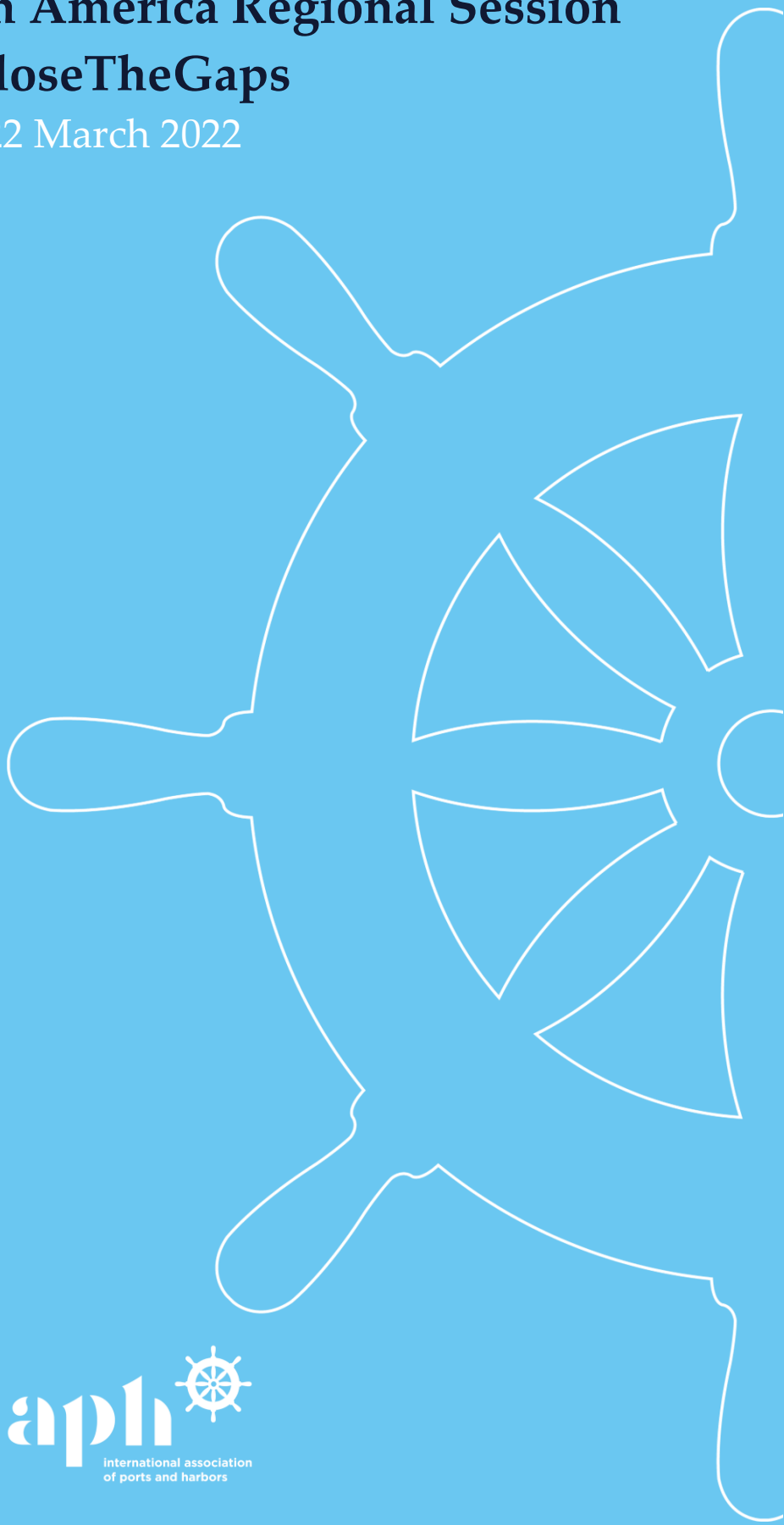
IAPH
Central and South America Regional Session
#CloseTheGaps

22 March 2022



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IAPH Central and South America Regional Session #CloseTheGaps – 22 March 2022

EXECUTIVE SUMMARY

The enclosed provides a summary of proceedings from the IAPH Central and South America Regional Workshop examining port competitiveness and identifying gaps to address in ports and port-related infrastructure and governance that took place on March 22, 2022.

The purpose of this document is to provide succinct highlights of specific gaps as well as proposals and suggestions raised at the Workshop to deal with those gaps in port infrastructure.

A more detailed analysis of the transcript and recording will be fed into the main workshop sessions of the IAPH World Ports Conference 2022 which will deal globally with the six areas of interest analyzed by a study that the University of Antwerp prepared for The World Bank in 2020[1], namely connectivity and accessibility, efficiency, digitalization, carbon emissions of shipping, shipping costs and regulatory environment.

The three main gaps identified for this region are efficiency, connectivity and accessibility and digitalization.

1.0. HIGH LEVEL OVERVIEW OF THE REGION IN TERMS OF PORT INFRASTRUCTURE GAPS

The whole context around identifying and closing port infrastructure gaps has changed on a global level in recent years, with the uncertainty created by the global pandemic and current geopolitical tensions accentuating this paradigm shift in the need for greater all-round resilience in port infrastructure.

The consistent message from all participants in this workshop highlighted the almost complete interdependence between maritime, port and logistics stakeholders to jointly improve cargo traceability, communication and data orchestration to address competitiveness gaps in port efficiency and connectivity in the end-to-end supply chain within and beyond port gates. These gaps are caused by a combination of factors which

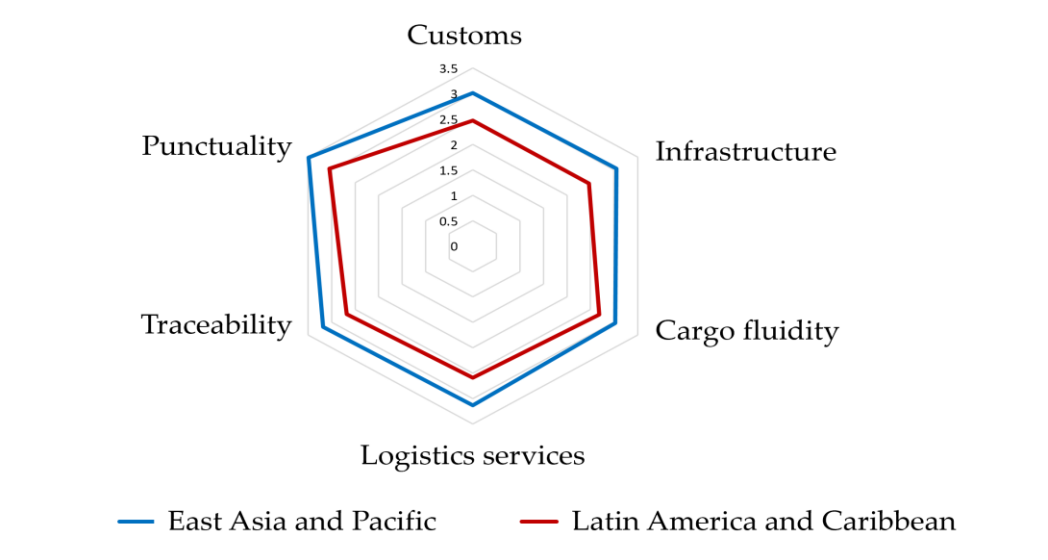
[1] Aronietis, R., Van Hassel, E. and Vanelslander, T. (2020), Maritime connectivity study for The World Bank: the state of developing country ports and maritime services: a global review.

ultimately point to fragmented governance and lack of willingness to share information between parties.

Several times during the discussions it was commented that a government's role is to provide a clear legal framework for a country's ports and for the various functions of public sector governance that determine relationships on a municipal level with port cities, potential and existing private sector stakeholders including international terminal operators investing in concessions, global carriers and shipowners using ports, and the shippers and forwarders themselves responsible for delivering imports and exports from origin to final destination.

To offer a quantification of these gaps in terms of efficiency, the expert provided the example of overall logistics performance by this region in comparison with East Asia and Pacific, using the Logistic Performance Index cited in the pre-Workshop study from the World Bank.

Logistics performance of Latin Americas & Caribbean vs East Asia and Pacific



Source = Compilation by Interamerican Bank based on Logistics Performance Index of the World Bank

The comment was made that if this region managed to improve to a point where it equalled the best performer in East Asia and Pacific, it could improve its exports between 4-8%, representing an overall average improvement in GDP value of around 1.5%.

The infographic identifies actual infrastructure, traceability of cargo between stakeholders and customs clearance as the three of the biggest challenges facing Central and South America. This concurs with a lot of comments made during the panel discussions. Let us deal firstly with infrastructure, with the other two items being dealt with later under digitalization.

When discussing physical infrastructure gaps in efficiency, panellists analyzed a multitude of factors which include (but are not limited to):

- Length and depth of quayside – this was seen as fundamental in some developing countries within the region, which depended either on public funds (in the case of widening or deepening a channel or where no private sector players operated the ports) or on the decision of the government to opt for concessions/privatisation of terminals of the country's ports. In this latter case one panellist pointed out that the long-term concession process of multiple ports to private operators has resulted in a significant increase in investments in well-equipped berth quayside and dredging operations to accept larger container vessels, closing the physical gaps in infrastructure. The frequent lack of a long-term vision such as this affects long-term projections and leads to ports missing out on securing future cargo opportunities.

- Physical infrastructure at the port itself – aside from the lack of quay capacity, materials handling equipment, availability and skill level of dockers as well as the administrative workforce, mention was made on the lack of decent hinterland connectivity with intermodal solutions including rails with multiple tracks at the port reaching inland, and ample yard infrastructure at port entrances and exits to handle heavy vehicle pick-ups, inspections, clearances and deliveries.

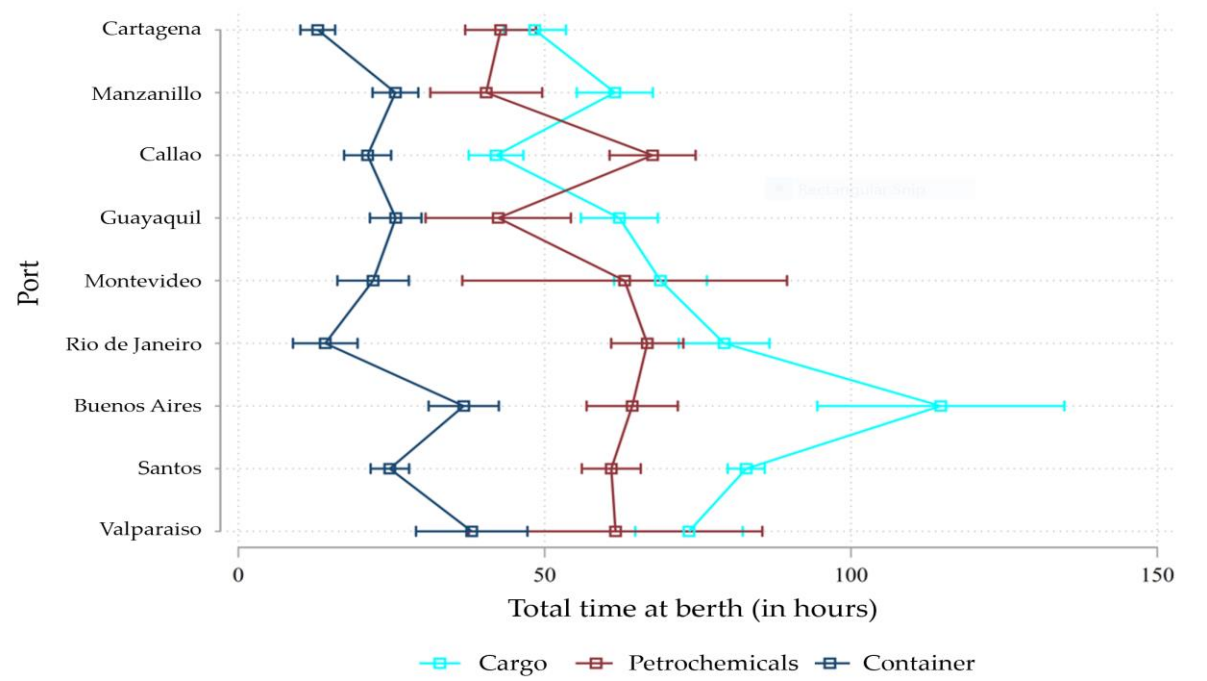
- Physical infrastructure beyond the port gates – particular emphasis was placed here on the desperate need in some of the countries to invest in rail track infrastructure and rolling stock in order to provide a sustainable alternative to trucking which predominates this region as the hinterland transportation method. In some cases, geographical limitations (e.g. the mountainous West Coast of South America) limit

the feasibility of rail hinterland connectivity. However countries located there such as Chile have been able to redirect some of its congested cargo inland using this transport mode due to available rail resources often found wanting in other countries.

The efficiency of port operations themselves varies substantially between countries, especially when the main first waves of the pandemic broke out in the region in 2020. A lack of docker personnel and port administrative staff often impacted ports, especially with those operating at maximum capacity or suffering congestion at berth.

Strict labour practices in some countries means that recruitment is a challenge, and in some cases policy decisions taken by government to subsidise labour during lockdowns and semi-lockdowns meant that some personnel preferred to opt for inactivity or alternative occupations than working at the ports.

Analysis of covariance in berth times by vessel type (2019)



Source – InterAmerican Development Bank presentation

Connectivity

Another major disruptor impacting port efficiency is related to connectivity. Carriers have frequently dropped vessel calls during the pandemic (especially from those services originating from Asia) at congested terminals throughout the region, which has caused misplaced import containers as well as imbalances in container equipment. This applied especially for areas experiencing spikes in demand (especially in Central America) due to the explosion of e-commerce replacing expenditures in entertainment, services and tourism.

This scarcity of space and equipment for those exporting from and importing into the region has become a major problem with carriers reluctant to add volumes or space given the highly congested state of many ports, with priority reallocations to the lucrative East-West trades.

Digitalization of processes – the link to connectivity and efficiency

During each of the panel sessions, continuous mention was made by panellists on the need to bridge the gap in digital port infrastructure, with improved digitalized processes as the key to improving cargo fluidity throughout the maritime supply chain, also leading better connectivity.

Examples were cited of valid initiatives and platforms that have increased the availability and transparency of data between stakeholders. This includes Latin American retail shippers establishing relationships with manufacturers at origin in order to control the expedition of import goods to improve overall end-to-end visibility and predictability. Also included was an example of digitalizing the forwarding process using APIs (Application Program Interfaces) by making carrier data on shipments more accessible to importers and exporters with increased collaboration as well between administrative and operational functions of stakeholders in the supply chain to facilitate the process.

However barriers to progress were cited, including the one-directional flow of data between terminal operators and carriers on arrival and departure windows for ships, with importers and exporters not being included in the chain on their shipments either due to legal, commercial or operational reasons. Also on the clearance side, shipment fluidity often depended on the responsiveness levels of customs and customs clearance agents which was

identified as a major issue in many countries, with excessive paperwork, long and delayed processes and a lack of good governance in optimising the process.

In order to gauge the main issues at hand, the Inter-American Development Bank conducted a survey this year of 300 maritime and transport organization for the AAPA (American Association of Port Authorities) investigating the state of digitalization of maritime and transport organizations in Central and South America. Here are the highlights of that comprehensive study by our expert.

Does your organization have a digital transformation strategy?

	Maritime transport	All transport enterprises
Yes	72,19%	69,06%
No	27,81%	30,94%

How advanced do you consider your organization to be in your digitalization strategy?

	Maritime Transport	All transport enterprises
Established plan in process of implementation	33,11%	31,39%
First pilots have been developed	26,49%	26,01%
Adoption at an advanced stage	17,22%	19,73%
The need for digitalization has been recognised	19,87%	19,73%
Nothing	3,31%	3,14%

How do you perceive the progress of the advancement of your digitalization strategy compared to global leaders in the sector?

	Maritime transport	All transport companies
Very much behind	17,88%	17,49%
Behind	39,74%	39,01%
On an average level	34,44%	35,87%
Advanced	5,96%	5,83%
Very Advanced	1,99%	1,79%

Which technologies have been deployed in your organization?

	Now		In three years	
	Public	Private	Public	Private
Omnichannels	14.29%	21.57%	16.33%	23.53%
Cloud computing	36.73%	56.86%	51.02%	40.20%
Data analytics/Big data	36.73%	59.80%	57.14%	57.84%
Machine learning	10.20%	18.63%	22.45%	42.16%
Internet of things/Sensors	20.41%	38.24%	38.78%	50.00%
Applied artifical intelligence	2.04%	16.67%	40.82%	40.20%
Robotic Process Automation (RPA)	2.04%	12.75%	22.45%	19.61%
Drones	30.61%	17.65%	30.61%	18.63%
Building Information Modeling	6.12%	15.69%	24.49%	22.55%
Augmented/virtual reality	4.08%	7.84%	18.37%	13.73%
Blockchain	8.16%	16.67%	51.02%	34.31%
3D/4D printing	4.08%	3.92%	20.41%	9.80%
Autonomous vehicles	0.00%	3.92%	6.12%	5.88%
Electrical vehicles	6.12%	6.86%	28.57%	17.65%

What have been the most significant contributing factors to digitalization

	Maritime transport	All transport companies
COVID-19	65,56%	64,57%
Top level management leadership	49,67%	49,78%
Cultural change	47,68%	50,67%
Customer changing needs	35,10%	34,53%
Changes in the sector	45,03%	44,84%
Competence	28,48%	29,60%
Webinar attendences	34,44%	33,63%
Loss in profit margins	5,96%	8,97%
External consultancy assessments	15,89%	13,45%

Which are the main barriers that you have encountered?

	Maritime transport	All transport companies
Implementation costs	55.48%	60,28%
Lack of a digital culture in the organization	66.44%	64,95%
Lack of knowledge	39.73%	40,65%
Lack on investment financing	26.03%	31,31%
Lack of clear business model	19.18%	17,76%
Lack of talent with necessary skills	32.19%	29,91%
Inadequate regulation	22.60%	21,50%
Resistance to changes	51.37%	48,60%
Weak technological infrastructure	31.51%	33,64%

In summary, the figures offer some interesting findings:

- The approximate third of organizations not yet considering a digitalization strategy concur with the global survey conducted by IAPH in 2020 with 111 ports on the status of implementation of the FAL requirements on digitalization.
- The number of organizations either implementing pilots or full implementations of digital projects (percentages in both categories in upper fifties) are higher than the numbers in that same IAPH survey for ports, suggesting that region is commencing its digitalization journey.

- The region's countries see themselves at an average level of development when comparing themselves against their colleagues in East Asia and Pacific, whereas they mostly see themselves as well behind the global leaders
- Cloud computing/big data analytics and the use of sensors and drones appear to be the most widely adopted technologies thus far
- The most significant contributing factors to digitalization have been the COVID19 pandemic, the influence of top management and the need for cultural change
- Most interestingly for this executive summary, the combination of high costs of implementation, lack of digital culture in the organization, and the resistance to change figure as the biggest barriers in the region. The last factor, namely resistance to change, makes for an interesting comparison to the main challenge cited global survey conducted by IAPH in 2020 which was multi-stakeholder collaboration.

It is important to note that panellists who did refer to the existence and use of Port Community Systems in countries commented that they varied in effectiveness in terms of data quality, data availability, reliability and level of automation (in the sense that some data was input manually into systems during phone calls or with the use of email with attachments).

BCOs, forwarders, carriers and other stakeholders raised the concern about data transparency by terminals and between terminals, which could have lessened the short-term impacts of the pandemic and is needed for overall improved resilience in the region's supply chains.

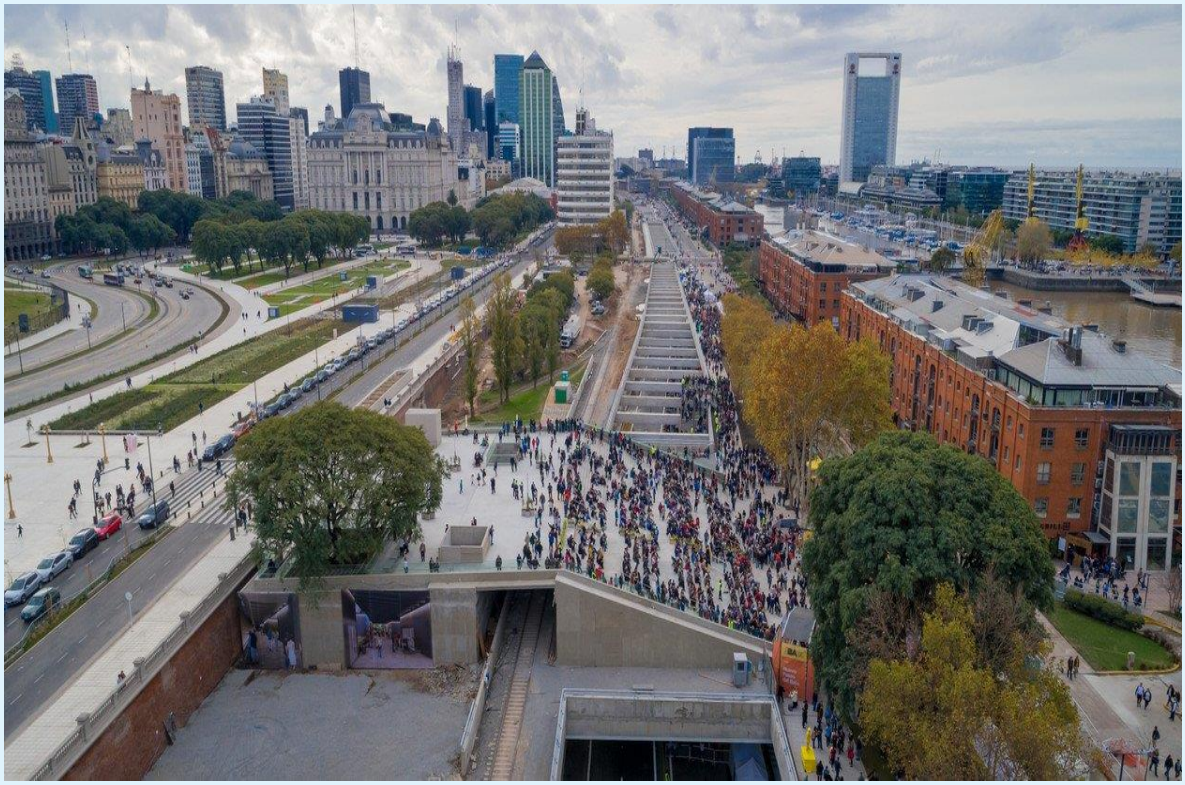
Another panellist highlighted the issue of lack of cooperation between competing or neighbouring ports, especially when not sharing the same data structure and standards and making data collaboration complex for shipowners and carriers faced with a variety of platforms and systems at different port calls in the region.

2.0. HIGH LEVEL OVERVIEW OF WORKSHOP POINTS RAISED TO #CLOSETHEGAPS

Some case studies and examples were cited during the workshop which pointed towards ways to improve efficiency, connectivity and accessibility, as well as digitalization tools

deployed to accelerate data orchestration to improve communications between stakeholders on traceability and cargo fluidity.

One smart example of spatial planning mentioned was the construction of an underground tunnel in the centre of Buenos Aires in order to divert trucks transiting to and from the port.



This tunnel reduced congestion by some 55% in the city and a calculation was made that it has saved up to USD 5.8 million for the city's inhabitants. It is a good example of suggestions made by panellists to establish transport corridors to and from ports to reduce intermodal congestion, especially in the case of ports that are located within city conurbations. Unfortunately a similar project in the same River Plate region did not achieve similar levels of success due to stakeholder cooperation.

On the physical infrastructure side, important investments such as the one made to increase the depth of the Guayaquil access channel to 13 metres was cited as significant in increasing accessibility for larger tonnage.

Other cited proposals in the region included the application of a single bar code system to increase truck turn-around time at a port which could be improved by up to 200%, which was also reflected in other examples where international terminal operators use their own bespoke systems to establish notifications for trucks using their app. Also the idea of introducing shift systems for trucks was muted which could reduce empty truck voyages by up to 35%. These suggestions came as a result of study in 2018 by the Inter-American Development Bank in collaboration with World Economic Forum on levels of digitalization of truck operators in the region. A third example cited the importance of digitalizing the nine processes taking place before cargo handling operations could commence for liquid bulk tankers.

Many panellists put forward ideas on how to improve data collaboration and harmonization between stakeholders at the ship-shore interface and for hinterland multi modal transportation. Specific ports and terminals participating in the workshop noted that some of their operations were not congested and that processes as well as the progress of digitalization to improve cargo fluidity were moving forward.

The most resounding call for action that came from the workshop was the improvement in customs clearance in the region through process improvement, paperwork reduction and above all the willingness to accelerate and simplify clearance processes to assist in the disentanglement of ports suffering from the global supply chain crunch. It was recognised between all participants that the only way this could be achieved successfully is by government at the highest level clearly stating mandates for port authorities and other public and private stakeholders in the supply chain as well as bringing them together under one umbrella to ensure that pertinent data is shared and used transparently and in a timely manner in the interest of all parties, in particular the shippers and forwarders who ultimately represent the main users of the ports.

As one of the few references during the workshop to the reduction of carbon emissions of ships, the IAPH Environmental Ship Index was mentioned as an important example of how ports in the region and globally can collaborate in setting global standards and providing incentives for their customers to improve environmental performance of their fleets over and above IMO standards. Other common initiatives such as the European Sea Ports

Organization (ESPO) Ecoports certification program was also mentioned as an example of good collaboration between ports.

As a final point on governance, the point was raised that with a properly-conducted concession process of a country's ports for a long-term period (20 – 40 years) , the potential for direct foreign investment has demonstrably shown improvements in quay length, equipment handling, productivity and efficiency and with it subsequent connectivity in the region. The cooperation between public and private sectors with the necessary legal framework set out in national legislation, followed by the inclusive participation of all stakeholders to implement the policies, are seen as the way forward to close port infrastructure gaps.

3.0. NEXT STEPS

These identified gaps and potential solutions will now be discussed at the IAPH World Ports Conference in Vancouver between 16-18 May both in plenary sessions and at the IAPH Regional Meetings which will have this Executive Summary to set the agenda on how to put together a plan to #CloseTheGaps in port infrastructure.