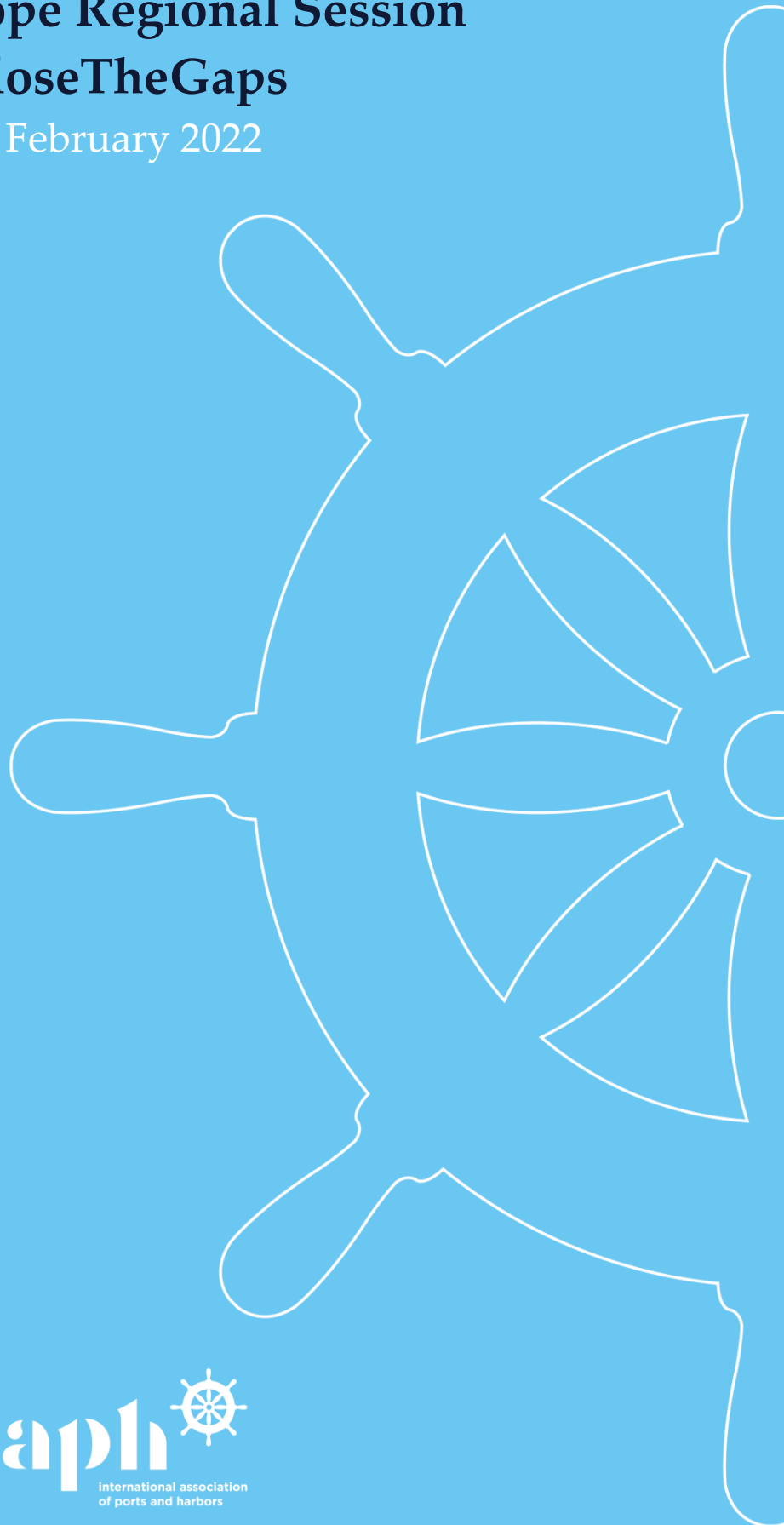


IAPH
North Europe Regional Session
#CloseTheGaps
10 February 2022



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EXECUTIVE SUMMARY

The enclosed provides a summary of proceedings from the IAPH North Europe Regional Workshop examining port competitiveness and identifying gaps to address in ports and port-related infrastructure and governance that took place on February 10, 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.

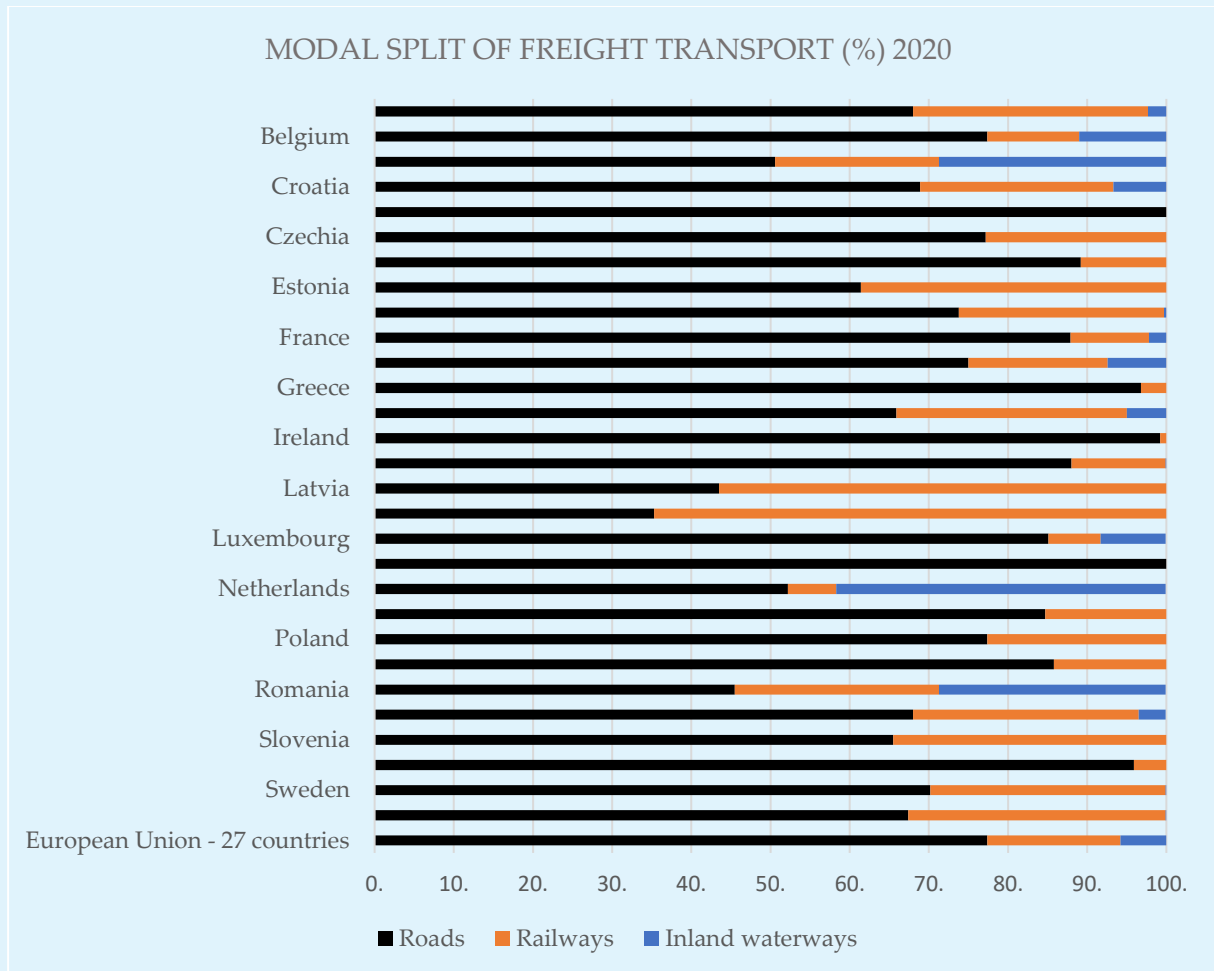
A more detailed analysis of the transcript and recording will be fed into the main workshop sessions of the IAPH World Ports Conference 2022 which will deal globally with the six areas of interest analyzed by a study that the University of Antwerp prepared for The World Bank in 2020¹, namely connectivity 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 carbon emissions of shipping.

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

The participants' poll at the beginning of the session confirmed the pre-workshop study that identified efficiency, connectivity and carbon emissions as the three stand-out gaps in North Europe's port competitiveness, which was defined in terms of the entire maritime supply chain rather than ports and port operations themselves. The expert analysis provided an overview of modal split serving North European ports, which points towards a prevailing dominance of road transport over rail and waterways connecting cargo inland from origin and to destination.

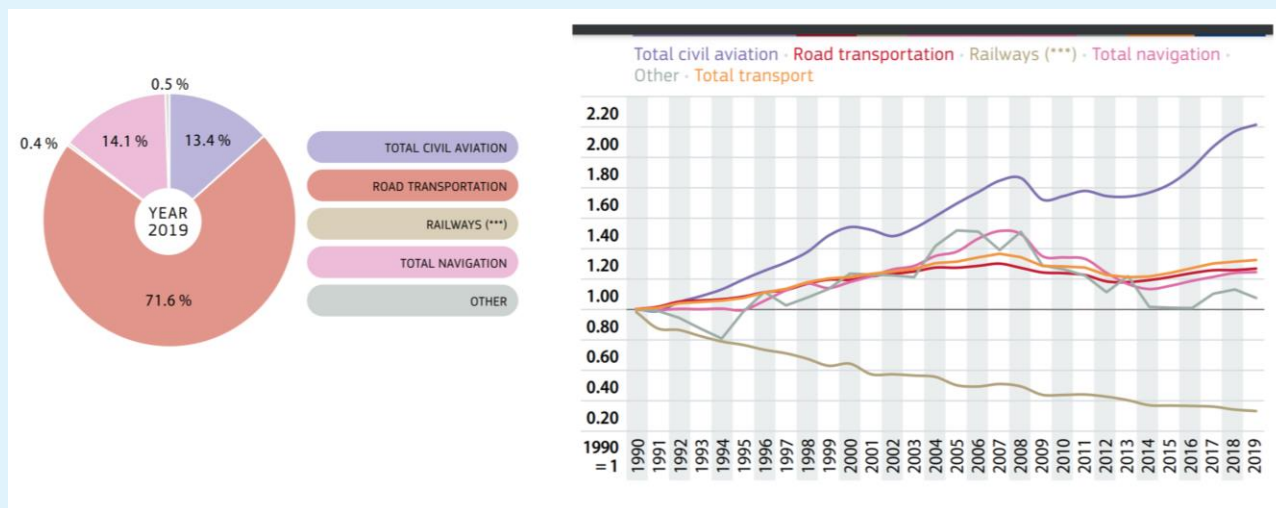
¹ Aronietis, R., Van Hassel, E. and Vanelslander, T. (2020), Maritime connectivity study for The World Bank: the state of developing country ports and maritime services: a global review.



Source: Eurostat

This, combined with the supply chain crunch experienced as a consequence of the demand and supply swings caused by the pandemic has impacted on North European port efficiency. It has also led to an overall increase in carbon emissions throughout the entire supply chain over time and in recent years.

Decarbonisation



Source : University of Antwerp

Further empirical analysis points towards a choice preference by beneficial cargo owners for truck over rail and barge mainly due to its greater flexibility and overall customer service despite the latter two modes ranking better in terms of a lower propensity for loss/damage and cost at scale. Cargo owners’ highest modal choice preference, namely reliability, registers with only marginal differences of ranking between the modes, and has suffered recently as result of multitude of issues related to the supply chain crunch including equipment and labour availability, accumulated congestion and lack of inland warehousing capacity as well as other external factors such as extreme weather events.

Other gaps identified include the relatively low level of public investments directed towards ports compared to other transport infrastructure despite the financing available under the European Union’s Trans European Network for Transport fund, the impact on hinterland traffic of larger vessel sizes in the container segment with ultra-large container vessels offloading and loading thousands of containers during single calls and larger inland ships being deployed leading to underutilised small terminals. The need was identified for a more

level playing field competition-wise between the inland transport modes, which requires policy intervention on national and regional scales.

During the port users' session, the recurring theme was repeated several times of the supply chain crunch affecting connectivity, which in turn has reduced overall efficiency, leading to higher carbon emissions. The overall consensus was that the global supply chain had, up until the pandemic, been optimised from a cost and utilization perspective to a point that no redundancy was built in to withstand the impact of a once-in-lifetime event such as the pandemic. Moving ahead, a change of mindset would be required by cargo and vessel owners alike and their service providers (including ports) throughout the supply chain to build in resilience into the system with a cost and investment implication for all parties.

The view that ocean carrier reliability would not improve until landside situations were resolved has been compounded by the problem of dropping port calls leading to an accumulation of congestion in the ecosystem.

Whilst not identified as a gap in itself, the absence of accurate information sharing and availability along the entire maritime transport chain was cited by the port users as a critical factor leading to connectivity and efficiency problems, with a direct impact on emission levels. Despite North Europe region having a higher concentration of sophisticated digitalised logistics systems than other global regions, the lack of transparency and trust between players in the chain to share data was identified as the key issue, not the technology. Commercial and vested interests often meant that certain key parties in the logistic supply chain either lack access to the information platforms or the relevant data they need to improve operational efficiency. The additional current absence of coherent industry data standards and open-source application programme interfaces as well as effective governance obliging the stakeholders to participate on data sharing platforms and make data available means that a solution will always have limitations.

Port users also cited the challenge they face when looking at reducing emissions in their operations. The final choice of alternative low and zero carbon fuels will be determined by that fuel availability at ports, which is in turn defined by what overall fuel provision will be envisaged by public and private sector initiatives and influenced by investments by oil and gas majors and renewable energy suppliers alike. The biggest current challenge facing shipping lines is which alternative energy can be economically deployed to power ships (LNG, biofuel, methanol/other future fuels), whilst at the same time improving efficiency in the supply chain. No one solution was muted, given the proliferation of new and old

tonnage as well an order book with newbuilds which will use any number of alternative fuels.

During the port service providers session, the point made by port users was reaffirmed on very little redundancy being built into container supply chain - it has been highly commoditised before the existential crisis now facing the industry.

Now that (in some cases for the first time in decades) money is back in the industry and in the system, there is an obligation of the players (not just public money and regulation) to deal with the supply chain crisis, both from a connectivity and efficiency perspective. Underinvestment to optimize utilization of existing physical assets will need to be replaced by considered investment decisions based on commitments from cargo owners and their service providers for a long-term sustainable response to port-related infrastructure gaps.

However it was felt that this could only be made realistic if the patterns of purchasing behaviour in the region changes from looking for the cheapest and most flexible transportation option to one which attaches a premium to ensure more resilience in the supply chain system. As an example, a 10 EUR difference between staying with truck and moving to rail or barge (or a combination of both) is currently not the norm despite this potentially offering the necessary scale, frequency and redundancy of the service provider. Similarly perception by shippers to look at reducing 80 - 90% no fault factors on rail or 60-65% fault factors on barge prior to selection should be scaled down to allow resilience to be properly built in.

The same posit was made by the port service providers for them to be able to combine their investments with public money in decarbonising port operations, offering alternative fuel bunkering and onshore power supply to ships, as well as improved port infrastructure connectivity to rail and barge/inland shipping. In fact it was observed that the larger terminal operators are now looking to offer landside “supply chain solutions as a service” to larger importers and exporters prepared to pay a fair rate in return for improved reliability, reduced overall emissions and cargo visibility already being feted by the ocean carriers looking to combine air/sea and sea/land solutions for their customers.

Additional gaps identified by the service providers in the Region also included a serious lack of manpower availability of long-distance truck and railway drivers to meet growing capacity constraints, the lack of redundancy in track availability when one route is down or

requires maintenance, and the enormous strain placed on rail as an alternative whenever major waterways such as the Rhine are impacted by low draft levels.

As a final point, the service providers also cited the challenge of actually filling the port infrastructure gaps with them typically requiring 15- to 20-year investment cycles when making outlays on physical equipment and the commitment this required from boards to get their returns on a market prepared to look at building in resilience rather than only lowest cost.

In the port authority session, as a first point it was agreed that ports need to listen better to long-term beneficial cargo owners needs to make better informed decisions on connectivity and efficiency. Secondly, the regional proliferation of “end-to-end” digitalization solutions in Europe, Asia and America has often led to a lack of effective interfacing and data collaboration between the global supply chain community which is seen as essential to improve overall efficiencies at ports. It has been identified that data should be shared with the receiving port before a vessel leaves Asia or America destined for Northern Europe as a precursor for efficient cargo handling by all parties.

Further on the matter of digitalization, it was identified that sectors outside the container industry (notably bulk and breakbulk) have not been developing with the same speed and are behind the curve, making it very difficult for ports with significant bulk terminals to provide infrastructure such as 5G wireless networks and getting assurances that cargo visibility and stakeholder collaboration to go paperless would be achieved with corresponding benefits to justify the public investment.

Another major gap impacting the willingness of shippers and BCOs to take a more pragmatic view on the overall costs of supply chain provision is the broken link that often exists between logistics and purchasing departments. Coordination in some cases can be practically non-existent with each department reporting in to different C-functions which have differing motives and internal objectives, principally related to cost savings.

What was also clearly identified as a gap was the relative underutilization of small to medium ports in Northern Europe which are not experiencing the same levels of congestion suffered by larger transshipment hub ports in the region. The exponential increase in vessel sizes, especially in the liner container segment, has concentrated traffic in a small number of larger transshipment hubs in Northern Europe with congested feeders at the expense of small

to medium sized vessels which could make efficient direct calls to destination ports in regional networks. The same applies to the relative underutilization of short sea shipping in Northern Europe, often at the expense of trucks which leads to much higher emissions and greater landside congestion. Using the same example of a shipment using transshipment hub/spoke and final mile truck delivery from Scandinavia to a Benelux port, it was determined that 12 different documentation processes were required compared to a single document required using short-sea shipping.

Echoing the point made by port service providers on long investment cycles, port authorities also indicated the complexities of planning for the handling of larger tonnage (cargo and passengers) by proposing and getting finance and approval from municipal, regional and state authorities for significant investments in infrastructure, especially given the space availability pressure on any port cities in terms of land. Growing demands for residential development in port cities to meet population growth and increasingly coordinated actions citing environmental concerns at any port expansions make multi-million investments a real challenge.

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

The overview view pointed towards digitalization as a genuine potential enabler of improved efficiency, and with it, improved connectivity and subsequently potential reduced emissions.

The notion of port call optimization and Just-in-Time (JIT) arrivals was commented upon, with the need to utilize operational tools to avoid the sort of congestion witnessed on West Coast of US, China and now being seen in continental Europe. It has the potential to diminish the impact of increased emissions and safety risks of congested anchorage awaiting berth slots and has the potential to reduce the incidence of wasted sea leg journeys at speed only to have to endure weeks of waiting time at anchor and long delays at berth. The example of West Coast US was cited involving the staggering of vessel arrivals by slowing down ship speed on the headhaul, and the proposal cited in the North America workshop of proactively sharing nautical and operational information prior to the departure of the vessel at the previous port. This could optimise pre- and post- transport scenarios around the ocean leg such as slot procedures and container priority tracking.

Similarly, data sharing by ports with stakeholders on fog levels, low water level, predicted storms or overtopping in order to predict terminal downtimes would also better enable proactive cargo handling operations on land.

That being said, the challenge of lack of coherent data standards between ports, countries and regions needs to be addressed. Some good work is under development in this respect by trade associations such as DCSA (Digital Container Shipping Association), Taskforce Port Call Optimization in coordination with the International Standards Organization and the IMO's Global Industry Alliance (GIA) initiative working group on data orchestration. In addition, multiple initiatives in the private sector to securely exchange nautical, operational administrative and also financial data are emerging, such as Tradelens where participants determine themselves the type, quantity and interchange method of data to improve collaborative supply chain workflows.

Port authorities also have the potential role to deploy new technology that improves overall infrastructure resilience. The example was cited of 5G networks connecting drone operations with training for port communities for various applications including inspections, safety protocols and berth monitoring.

A point was also raised on the need to identify and use additional ports in the region that can act as "safety valve" releases for when some of the larger ports are congested. As in the West Coast North American case of Prince Rupert in Canada, where there is good intermodal connectivity (in this case rail), some of the congestion pressure can be relieved. Other examples closer to home in North Europe Region include UK's Northern ports with reasonable rail connectivity providing relief for cargo transits otherwise clogged up in Southern UK ports.

It was also felt that ambitions should be raised to be able to link different transport modes so that the customer doesn't mind which one is used, provided they get visibility on it and their cargo gets delivered. This will only be feasible with long-term planning, contractual partnerships with BCOs and the involvement of competing transport modes to act as back-ups to each other. As previously stated in the first section, participants felt that this could only be achieved with a change of mindset by the cargo owners in terms of being prepared to go beyond paying the lowest price for their supply chain services.

Specific examples were cited of successful collaborations between port authorities, terminal operators and rail operators on co-developing improved intermodal links for cargo as an alternative to trucks between Germany and Holland as well as between Austria and Germany. Increasing frequency of services and gaining critical mass was seen as the key to reducing overall cost compared to barge and road alternatives. A positive trend has also been observed of barge operators moving into rail and vice versa, especially given the expected rise in frequency of low river levels on vital North European waterways such as the Rhine and Danube. On barge operations, pilot operations using battery-driven barges have been quite successful with additional pilots being investigated for hydrogen-powered inland cargo vessels including waterway refuel points.

Rail operators offering supply chain solutions as a service are also investing in e-trucks, CNG- and LNG- powered trucks for last mile deliveries.

On the deep-sea leg, it was felt that there is a need in the short to mid-term need for variety of choices (biofuel, LNG, ethanol among others) for mid- to older-aged tonnage from energy providers and then one or two zero-carbon fuels on a longer timeline. Shipowners are actively collaborating on new low and zero carbon fuels with oil majors, new energy providers, shipyards and engine manufacturers alike, but it is down to the port communities and port authorities to work with governments and regional institutions to bring the supplies of new alternative fuels on tap for retrofitted or newbuild vessels visiting the ports as part of a wider energy transition away from hydrocarbons.

A similar view was also held for the investments in ports in onshore power from low or zero carbon sources as hubs for carbon capture, storage and transportation given the amount of real estate needed and the level of investments required as part of a wider plan for port cities and industrial regions to lead the energy transition.

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.