervention and offering bonus payments for employees engaged in operation of infrastructure.

**Impact on the Maritime Routes**

As a result of larger ships being introduced, the traditional maritime routes are to be adjusted in view of demand. The following changes are occurring:

- Suez Canal extension at cost of US$8 billion, open in June 2015
- Panama Canal enlargement over nine years, due for completion by April 2016
- Nicaragua Canal implementation anticipated by around 2020
- Exploration of using Asia-Europe North route or the North Atlantic route, etc.

**The Arctic Routes**

The Northwest Passage (NWP) was long favored by European explorers as the key to unlocking a direct route to Asia, although the navigation of the NWP proved to be a challenge for centuries. With the retreat of permanent sea ice in the Arctic, a phenomenon that has accelerated in recent years, attention has turned once again to the northern sea routes (Northwest Passage,

Northeast Passage/Northern Sea Route, Transpolar Passage) as possible shipping routes to Asia in the future. The Arctic seas offer other potentials as expanded fishing grounds, oil and gas exploitation, potential mineral mines, as well as tourism sites.

*Figure 5. Advantages of the Northern Sea Route: Distances from select Asian ports to Rotterdam*

| | Via Suez Canal | | | Via Northern Sea Route | | | Days Saved |
|---|---|---|---|---|---|---|---|
| | Distance Nm. | Speed Knots | Days | Distance Nm. | Speed Knots | Days | |
| Shanghai, China | 12,050 | 14 | 37 | 6,500 | 14 | 19 | 18 |
| Busan, Korea | 12,400 | 14 | 38 | 6,050 | 14 | 18 | 20 |
| Yokohama, Japan | 12,730 | 14 | 39 | 5,750 | 14 | 17 | 22 |

*Source: Presentation by Hugh Stephens, Vice-chair of CANCPEC, delivered at PECC seminar, October 19, 2015 | Papeete, French Polynesia*

As seen above, there are potential cost and time savings by using the Arctic routes. However, the ice conditions are unpredictable in some parts and may incur high ice breaking fees as well as higher insurance rates. With the Transpolar Passage having the shortest distance but least unlikely to be used, the NWP offers some limited current prospects while the NEP is the most favored given the resource base, existing infrastructure, and better ice conditions. The NEP toll fees must be competitive with those of Suez or Panama Canals if intent on drawing more ships to use the northern route.

The Arctic Council was set up in 1996 to promote cooperation, coordination, and interaction among Arctic states, together with indigenous peoples, on common issues with much focus on sustainable development and environment protection. The Council consists of eight member countries (Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden and the USA) with six permanent indigenous peoples, twelve non-Arctic observer nations (7 European and 5 Asian) plus other observer organizations participating in the discussions.

The tentative conclusion is that despite some obvious advantages in terms of distance and time savings, both passages will play only a marginal role in the transshipment of goods, having little real impact on shipping volumes between northern Europe/eastern North America and north Asia. They may play a larger role in terms of direct shipment of commodities to Asia from northern regions, and some “boutique” shipping, including cruising. There is growing interest of major Asian economies such as China, Japan, and Korea in Arctic issues with implications for intercontinental maritime trade.

**Piracy and Chokepoints in Narrow Seas**

There are two key factors of threat to maritime transportation: piracy and war. Dr. Charles Morrison, President of East-West Center and former Chair of PECC, outlined various issues related to piracy and the challenges of narrow straits. There are three main zones with concentrations of piracy or hijacking: East Africa (Somalia), West Africa (Nigeria), and Southeast Asia (Indonesia). Apart from the psychological damages to the hostages the extra shipping costs incurred by piracy off the Somali coast mounted around US$6.6 to 6.9 billion in 2011. The good news is that there has been notable decline in the number of incidents around the world since 2011. Piracy on the Somali coast had been managed effectively mainly due to a number of factors of which perhaps the most important was the cooperation of the international community.

While Somali piracy has been eradicated, at least for the moment, there is a growing problem of piracy in Southeast Asia and notably around the Straits of Malacca and Singapore. There is a high concentration of shipping around the Straits of Malacca with 50,000 vessels passing through each year, constituting 30 percent of global trade. Most of the piracy in Indonesia involves theft, especially of crude oil cargos that travel from the Middle East to Northeast Asia. Small groups of pirates transfer fuel from anchored cargo ships to their own tankers. Unlike Somalia, there is weak naval enforcement around these areas and especially in the Indonesian waters. With lack of local enforcement, most of the incidents take place at or near ports with only 13 percent of incidents taking place at high seas. The local Indonesian jurisdiction lacks the facilities to combat this and regional states seem unwilling to accept external support (unlike in Somalia) although there have been some effect in moving pirates out of the Malacca and Singapore Straits thanks to enhanced Singapore-Malaysia-Indonesian naval cooperation. When piracy takes place in the South China Sea, cooperation becomes more limited by the ongoing territorial disputes.

The narrow seas in East Asia and that of the Arctic Ocean offer some interesting points of comparison:

| East Asian Seas | Arctic Ocean |
|---|---|
| • Densely populated coasts<br>• Intensely used<br>• Overlapping sovereignty, resource claims<br>• Need for cooperation, but dominant theme is conflict; presence of military forces are significantly increasing<br>• Issues are highly politicized<br>• No high governance structure for the seas | • Limited population<br>• Seasonal usage, but growing<br>• So far, territorial claims rarely overlap, but encroach on global commons<br>• Dominant theme so far is growing cooperation<br>• Little politicization so far<br>• Arctic Council as a consultative structure includes maritime issues |

With significant part of territorial disputes today focusing on potential EEZs, there is growing difficulty in efforts to "settle" and make compromises on the claims made by different parties. Still, there is clearly a need to find ways to cooperate on environmental issues and economic opportunities without touching on sovereignty.

For example, economies along the 'One Belt One Road' routes proposed by China should enhance customs cooperation such as information exchange, mutual recognition of regulations, and mutual assistance in law enforcement. The involved economies should improve bilateral and multilateral cooperation in the fields of inspection and quarantine, certification and accreditation, standard measurement, and statistical information while ensuring that the WTO Trade Facilitation Agreement takes effect. Establishing a "single-window" in border ports, and improving customs clearance facilities would help to reduce costs and improve efficiency.

**Maritime Surveillance in the South Pacific**

While the port of Papeete may seem relatively small compared to other ports in the Asia-Pacific, it is interesting to note that the EEZ footprint of French Polynesia is as long and wide as Europe which earns France the second top place in global ranking in terms of the total size of EEZ. In such vast space, the main guarantee of security is an effective maritime surveillance. The share of powers between the French State and the government of FP entail the French state services having the responsibility to ensure the monitoring of FP's maritime area. The main tool of maritime surveillance is the Maritime Inter-Agency Center (MIAC) that was created in 2011 merging the skills and intelligence from various state services: armed forces, maritime affairs, customs and police force ('gendarmerie').

Marie Baville, Director from the Office of the High Commissioner stressed that the maritime economy and commercial exchanges by sea depend upon the safety of the maritime links and also of the proper operation of harbor installations and equipment, most of which the government of French Polynesia has jurisdiction over. These areas include: transportation and maritime equipment planning, economic development, fiscal matters, environmental protection, etc. The French government adheres to the international code for the ship and harbor installations safety (ISPS) and makes it mandatory to implement strict security standards in the harbors handling international ocean-going vessels to prevent possible acts of sabotage or terrorism.

Commander Nicolas Rossignol, French Pacific Command, gave an overview of the maritime surveillance and patrolling conducted in the French Polynesian waters to provide security for shipping, ports, civil defense against technological risks and natural disasters, as well as monitoring and policy of fisheries, safety of life at sea, trafficking of goods at sea, etc.

The types of surveillance conducted, the cooperation with neighboring jurisdictions, and results were outlined along with the administrative structure that is based on cooperation between relevant agencies in the FP.

Modularization of production becomes the key in the spread of global value chains where trade in goods become trade in tasks, where service links become crucial in an increasingly complex network of production across the borders, said Professor Rob Scollay from University of Auckland. As comparative advantage defines the location of production modules rather than of entire industries, it becomes possible for low-cost developing economies to gain access to international market. The cost of linking becomes an important variable to determine where to place the production base of certain components. International trade today consists largely of intermediate goods (over 50 percent) vis-à-vis raw materials or finished products.

However, what used to be largely global is noticeably becoming increasingly regional in the value chains. With the world trading less, stronger growth in the services sector rather than the manufacturing, technological innovations that can reduce needs to ship, and with the reverse trend of large companies choosing to onshore and nearshore their production base or assembly facilities rather than keep them offshore which could incur higher labor costs and challenges in quality control, there are also questions on whether or not the maritime trade volume would be increasing significantly in the future or not.

There are some logistic challenges for maritime transport in view of meeting the needs for supply chains such as ensuring schedule reliability that would require careful integration of levels of feederization while providing flexibility by developing multiple networks. With pressure on multimodal integration to serve hinterland, the possible limitations on port facilities, bottlenecks, disruptions would need to be carefully monitored. Lastly, repositioning of empty containers would be desirable to increase their optimal use and cut costs.

## Conclusions

There is a clear trend in shipping where vessels are becoming larger and larger which, while driving down costs, has significant implications for ports management and infrastructure which can require time that is five times more in materialization compared to upsizing vessels. The life-time of port infrastructures are also more than five times that of a ship. Also, if cargo expansion in reality is less than forecast and ‘slow-steaming’ remains the preferred sailing mode, might the outlook be one of fewer calls and longer waiting times which could have negative consequences for perishable products with limited shelf-life?

As large ports re-configure and make various adjustments to handle the very large new vessels, this has a spin-off impact on cargo shipping routes and volumes and costs at smaller ports. Even for smaller ports, upgrading to meet the requirements of larger vessels, both containers and cruise ships, is essential. Competition between ports requires that infrastructure investment must be maintained. For the safe and efficient flow of cargo in particular, careful attention must be paid to security and surveillance. Neglect of adequate security can quickly lead to a rise in piracy which could take considerable time and expense to suppress. Investment in sound maritime security and surveillance practices is a necessary and cost-effective measure. Finally, in

examining how to raise the necessary funds to invest in infrastructure, there may be a need for government to inject capital to ensure that a project is economically viable. Investment in port infrastructure has the potential to generate economic benefits well beyond the immediate economic impact from better and faster handling of cargo. Indirect benefits can include spin off employment in a variety of areas, greater tax revenues and general economic growth.

In view of economic efficiency, environmental and social concerns, and technological innovations serving as main drivers to determine the future prospects of shipping industries and ports, these were some of the recommendations raised:

1. Continue to monitor developments in ship design and size to assess the impact on port infrastructure in the region.
2. Ensure adequate investment in security and surveillance to ensure the smooth flow of shipping in the Asia Pacific region, including in the South Pacific and narrow chokepoints
3. For the efficient development of the cruise ship industry, ensure that port facilities are expanded as new ships and routes are developed that require upgraded infrastructure.
4. Ensure that human capital, onshore facilities, inland transport systems, and the tourism/ services sector are developed in parallel with the anticipated demand in the growth of cruise ship traffic.
5. In financing port infrastructure investment, examine all potential sources of funding including domestic savings/pension funds, private investment and government loans. In assessing the economic viability of port infrastructure investment, take full account of the indirect economic benefit that can accrue as a result of upgrading infrastructure.

*Summarized by Jessica Yom*
*Director of Public Affairs*
*PECC International Secretariat*

**SEMINAR 1: MEETING THE INCREASING DEMAND FOR MARITIME TRADE**
**Papeete, French Polynesia | October 19-20, 2015**

## PROGRAM AGENDA

**DAY ONE: Monday, October 19th**

08.00-08.30 Registration

08.30-09.00 Welcome remarks
*Albert Solia, Minister of Public Works and Transportation, French Polynesia*
*Eric Pommier, Chair, FPTPEC-French Polynesia*

09.00-09.15 Introduction to the Papeete seminar and PECC international project 2015/2016 – "Managing the Blue Economy"
*Jean Luc Le Bideau, Vice-chair, FPTPEC*

09.15-09.45 Where are we? French Polynesia Port
*Boris Peytermann, Chief Executive Officer, Papeete Port Authority, French Polynesia*

09.45-10.00 COFFEE BREAK

**SESSION 1: Asia-Pacific maritime trade outlook: Possible scenarios for the next decade**
*Session chair: Charles E. Morrison, President, East West Center, USA*

10.00-11.00 Accommodating the growing demand for global maritime trade: Drivers and implications for port operators
Needs for new sea routes and port facilities, new port strategies
*Bernard Mazuel, Secretary General, Union of Ports of France*

11.00-11.30 The opening of the Northwest Passage: Implications for global shipping and Asian economies
*Hugh Stephens, Vice-chair, CANCPEC/ Executive Fellow, School of Public Policy, University of Calgary, Canada*

11.30-12.00 Open discussion

12.00-13.30 LUNCH

**SESSION 2: Challenges and opportunities in maritime transportation**

*Session chair: Hugh Stephens, Vice-chair, CANCPEC/ Executive Fellow, School of Public Policy, University of Calgary, Canada*

13.30-14.00 Mega container vessels and port capabilities
*Hyongmo Jeon, Korea Maritime Institute*

14.00-14.30 Cruise development and opportunities in the Pacific
*Ollivier Amaru, Chair, South Pacific Cruise Alliance (SPCA)*

14.30- 15.00 Piracy and conflicting claims at maritime chokepoints and in narrow seas
*Charles E. Morrison, President, East West Center, USA/ USAPC*

15.00-15.30 COFFEE BREAK

15.30-16.00 Maritime surveillance: A guarantee of security in French Polynesia
*Marie Baville, Director, Office of the High Commissioner, French Polynesia / Nicolas Rossignol, Deputy Chief of Staff for Operations, French Pacific Command*

16.00-16.45 Economic effect of infrastructure investment for sustainable growth
*Naoyuki Yoshino, Dean, Asian Development Bank Institute / Professor emeritus, Keio University, Japan*

16.45-17.30 Open discussion

19.00- Cocktail (Venue: Hotel Tahiti Nui)

**DAY TWO: Tuesday, October 20th**

**SESSION 3: Port upgrades**
*Session chair: Jean Luc Le Bideau, Vice-chair, FPTPEC*

09.00-09.30 Meeting the demand for cruise ships and port facilities to cope with rapid increase in tourism and maritime trade
*Lluis Bernabe, Chair, Maritime Cluster – New Caledonia*

09.30-10.00 Port of Tahiti facing an unprecedented challenge: Meeting the new maritime standards and their future development
*Gérard Siu, Chair, Maritime Cluster - French Polynesia*

10.00-10.30 COFFEE BREAK

10.30-11.00 Sustainable port development: Chile
*Rodrigo Galleguillos, Zone Manager, Ultraport, Chile*

11.00-11.30 Off the beaten track: Meeting the maritime challenges of being small, distant, and developed: New Zealand
*Brian Lynch, Vice-chair, NZPECC*

11.30-12.00 Open discussion

12.00-13.00 LUNCH

**SESSION 4: Addressing the gaps: Regional cooperation**
*Session chair: Michel Paoletti, Chair, Council for Strategic Reforms, FPTPEC - French Polynesia*

13.00-13.30 Conflict and cooperation in narrow seas
*Charles Morrison, President, East West Center, USA/ USAPC*

13.30-14.15 A redirected global value chains and growth of international services: Implications for maritime trade
*Rob Scollay, University of Auckland, New Zealand*

14.15-15.00 Open discussion

15.15-15.30 COFFEE BREAK

15.30-16.30 Summary of recommendations by session chairs: Chair Charles Morrison
*Open roundtable discussion with all session chairs*

Concluding session and follow-up
*Jean Luc Le Bideau/ Hyongmo Jeon*